



## Mainstreaming SDGs for Ministry of Industries



Ministry of Industries  
Government of the People's Republic of Bangladesh  
April 2020

# Mainstreaming SDGs for the Ministry of Industries



Ministry of Industries  
Government of the People's Republic of Bangladesh  
April 2020

## A Handbook Mainstreaming SDGs for the Ministry of Industries

**First Edition**  
**SDG Publication One**

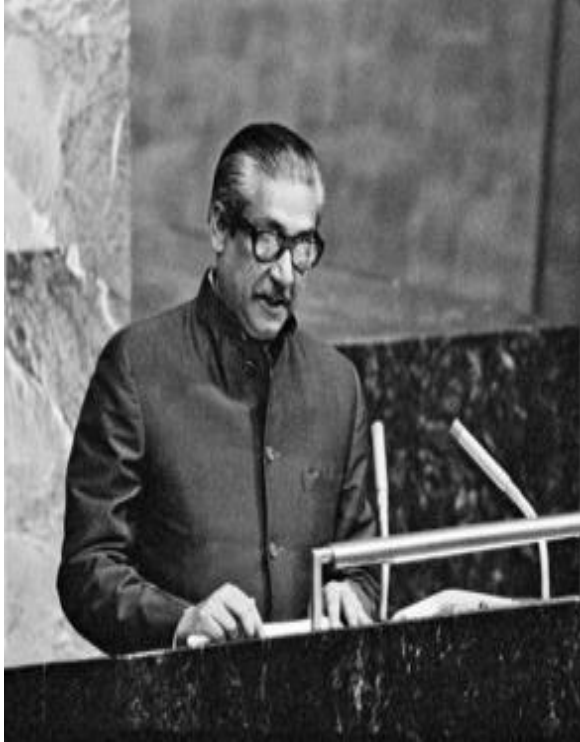
*Prepared and Published by*  
Ministry of Industries  
Government of the People's Republic of Bangladesh  
91 Motijheel, Dhaka 1000, Bangladesh

May2020

Note: This document is approved on 30 April 2020 by the Competent Authority of the Ministry of Industries

*Copyright @* Ministry of Industries, Government of the People's Republic of Bangladesh, 91 Motijheel, Dhaka 1000, Bangladesh  
All rights are reserved.

Printed by



“Let us together create a world that can eradicate poverty, hunger, war and human sufferings and achieve global peace and security for the well-being of humanity”

**Bangabandhu Sheikh Mujibur Rahman**  
Father of the Nation of Bangladesh  
UNGA 1974



‘I am confident that Bangladesh could show its capacity in achieving SDGs the way it achieved the MDG goals.’

Honorable Prime Minister  
**Sheikh Hasina**

## Foreword by the Editors

As a forerunner in conceptualizing and implementing Sustainable Development Goals (SDGs), Bangladesh is facing the most pivotal challenge in determining its direction of industrialization. The scope of industrialization has become delimited under interconnected development framework of Agenda 2030 and became a subject to the environmental and social consideration. Within the limited scope, an appropriate approach for industrialization is key to retain the present-day economic growth rate and harness the advantage of currently available population dividend. Tracking the fast-changing industrial environment, foreseeing the probable impact of fourth industrial revolution (4IR) and emergence of techno-functional transformation of domestic firms put more hurdles in finding the road map for industrialization in the country.

The ministry of Industries (MoInd) has taken number of initiatives in exercising the alternative options and setting the priority for industrialization in the country and also integrating those prior options into the SDGs implementation plan of organizations operating under the ministry. In the concern area, SDGs related capacity development was one of the top priorities of the Ministry in the first half of the fiscal year of 2019-20. Twenty officials, mainly the SDG focal desk officers of different organizations working under administrative umbrella of MoInd, completed a 2-week intensive training course on “Sustainable Industrialization in Bangladesh” in the Curtin University Sustainability Policy (CUSP) Institute, Australia in October 2019. The follow-up phase of the capacity development programme in form of action research by the participants is going on now. This documents on ‘Mainstreaming SDGs for Ministry of Industries’ is an outcome of the said programme. The write up of the different chapters of this document was prepared by the aforementioned SDGs focal desk officers as well as other officials of MoInd and concern organizations, including private sector representatives, interested in SDGs issues. A good number of workshops and consultation sessions were organized to finalize the write-up. The entire process helped to reach in a better level of understanding among all the contributors of this document associated from different organizations and different levels. It also facilitated preparation and on boarding of an internal resource pool ready to take-off for working further for mainstreaming SDGs in planning and facilitation of industrialization in Bangladesh with a special focus on localization of industries.

As a Millennium Development Goal (MDGs) champion, Bangladesh had taken proactive initiatives to accommodate SDGs in its mainstream development planning i.e., Five Year Plan (FYP). The long-term high-level action plan for achieving SDGs is broken down in 5 years range and the first of the three parts was integrated in 7<sup>th</sup> FYP (Fiscal year 2016 -20). Similar attempts been taken in integrating the later parts in 8<sup>th</sup> FYP (Fiscal year 2021 -25) and 9<sup>th</sup> FYP (Fiscal year 2026 -30). Almost all the necessary planning and administrative efforts has been initiated nationally, such as, forming a high powered SDG cell under Prime Minister’s office, appointing a chief coordinator for SDGs affairs, responsibility distribution (mapping of the ministries), data gap analysis, sketching of financing strategy, setting the monitoring and evaluation framework, installation of online SDG tracker, etc. In the process of distribution of the responsibilities, MoInd is entrusted with certain responsibilities of leading the activities to achieve Four (4) SDG targets (no. 2.3, 9.2, 9.3 and 9.4) with 6 indicators. The Ministry itself or the organizations under its administrative control are also assigned with responsibilities to work for achieving two (2) targets (6.4

&8.2) with 3 indicators as co-leading agency and another forty-five (45) targets as associate agencies. The ministry is also responsible for overall coordination of the activities targeted to attain SDG-9. To carry out all the above responsibilities rigorous planning exercises had been done. This handbook is the documentation of the output of the exercise and prepared to guide the coordinated implementation of the planned course of multidimensional actions by the MoInd and its organs.

During the exercise on outlining the future course of actions of the different agencies and of MoInd itself, both the global and national contexts are considered. The global contexts are put on trials to optimize the local potentials. The prospects of Industrial localization are cross validated with the basic approaches and features of Agenda 2030. Emphasis has given on distribution of benefits of industrialization and employment creation to the most disadvantageous groups with an aim to 'Leave No One Behind' from the future course of actions of MoInd. Deliberation has also made on the political and governmental commitments and frameworks, such as, implementation of election manifestoes 2018, compliance on dream trajectory of Honorable Prime Minister Sheikh Hasina to uplift Bangladesh into the middle income status by 2021 and a developed nation by 2041 where end line of SDG implementation i.e., 2030 is regarded as the year of development junction.

We humbly acknowledge the constant guidance and supports from the Honorable Minister for Industries to take the appropriate initiatives to implement sustainable industrial activities and to bring this handbook into its existence. We are indebted to the Honorable State Minister for Industries for extending all out co-operations in mentioned areas. We admit with gratitude to the Secretary for Ministry of Industries for his unparalleled initiatives for capacity development of the concern officials in the SDGs arena as well as effective directives to complete gigantic tasks of publishing this handbook. We are also grateful to the heads of organizations operating under this ministry for their unstinted assistances in this regard. Special thanks to all members of Review and Publication Committee and the officials who have worked hard to bring this book on the hand of readers.

Finally, we hope this book will make SDGs, especially the matters related to Ministry of Industries easily understandable to all the stakeholders, provide guidance for implementing officials as well as serve the thirst of academia.

Additional Secretary  
&  
Convener, Editorial Committee

## Executive Summary

As a signatory of “Transforming our world: the 2030 Agenda for Sustainable Development”, Bangladesh has made its pro-active efforts to frame in the national level implementation arrangement to achieve SDGs. The Ministry of Industries (MoInd) endeavors to ensure its timely responses to the assigned responsibilities within the national arrangement. To get a clear view about the completed, ongoing and future course of actions MoInd has prepared this Handbook captioned ‘Mainstreaming SDGs for the Ministry of Industries’ where implementation strategies of the MoInd to attain its assigned sustainable development targets had been kept under prime focus. This document is prepared in a point of time two third of the implementation period (10 years) is remaining to attain those targets and goals.

This handbook could not come out by the usual routine work of the officials of MoInd rather it is an outcome of a long process and of extraordinary efforts of all contributors and the member of editorial committee of this book. The mentioned long processes got a robust momentum under mentoring and guidance of the present Secretary of Ministries of Industries. It is worth mentioning that as a management graduate, award winning experienced public servant and a former Director General, Governance Innovation Unit, Prime Minister’s Office (GIU, PMO), he possesses an exceptional know-how to lead industrial localization and sustainability. He has patronized several initiatives of the ministry officials towards SDGs. A good number of in-house trainings and workshops were organized with an aim to capacity development of SDGs focal point and concern officials of the MoInd and its administered organizations even before starting work on the handbook. Internal, external and foreign resource persons were invited as resource persons in those trainings and workshops. Finally, in October 2019, twenty officials, nominated from MoInd and its administered organizations, were trained at Curtin University, Australia in the “Capacity building program for SDG localization for sustainable industrialization in Bangladesh”. The programme open up the opportunity for the officials to experience some good practices in industrial management, compare their understanding of SDGs with situation of an advanced economy like Australia, and consolidate their knowledge of SDGs in global context. With their up graded capacity, the participants of that training were assigned as the driving force for preparing this document. With an utmost spirit of inclusiveness, a large committee of contributors was formed consist of all the participants of the mentioned training, alternative SDGs focal desk officials of different organizations of MoInd, private sector and also the other officials of MoInd who have the scholastic ability to contribute in drafting various chapters of this document. The contents, structure and outline of this document were initially decided in a workshop conducted in a participatory approach. Secondary information on ability, capacity, activities and plan related to SDGs of MoInd and its different concerns was collected using structured and semi-structured formats. All the previous documents related to SDGs of the mentioned organizations were summarized. Prime national & international literatures related to SDGs were reviewed. The collected information was distributed according to the arrangement of the chapter of the document. The individual contributors were assigned to analyze and prepare the different part of the various chapters. After preparation of the first drafts, the whole document was shared with all the contributors. A meeting, chaired by the Secretary, was arranged for identifying scope of necessary rearrangement and correction. All the high officials of MoInd and the head of different organizations operating under the ministry had participated in the meeting. As per the decision of the meeting, the different parts of the documents were distributed again to alternative

contributors to improve further. Then a series of meetings of the three members core editorial committee headed by Deputy Secretary (PR&GIM) of MoIndhad taken place to bring this document in this final shape. Continuous mentoring of the Secretary of Industries was a valuable input to the entire process.

The contents of this handbook are allocated into nine main chapters. The **first chapter** provides short introduction to SDGs along with its historical background and key features. This chapter is a compilation of nutshell information from the international documents. A huge number of officials of MoIndis yet to be trained on SDGs. This chapter will provide them, as well as general readers, with essential understanding on SDGs in global context. The **second chapter** accommodates the national context of SDGs implementation in Bangladesh. This chapter is drafted mainly based on the documents published by Planning Commission of Bangladesh and the various directives of Principal Coordinator's Office for SDGs, PMO. A pertinent success story is also put in the chapter to encourage strong initiatives towards sustainable development targets by the officials of MoInd. Both the first and second chapter will help the users of the handbook to comprehend the next chapters to relate their respective responsibilities, in and outside their organizations, to work out for achieving SDGs.

Chapters -3, 4 and 5 are the core part of this handbook. The **third chapter** provides a broad outline of the role and responsibilities of the MoInd in achieving certain SDGs. This chapter is put up with MoInd's activities to implement 7<sup>th</sup> Five Year Plan with cross reference to sustainable development targets assigned to it as lead implementer. It also provides the addresses of SDGs in relation to the current Industrial Policy, 2016 and the descriptions of how the responsibilities of achieving SDGs are reflected in the Annual Performance Agreement (APA) of MoInd. The **fourth chapter** is a walk through the strategy for implementation of sustainable industrialization in Bangladesh. This comprehensive chapter focused on strategy for SDG priority indicators, industrial localization aspects, SDGs action plan, implementation and the progress so far made by MoInd, the ongoing and planned projects under MoInd those addresses different sustainable development targets and MoInd's strategy for implementing SDGs action plan. The capacity development initiatives and special events related to SDGs hosted by the different concerns of MoInd were also covered in the chapter. The **fifth chapter** essentially looks on the resource requirement in implementing SDGs related projects and activities by MoInd. The estimation of the requirement is calculated based on the General Economic Division's publication titled 'SDG financing and strengthening multi-stakeholder partnerships. While estimating the emergence of fourth industrialization and predicted changes in the industrial sector have been taken into consideration. The resource requirement is highly dependent on the level of other stakeholders' engagement and distribution of core responsibilities among them. So, the chapter also accommodate the role of private sector, NGOs, development partners and industrial sector associations. It is highly expected that these three chapters will provide substantial information and guidance for internal use the officials working under MoInd. The mention direct users' group of this handbook will be benefited in the areas of harmonization of their knowledge level, coordination among the different organizations and implementation of SDGs related projects and activities.



The next three chapters provides essential information on MoInd's progress in SDGs thematic areas, special consideration under SDG framework and the cross-cutting issues for sustainable industrialization in Bangladesh. The **sixth chapter** looks on the three alignments - firstly the alignment of industrialization with SDGs' core spirit of 'Leaving no one behind'. Secondly the alignment of the industrialization among the three dimensions of sustainable development, namely, economic, social and environmental and lastly the alignment among 5Ps i.e., inclusion of 5Ps (People, Planet, Prosperity, Peace & Partnership). The chapter also includes a discussion on the necessary change in the planning and implementation approach from 'Whole of Government' to 'Whole of the Society' for fostering the SDGs spirit of inclusiveness and participation in industrial development. The **Seventh Chapter** draws the attention of the users of the handbook on the special aspects to be considered in implementing activities for sustainable industrialization. The aspects include environmental protection, waste management and implementation of 3Rs (Reuse, Reduce & Recycle) and circular economy. This chapter also puts light on impact of sustainable industrialization on reducing poverty and inequality, creating employment, empowering women and improvement of health and nutrition. The **eighth chapter** hosts some of the major cross cutting issues having effects on implementing sustainable industrialization, such as, research, skill development and potentiality of blue economy.

The **ninth chapter** focuses on two major issues related to future directions for sustainable development in Bangladesh. These issues are fostering green innovations and 4th industrial revolution (4IR). The emergence of 4IR has pushed the industrial sector, globally, to be adopted with drastic changes. So, the issue is elaborated to an extent of necessary detail. The **tenth chapter** looks at the challenges for the MoInd in planning and facilitating sustainable industrialization in the country. The chapter also suggests some concrete way forwards to overcome the challenges. Finally, the **eleventh chapter** draws the conclusion in consolidated manner.

### Editorial Committee

Additional Secretary (Development, Research and SDG), Moind	Convener
Md. AbulKhair, Deputy Secretary (Ship Recycling), Moind	Member
Napal Chandra Karmaker, Deputy Secretary (BSCIC), Moind	Member
Dr. A.F.M. Amir Hussain, Deputy Secretary (Law), Moind	Member
Mohammad Solaiman, Deputy Secretary (International Cooperation), Moind	Member
Mohammad SayeedurRahman, Management Counsellor, BIM, Moind	Member
Md. RajibulHoque, Management Counsellor, BIM, Moind	Member
AkhilRanjanTarafder, Manager, SME Foundation, Moind	Member
Mohammad MahbuburRahmanBhuiyan Deputy Secretary (Policy Research & Global Issues Management), Moind	Member's Secretary

### Review and Publication Committee

Mohammad MahbuburRahmanBhuiyan Deputy Secretary (Policy Research & Global Issues Management), Moind	Team Leader
Mohammad SayeedurRahman, Management Counsellor, BIM, Moind	Member
Abdullah Al Mehedi, Executive Engineer, TICL, BCIC	Member
Md. RajibulHoque, Management Counsellor, BIM, Moind	Member

## Table of Contents

	Page
Quotes from Father of the Nation (with Photo)	3
Quotes from Hon'ble Prime Minister (with Photo)	4
Messages	5
Foreword by Editors	13
Executive Summary	15
Editorial Committee	17
Table of Contents	18
List of Abbreviations	21
Chapter 1: Introduction	25
i.    SDG at a glance	26
ii.   Towards Sustainable Development Goals (SDG)	29
iii.  Key features of SDG	29
Chapter 2: SDG: Bangladesh perspective	
i.    SDG in the context of Bangladesh	32
ii.   SDG Success story	37
Chapter 3: SDG: Ministry of Industries perspective	
i.    Role of the Ministry of Industries in achieving SDGs	40
ii.   Mapping of SDG with 7 <sup>th</sup> Five Year Plan	46
iii.  SDG and Industrial Policy 2016	54
iv.  Alignment of SDG with Annual Performance Agreement (APA) and Election Manifesto 2018	62
Chapter 4: Strategy and Implementation for Sustainable Industrialization	

i.	Strategy for SDG priority indicator	69
ii.	SDG Localization	72
iii.	SDG Action Plan, Implementation and Progress	76
iv.	Projects aligned with SDGs	97
v.	Capacity Development and Special Events related to SDG	115
vi.	Strategy to implement SDG Action Plan	122
Chapter 5: Resource Mobilization and Stakeholder engagement		
i.	Resource mobilization strategy for its optimum utilization	131
ii.	Role of Private Sector, NGOs, Development Partners and Industrial Sector Associations	140
Chapter 6: SDG Thematic Progress		
i.	Leave no one behind a. Efforts for raising lower income people	143
ii.	Economic, Social & Environmental Development	148
iii.	Inclusion of 5Ps (People, Planet, Prosperity, Peace & Partnership)	151
iv.	Role of Industrialization on principle transforming from ‘Whole of Government Approach’ to ‘Whole of the Society Approach’	154
Chapter 7: Aspects considered in Implementing SDGs		
i.	Environmental Protection for Sustainable Industrialization	158
ii.	Implementation of 3Rs (Reuse, Reduce & Recycle) and Circular Economy	160
iii.	Waste Management in Industrial Sector	166
iv.	Water Management in Industrial Sector (Minimal use of underground water, maximum use of surface water and recycling of water use)	171
v.	SDG a tool to reduce poverty, inequality, create employment, empower women and for better health and nutrition	177
Chapter 8: Cross Cutting Issues in Implementing SDGs		
i.	Research and SDG	195
ii.	Skill Development	199
iii.	SDG and Blue Economy	203
Chapter 9: Issues related to Future Directions		

i.	Fostering Green Innovations	207
ii.	SDG and 4 <sup>th</sup> Industrial Revolution	209
Chapter 10: Challenges and Way Forwards		
i.	Challenges	222
ii.	Way Forwards	224
Chapter 11: Conclusion		226
References:		227
List of Publications		236

## List of Abbreviations

3R	Reduce, Reuse & Recycle
4IR	4 <sup>th</sup> Industrial Revolution
5R	Reduce, Reuse, Recycle, Recover & Refuse
ADB	Asian Development Bank
AFCCL:	Ashugonj Fertilizer and Chemical Company Limited
APA	Annual Performance Agreement
APLAC	Asia Pacific Laboratory Accreditation Cooperation
APO	Asian Productivity Organization
ARTDO	Asian Regional Training and Development Organization
BAB	Bangladesh Accreditation Board
BBS	Bangladesh Bureau of Statistics
BCIC	Bangladesh Chemical Industries Corporation
BFSIC	Bangladesh Sugar and Food Industries Corporation
BIM	Bangladesh Institute of Management
BITAC	Bangladesh Industrial & Technical Assistance Center
BMRE	Balancing Modernization Rehabilitation and Expansion
BSB	Bhutan Standards Bureau
BSCIC	Bangladesh Small and Cottage Industries Corporation
BSEC	Bangladesh Steel & Engineering Corporation
BSFIC	Bangladesh Sugar & Food Industries Corporation
BSTI	Bangladesh Standards and Testing Institution
CAD	Computer Aided Design- Computer Aided Machining
CAM	Computer Aided Machining
CCCL	Chhatak Cement Company Limited
CDM	Clean Development Mechanism
CETP	Central Effluent Treatment Plant
CIRDAP	Centre for Integrated Rural Development for Asia and the Pacific
CKD	Completely Knocked Down
CNC	Computer Numerical Control
CO2	Carbon Dioxide

CUFL	Chittagong Urea Fertilizer Project
DCCI	Dhaka Chamber of Commerce & Industry
DoE	Directive of Environment
DPDT	Department of Patents, Designs & Trademarks
EBA	Everything But Arms
ED	Engineering Dimensions
ETP	Effluent Treatment Plant
EU	European Union
FBCCI	Federation of Bangladesh Chambers of Commerce & Industry
FDI	Foreign Direct Investment
FSMS	Food Safety Management System
FYP	Five Year Plan
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GED	General Economic Division
GHGs	Green House Gases
GI	Geographical Indication
GIZ	German International Cooperation
GMP	Good Manufacturing Practice
GoB	Government of Bangladesh
GPUFP	GhorasalPolash Urea Fertilizer Project
GSP	Generalized System of Preference
HIES	Household Income and Expenditure Survey
HLPF	High Level Political Forum
IAF	International Accreditation Forum
ICPE	International Centre for Public Enterprises
ICT	Information and Communication Technology
IEC	International Electro-technical Commission
IFAD	International Fund for Agricultural Development
IGES	Institute for Global Environmental Strategies
ILAC	International Laboratory Accreditation Cooperation

ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organization for Standardization
ITC	International Trade Centre
JFCL	Jamuna Fertilizer Company Limited
JICA	Japan International Cooperation Agency
KOICA	Korean International Co-operation Agency
KPML	Karnaphuli Paper Mills Ltd.
LDC	Least Developing Countries
MBF	Mid-Term Budgetary Framework
MDG	Millennium Development Goal
MHT	Medium and High-Tech Industry
MMC	Metal Matrix Composite
MMCF	Million Cubic Feet
MOI	Ministry of Industries
MoInd	Ministry of Industries
MoU	Memorandum of Understanding
MT	Metric Ton
NBFI	Non-Bank Financial Institution
NPO	National Productivity Organization
NSBs	National Standards Bodies
OCIB	Office of the Chief Inspector of Boiler
OIML	International Organization of Legal Metrology
PAC	Pacific Accreditation Cooperation
PIL	Pragati Industries Limited
PLC	Programmable Logic Controller
PPP	Public Private Partnership
PPP	Purchasing Power Parity
PRISM	Poverty Reduction through Inclusive and Sustainable Markets
PRSP	Poverty Reduction Strategy Papers
QMS	Quality Management System



R&D	Research and Development
RJC	Renwick, Jaineswar and Company Bangladesh Limited
S&DT	Special and Differential Treatment
SARSO	South Asian Regional Standards Organization
SCI	Small and Cottage Industries
SCITI	Small and Cottage Industries Training Institute
SDC	Bangladesh Sugar and Food Industries Corporation
SDG	Sustainable Development Goals
SEIP	Self-Employment Investment Program
SFCL	Shajalal Fertilizer Company Limited
SLSI	Sri Lanka Standards Institution
SMCI	Small, Medium and Cottage Industries
SME	Short and Medium Enterprises
SMEF	Small & Medium Enterprise Foundation
SoE	State Owned Enterprises
SPS	Sanitary and Phytosanitary
STC	Sectoral Technical Committee
TBT	Technical Barriers to Trade
TICI	Training Institute for Chemical Industries
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TVC	Time, Visit and Cost
UGSFL	Usmania Glass Sheet Factory Limited
UHC	Universal Health Coverage
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNIFEM	United Nations Development Fund for Women
USAID	United States Agency for International Development
WTO	World Trade Organization

# Chapter I: Introduction

## i. SDG at a glance

The concepts of 'development' has emerged to 'well-being of everyone' from the 'asset accumulation of the elites' over last centuries. The consideration for optimum well-being of everyone without harming welfare of anyone is the simplest idea of 'sustainable development' where everyone and anyone refers to human, plant, animal, planet and the future generations. In last decades, the idea had exercised a lot in academics, political negotiations and international forums and reached in a level of maturity to set on a global consensus. Hosting Sustainable Development Goals (SDGs) as the centerpiece, a proposal named "Transforming our World: the 2030 Agenda for Sustainable Development" was agreed and adopted by Heads of State and Government during 70<sup>th</sup> session of the UNGA, in a special summit, on 25 September 2015. The objective of the agreement was to produce a set of universal goals that face the urgent economic, social and environmental challenges prevailing in the world.

The framework of the Agenda 2030 impelled the signatories to shape up their governance and the society towards 17 Sustainable Development Goals (SDGs). For specific understanding, the goals are further broken up to 169 targets. The Agenda is a commitment to eradicate poverty and achieve sustainable development by 2030 world-wide, ensuring that no one is left behind. The adoption of the 2030 Agenda was a landmark achievement, providing for a shared global vision towards sustainable development for all<sup>1</sup>. The 17 Sustainable Development Goals (SDGs) can be depicted in the following info-graph:



<sup>1</sup>[https://ec.europa.eu/environment/sustainable-development/SDGs/index\\_en.htm](https://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm)

The 2030 Agenda marks for the first time in human history that the nations of the world have come to agreement on a comprehensive vision, with clear goals and targets, and indicators to measure the improvement for the development of a sustainable civilization on the earth<sup>2</sup>. These goals determined by integrating three dimensions of sustainable development: the economic, social and environmental, as well as, considering the indivisibility of the impact of one dimension over others.

In colonial era, rapid extraction of resource and robust trade were means of economic progress. The first industrial revolution added two new elements i.e., heavy industrialization and construction of logistic infrastructure as economic prosperity essentials. In post-colonial period, mentioned four activities were over emphasised to have a faster economic prosperity without considering the impacts on social relations and environment. In post-cold war era, several tensions, for example, dissolution of nuclear families, disrespect of social bondages in the urban areas, depletion of ozone layer, were evident as result of conflicts among economic prosperity, healthy social relationship and environmental quality. Urge for rapid industrialization for pacing up economic growth and increase of irresponsible consumption due to widely spread consumerism the tensions aggravated. But the scope of mitigation of the conflicts had rarely been addressed in development theories and practices. The sustainable development framework in agenda 2030 rightly addresses the tri-dimensional aspects of development and has considered 5Ps- people, planet, prosperity, peace, and partnership (i.e., 5 elements) during outlining the development charter. Contemplation of 5 Ps for any development intervention is expected to resolve conflicts and show the ways for better integration of different aspects from different dimensions for development. The primer of 5Ps (i.e., 5 elements), considering Agenda 2030, be follows<sup>3</sup>:

**People:** The SDGs declare the world’s determination “to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.”

**Prosperity:** The SDGs aim to “ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social, and technological progress occurs in harmony with nature.”

**Planet:** The SDGs include the protection of the planet “so it can support the needs of the present and future generations.”

Targets are set to protect the planet from degradation, through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change.



<sup>2</sup> <http://17goals.org/the-story-behind-the-goals/>

<sup>3</sup> The details can be found in <https://unfoundation.org/blog/post/the-sustainable-development-goals-in-2019-people-planet-prosperity-in-focus/>

**Peace:** The SDGs rightly note that “There can be no sustainable development without peace and no peace without sustainable development.” Therefore, they set out goals to foster peaceful, just, and inclusive societies.

**Partnership:** The SDGs call for “a spirit of strengthened global solidarity.” Problems that cross geographies and sectors require collaboration that does as well. The partnerships are required to mobilize the means to implement this agenda through a revitalized Global Partnership for Sustainable Development, global solidarity, the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people. The lives of all will be profoundly improved and our world will be transformed into better one.

## ii. Towards Sustainable Development Goals (SDG)

The concept of sustainable development has taken decades to come into the present shape. Brundtland-Report "Our Common Future" (1987), United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, 1992), United Nations Millennium Declaration (Millennium Summit of the United Nations in 2000 and adoption of MDGs), Rio-Declaration ("Rio+20" Conference on Sustainable Development, June, 2012), “A decent life for all: ending poverty and giving the world a sustainable future” (February 2013), “An overarching post-2015 framework” (June 2013), “A decent life for all: from vision to collective action”( June 2014), “A transformative post-2015 agenda” (December 2014), "A Global Partnership for Poverty Eradication and Sustainable Development after 2015"(February 2015) are the milestone events and documents of the various exercises paved the way towards agenda 2030. The UN Open Working Group (OWG) on Sustainable Development Goals and the Intergovernmental Committee of Experts on Sustainable Development Financing had lead the process since 2013 and formed the basis of the final Agenda package, through a series of intergovernmental negotiations in partnership with major groups and stakeholders, ensuring the broadest possible ownership of this new Agenda<sup>4</sup> captioned as “Transforming our World: the 2030 Agenda for Sustainable Development”.

Eventually, The SDGs are seen as successor to the Millennium Development Goals (MDGs), which started a global effort in 2000 to tackle mainly the indignity of poverty around the developing countries. The 8 MDGs were founded on measurable, universally agreed objectives for tackling extreme poverty and hunger, preventing deadly disease, and expanding primary education to all children, among other development priorities. During the 15 years’ timeline (2000 to 2015), the MDGs drove some progress in several important areas: reducing income poverty, providing much needed access to water and sanitation, driving down child mortality and drastically improving maternal health. Most significantly, the MDGs made huge advancement in combating HIV/AIDS and other diseases like malaria and tuberculosis. However, the MDGs could not cater the whole gamut of economic, social and environmental unsustainability of the globe. The legacy and achievements of the MDGs provide the world community with valuable lessons and experience to begin work on the new goals. But the job remains unfinished for millions of people around

---

<sup>4</sup> [https://ec.europa.eu/environment/sustainable-development/SDGs/index\\_en.htm](https://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm)

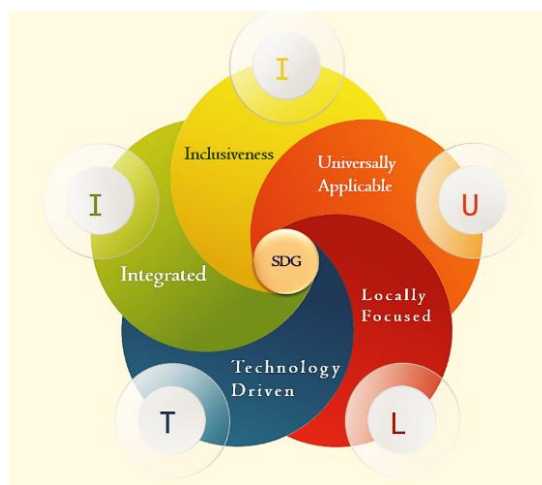
the world. The MDGs were targeted only within the developing countries. However, there are many issues are not linked only to developing countries rather linked to all nations of the globe; say for example, the environment, use of natural resources, peace and justice etc. Therefore, the SDGs were covered to all UN member states, and are considerably more comprehensive and much more ambitious than the MDGs. It was well understood by the global leaders that the world needed to go the last mile on ending hunger, achieving full gender equality, improving health services and getting every child into school beyond primary and many other issues through the whole globe initiatives. It was also understood that broader perspective of socio-economic and environmental issues cannot be solved without ensuring peace, justice and partnership. Therefore, SDGs are also an urgent call to shift the world into a more sustainable path through strong collaboration and partnership.

In the abovementioned context, aftermath of the MDGs period, the SDGs framework has been designed through a wide conscientious to address individual and collective challenges of the current and future world. With some exceptions, the present development trends offer reasons for hope by utilization of this “time of immense opportunity”. There have been tremendous technological advances that have led to improved development outcomes, by proper utilization of highly improved global interconnectivity and vast opportunities for industrial productivity enhancement across the world economy<sup>5</sup>. The scale, ambition and approach of the agenda are unprecedented.

### iii. Key features of SDGs

The 2030 Agenda itself consists of 4 sections: (i) A political Declaration (ii) a set of 17 sustainable Development Goals and 169 targets (based on the report of the Open Working Groups, with some small modifications) (iii) Means of Implementation (iv) a framework for follow up and review of the Agenda. The Agenda 2030 sets out five key opportunities for development; these are also known as key features of SDGs, such as,

- (i) **Inclusiveness**— i.e., framework has considered every citizen of the present and future world and uphold the spirit of leaving no one behind,
- (ii) **Universally applicable**— i.e., all countries regardless of their development status can adopt the framework,
- (iii) **Integrated**— i.e., the three dimensions of sustainable development – economic, social and environmental well incorporated into the framework in a balanced manner. The 2030 Agenda is also indivisible, in a sense that it must be implemented as a whole, in an integrated rather than a fragmented manner, recognizing that the different goals and targets are



<sup>5</sup> Adopted from *SDG Guide: Getting Started with the Sustainable Development Goals—A Guide for Stakeholders, Chapter-I*.

closely interlinked.

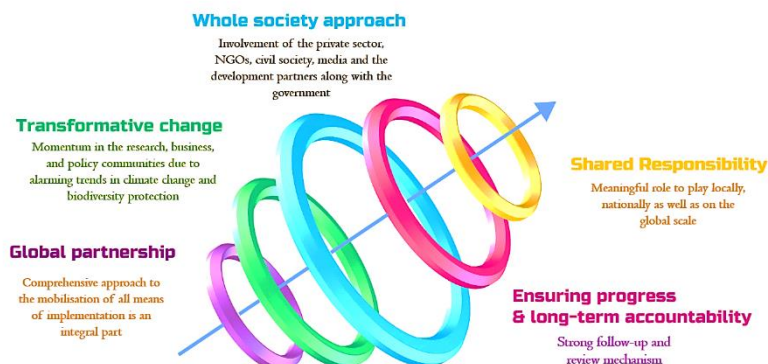
- (iv) **Locally-focused**— i.e., specific implementation plan has to be designed on country and community context and
- (v) **Technology-driven**— i.e., innovation and production of new goods or services based on the local technical abilities to foster the digital revolution.

Various other documents and sources have described some other features of the SDG framework, for instance-

- (vi) **Whole of society approach**— i.e., a shift from government to governance, attempting to reconcile state, market and society, economic and health/environmental interests, and public and private organizations. In so doing it is also seeking a reconciliation of ideas, interests and institutions. Its partners consist of NGOs/CSOs, commercial businesses and public institutions working together in explorative cross-domain networks with an adaptive attitude in organic and pragmatic processes of learning by doing<sup>6</sup>. Whereas, a **whole-of-government approach** implies<sup>7</sup> that various parts of the government work together to facilitate synergies, manage trade-offs and avoid or minimize negative spillovers, in line with the “indivisible economic, social and environmental pillars” of the 2030 Agenda.

- (vii) **Transformative change**<sup>8</sup>— i.e., changes in social structures and relations, including overcoming patterns of stratification related to class, gender, ethnicity, religion or location that can lock people (including future generations) into disadvantage and

constrain their choices and agency. It also means changing norms and institutions, both formal and informal that shape the behaviour of people and organizations in the social, economic, environmental and political spheres. It also designates the qualitative changes in different policy domains that are necessary to achieve the SDGs. Transformative change that are desirable, in the sense that they are (a) progressive (in a normative sense of social justice), (b) systemic (addressing various factors simultaneously and in an interrelated way), and (c) long term (cannot be easily reversed in the short term). Transformative change requires innovative approaches: in conceptualizing and defining problems and potential solutions, designing policy and institutional reforms, changing social



<sup>6</sup> *Civil society and health: Contributions and potential, Health Policy Series-48, The European Observatory on Health Systems and Policies and WHO, 2017.*

<sup>7</sup> *Karina Cazarez-Grageda, 'The Whole of Government Approach: Initial Lessons Concerning National Coordinating Structures for the 2030 Agenda and How Review can Improve their Operation,' March 2019.*

<sup>8</sup> *Adopted from Policy Innovations for Transformative Change: Implementing the 2030 Agenda for Sustainable Development, UNRISD FLAGSHIP REPORT 2016.*

structures and norms, and using new technologies that are affordable, socially acceptable and effective.

- (viii) **Ensuring progress and long-term accountability**— i.e., strong follow-up and review mechanism which will allow all partners to assess the impact of their actions. At the global level, this is overseen by the High-level Political Forum on Sustainable Development, which meets at UNHQ every year to track progress.
- (ix) **Shared responsibility**— i.e., considering national realities, capacities and levels of development and specific challenges, countries have a meaningful role to play locally, nationally as well as on the global scale<sup>9</sup>.
- (x) **Global partnership**— i.e., a comprehensive approach to the mobilization of all means of implementation is an integral part (complemented by the Addis Ababa Action Agenda).

---

<sup>9</sup>Sourced from [https://ec.europa.eu/environment/sustainable-development/SDGs/index\\_en.htm](https://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm)

## Chapter 2: SDG: Bangladesh perspective

### i. SDG in the context of Bangladesh

Bangladesh is an early starter in implementing agenda 2030 with its inspiration from noteworthy success in achieving the Millennium Development Goals (MDGs). With an experience in social sector development, the country representatives, government officials, development practitioners and the scholars from the country took an active part in the global process of preparing the SDGs framework. Bangladesh proposals to the UN were strikingly similar to the proposals made by the Open Working Group (OWG) of the United Nations where 9 out of 11 goals were similar and other goals proposed by OWG were also these in Bangladesh proposals but as targets of different goals.

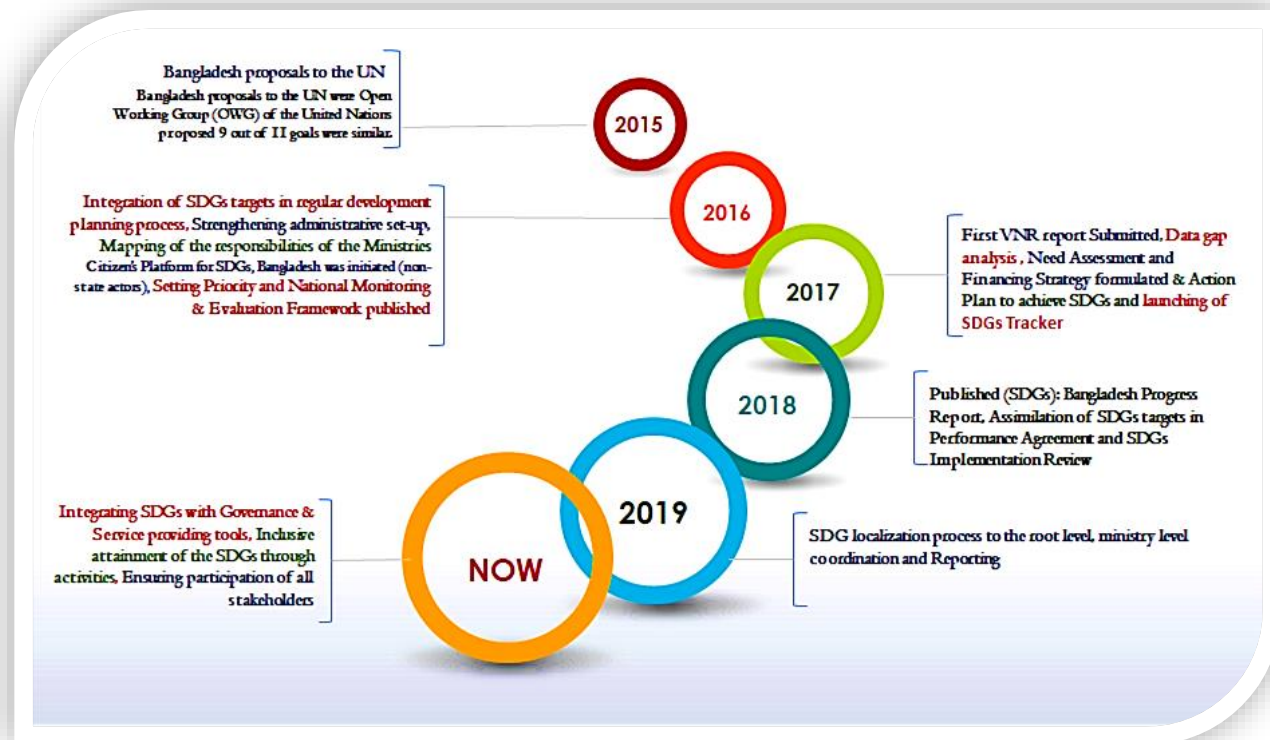
Bangladesh could thus articulate sustainable development problems that the world would have to grapple with in the coming one and a half decade<sup>10</sup>. So, the leaders of the different stakeholders started situating them in the 2030 Development Agenda even before September 2015. The reflection of this early start is now visible in the political standpoint, development planning, public administrative workflows and in the activities of the non-state actors. The initial efforts, advancement and success stories at the infant stage (first two years) of implementing agenda 2030 in Bangladesh were well documented in its first Voluntary National Review (VNR) report to the High-Level Political Forum (HLPF) of the United Nations. The report was submitted in June 2017. At the latest point, General Economics Division (GED), Bangladesh Planning Commission, Ministry of Planning has published the first formal report on implementation progress of SDGs in the country titled as 'Sustainable Development Goals (SDGs): Bangladesh Progress Report 2018'.

**Integration of SDGs targets in regular development planning process:** the starting time of the Sustainable Development Goals (2016-2030) and the 7<sup>th</sup> Five Year Plan (2016-20) was the same and it provided a good opportunity to integrate SDGs in the 7<sup>th</sup> FYP. All the 17 goals were integrated into the plan - 14 goals are thematically fully aligned, 3 goals (Goal 14, 16 and 17) of the SDGs are partially aligned with the 7<sup>th</sup> FYP. More precisely, the numbers of fully and partially aligned SDG targets are 58 and 38, respectively. Thus, the achievement of planned objectives and targets are expected to contribute towards the achievement of SDGs.

---

<sup>10</sup>*Sustainable Development Goals: Bangladesh Progress Report 2018, December 2018, published by General Economics Division (GED), Bangladesh Planning Commission, Ministry of Planning, GoB.*





**Strengthening administrative set-up:** To lead the implementation process in accordance with the plan, an ‘SDGs Implementation and Monitoring Committee’ has been formed at the Prime Minister’s Office. The aim of setting up such a committee is to facilitate and implementation of SDGs Action Plan. The Committee comprising Secretaries from 20 Ministries/ Divisions coordinates SDGs monitoring and implementation. The Principal Coordinator (SDGs Affairs), a newly created high-level position in the Prime Minister’s office, heads the Committee. GED is the secretariat for the committee to coordinate implementation at the policy level along with monitoring and reporting SDGs status.

**Mapping of the responsibilities of the Ministries:** To ensure the collective efforts from all the government apparatuses, the responsibilities of implementing SDG targets are distributed among the different the ministries and agencies. A responsibility matrix is in operation where ministries and agencies are held accountable as lead, co-lead and associate agencies against each target of the SDGs to achieve those. A handbook<sup>11</sup> is published by Support to Sustainable and Inclusive Planning (SSIP) Project, General Economics Division (GED), Planning Commission in September 2016 detailing the issue. This mapping exercise is expected to reduce duplication of efforts, enhance synergy and help formulate action plans.

**Data gap analysis:** To monitor and assess the attainment of the targets of Sustainable Development Goals (SDGs), Bangladesh Planning Commission conducted a review of various means of data generation in the country. The commission has published its first analytical document on the data availability in Bangladesh

<sup>11</sup> A Handbook Mapping of Ministries by Targets in the implementation of SDGs aligning with 7th Five Year Plan (2016-20), can be sited at [http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e\\_6ba3\\_467b\\_bdb2\\_cfb3cbbf059f/A-Handbook-Mapping-of-Ministries-targets\\_-SDG\\_-7-FYP\\_2016.pdf](http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e_6ba3_467b_bdb2_cfb3cbbf059f/A-Handbook-Mapping-of-Ministries-targets_-SDG_-7-FYP_2016.pdf)

titled as 'Data Gap Analysis for Sustainable Development Goals (SDGs) Bangladesh Perspective'<sup>12</sup> in January 2017. That document primarily found that data on 70 SDG indicators are available in existing data generating system of Bangladesh and 108 can be generated by modifying existing census and survey (for disaggregation). Additional 63 indicators will require a new survey or census to generate information for measuring the performance in achieving targets of SDGs (Nine indicators are to be used for more than one target).

**National Monitoring & Evaluation Framework:** the General Economics Division, Bangladesh Planning Commission has prepared and published 'Monitoring and Evaluation Framework of Sustainable Development Goals (SDGs): Bangladesh Perspective'<sup>13</sup> in March 2018. The design of the M&E framework was initiated during an inter-ministerial consultation workshop organized in December 2016 and finalized after a series of consultations involving ministries, divisions, agencies, data producers and UN Data Group working in Bangladesh. It is prepared based on the latest available indicators suggested by Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs). The framework is to exercise further for the indicators for which IAEG-SDGs is yet to finalize the calculation methodology. So, the M&E framework is suggested as a dynamic process with the scope of revisiting and evolving towards maturity over time with learning from international experiences.

**Action Plan to achieve SDGs:** Coordinated by the General Economics Division of Bangladesh Planning Commission, the National Action Plan for the implementation of the SDGs has been prepared. The plan was finalized through a rigorous process of consultations, review and feedback from the respective ministries and divisions. It accommodates the action plans of the 43 lead Ministries/Divisions. The plan provides comprehensive lists of the ongoing projects and proposed projects need to be undertaken during the remaining period of the 7<sup>th</sup> Five Year Plan and beyond to achieve specific SDG targets. In the plan, the information of ongoing projects and proposed projects is available coupling with the sanctioned budget and indicative costs, respectively. The plan represents a dynamic/living document which leaves scope for revision during the preparation of the 8<sup>th</sup> Five Year Plan and the successive plans.

**Need Assessment and Financing Strategy:** Implementation of SDGs requires a great deal of financing. The document titled "SDGs Financing Strategy: Bangladesh Perspective"<sup>14</sup> provides an estimate of the annual cost requirement, resource gap and an opportunity to revise the government interventions and financing strategies accordingly. The estimates show that an additional amount, over the current provision of investment related to SDGs by public sectors and external sources, would be US\$ 928.48 billion at 2015-16 constant prices. This amount would be required for SDGs implementation over the period of FY 2017-FY 2030, which is 19.75 per cent of the accumulated gross domestic product (GDP) under the 7<sup>th</sup> Five-Year Plan (FYP) extended growth scenario. The annual average cost of SDGs would be US\$ 66.32

---

<sup>12</sup> Can be sited at [http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbe97e\\_6ba3\\_467b\\_bdb2\\_cfb3cbbf059f/Final\\_Data-Gap-Analysis-of-SDGs\\_Bangladesh-Perspective\\_23\\_02\\_2017.pdf](http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbe97e_6ba3_467b_bdb2_cfb3cbbf059f/Final_Data-Gap-Analysis-of-SDGs_Bangladesh-Perspective_23_02_2017.pdf)

<sup>13</sup> Can be sited at [https://mowca.portal.gov.bd/sites/default/files/files/mowca.portal.gov.bd/download/efad6d3c\\_1828\\_4d9e\\_a42f\\_b0f08b4c61c7/Monitoring\\_and\\_Evaluation\\_Framework\\_of\\_SDGS\\_Book\\_Proof.pdf](https://mowca.portal.gov.bd/sites/default/files/files/mowca.portal.gov.bd/download/efad6d3c_1828_4d9e_a42f_b0f08b4c61c7/Monitoring_and_Evaluation_Framework_of_SDGS_Book_Proof.pdf)

billion (at constant prices) for this period. The costing exercise covers close to 80 per cent of the 169 targets of SDGs.

Sustainable Development Goals: Bangladesh Progress Report 2018 provides a summary of the financing strategy as follows -the study has suggested five potential sources of gap financing. These are: (i) Private Sector Financing, (ii) Public Sector Financing, (iii) Public-Private Partnership (PPP), (iv) External Financing comprising Foreign Direct Investment (FDI) and (v) foreign aid and grants, and Non-Governmental Organizations (NGOs). On average, public sector would account for around 34 per cent of the financing requirement, whereas the private sector has the share of around 42 per cent during 2017-30 periods. The goals and associated targets of SDGs have large public goods aspect whose provision would require higher public funding relative to private sector's contribution. The average share of PPP is 6.0 per cent. The external sources would constitute close to 15 per cent where FDI would make up 10 per cent and foreign aid would comprise 5.0 per cent of the financing gap. Finally, the NGOs would contribute around 4.0 per cent for the same period<sup>15</sup>.

**Assimilation of SDGs targets in Performance Agreement:** To ensure a systematic review of all Ministries/Divisions and to generate more accountability and effectiveness in public organizations, a results-based performance tracking system, Annual Performance Agreement (APA), has been already in place. Initiatives have been taken to incorporate SDGs related activities into the Annual Performance Agreement (APA). So that, actions for achieving SDGs targets can be mainstreamed as general operations of different public agencies with appropriate attention.

**Localization of SDGs:** A noteworthy effort has given by the Governance Innovation Unit (GIU), PMO for contextualizing the 2030 Agenda and foster localization of SDGs targets. A set of 39 indicators has been selected as 'prioritized indicators of SDGs for Bangladesh' under the instructions of the SDG Implementation and Review Committee. Among these indicators, some of the indicators are taken directly from the global Sustainable Development Goals framework and some of the indicators are selected after required modification considering Bangladesh context. In addition to these 39 indicators, decision of selecting another I(one) indicator is delegated to the local authority. So, the total is named as '39+1 Priority Indicators'.

In the drive for localization of SDGs a national trainers' pool had been prepared through conduction of intensive Training of the Trainers (ToT) to selected ministry officials and public sector trainers on the relevant issues. National roll-out workshops were organized starting from divisional headquarters to all the Upazila headquarters assigning local resources along with resource persons from Governance Innovation Unit and national trainers' pool to inform the SDG localization process to the root level in 2019.

A proposal for a framework for localization at Upazila level was put forward by the General Economics Division (GED) after discussed in the SDGs Implementation and Review Committee to meet the purpose

of leveraging coordination among multiple stakeholders at the local level. Meanwhile, Natore district administration had put into practice this localization model at district level chalking out action programme for all government agencies of that district.<sup>16</sup> The learning of Natore Model was discussed in the national roll-out workshops and all the upazila administrations started putting their efforts for the planning of localization of SDG targets.

The Ministry of Industries has also initiated the localization process through its Capacity Development Program for SDG Localization for Sustainable Industrialization in Bangladesh. Under this initiative number of in-house trainings workshops were organized involving officials of the ministry as well as focal persons from all the agencies working under the umbrella of the ministry to come up with a localization model. Twenty officers were sent to Curtin University, Perth, Australia to learn and get practical exposure on localization of sustainable **industrialization**.

**SDGs Tracker:** To enable tracking Bangladesh's progress towards attainment of SDGs and other national development goals through a web-based information repository, the SDG Tracker<sup>17</sup> is developed and installed by Access to Information (a2i) Program, PMO with technical support from UNDP and USAID- in collaboration with General Economic Division (GED) of the Planning Commission, Bangladesh Bureau of Statistics and other government and private stakeholders. The monitoring processes through the system help to have predictive analysis for achieving the goals within the set timeframe. SDG Trackers are working with two major components - SDG Portal and Dashboard. SDG Portal enables Policy Makers, Government Agencies, Private Sector, Civil Society Organization (CSO), International Organizations, academia, researchers, and the citizens to track year to year progress against each target and to create required visualization. On the other hand, SDG Dashboards facilitate individual Ministries/Divisions and Agencies to consolidate available data for each SDG and compare it visually against performance thresholds. The resulting dashboards highlight areas where Ministry/Division needs to make additional progress towards achieving the Goals by 2030.

**Initiatives of non-state actors:** Chiefly, four types of organizations are considered as non-state actors in SDG regime, such as, NGOs, knowledge and advocacy community, media and private sectors. Up lifting the spirit of "Whole Society Approach" the Government of Bangladesh, in collaboration with United Nations Resident Coordinator (UNRC), organized dialogues with the NGOs, CSOs, Development Partners, Private Sector and media.

A Citizen's Platform for SDGs, Bangladesh was initiated by a group of individuals and formally launched on 18 June 2016. Apart from the Core Group of individual members, the platform also includes 104 organizations from across the country working on SDGs as partners. According to the web site of the platform, its objective is to contribute to the delivery of the SDGs and enhance accountability in its

implementation process and initially, the activities of the platform have been planned for five years (2016-2021).

## ii. **SDG Success story**

As a part of SDG implementation, Ministry of Industries is working as lead role in 4 targets, co-lead role in 2 targets and associate roles in 45 targets. Moreover, MoInd is playing as a coordinating role to implement Goal 9. MoInd has already updated SDG Action Plan which is mainly being implemented by 12 organizations working under the Ministry. Out of 39 priority indicators of the country, MoInd is responsible for 2 priority indicators. These are i) Manufacturing value added as a proportion of GDP (35%) and per capita and ii) Manufacturing employment as a proportion of total employment (25%). We are well ahead of Manufacturing value added target. At the end of 2019, achievement rate is 24.21% though the milestone for 2020 is 21.5%. It has been possible through comprehensive initiatives taken by the organizations in both public and private sectors. There might have been lot of success stories behind these achievements under the effective guidance and supervisions of the MoInd. BSCIC is developing Industrial Park throughout the country which play very vital role for industrial development and employment generations especially in manufacturing sectors, BCIC, BSEC and BSFIC are also playing very significant role successfully to achieve SDG targets. Apart from these, SMEF, BIM, BITAC, BSTI has their own projects and activities related to SDG and are being implemented by the respective organizations successfully. In this section we will discuss only two success stories. One is SEPA project of BITAC and the other is Fortification of Edible Oil Project of MoInd.

**SEPA Project:** Bangladesh Industrial Technical Assistance Centre (BITAC) has been implementing the Self-Employment and Poverty Alleviation (SEPA) project since 2009. SEPA is an initiative to create job for the youths particularly for women. BITAC is committed to develop skills through training; producing and repairing import substitute machine parts and conduct research and development activities for improvement of their product and innovations as well. It is a self-governed autonomous body under the Ministry of Industries.

In SEPA project there were nine technical trades like machine shop, electrical maintenance, AutoCAD, household appliances, air-conditioning and refrigeration, plastic general and plastic customize carpentry and light machinery for female and three trades like machine shop, electrical maintenance and welding for male. Under the project 300 females in each batch are getting 3 months training in 9 trades from Dhaka center while males are getting two months training in 3 trades from other four centers.

Since July 2009, a total number of 24840 trainees had been trained by BITAC. Thus, in its last ten years journey BITAC could have completed 100% coverage of its training program. More than seven thousand male/female trainees have received appointment letter after completion of their training courses. Among the employers the Pran-RFL, Sino Bangla Packaging, Matador Group, Polymer Group, Bengal Foundation, Beximco Ltd, Shah Cement, Nasir Glass Industries etc. are mention worthy. A good number of trainees did not avail the facilities of having jobs rather they became entrepreneurs of small businesses after training.

Contribution of Honorable Prime minister Sheikh Hasina, Confirm Employment at the end of training



It is noteworthy that the project arranges Job Fair, confer training certificate to the trainees and simultaneously hand over appointment letters during the closing session of the Fair.

Access to Information (a2i) Program of the

Prime Minister’s Office agreed to support BITAC in assisting with technology support. A2i selected 20 poverty prone Upazillas from different parts of Bangladesh. Both a2i and SEPA team physically visited local areas to disseminate the activities of the project to get deserving candidates. The project ensures better selection, impart better training programs, provide motivation to the youths, arrange Job Fair, confer Certificates after training and finally hand over appointment letters.

SEPA project is a successful one in implementing industrial training programs. It has contribution to empowering women in the society and subsequently plays a vital role in poverty reduction. It also helps generating employment through building entrepreneurship among the youths.

**Fortification of Edible Oil in Bangladesh Project:** The main objective of this project is to improve access to safe and affordable fortified foods across the Bangladesh especially women of reproductive age, adolescent girls and children under-five in Bangladesh and thus reduce the prevalence of micronutrient deficiencies among these population groups.

Ministry of Industries (MoInd) along with Global Alliance for Improved Nutrition (GAIN) and UNICEF has started work on oil fortification with vitamin A in Bangladesh since 2010. Phase-I (2010-2013), Phase-II (2013-2017), Phase-III (2018-2020). The mandatory law for fortification of edible oil with vitamin A was enacted in 2013. The act was published in November 2013 mentioning that all edible oils in Bangladesh must be fortified with vitamin A whether it is produced locally, refined or imported. GAIN along with the Ministry of Industries has actively supported the creation of the rules for the enforcement of the law. The “Oil Fortification Rules 2015” has been published in Bangladesh Gazette on 16th November 2015.

Currently all 44 refineries and packers operating in Bangladesh have signed MoU with MoInd and fortifying edible oil with Vitamin A (soybean, palm and rice bran oil). In current phase GAIN is closely working with MoInd and other stakeholders for Formation of the National Fortification Unit (NFU), Drum management, web based MIS and has signed contract with Bangladesh Standards and Testing Institution (BSTI) and MoInd on the formation of monitoring cell to monitor QA/QC of fortified edible oil in Bangladesh.

**PRISM Project:** The European Union funded programme ‘Poverty Reduction through Inclusive and Sustainable Markets’ (PRISM) which is under the supervision of the Ministry of Industries, Government

of the People’s Republic of Bangladesh, and Bangladesh Small and Cottage Industries (BSCIC) being the implementing agency of this Programme has been working with the objectives of building capacity of the relevant Government services, to foster private sector development in general, with the focus on small & cottage industries and on poorer segments of society. With financial contribution of nearly EUR 30 million from the European Union, PRISM programme is composed of two components; five grant scheme project and a technical assistance to BSCIC.



Since its inception, through the five grant schemes and the technical assistance, the implementation of activities has been targeting poverty alleviation through skill development and job creation, as well as dissemination of Digital Financial Services (DFS) to the rural poor. The focus of the activities has been on the Light Engineering, Jute, Agro-Food Processing, informal sector and rural micro-merchants, specifically targeting poor disadvantaged, women, disabled people and minorities. Overall, the activities of PRISM have contributed

positively to some of the goals and targets of the SDGs in Bangladesh. The final beneficiaries are starting from a low base, because they are disadvantaged not only in terms of education, training or disability/minority but also because of their locations which suffer from poor infrastructure. The below details the SDG Goals and the relevant activities undertaken. It is noteworthy that despite starting from the low base some substantial results have been achieved.

Overall, PRISM Programme has had some positive contribution towards achieving Sustainable Development Goals in Bangladesh, particularly in line with SDGs 8 and 9, and indirectly SDGs 1,4,5 and 6. Some of the main contribution include:

- Technical up gradation of 5,000 micro and cottage enterprises in Light Engineering sector, and enhanced employable skills and decent employment opportunities of 10,000 disadvantaged youth, especially young women and people with disability (PWD) in Light Engineering sector, with 500 new entrepreneurs established businesses in the Light Engineering Sector, as well as 700 Market Committees (MCs) strengthened and networks established with local and national level trade associations in Light Engineering sector



- Improved the well-being of 40,000 poor and disadvantaged men (45%) and women (55%), in informal sector, by improving their access to labour market and safeguarding their fundamental rights at work, with 70% gaining employment, including capacity building of 32 Training Centred targeting disadvantaged men and women in informal sector, and make 3500 small, micro and cottage industries aware of decent work in informal sector.



- Built capacity, skills and knowledge of over 4,000 micro-merchants, business development service providers and business association leaders, and reached more than 10,000 micro-merchants with educational toolkits

tailored to their business needs. These micro-merchants now consult a pictorial book titled “Amar Dokan” and mobile app by the same name to enhance their business management skills and efficiently manage their businesses.

- 104 Training Service providers (TESP) in Agro-Food Processing sector supported to provide relevant skills training and job placement services to small & cottage industries and job seekers. 25,000 trainees passed skills testing certified by appropriate authorities (new and re-skilled workforce) in Agro-Food Processing sector out whom 20,000 are placed in decent work with support of the TESP; and additional 6,223 forward and backward actors have been linked with 4,000 small & cottage industries with 26.3% of contribution margin being reported. 2,000 women, men and disadvantaged persons starting an own Agro-Food



Processing business, of which 30% are women and 20% belong to disadvantaged groups (indigenous/ tribal, religious minorities, disabled people).

- 2,857 workers and labourers trained on new jute fibre extraction machines; delivery of basic training on weaving, product making and safety measures to 2,150 female and male weavers and jute product makers in small and large factories. Provided apprentice development support to 1,650 female and male weavers, as well as apprentice development support to

500 jute product makers in small and large factories and to 1,000 metal workshop artisans. 1,000 jute floor textile retailers and other jute product retailers trained in Entrepreneurship and vocational training on Light Engineering and related sectors for 1500 extreme poor youth with apprenticeship support to 1500 extreme poor youth on Light Engineering sector.

The table below depict the number of people trained and gained employment.

Grant Scheme	Trained	Female	Male	Job placements		Total employment
				Female	Male	
Swisscontact construction, RMG/backward linkage, electrical, electronics, furniture and automobile repairs (informal sector)	41,577	22,036	19,541	17,646	15,295	32,941
Helvetas* Agro-Food Processing	21,440	6,680	14,760	4,097	11,170	15,267
Practical Action Jute and Light Engineering	12,963	4,416 (138 PWD)	8,388 (1,610 PWD)	3,513	6,526	10,039
BRAC* Light Engineering	10,258	4,209 # (313 PWD)	6,002 # (629 PWD)	4,209	6,002	10,258 (10,211+ 47 Transgender)
UNCDF Micro-merchants, business development service providers and business association leaders	4,000	300	3,700	-	-	-
<b>Total</b>	<b>90,238</b>	<b>37,641</b>	<b>52,391</b>	<b>29,465</b>	<b>38,993</b>	<b>68,458</b>



\*includes apprenticeships # People with Disability (PWD)



Most of the activities have aimed at reducing poverty and improve well-being of poor and disadvantaged men and women by increasing their access to the labour market and enhancing their incomes, while safeguarding their fundamental rights at work. PRISM Programme has facilitated implementation of training

programmes through local Training Service

Providers (TSPs) on demand driven skills. It has also supported the linkage of skilled graduates with financial institutions and provided entrepreneurship development training under post-training support. Additionally, PRISM Programme has raised awareness amongst the graduates and informal sector enterprises on Labour Rights and Decent Work (LRDW) issues.

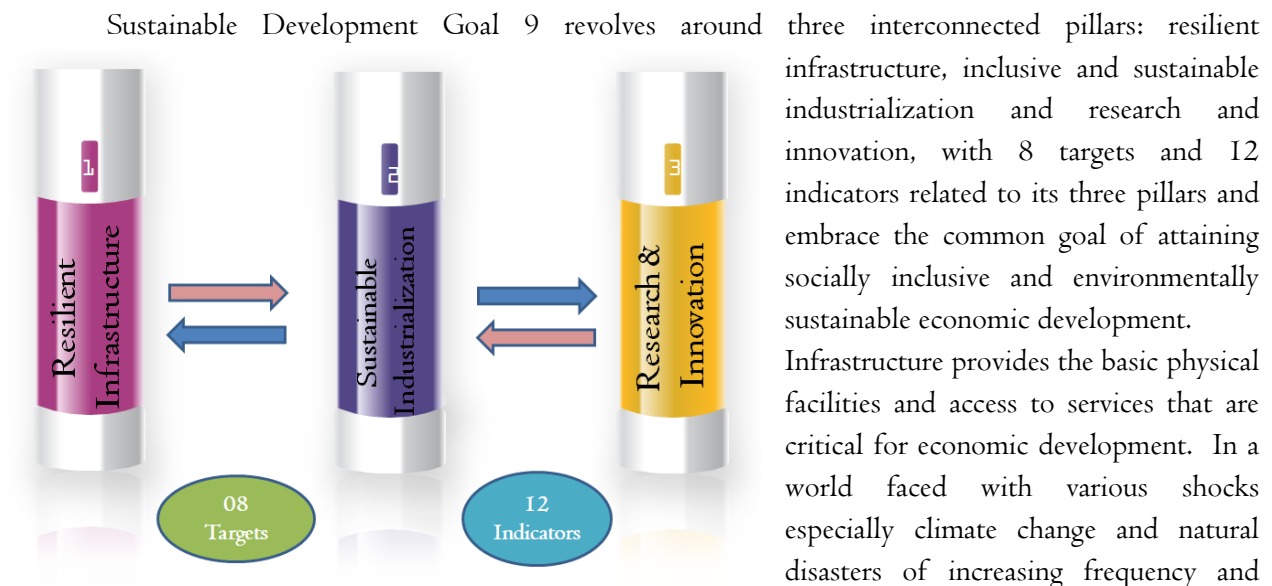


As a showcase, the activities that have been implemented for the Light Engineering Owners (LEOs) have resulted in 29% increase of sales revenue from base line; 53% increase of savings from base line; 38% LEOs provided employment to the graduates; 32% LEOs recruited at least one staff; 48% LEO is practicing at least 7 indicators of decent work; 47% LEOs received new loan from formal loan from formal sources; 46 LEOs received RPL certificates and another 1,101 LEOs took initiative of getting RPL certification; 711 LEOs established toilets; 1,125 LEOs agreement with staffs; and 1,121 LEOs opened new current account on enterprise name.

## Chapter 3: Ministry of Industries Perspective

### i. Role of the Ministry of Industries in achieving SDGs

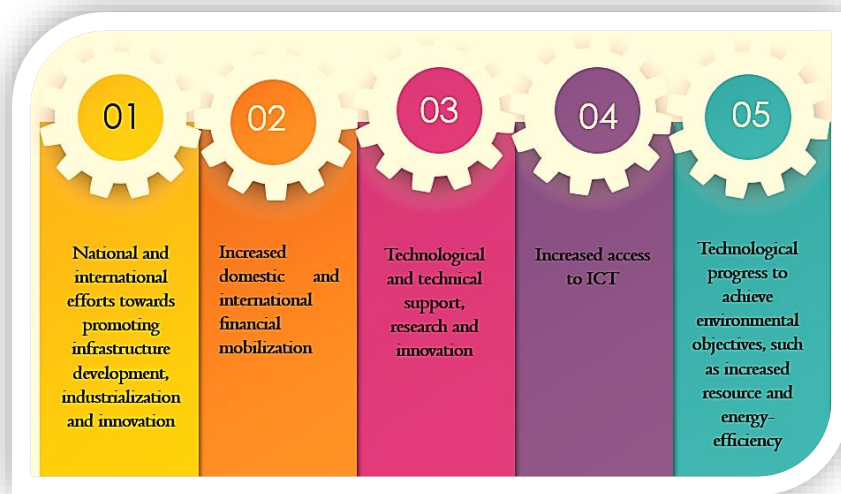
Ministry of Industries is persistently striving to achieve rapid industrial growth which is a prerequisite for economic development in the country. In order to accelerate the pace of industrialization the 'National Industry Policy 2016' has put emphasis on sustainable and inclusive industrial growth through generation of productive employment to create new entrepreneurs, mainstream women in the industrialization process and to create international market linkages. The 'National Industry Policy 2016' as well as other policies and strategies are associated with some of the SDG<sup>18</sup> goals, and targets. Therefore, an action plan has been framed in consultation with concerned stakeholders to achieve SDGs targets of this Ministry. Five goals are directly or indirectly associated with this Ministry. It leads in four targets (2.3, 9.2, 9.3 & 9.4) with 6 indicators, co-leads in two targets (6.4 & 8.2) with 3 indicators and plays an associate role with 45 targets. However, the Ministry is playing coordinating role to achieve Goal 9. To address these targets Ministry of Industries has prepared its action plan for SDGs in line with the relevant FYP targets.



Infrastructure has to be made resilient to cope with the shocks. Manufacturing has been one of the prime drivers of economic growth and decent job creation and hence has contributed to reduction of income poverty. There needs to be more investments in high-tech products that dominate the manufacturing productions to increase efficiency and productivity on the one hand and address environmental issues on the other. However, inequalities in the value added in the manufacturing sector across countries pose a challenge to sustainable development. To cater to these goals, it is closely related to other SDGs, industry-related targets associated with job creation, sustainable livelihoods and food security,

for example. Innovation – introduction of new products, processes and business models, will spur manufacturing growth with environmental sustainability.

Goal 9 is aimed at consolidating national and international efforts towards promoting infrastructure development, industrialization and innovation. Increased domestic and international financial mobilization, technological and technical support, research and innovation, and increased access to information and



communication technology are required to achieve this goal. Technological progress is the foundation of efforts to achieve environmental objectives, such as increased resource and energy-efficiency.

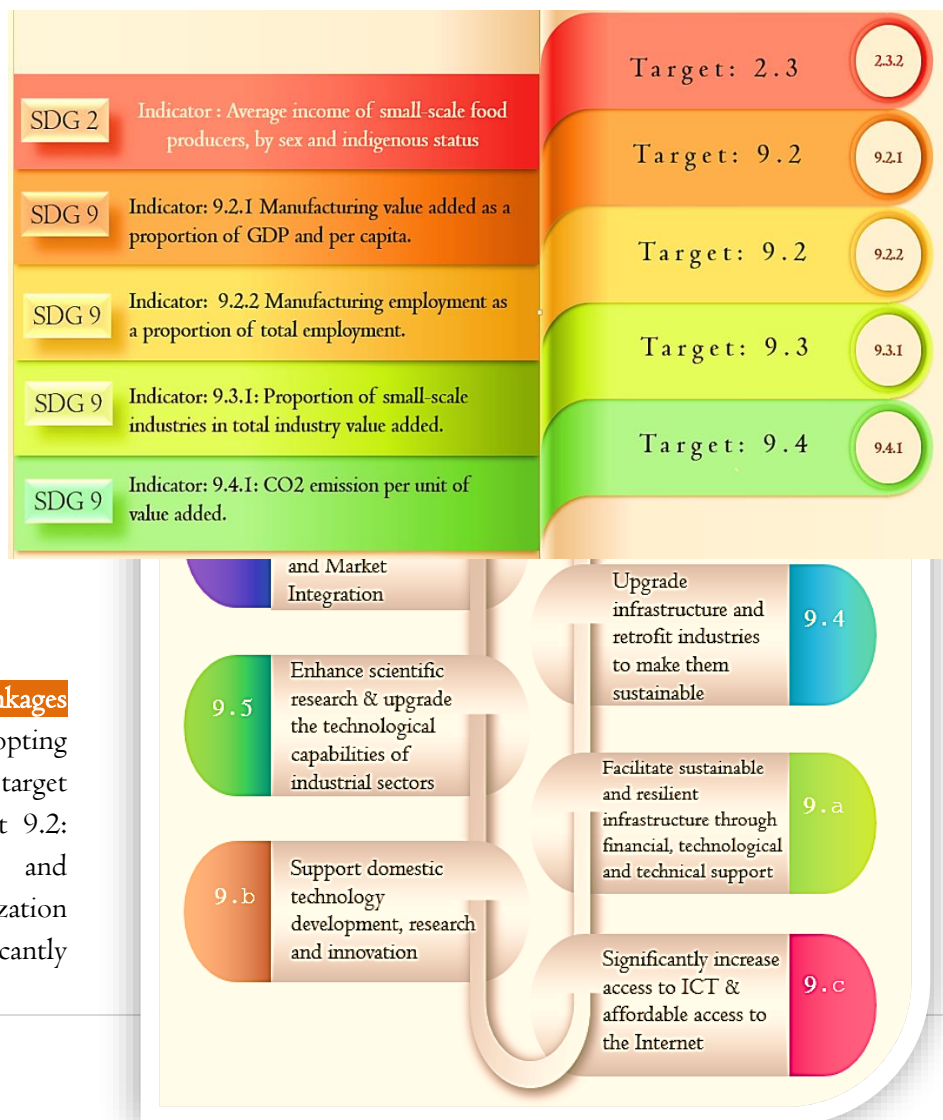
Ministry of Industries is playing coordinating role to implement SDG 9. It aims to facilitate the sharing of experiences, including successes, challenges and lessons learned. Earlier Bangladesh has made outstanding progress in MDGs achievement. Bangladesh's commitment for attaining SDG targets that has been manifested in the development plans. As lead role Ministry of Industries has 3 targets for Goal 9 (Target 9.2, 9.3&9.4). But the Goal consists of 8 Targets (9.1, 9.2, 9.3, 9.4, 9.5, 9a, 9b and 9c). Road Transport and High way Division, Ministry of Industries, Ministry of Labor and Employment, Ministry of Commerce, Ministry of Textile and Jute, Ministry of Science and Technology, Ministry of Agriculture, Economic Relations Division, Information and Communication Technology Division and Post and Telecommunications Division are working as the lead and co-lead agency of Goal 9. Besides that, there are some other Ministries and Divisions who are also working as associate agency of Goal 9. By adopting Goal 9 in general and target 9.2 in particular (9.2: promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries), Bangladesh addresses these and other challenges by committing itself to an industrial development that is inclusive and sustainable, thus highlighting close linkages with virtually all other SDGs as regards job creation, sustainable livelihoods, SME development, technology and skills development, food security, green technologies, environmental protection, building resilient cities and climate change mitigation. There are many different indicators and metrics to evaluate the development made in the domain of sustainable industrialization. This handbook discusses a few of them.

Government of Bangladesh has taken many initiatives for fostering industrialization through industrial policy and other policy documents and by implementing many development projects. However, under goal

9, infrastructure development mainly limited into highways and bridges, rail transport, air transport, water transport, rural transport, ICT etc. These infrastructure developments are mandated to other ministries/divisions like Road Transport and Highways Division, Bridge Divisions, Ministry of Railway, Ministry of Shipping, Power Division, Energy Division, ICT Division etc. Government of Bangladesh is implementing many mega projects like Padma Bridge, Ruppur power plant, Matarbari power plant, Rampal coal based power plant, Paira sea port and many others. All these are the priority projects which are the creation of infrastructure for industrialization. Moreover, Government has created many Economic Zones through BEZA. MoInd is mandated for managing some public enterprises like fertilizer, cement, sugar industries and supporting SMEs. However, skilled manpower development is one of the important roles of MoInd for all industry sectors. MoInd is supporting industry sector through policy guidelines. Industrial Policy 2016 is now reviewed by the ministry. Motor cycle policy is being implemented. Besides, new SME Policy has been formulated. On the other hand, Plastic and Light Engineering Product policy is under way. Realizing the importance to measure the performance of government processes on a regular basis in order to ensure continuous growth, the government of Bangladesh started to implement a performance management system in the form of the Annual Performance Agreement (APA) for different ministries and divisions since 2014-15. Accordingly, MoInd has integrated and aligned the relevant SDG targets with APA are: 8.2, 8.3, 9.2, 9.3, 2.2, 2.3, and 2.4.

This handbook enunciates the targets and indicators of Goal 2 & 9 (Indicator 2.3.2 and Target 9.2, 9.3 & 9.4) of SDG, builds an analysis of the interlinkages of other goals with Goal 2 & 9, and examines the overall progress of the Ministry of Industries in implementing the targets of Goal 2 & 9.

**SDG Goal 9 and its linkages with other goals:** By adopting Goal 9 in general and target 9.2 in particular (Target 9.2: promote inclusive and sustainable industrialization and, by 2030, significantly



raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries 2 cent between 1970 and 1990, and has remained stable since.), Bangladesh addresses these and other challenges by committing itself to an industrial development that is inclusive and sustainable, thus highlighting close linkages with virtually all other SDGs as regard to job creation, sustainable livelihoods, SME development, technology and skills development, food security, green technologies, environmental protection, building resilient cities and climate change mitigation. There are many different indicators and metrics to evaluate the development made in the domain of sustainable industrialization. The following segment of the chapter would discuss some of them.

The main industrial infrastructure development is not under the purview of the MoInd. MoInd is mandated to set up or develop industrial park for SMEs through BSCIC. Moreover, preparation of schemes relating to the public sector industries, matters relating to micro, cottage industries and SME's, industrial management, co-operation in the industrial sector, testing and quality control of industrial and commercial products are the main mandates of MoInd. On the contrary, MoInd is not responsible for protection of the industrial environment though it is necessary for sustainable industrialization. Moreover, haphazard and unplanned industrialization has been a great challenge for rapid industrial growth. Strict enforcement of the provisions of relevant policyguidelines may bring good results in the development of industrial environment for ensuring sustainable industrialization and green innovation.

Ministry of Industries is working relentlessly to meet the challenges of SDG 9 particularly the target 9.2. MoInd is primarily responsible for developing new policies & strategies for promotion, expansion and sustainable development of Industrial sector of the country. The vision of the MoInd is to promote the contribution of the industrial sector in the indigenous production from 25 to 35 per cent and to provide all sorts of assistance in augmenting the share of labor force in the industrial sector increasing from 16 to 25 percent by 2030. The major contributions of the Ministry of Industries in industrialization are rapid formulation of industrial policy, establishment of industrial parks including industrial park for production of raw materials of pharmaceutical industry, playing the role of facilitator for the development of cottage, small and medium enterprises, manufacturing environment friendly motor vehicle within the purchasing capacity of the people and protecting the national interest & expanding the trade and industry by preserving and encouraging intellectual property in relation to industry.

Industrial Policy in Bangladesh envisages that rapid industrialization is a key to the country's economic development. To cater to this, the government has brought about many constructive and timely reforms in the running of businesses, and liberalized trade so that private entrepreneurs can seize opportunities of establishing and running industrial enterprises profitably and freely. To reduce poverty and generate employment opportunities, efforts have been exerted to establish agro-based industries as well as to raise agricultural production. This will ensure the protection and fair price of agricultural products and employment of a huge number of unemployed people. In order to create further employment opportunities beyond the agricultural sector, initiatives have been taken to set up small, medium and large industries across the country. It is expected that these initiatives, when implemented, unemployment rates will decline and poverty alleviation will be accelerated. With these objectives in mind, the Industrial Policy has been

substantially reviewed. In order to provide administrative, institutional and infrastructure facilities in the country's industrialization, there are organizations such as the Bangladesh Stranded and Testing Institution (BSTI), Bangladesh Industrial Technical Assistance Centre (BITAC), Bangladesh Institute of Management (BIM), Bangladesh Small and Cottage Industries Corporation (BSCIC), National Productivity Organization (NPO) and Small and Cottage Industries Training Institute (SCITI) are working under the Ministry of Industries. In order to further strengthen the country's industrialization process, the present government has identified the Small and Medium Enterprises (SMEs) as a priority sector and the driving force for industrialization. A national taskforce led by the Principal Secretary of the Prime Minister's Office has been formed to supervise the flourishing of the SME sector. At the same time, with a view to providing entrepreneurs with assistance in the establishment of SMEs, a cell has been established under the supervision of the MoInd comprising officials experienced in SMEs from the MoInd, BSCIC and NPO. The provisions of all facilities for attracting foreign investment have been envisaged in the Industrial Policy. More importantly, separate SME policy 2019 has been formulated to provide entrepreneurs with necessary guidance and strategic support in respect of the establishment of SME industries all over the country. Apart from these, MoInd has taken a significant number of initiatives such as developing Industrial Parks, Ship-breaking Industry and Shipyard, Economic Zones and Food Processing Zones to facilitate industry sector for achieving its SDG targets including 2 priority targets.

Government of Bangladesh has taken a number of initiatives to fulfil the targets and the indicators of SDG 9 show that the country has made substantial progress. However, realizing SDG 9 by 2030 will require overcoming resource constraints, building and strengthening capacities, and exploring more innovative ways to solve development challenges, in order to promote sustainable industrialization by exploring new ways to solve development challenges by involving various actors, processes and types of governance, source of finance and encourage collaboration and cooperation across stakeholders, sectors and regions. While SDG 9 implementation is progressing in many areas, challenges remain high where often industrialization rates continue to lag and the benefits of the digital revolution remain elusive.

ii. Mapping of SDG with 7<sup>th</sup> Five Year Plan (Landscape file to be inserted)

Sustainable Development Goal and associated Targets	Lead Ministries/Divisions	Associate Ministries/ Divisions	Actions to achieve the SDG targets within 7thFYP (2016-2020)	Actions to achieve the targets beyond 7thFYP Period (2021-2030)	List of Existing Policy Instrument (Acts/ Policies/ Strategies etc.)	Proposed Global Indicators for Performance Measurement	Remark
	<i>Lead:</i> MoInd	MoE; MoA; MoFL; SID				2.3.2 Average income of smallscale food producers, by sex and indigenous status	
<b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b>							
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	<i>Lead:</i> MoInd	FD; GED; MoC; BFID (BB); SID; ICTD; MoTJ	<ul style="list-style-type: none"> <li>Investment rate needs to expand from 28.9% in FY2015 to around 34.4% by FY2020.</li> <li>Creating good jobs for the large pool of under-employed and new labour force entrants by increasing the share of employment in the manufacturing sector from 15 percent to 20 percent</li> <li>Manufacturing sector, with double digit growth, rising progressively to 12.6% in 2020.</li> <li>Share of manufacturing need to increase from 17.8% in FY2015 to 21.5% by the end of the</li> </ul>		Industrial Policy 2010;	9.2.1 Manufacturing value added as a proportion of GDP and per capita	

		<p>Seventh Plan.</p> <ul style="list-style-type: none"> <li>• Increase the contribution of the manufacturing sector to 21% of GDP by FY20</li> <li>• Promulgation of special incentive for prospective investors would proceed simultaneously to encourage faster investment in this industrial park.</li> <li>• Sustainable export growth with a diversified basket of goods, trade and industrial policies have to be geared towards a dynamic and globally competitive manufacturing sector of the future</li> <li>• Strengthen the economic transformation of Bangladesh from an agrarian economy towards a more manufacturing and modern service economy.</li> <li>• Employment responsiveness of growth in manufacturing needs to increase to absorb more labour.</li> <li>• Improving composition of investment in favour of infrastructure and manufacturing.</li> <li>• In manufacturing the effort will concentrate on labour intensive manufacturing with focus on export diversification.</li> </ul>				
--	--	--	--	--	--	--



			<ul style="list-style-type: none"> <li>• Small and medium level manufacturing sector will grow and generate more employment and contribute to poverty reduction, if smuggling is halted.</li> </ul>				
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	<i>Lead:</i> MoInd	BFID (BB); LGD; MoInf; ICTD; SID	<ul style="list-style-type: none"> <li>• Identifying niches where SMEs have comparative advantage and higher growth potential is.</li> <li>• The capacity and activities of the SME Foundation needs to be strengthened.</li> <li>• A national SME census needs to be conducted through Bangladesh Bureau of Statistic (BBS)</li> <li>• Removing policy induced constraints; structural constraints; and constraints arising out of poor business support services and weak governance.</li> <li>• Prioritizing public investment designed to ease various structural bottlenecks pertaining to physical and infrastructural facilities, energy, and technology.</li> <li>• The structural difference between the SMEs and their large-scale counterparts, justify a case for a differentiated system of indirect tax for the SMEs that will enable them to pay the indirect tax free from</li> </ul>			9.3.1 Proportion of small-scale industries in total industry value added	

			<p>harassment.</p> <ul style="list-style-type: none"> <li>• A graduated system of turnover tax can be designed for the SMEs for this purpose</li> <li>• The problem of VAT certificate may be resolved by creating a notional VAT equivalence of the turnover tax.</li> <li>• A strategy for SME to be premised on further trade liberalization measures with a view to providing SMEs easier access to imported inputs.</li> <li>• Targeting public expenditure towards augmenting demand:</li> <li>• 177 SME clusters scattered throughout Bangladesh, and is now formulating a National SME Cluster development action plan for improving the competitiveness of the SME Clusters.</li> <li>• Women Entrepreneurship Development Programme:</li> </ul>				
	<i>Lead:</i> MoInd	BFID (BB); (BFID); SID	<p>The comprehensive credit policy for SMEs developed by the Bangladesh Bank constituted a key element of the Plan measures.</p> <ul style="list-style-type: none"> <li>• To strengthen targeting of SME credit, the Plan provided for (i) a census of SMEs containing detail information on inputs, output, technology and</li> </ul>			9.3.2 Proportion of small-scale industries with a loan or line of credit	

			<p>management, (b) issuing identification card with registration number to the SMEs, (iii) creating a database of SMEs and updating it periodically, and (iv) creation of detail upazila level map of SMEs to identify cluster.</p> <ul style="list-style-type: none"> <li>• The financial institutions will be required to develop loan products that relate better to specific type of credit needed in SMEs.</li> <li>• Provision of subsidized credit to clusters, disadvantaged groups and backward regions with close monitoring.</li> <li>• Training of bank officials and setting up of SME cells for identifying potential borrowers loan disbursement, monitoring use of credit and collection of loan.</li> <li>• PKSF will continue to wholesale credit to its partner NGO-MFIs for small and micro enterprises.</li> <li>• SME Foundation will continue providing loans at single digit interest rates to local SMEs through its credit wholesaling programmes.</li> </ul>				
9.4 By 2030,	Lead:	BD; LGD;	The growth strategies of the 7th		Environment	9.4.1 CO2	

<p>upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p>	<p><i>MoInd</i> <i>Co-Lead:</i> <i>MoLE</i> <i>Co-Lead:</i> <i>MoC</i> <i>Co-Lead:</i> <i>MoTJ</i></p>	<p>MoS; RTHD; MoR; MoA; MoFA</p>	<p>FYP are broad-based enough to emphasize eradicating poverty as well as sustained economic growth while maintaining the healthy functioning of the Earth's ecosystems.</p> <ul style="list-style-type: none"> <li>• Incentives for adoption of improved fuel use efficiency and energy conservation technology in industry;</li> <li>• Produce environment friendly organic Bio- fertilizers, Bio- gas that will reduce fuel consumption, increase sugar cane production and also consider using molasses to produce alcohol/spirit.</li> <li>• DoE should have strong role as National Designated Entity (NDE) of International Climate Technology Centre and Network (CTCN) in order to facilitate transfer of climate and environment friendly technologies and know how to Bangladesh through CTCN</li> <li>• Special emphasis should be given for extension services to disseminate newly developed technologies and building materials which will be agriculture and environment friendly, disaster resilient and affordable.</li> <li>• Research and development for innovation of environment</li> </ul>		<p>Court Act 2010; Brick Manufacture and Brick Kiln Installation Act in 2013;</p>	<p>emission per unit of value added</p>	
---	--	--	--	--	---	---	--

			<p>friendly sustainable technology for the economically constrained communities</p> <ul style="list-style-type: none"> <li>• Harnessing technology and innovation to fast track development</li> <li>• The productivity of both labour and capital can be raised through adoption of better technology and efficiency improvements.</li> <li>• Developing women friendly technology and business environment</li> </ul>				
9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	<p><i>Lead:</i> MoST <i>Co-Lead:</i> ICTD</p>	<p>BD; ERD; LGD; MoA; MoHPW; MoInd; MoR; MoS; PID; RTHD; MoInd (DPDT); MoTJ; SID</p>	<p>Technology can also be imported from abroad through foreign direct investment which brings the latest equipment, management skills, and technical know-how.</p> <ul style="list-style-type: none"> <li>• Technology transfer in the garment industry from partnership with foreign investors</li> <li>• Adoption of improved technology can be a major factor for improving total factor productivity and increasing the rate of growth.</li> <li>• The Government should build partnership with NGOs, Multinational Companies, and donors so that greater technology transfer is facilitated.</li> </ul>		<p>Information and Communication Technology Act 2006, Amended in 2009 &amp; 2013;</p>	9.b.1 Proportion of medium and high-tech industry value added in total value added	
12.4 By 2020,	<i>Lead:</i>	LGD; MoA;				12.4.1 Number of	

achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	MoEF	MoInd; MoHFW; MoTJ				parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	<i>Lead:</i> LGD	MoEF; MoInd; SID				12.5.1 National recycling rate, tons of material recycled	
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	<i>Lead:</i> IMED (CPTU)	BD; LGD; MoHPW; MoWR; PD; RTHD; MoInd; MoR; MoE	<ul style="list-style-type: none"> <li>• Procurement process using e-GP.</li> <li>• Usage of PPR in procurement</li> </ul>		PPA-2006; PPR-2008	12.7.1 Number of countries implementing sustainable public procurement policies and action plan	

12.8 By 2030, ensure that people everywhere have the	<i>Lead:</i> MoE, <i>Co-Lead:</i>	GED; MoEF; PMO; MoInd (BIM); MoInf			NSDS	12.8.1 Extent to which (i) global citizenship	
--	---	---	--	--	------	---	--

### iii. SDG and Industrial Policy 2016

Structural transformation plays a pivotal role to enhance rapid economic progress of any country. Inclusive and sustainable industrial development is the primary source of income generation, allows for rapid and sustained increases in living standards for all people, and provides the technological solutions to environmentally sound structural economic change. The faster the rate at which industry moves from traditional agriculture and low-productivity informal activities to the modern sector, the more rapid the rate of economic growth happens in a society. The Sustainable Development Goals has greatly increased the premium on rapid structural transformation particularly through calculated implementation of industrial policy. One potential reason may be SDG's offers opportunity to respond to the commitment of the government to reduce inequalities within the country by setting a clear demand for sustainable consumption and production patterns and the aspiration for peace, fair governance and justice. This is why all over the world Industrial Policy has been taken as the best means for rapid economic structural transformation.

Industrialization is a prerequisite for sustainable economic development and achievement of social progress in a developing country like Bangladesh. Generally, industrial policy aims to stimulate various industrial sectors; reflect strategies to have better coordination with the market trends; emphasize more on to achieve national competitive advantage and the modus operand for State intervention in those areas where it is needed and where the market cannot cope alone. R Warwick defines in his landmark book, industrial policy as “any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity toward sectors, technologies or tasks that are expected to offer better prospects for economic growth or societal welfare.” This definition highly stresses the grounds for Industrial Policy to be the means for improving the structure of the economy through sectoral development to give rise to more favorable prospects for economic growth and social welfare. Industrial Development is the synthesis of contributions from four major factors, namely, Business, Technology, Government and Productivity and successful industrial policy can bring prosperity only through a close co-operation and mutual understanding between these contributors.

Government is pledge bound to take Bangladesh into Mid-Income country by 2021. For that end, Government has taken initiatives to accelerate the environment-friendly sustainable industrial growth in the country. In order to accelerate the pace of industrialization National Industrial Policy 2016 was formulated by Ministry of Industries. The important and underlying objective of the Industrial Policy 2016 is to ensure sustainable and inclusive industrial growth through generation of productive employment to create new entrepreneurs, mainstreaming women in the industrialization process and international market linkage creation. To this end, special emphasis is being laid on Small and Medium Enterprise (SME) development. The key determinants of National Industrial Policy 2016 are infrastructural transformation, diversification of the economic base, accelerated economic growth, employment generation, increasing income level and development of livelihood of the people. The important and underlying objective of the policy is to contribute to Bangladesh's transition to mid income country by 2021. Proper strategies have been set out in the industrial policy to implement this objective. Combined efforts are being taken to implement the policy. A time bound Action Plan has been framed in consultation with concerned



ministries and other stakeholders to achieve the desired industrial growth. ‘The Seventh Five Year Plan (SFYP): 2016- 2021’, ‘Outline Perspective Plan of Bangladesh (2010-2021)’, ‘Making Vision 2021: A Reality’, ‘The Sustainable Development Goals’ underlie as basic documents for the National Industrial Policy 2016 to build a potential industrial sector with the aim of reducing unemployment, hunger and poverty. Indications of these documents have been followed to undertake short, medium and long term programmes to accelerate sustainable and inclusive economic growth of the country.

The Sustainable Development Goals (SDGs) are a collection of 17 global goals designed to be a blueprint to achieve a better and more sustainable future for all national development endeavors for the next 17 years. The SDGs are an ambitious plan of action for people, planet and prosperity. They

are universal, applying to all nations and people, seeking to tackle inequality and leave nobody behind. They are wide ranging including ending poverty and hunger, ensuring sustainable consumption and production, and promoting peaceful and inclusive societies. The Sustainable Development Goals in relation to The National Industrial Policy 2016 as the effective instruments towards implementing the dreams of “Creating Golden Bengal” effectively have been reflected in the following box:



SDG and Industrial Policy: A

Diagrammatic View

Goal No	Sustainable Development Goals	Implications in National Industrial Policy 2016
Goal 1: No poverty	End poverty in all its forms everywhere	The government is determined to achieve sustainable development through income generation for the livelihood improvement of the mass people. Faster economic growth could be attained by involving more people in the industrial sector through the creation of skilled manpower and putting appropriate technology in place. National industrial policy 2016 has been framed to ensure that the benefits of industrialization are shared by all, that the living conditions of all are sustainably improved, and that no one is left behind.
Goal 2:	End hunger,	National Industrial Policy 2016 promotes capacity-building and

<p><b>Zero hunger</b></p>	<p><b>achieve food security and improved nutrition, and promote sustainable agriculture</b></p>	<p>competitiveness in existing Agro processing sectors with a clear potential for specialization and incorporation of technological progress and fosters diversification of the production structure by creating or consolidating new high-productivity and more environmentally efficient sectors. Boosting the productivity of food security related enterprises is a key element in this regard. NIP 2016 puts Agriculture/Food Processing and agricultural tools manufacturing industry as the highest priority sector of Bangladesh in order to support value addition to agricultural output, and helps reduce post-harvest losses and increase resource efficiency, while generating job opportunities for rural communities and increasing food security, food safety and nutrition, particularly through agri-business development and upgrading agro-food value chains.</p>
<p><b>Goal 4: Quality Education</b></p>	<p><b>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."</b></p>	<p>The main goal in the formulation of National Quality education and promote lifelong Industrial Policy 2016 is to ensure that the education learning opportunities for all." economy grows in a manner that is in keeping with its comparative advantage through quality education and skilled manpower. In this way the economy will be competitive, profits will be optimized, and capital accumulation will be maximized. As capital accumulates, however, the economy's factor endowment structure evolves, resulting in a gap between the current and the optimal industrial structure. Chapter 15 of National Industrial Policy reiterates the importance of skilled manpower for meeting up supply and demand to cater the present and future demand of skilled labour in the national and international market. To this end, National Skill Development Policy (NSDP) 2011 has been taken as model form to create skilled manpower for service and industry sector. Based on the NSDP-2011, formulation of curriculum, level of skills education and training to be conducted according to the structure of National Technical and Vocational Qualification Framework (NTVQF). Formulation of Course Curriculum as well as competency-based Training and Assessment System have to be introduced in all technical as well as vocational education and training related aspects. Evaluation of skills and dual certification system assessed by neutral assessors will be introduced. Moreover, in case of technical skill, other than formal education system, Recognition of Prior Learning (RPL) achieved by self-effort has been accepted for employment in the NIP-2016 to support the development of entrepreneurial culture and skills, provides technical and vocational training, and helps enhancing young people's skills</p>

		and knowledge for employment, decent jobs and entrepreneurship.
<b>Goal 5: Gender equality</b>	<b>Achieve genderequality and empower all women and girls</b>	Industrialization can significantly contribute to Gender equality through shared prosperity. However, women are often precluded access to secure and well-paid jobs in manufacturing industries and related service sectors, and their participation in the development of new technologies remains limited. Recognizing this, NIP 2016 is committed to a policy agenda as discussed in chapter 10 that promotes gender equality for achieving inclusive and sustainable industrial development (ISID). Gender equality means equality in rights, responsibilities, and opportunities. Policy advocates the needs for various incentives and financial support for women entrepreneurs to get themselves established in micro, small, cottage and medium industries. It also simultaneously promotes the basis to provide collateral free loan to women entrepreneurs. With a view to encourage women entrepreneurs Bangladesh Bank should develop women-friendly banking service system in co-ordinations with financial and banking institutions as well as loans free from mortgage and group loans to be considered for women entrepreneurs in case of high quality project proposals to support women in acquiring skills and gaining access to productive and financial resources that allow them to compete effectively in the economic life of their communities. Industrialization and industrial policies take place within economic structures characterized by gender bias in several dimensions. In turn, they further shape gendered economic structures by either reducing or reinforcing gender inequalities. Gender-differentiated distributional effects result not just from job creation/destruction across manufacturing sub-sectors, but also because of new products and consumption opportunities made available by the development of the manufacturing sector.
<b>Goal 6: Clean water and sanitation</b>	<b>Ensure availability and sustainable management of water and sanitation</b>	Industry accounts for only 2% of global water withdrawal, and agricultural supply chains for 88% more. Access to safe, resilient water supplies is essential to industrial success and environmental sustainability. As water is essential for human survival, socio-economic development of the country and preservation of its natural environment, the National Water policy of the Government of Bangladesh advocates that all necessary means and measures will be taken to manage the water resources of the country in a comprehensive, integrated and equitable manner. Sustainable Development Goal 6 pursues to ensure availability and sustainable management of water and sanitation for all. Clean, accessible water

		<p>for all is an essential part in developing the industrial policy. Chapter 4.8 of National Water Policy vows that excessive water salinity in the southwest region is a major deterrent to industrial growth. Also, pollution of both surface and groundwater around various industrial centers of the country by untreated effluent discharge into water bodies is a critical water management issue. The policy of the Government in this regard is that:</p> <ol style="list-style-type: none"> <li>a. Zoning regulations will be established for location of new industries in consideration of fresh and safe water availability and effluent discharge possibilities</li> <li>b. Effluent disposal will be monitored by relevant Government agencies to prevent water pollution</li> <li>c. Standards of effluent disposal into common watercourses will be set by WARPO in consultation with DOE</li> <li>d. Industrial polluters will be required under law to pay for the cleanup of waterbody polluted by them</li> </ol>
<p><b>Goal 7: Affordable and clean energy</b></p>	<p><b>Ensure access to affordable, reliable, sustainable and modern energy for all</b></p>	<p>The Chapter four of the National Industrial Policy 2016 promotes energy efficiency policies, technologies and practices, as well as access to affordable renewable and clean energy for all sources of energy for the facilitation of productive energy activities, whereas Chapter Fourteen provides the country an opportunity to follow a low-carbon and low-emissions growth path.</p>
<p><b>Goal 8:Decent work and economic growth</b></p>	<p><b>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b></p>	<p>The contribution of Industry Sector to GDP is progressively increasing in Bangladesh. The nation sustains per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the country. The national Industrial policy 2016 has been framed to achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors. Annex I of the policy designated highly prioritized sectors for achieving higher levels of economic productivity through industrialization. The policy also promotes full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. Thus NIP 2016 facilitates structural transformation and economic growth by increasing the capacities of local industries for</p>

		value addition, economic diversification, and export promotion, as well as supports the creation of decent jobs in industry and industry-related services
<b>Goal 9: Industry, Innovation, And Infrastructure</b>	<b>Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation</b>	Sustainable Development Goal 9 (SDG9) is based on three interconnected pillars: infrastructure, industry and innovation. These pillars all share the objective of achieving socially inclusive and environmentally sustainable economic development. Realizing SDG 9 by 2030 will require overcoming resource constraints, building and strengthening developing countries' capacities, and exploring innovative ways to solve development challenges, in order to build resilient infrastructure, promote sustainable industrialization and foster innovation. SDG 9 has approximately 20 targets and indicators related to its three pillars and are closely linked to other SDGs related to job creation, sustainable livelihoods, improved health, technology and skills development, gender equality, food security, green technologies and climate change. The national Industrial Policy 2016 seeks to advance poverty eradication and inclusiveness, build productive capacities in an inclusive manner, and provide more opportunities for all women and men as well as across social groups, also through partnerships with all stakeholders involved in industrialization processes. The NIP2016 aims to advance environmentally sound sustainable growth of industries, builds institutional capacities for greening industries through cleaner production technologies and resource efficiency methodologies, and creates green industries, spurred by technology facilitation, innovation and partnership building under chapter 14.I to 14.8.
<b>Goal 10: Reducing inequalities</b>	<b>Reduce income inequality within and among countries</b>	Chapter 6 of NIP 2016 promotes greater productivity, stable employment, and increased incomes, and improves economic opportunities between and within populations including young people, women. This chapter also focuses on pro-poor enterprise initiatives, agro industries, greater value-addition, women and youth entrepreneurship, through development of Cluster Industries, Economic Zones and High-tech Parks. Article 6.I advocates that in order to establish industry cluster, infra structures of industrial park, and development of labor-intensive industries established in the underdeveloped area and eco-friendly industry establishment, resources will be distributed based on the government initiative and PPP guideline.
<b>Goal 11: Sustainable Cities and Communities</b>	<b>Make cities and human settlements inclusive, safe, resilient and sustainable</b>	NIP 16 promotes smart industries and industrial clusters in urban

Sustainable cities and communities	human settlements inclusive, safe, resilient, and sustainable	industrial zones that are pure innovation, resource efficiency and industrial competitiveness while linking local business with global markets and supply chains. According to article 6.7 of national industrial policy Unplanned industries located in the metropolitan cities, especially in Dhaka and Chittagong will be transferred to the EPZ/EZ/Parks etc. in turn
Goal 12: Responsible consumption and production	Ensure sustainable consumption and production patterns	Chapter 13 & 14 of NIP 2016 vow that competitive effective measures will be taken to enhance the efficiency of the industrial organizations of Bangladesh through application of cost effective and eco-friendly technology in order to promote green industries. It also puts much emphasize on creating Corporate Culture in order to produce a workforce having appropriate skills required for knowledge-based high-technology intensive industry, resource efficient management, cleaner production, energy efficiency in industry, reduction of waste and pollution, and environmental sustainability policies in industrial production and consumption, such as the circular economy approach.
Goal 13: Climate action	Take urgent action to combat climatechange and its impacts by regulating emissions and promoting developments in renewable energy	<p>National Industrial Policy promotes the reduction of industrial CO2 and other greenhouse gas emissions Establishment of ETP, CETP will be encouraged in order to control environmental pollution in the industrial organizations. The following provisions are notable to be mentioned here to cite the national industrial policies commitment to combat climate change including through sustainable energy solutions andthe uptake of resource-efficient technologies and practices, and cleaner production in industrial processes of the country:</p> <p>14.2 The Government will ensure the effective implementation of the Environment Protection Act 1995, Bangladesh Water Act 2013 and other relevant legislation in this regard.</p> <p>14.3 Industrial organizations who will work under CDM (Clean Development Mechanism) to protect environmental pollution will get assistance.</p> <p>14.4 Disaster risk reduction and environmental issues will be considered in case of establishment of new industries. If necessary, eco-friendly industries will get incentives.</p> <p>14.5 Domestic and foreign entrepreneurs will be encouraged strongly in setting up and running industrial waste management industries. Other than national Industrial Policy 2016, the major acts to</p>

conserve and protect environment as well as combat climate change are:

Bangladesh Environment Conservation act, 1995

Environment Court Act 2010

Hazardous Waste and Ship Breaking Waste Management Rules 2011

The Brick Burning (Control) Act, 1989

The Building Construction Act, 1996

The Environmental Conservation Rules, 1997

The Environmental Conservation (Amendment) Law, 2000

The Environmental Conservation (Amendment) Law, 2002

The Environmental Court Act, 2000

The Environmental Court (Amendment) Act, 2000

The Forest Act 1927 (amended in 1990, 2000)

Water Pollution control Ordinance 1973

Finally, Each and every SDG provides an opportunity for business and two are worth highlighting as cross-cutting themes: SDG 12 focuses on production and consumption and includes a specific target on “adopting sustainable business practices and reporting”; SDG 17 includes two targets on multi-stakeholder partnerships to ensure this attracts sufficient focus. NIP 2016 is targeted to achieving improved human well-being and social equity while simultaneously diminishing environmental risks and reducing ecological scarcities. Economic transformation through manufacturing and allied industry sectors by introducing more efficient, productive and responsible use of raw materials so that they contribute more effectively to sustainable industrial development. Technological progress helps us address our challenges such as creating jobs and becoming more energy efficient. For example, the world is becoming ever more interconnected and prosperous. The more connected we are, the more we can all benefit from the wisdom and contributions of people everywhere on earth. The more we invest in innovation and infrastructure, the better off we’ll all be. Bridging the digital divide, promoting sustainable industries, and

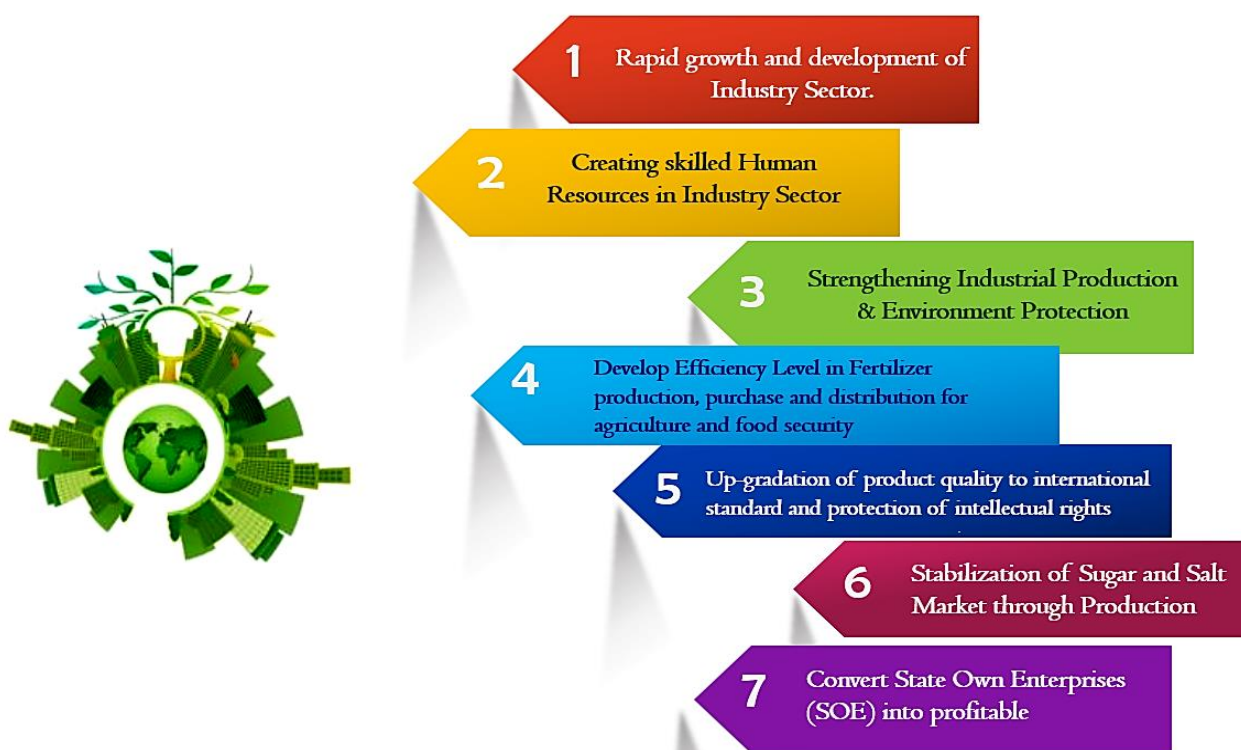
investing in scientific research and innovation are all important ways to facilitate sustainable development. The better way National Industrial Policy-2016 will be able to realize the direction of Article-13 (Principles of Ownership) of the constitution of Bangladesh.

#### iv. Alignment of SDG with Annual Performance Agreement (APA) of MoInd

Performance Management System of an organization can be defined as the systematic approach to measure the performance of the organization. Ministry of industries aligned its mission, goals and objectives with available resources such as human resources, materials and systems and set the priorities to ensure growth and finally evaluate the outcomes against the targets. It can also be considered as a management tool that helps managers to monitor and evaluate employees' work.

Realizing the importance to measure the performance aligned with SDGs Ministry has adopted significant seven areas in Annual Performance Agreement (APA) of 2019-2020. Ministry of industries is playing coordinating role of SDG 9 in Bangladesh. The seven areas adopted segregated and require additional efforts by subordinate agencies under the system. The APA is signed by two parties. For the APA of a ministry/ division, the Cabinet Secretary on behalf of the honorable Prime Minister signs as one party whereas the concerned Secretary signs it on behalf of the respective Minister as the implementing party.

While developing the APA for the year 2019-20, all the relevant policy documents of the government had been consulted namely 7<sup>th</sup> Five Year Plan, Election Manifesto, PM's commitment, SDGs etc. The SDG targets which were mostly aligned with APA are: 8.2, 8.3, 9.2, 9.3, 2.2, 2.3, and 2.4. The APA targets aligned with SDGs are shown below table with seven objectives.





## Seven areas in Annual Performance Agreement (APA) to Achieve SDGs by MoInd

Strategic Objective: Rapid Growth & Development of Industrial Sector										
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd										
APA	I.1	I.2	I.3	I.4	I.5	I.6	I.7	I.8	I.9	I.1
Activity	Draft Boiler Act, 2019 sent to the Parliament Secretariat	Draft BITAC Act, 2019 sent to the Parliament Secretariat	Draft Iodized Salt (Production, Storage, Supply, Distribution and Sale) Act, 2019 sent to the Parliament Secretariat	Final approval of the draft of BSCIC Act, 2019 by the Cabinet Committee	Draft Bangladesh Patent Act 2019 sent to the Parliament Secretariat	Draft Bangladesh Industrial Design Act 2019 sent to the Parliament Secretariat	Formulation of National SME Policy	Formulation of Leather and Leather Products Development Policy	Handing over the President's Industrial Development Award, Quality Excellence Award, CIP cards.	Organizing and participating in Industrial Fair
SDG Targets	8.3	8.3, 4.3	8.3	8.3, 9.3	8.3, 9.2	8.3, 9.2	8.3, 9.2	8.3, 9.2	9.2	9.2

Strategic Objective: Rapid Growth & Development of Industrial Sector											
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd											
APA	I.11	I.12	I.13	I.14	I.15	I.16	I.17	I.18	I.19	I.2	I.21
Activity	Establishment of Industrial Parks and Industrial Estates	Production of Import Substitute Spare Parts	Approval of Ship Recycling Request, Board Formation and relevant policy formulation	Completion of a quarter of the Ghorashal Urea Fertilizer Project	Assembling of motorized vehicles	Assembling of motorcycles	Production of Super Enamel Copper Wires	Boiler Registration	Renewal of boiler certificates	Iodine addition in edible salt	Fortification of Vitamin A in edible oil
SDG Targets	8.2, 9.2, 9.3	8.2, 9.2	9.2, 14.1	2.3, 2.4	8.1, 8.2, 9.2	8.1, 8.2, 9.2	8.1, 8.2, 9.2	8.2, 9.2	8.2, 9.2	2.2	2.2

Strategic Objective: Creating Skilled Human Resources in Industry Sector						
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd						
APA	2.1, 2.2, 2.3	2.4	2.5	2.6	2.7	2.8
Activity	Entrepreneurship development training by BIM, BSCIC, SME Foundation	Hands on technical training for women employment by BITAC	Employment generated for trained women from BITAC	Training on different trades by BITAC	Employment generated for trained manpower from BITAC	Employment generated for trained manpower from BSCIC
SDG Targets	9.2, 8.5	9.2, 4.3, 5.1, 8.5, 8.8	9.2, 5.1, 8.5	9.2, 4.4	9.2, 8.5, 8.6	9.2, 8.5, 8.6

Strategic Objective: Strengthening Industrial Production and Environment Protection						
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd						
APA	3.1	3.2	3.3	3.4	3.5	3.6
Activity	Management & Capacity Development training by BIM	BSCIC training for creating skilled labour force	BITAC Training for skill development	BCIC training for skill development	BAB Training to different laboratories, accreditation and standard bodies.	NPO Training for enhancing productivity
SDG Targets	9.2	9.2, 4.4	9.2, 4.4	9.2	9.2, 3.9, 4.4	9.5, 8.4

Strategic Objective: Develop Efficiency Level in Fertilizer Production, Purchase and Distribution for Agriculture and Food Security							
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd							
APA	4.1	4.2	4.3	4.4	4.5	4.6	4.7
Activity	Aligning National standards of products to International standards	Certification marks to various products	Accreditation of various types of labs, certification providers and inspection agencies as per ISO/ IEC	Patent Application disposal	Design Application disposal	Trademarks Application disposal	Renewal of Trademarks
SDG Targets	2.1	2.1	2.1, 2.3, 3.2, 9.2	9.2	9.2	9.2	9.2

Strategic Objective: Up-gradation of product quality to international standard and protection of Intellectual Rights							
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd							
APA	5.1	5.2	5.3	5.4	5.5	5.6	5.7
Activity	Production of Urea fertilizer	Production of TSP fertilizer	Production of DAP fertilizer	Import of Urea fertilizer	Distribution of Urea fertilizer	Distribution of TSP fertilizer	Distribution of DAP fertilizer
SDG Targets	2.3, 2.4	2.3, 2.4	2.3, 2.4	2.3, 2.4	2.3, 2.4	2.3, 2.4	2.3, 2.4

Strategic Objective: Stabilization of Sugar and Salt market through its production			
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd			
APA	6.1	6.2	6.3
Activity	Reports prepared on the productivity of government organizations by NPO	Project to convert wet process to dry process of Chatak Cement Company Ltd	Production of Standard MS rod
SDG Targets	9.2	2.3, 2.4	8.1, 8.2, 9.2

Strategic Objective: Convert State Own Enterprises (SOE) into Profitable		
Activities/ Actions/ Projects to be implemented under APA 2019-20 of MoInd		
APA	7.1	7.2
Activity	Sugar production through State-owned industry	Farmer's level salt production and Farmer's training
SDG Targets	2.3, 2.4	2.3, 2.4

## **SDGs and Election manifesto: Action plan of Ministry of Industries**

The Honorable Prime Minister announced the government's manifesto 2018 to fix up a slogan titled 'Bangladesh in progress for prosperity'. Election manifesto is the political promise to the people of the democratic government. It is then the administrative duty to formulate an action plan along with its execution strategy for successful implementation of this political document. In this connection, Ministry of Industries has adopted the government's election manifesto as a planned document for development.

There are 33 strategic objectives in the election manifesto of the government. The Ministry of Industries firstly analyzed the basic goals and objectives of the manifesto. Several consultation meetings took place with the ministry's officials as well as officials of the all departments under the Ministry. Through these consultations 9 among 33 strategic objectives are found directly or indirectly related to this ministry. These 9 strategic objectives are: (i) Efficient, service oriented and accountable administration, (ii) Zero tolerance policy against corruption, (iii) Macroeconomics: high income, sustainable and inclusive development, (iv) My village is my city, (v) Young youth: power of youth-Bangladesh's prosperity, (vi) Agriculture, food and nutrition: ensure to achieve food security, (vii) Industrial development, (viii) "Sea victory: blue economy-development horizon opens and (ix) Climate change and environmental protection

A comprehensive detailed action plan has been framed in aligned with these 9 strategic objects. In order to formulate this action plan, the ongoing Seventh Five Year Plan, Sustainable Development Goals, Vision 2021 and Vision 2041, National Industrial Policy 2016, Annual Performance Agreement of the ministry and other policies and strategies made by the ministry have been adopted as a basis document. The salient features of the action plans are: (i) identifies activities with implementing agencies, (ii) probable budget with implementation period, (iii) implementation strategies with monitoring tools for tracking the progress, (iv) explores the challenges/risks and its means of mitigation, (v) find out existing and new or ongoing activities and (vi) finally, incorporated the possible outcome from the intervention.

A total of 120 activities and/or programs are identified in order to achieve 9 separate strategic objectives. The activities included in the action plan will be implemented through revenue and development budget. Furthermore, the ongoing activities as well as future activities/programs in aligned with the nine strategic goals are also framed in the action plan. All these activities and/or programs incorporated in the action

plan will be implemented during 2019-2023 period considering the tenure of the government. Another notable aspect is that the potential tentative budget is also estimated to implement each of the activity included in the action plan.

## Chapter 4: Strategy and Implementation for Sustainable Industrialization

### i. Strategy for SDG priority indicators

Ministry of Industries is playing coordinating role relentlessly to meet the challenges of SDG Goal 9 particularly implementing the target 9.2. Ministry of Industries is primarily responsible for developing new policies & strategies for promotion, expansion and sustainable development of industrial sector of the country. The vision of the Ministry of Industries is to promote the contribution of the industrial sector in the indigenous production from 25 to 35 per cent and to provide all sorts of assistance in uplifting the labor force in the industrial sector increasing from 16 to 25 percent by 2030. The major contributions of the Ministry of Industries in industrialization are rapid formulation of industrial policy, establishment of industrial park for production of raw materials of pharmaceutical industry, playing the role of facilitator for the development of cottage, small and medium enterprises, manufacturing environment friendly motor vehicle within the purchasing capacity of the people and protecting the national interest & expanding the trade and industry by preserving and encouraging intellectual property in relation to industry.

#### **Indicator 9.2.I** Manufacturing value added as a proportion of GDP (per cent)

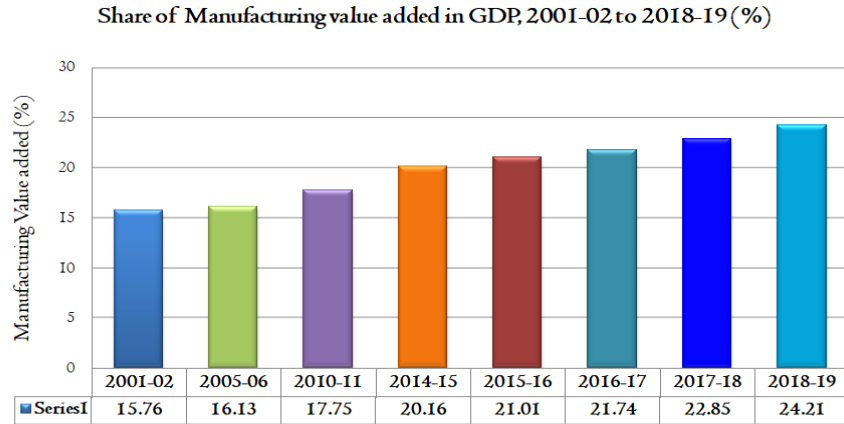
Manufacturing is considered a major dynamic sector in the economy achieving relatively higher growth rate. Accordingly manufacturing value added as a proportion of GDP has been rising steadily since 2000-01 reaching 19.47 per cent in 2014-16 in Bangladesh (see Figure 4.iv.I). This trend has continued in the SDG period. It should be noted that manufacturing value added as a proportion of GDP has a downward trend in most countries both developed and developing, and it exceeds 20 per cent only in a handful of countries, Bangladesh being one of them. While developed countries have declining share in manufacturing as a natural pattern due to structural change, developing countries are said to have falling share because of early de-industrialization. In this context increasing share of manufacturing in GDP in Bangladesh is a notable phenomenon. The share of manufacturing value added in GDP already reached the 2020 milestone in FY2017.

**Table I: Share of Manufacturing value added in GDP, 2001-02 to 2016-17 (per cent)**

2001-02	2005-06	2010-11	2014-15	2015-16	2016-17	2017-18	2018-19
15.76	16.13	17.75	20.16	21.01	21.74	22.85	24.21

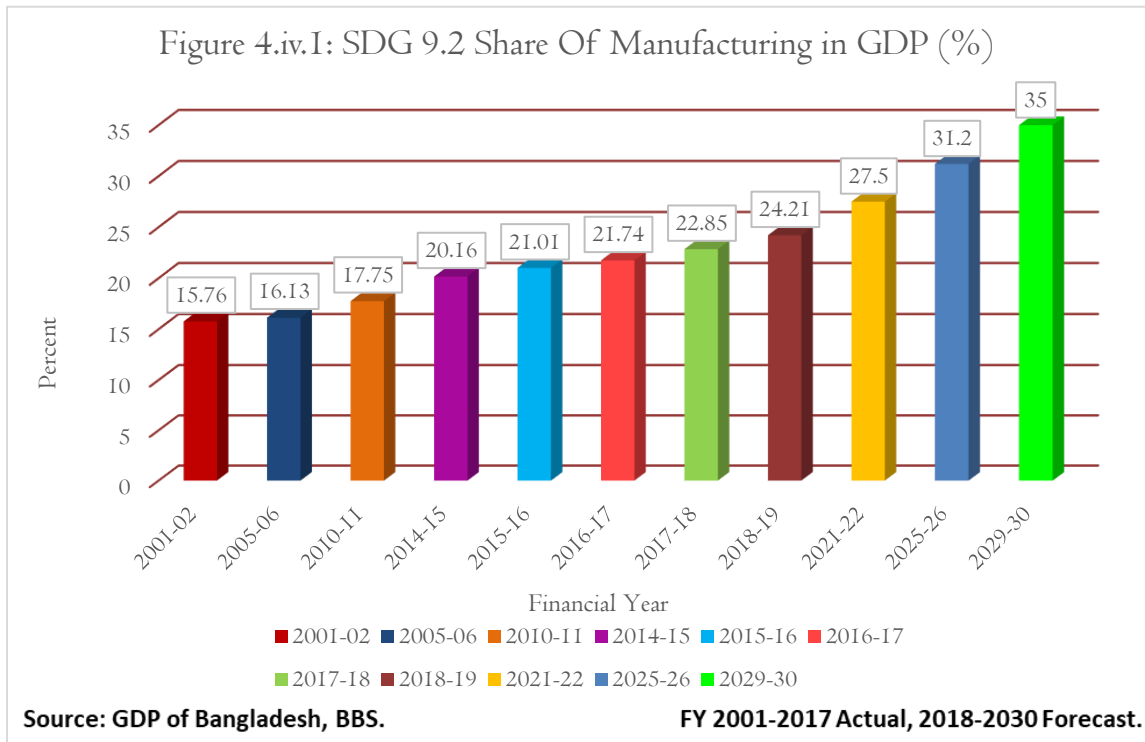
Source: Ministry of Finance, Bangladesh Economic Review, various years

## Progress against targets



Source: Bangladesh Economic Review 2019

It should be noted that the growth of the sector has been dominated by large and medium scale industries with lacklustre growth in small-scale industries. There has been remarkable shift in the composition of manufacturing output from jute goods dominated one to RMG dominated one. Manufactured goods serve both the domestic market as well as the export market with RMG, dominating the export basket. The transition of the sector benefited from supportive government policies including fiscal incentives, favourable policies of the trading partners such as MFA, GSP, and QFDF access and surplus labour condition in the labour market which kept wages low.



Indicator 9.2.I Manufacturing value added per capita (constant 2010 US \$)

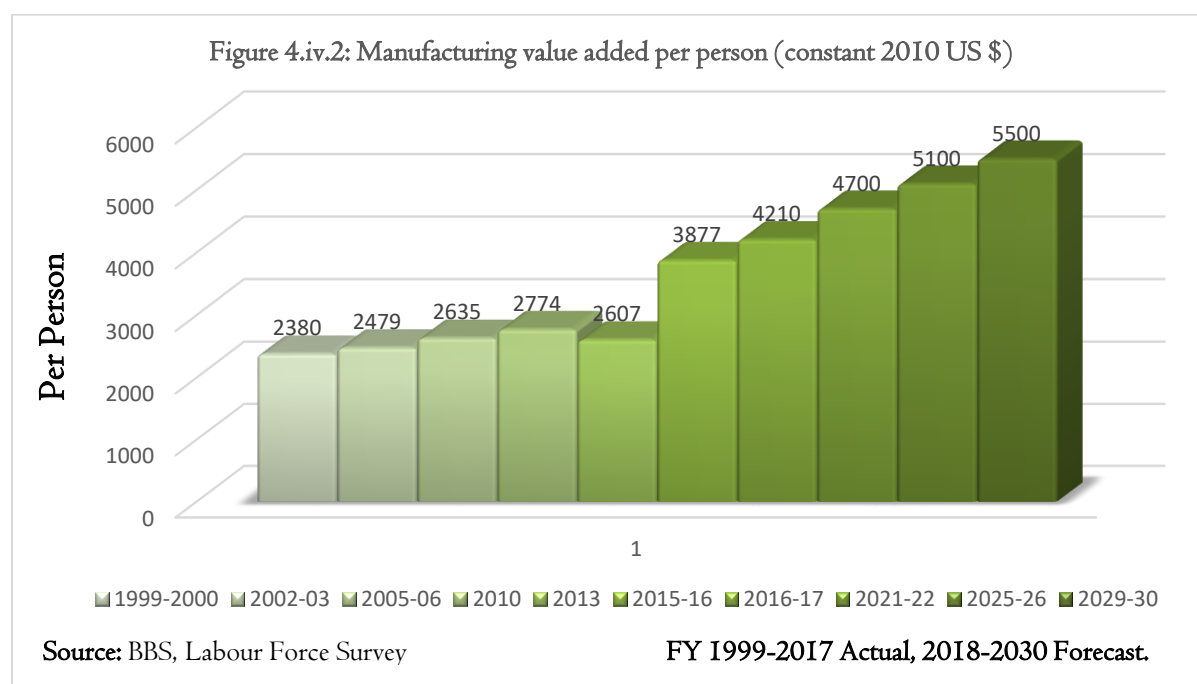


Manufacturing value added per worker has been calculated by dividing manufacturing value added in constant 2010 US dollar by the number of workers employed in the manufacturing sector in a particular year through the Labour Force Survey by the BBS. Per capita manufacturing value added has increased steadily during the period from 1999-2000 to 2015-16 with a rise in 2013.

**Table 9.3 Manufacturing value added per person (constant 2010 US \$), 1999-2000 to 2015-16**

1999-2000	2002-03	2005-06	2010	2013	2015-16	2016-17	2017-18
2380	2479	2635	2774	2607	3877	4210	

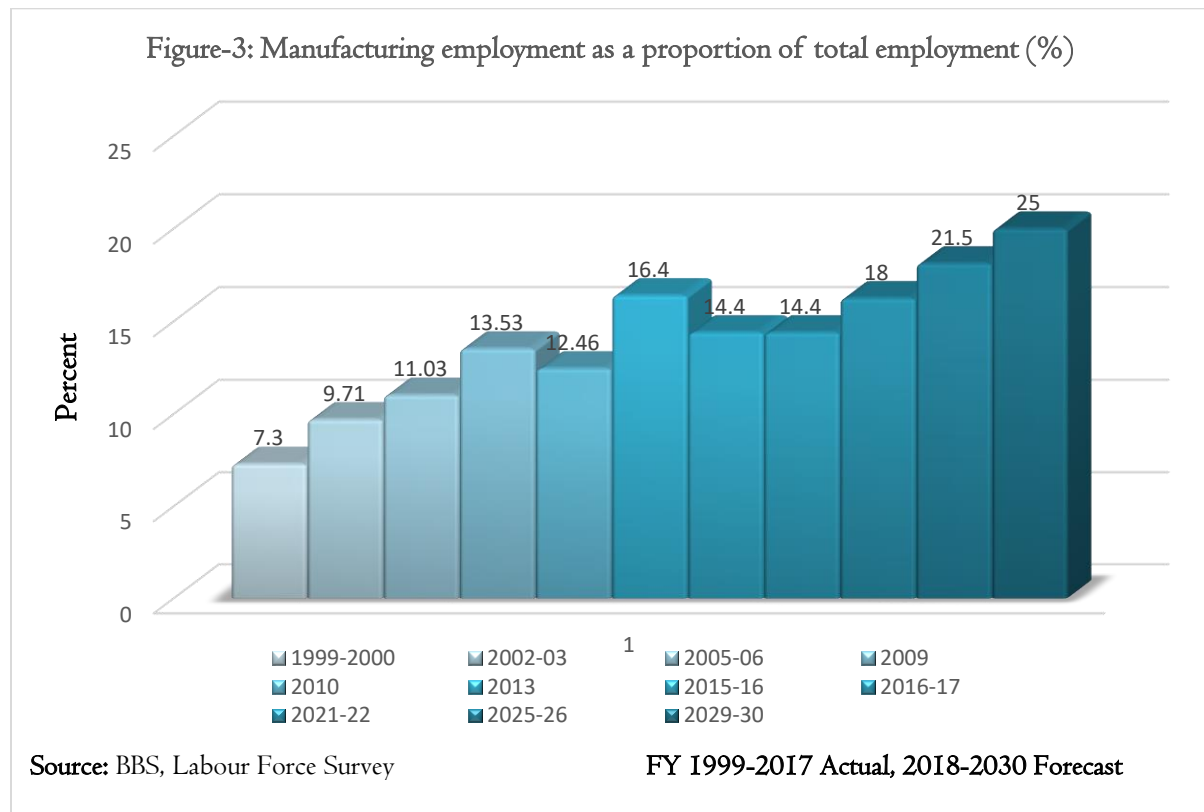
Source: Calculated using GDP data from World Bank and employment data from BBS, Labour Force Survey, various years



### **Indicator 9.2.2 Manufacturing employment as a proportion of total employment (per cent)**

Manufacturing sector has been steadily expanding in Bangladesh over last two decades. Dominant segments of the sector such as textiles, RMG, jute goods, leather are labour intensive and consequently there has also been increase in manufacturing employment. Higher growth of manufacturing output has resulted in higher proportion of employment in the sector. There has been a decline in the manufacturing employment share in 2015-16. In recent years there has been a tendency in the RMG sector undergoing upgrade of technology to substitute capital for labour. A recent study (CPD 2015- 16) found that the average yearly

growth of employment in the sample enterprises during 2012-16 was 3.3% down from 4.01% during 2005-2012. Such trending the RMG, the dominant sector in manufacturing in terms of output and employment, helps explain this change. The employment share remained stable in 2016-17. The stability in manufacturing employment share in last two years, if continues, will make it difficult to attain the 2020 milestone. This type of development may be explained with the help of Figure-3. The Figure indicates increasing productivity of manufacturing workers which imply less workers are needed to produce a given unit of output. Therefore, while the share of manufacturing in GDP increases its employment share in total employment might decrease.



## ii. SDG Localization: Ministry of Industries Perspective

Localization of industries is an over a century old phenomenon but a universal or widely accepted conceptual framework is yet to be available about that. It comes under spotlight in context of implementing SDGs in country like Bangladesh. It still creates confusion with the ideas of locational advantage of a firm, development of traditional/indigenous industries, centralization/decentralization of industrial base etc. In the initial days of industrialization, some industries were obliged to be localized to enjoy certain advantaged, such as, favorable climatic or soil conditions or availability of raw materials. For instance, localization of weaving industries on the bank of Shitalakhkha River at Narayanganj and localization of tea industries in the northeastern part of the country. Some other industries were localized considering the logistic or administrative advantages, such as, localization of jute industries on the bank of Hugli River in West Bangla during colonial era. Not only in Bangladesh but in the country like USA, in early days of the 20<sup>th</sup> century it was observed – “a large number of the great and small industries are not scattered broad- cast over the entire country but are confined to one narrow locality. This fact is contrary to what common sense would seem to dictate, for apparently a business would be most assured of success where it had no competition in the immediate neighborhood, but in reality, industry seems to thrive best where it throngs most. It is worthwhile, then, to find out how localization starts and grows, and what advantages it offers<sup>19</sup>”.

Localization<sup>20</sup> of industries simply refers to the concentration of an industry in a particular area. It differs from the idea of industrial location but indicate more of the choice of an area or region for setting up a firm even competitor firms are exiting there. The strategy about the localization of industries is more complicated in the countries with larger territory, diverse topology, variety of climatic conditions, different soil types and variation in natural resource endowment etc., Although countries like Bangladesh, having opposite conditionality on the abovementioned factors, still may come forwards to harness the advantages of localization of the industries in the possible extent. MoInd and some of its organizations are already applying similar concept known as ‘cluster development’.

From expert<sup>21</sup> sayings- “In the case of localization of small or medium scale industrial development programs it requires a specific site in a locality that is appropriate for accomplishing self-reliant social, economic and environmental sustainability. The site is also required to be enriched with required human resources; availability of required raw materials; and required transportation facility for distribution of outputs. The by products are also required to be utilized as inputs to sustainable socioeconomic and/or environmental benefits. In the context of localization of industrialization in Bangladesh, the working definition views the term ‘localization’ as a means and process of industrial development within a particular locality or site where the inputs required for desired production and distribution processes for meeting the local socioeconomic needs are sustainably available and met. The inputs include stakeholders, land, raw

---

<sup>19</sup> Malcolm Keir, *The Localization of Industry. How It Starts; Why It Grows and Persists*, Jan. 1919, *The Scientific Monthly*, Vol. 8, No. 1, pp. 32-48

<sup>20</sup> *de-localization refers to the process of setting up industries in a place that they have never existed before.*

<sup>21</sup> Dr. Md. AmzadHossain, Curtin University Sustainability Policy (CUSP) Institute, Perth, Western Australia.

materials, manpower, transportation facility, and scope for action research. Sustainable localization for re-achieving one or more SDGs at a particular site generates a Model SDGs Project for Replication.

In this context, localization of small and medium scale industrialization is the most sustainable way forward for meeting essential consumption needs of the people in general. The basic materialistic consumption needs include food, dress and housing. The major challenge of the ministry of industries is to meet the basic needs in a traditionally sustainable way for now and for future generations. The practices of traditionally sustainable way follow the philosophy: the less you consume, the more you sustain<sup>22</sup>.”

However, localization of industries may leads to some or all of the following advantages, such as, creating employment opportunities, infrastructural development, urbanization, capacity development of the working class, creating market for other products, attracting financial facilities, fostering innovation, improvement in techniques of production, encouraging specialization, increasing government revenue, development of subsidiary and complementary industries, improving standards of living, increase the level of production in a particular area. On the opposite side it may drives to certain disadvantages, such as, creating environmental and/or health hazards, regional imbalance or development disparity, over extraction of certain natural resources, increase in the costs of living, development of slums, loss of traditional skills, higher traffic congestion, higher risk of non-diversification of the local economy.

Considering the pros and cons Bangladesh has high potentials to go for localization of certain food-processing industries and organic fertilizer processing industries in certain regions. The RMG, lather, ship recycling and light engineering industries are somehow localized in certain big cities or industrial areas or coastal belt but many of the firms suffer from professional and technological drawback.

Ministry of industries has taken a few initiatives for optimizing benefits from localization. Among others, the ship breaking, and recycling industry is in an advantageous position in context of localization. Major proportion of leather industry is in a process of relocation to the Savar Tannery Industrial Estate and gradually entering in a more localized form. Bangladesh Small and Cottage Industries Corporation (BSCIC) initiatives for construction of specialized industrial park, such as, Jamdani Industrial Estate at Tarabo union of Rupshiupazila is a good example of step towards localization of industries. BSCIC administers a total of 76 industrial estates in different districts of Bangladesh. BSCIC's efforts for more specialized industrial estates can lead to a higher degree of localization of industries in Bangladesh. Bangladesh Chemical Industries Corporation (BCIC) runs 13 Chemical and fertilizer companies and Bangladesh Sugar and Food Industries Corporation (BSFIC) runs 17 companies in Bangladesh. Scope of localization can be examined for these corporations. In order to achieve sustainability in those industries, green industry, circular economics model, industrial ecology and sustainable wastage management concepts must be in practice. By doing so, guidelines, special monitoring cell and new projects can be initiatives. Bangladesh Institute of Management (BIM), Small and Cottage Industries Training Institute (SCITI), SME Foundation should provide training to create entrepreneur for sustainable industrialization as well as to train to the trainees on sustainability and sustainable development aligning with prospect of localization of industries.

---

<sup>22</sup>See more at <http://newsfrombangladesh.net/photo-story/44>

Bangladesh Industrial Technical Assistance Centre (BITAC) can provide profound skilled manpower for sustainable industrialization. Department of Patent, Design and Trademark (DPDT), Bangladesh Standard and Testing Institution (BSTI), Bangladesh Accreditation Board (BAC), National Productivity Organization (NPO) and Boiler Office can be assigned to monitoring and evaluating the relevant matters with sustainable industrialization throughout Bangladesh.

Finally, domestic technology development and enterprise facilitation for small and medium scale industries appears appropriate for promoting inclusive and sustainable industrialization in Bangladesh. To serve the purpose, establishing specialized industrial estates, ensuring availability of production and trade facilities, determining directions for industrial research, formulating strategies for technology acquisition and transfer and easing up 'doing the business' conditions are indispensable for the growth of new generation entrepreneurs whom can be considered as the driving force to reach at the necessary level of localization of industries in Bangladesh.

iii. SDG Action Plan, Implementation and progress

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks			
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)					
						Physical Progress	Financial Progress											
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11			
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial	2.3.2 Average income of small-scale food producers, by sex and indigenous status	Lead: MoInd	SID, MoE; MoA; MoFL;	1. Establishment & Modernization of BSTI Regional Offices at Chittagong & Khulna.(July 2015-June2019)	28291.00	38.04%	7752.70	Measure Productivity level of all economic sectors, 2018-19 to 2020-21.		Measure Productivity level of all economic sectors		1. Measure Productivity level of all economic sectors						
				2. Skill development program on Good Manufacturing Practice (GMP) for Bakery Industries.	1.00	100%	90%	Pineapple Processing Industry, Madhupur, Tangail (01.07.2019-30.06.2022)	500.00	Mechanization of Cane cultivation in Agriculture farms of Sugar Mills.	2000.00							
				3. Introducing Good Agricultural Practice (GAP) for Export Promotion (Mainstream and Ethnic Market).	1.00	100%	100%			Establishment of a Fruit processing, Pulp and Bottling plant at Rajshahi Sugar Mills.	1000.0							
				4. Skill Enhancement Program on 'Operation, Maintenance and Safety of Industrial Boilers' for Agro-processing Industries	1.00	100%	90%											
				5. Productivity & Quality (P&Q) Enhancement of SMEs through KAIZEN	1.00	100%	100%											
				6. Identify the Causes of lower productivity in several sectors and Opportunities to Improve, 2016-17	Regular Activities													

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				7. Training on food processing and agro business 2018-19 to 2020-21.	Regular Activities	05									
				<b>MoA:</b> 01. Enhancement of crop production through Farm Mechanization Project 2 <sup>nd</sup> Phase (July13-june18) (DAE).	2481.76			01. Increase agricultural productivity through dissemination of modern technologies (2018-2021) (DAE)	1000.00	01. Enhancement of crop production through Farm Mechanization Project 2 <sup>nd</sup> Phase (2021-2024) (2025-2030) (DAE, BADC, BARI, BRRI, BINA, BJRI, BSRI)	1500.00 5000.00 1000.00 3000.00 100.00 1000.00 = 11,600.00				DAE BARI BADC BRRI BJRI BARI
				02.National Agriculture Technology Project-2 <sup>nd</sup> Phase (Oct15-Sept 21) (DAE, PMU, BARC)	10291.40			02. Improvement of farmers' Livelihood Through Cropping Systems Research and development in the Central and Southern Regions of Bangladesh (July 2017-june2022) (BARI, BRRI, BINA, BSRI, BJRI, CDB, DAE)	DAE-115 BARI-115 BJRI-100 CDB-300	02.Enhance Integrated Agricultural Productivity Approach (DAE, BADC, BARI, BRRI, BINA, BJRI, BSRI) 2021-2025	DAE 1000 BARI 5000 BSR 1300 BJRI 100 CDB 600 BRRI 500 BINA 300 =8,800.00				
				03. Integrated Farm Management Component, Agricultural Growth and Employment Programme. (July 13-June18) (DAE)	3579.91			03.Increase agricultural productivity through modern technology transfer, minimizing yield gap, crop diversification & intensification with high value crop production. 2018-2021 (DAE, BARI)	DAE 700 BARI 800 =1,500.00	03. Introduction of water saving technologies such as, drip irrigation, sprinkler irrigation, furrow irrigation, alternate furrow irrigation, deficit irrigation, etc. at farmers levels. 2021-2025 2026-2030 (DAE, BARI, BRRI, BINA, BADC, BMDA, BSRI, BJRI, CDB)	DAE 2000 BADC 12000 BARI5000 BSRI500 BJRI100 BMDA 8500 CDB 400 BRRI500 BRR1300 BINA300				
				04.Production, Storage & Distribution of quality seeds of Rice, Wheat & Jute at farmers level project-	1125.00			04.Extension of appropriate post-harvest management technologies through training and demonstration 2018-	DAE 500 BARI 5000	04. Improvement and extension of the existing cropping pattern and crop zoning to increase productivity	DAE 1500 BARI1500 BSRI500 BJRI100 CDB 400 BRR1400				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				2nd phase. (July13-June18) (DAE)				2021		2021-20214 2025-2028 (DAE, BARI, BRRI, BINA, BSRI, BJRI)	BINA500				
				05.Production, Storage & Distribution of quality seeds of Pulses, Oils & Onion at farmers level project-2nd phase. (July13-June18) (DAE)	494.50			05. Enhancement of Crop Production in Chittagong Hill Tracts Region through Expansion of Modern Agricultural Practices, July 2016- June 2021 (DAE, BADC)	DAE1000 BADC500	05.Women empowerment in production, processing & other income generating activities. 2021-2025 2026-2030 (DAE, BARI, BRRI, BINA, BSRI, BJRI, CDB, BADC, BMDA, BIRTAN, DAM)	DAE 1000 BARI2000 BADC1000 BSRI500 DAM700 BJRI100 BMDA 1500 CDB 300 BIRTAN 300 BRR1400 BINA200				
				06. Enhancement of crop production through improved on Farm Water Management Technologies. (DAE)	345.70			06.Production & distribution of good quality seed 2021-2024 2025-2030 (BJRI)	500	06.Expansion of appropriate post-harvest management technologies (Processing, preservation & packaging) to reduce production loss and develop market linkage among the producer and consumer. (BARI, BRRI, BINA, BSRI, BJRI, DAE, CDB, DAM)	DAE 1000 BARI5000 BSRI500 DAM2000 BJRI100 CDB 1000 BRR1400 BINA500				
				07.Development, Multiplication and Quality Assessment of Agricultural Seeds through Biotechnology and Dissemination of the Technology, March 2015 to March 2018 GOB Funding	225.57			07. Enhancement of Crop Production in Chittagong Hill Tracts Region through Expansion of Modern Agricultural Practices, July 2016- June 2021 BADC	533.63	07. Increase agricultural productivity through modern technology transfer, minimizing yield gap, crop diversification & intensification with high value crop production. 2021-2025 2026-2028 (BARI, BRRI, BINA, BSRI, BJRI,	DAE 1200 BARI5000 BSRI500 DAM500 BJRI100 SCA100 CDB 1000 BRR1500 BINA600				



SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
										DAE, CDB, SCA, DAM)					
				08. Improvement and Quality Seed Production of Rice, Wheat and Maize-2nd Phase, July 2015 to June 2020 GOB Funding	3534.50			08. Strengthening of Hybrid Vegetable Seed Production, Processing, Preservation & Distribution Activities Project, October 2016-June 2021	468.46	08.Production & distribution of good quality seed 2021-2024 2025-2030 (BADC, DAE, BARI, BRRI, BINA, BSRI, BJRI, CDB, SCA)	DAE 2000 BADC 10000 BSRI100 BJRI100 SCA 500 CDB 200 BRRI1000 BINA 200				
				09. Construction of Rubber Dams to Utilize Surface Water for Enhancing Agricultural Production, January 2016 to June 2020 GOB Funding	1720.00			09. Strengthening Seed Supply System of BADC for Ensuring Food Security of Bangladesh, July 2016-June 2021 (BADC)	4800.00	09.National Agriculture Technology Project -3rd phase. 2021-2030 (BARC)	BARC 6000 PA				
				10. Sylhet Division Minor Irrigation Development Project, October 2014 to June 2019 GOB Funding	1380.59			10. Noakhali-Feni-Lakshimpur Coastal Area Sustainable Agricultural Development Project, July 2016-June 2021	2550.00	10.Enhanced Integrated Agricultural Productivity Approach July 2021-June 2030 BADC	BADC 6000.00				
				11. Barisal Division Minor Irrigation Development Project, April 2015 to June 2019	1011.77			11. Greater Khulna and Jessore District Minor Irrigation Development Project, October 2016-June 2021	1879.00	11. Provide information on seeds and non-nitrogenous fertilizer July 2021-June 2030, (BADC)	10000.00				
				12. Expansion of Irrigation through Utilization of Surface Water by Double Lifting (3rd Phase), July 2015 to June 2020 GOB Funding	1187.27			12. Greater Bogra and Dinajpur District Minor Irrigation Development Project, July 2016-June 2021	2296.00	12.Increase water use efficiency through improved on-farm water management technologies such as AWD, Dug well, Buried Pipe, Hose Pipe, Raised Bed rice irrigation, Drip & Sprinklers	DAE 1500 BADC 10000 BARI 2000 BSRI100 BJRI100 BMDA 5500 CDB 200 BRRI400				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
										irrigation, Hand shower irrigation, Mulching etc. (BARI, BRRI, BADC, DAE, BMDA, BINA, BSRI, BJRI, CDB, SRDI) 2021-2030	BINA400				
				I3. Ashugonj-Polash Agro-Irrigation Project (5th Phase), July 2015 to June 2020 GOB Funding	205.11			I3. Mymensingh Division and Tangail and Kishorganj District Minor Irrigation Development Project, January 2017-June 2021 GOB Funding	2031 GOB	I3. Development of smallfarm toolsand machinery (BRRI, BARI, BSRI, BJRI, BMDA	BARI 2600 BSRI1000 BJRI200 BMDA 850 CDB 200 BRRI400				
				I4. Enhancing Quality Seed Supply (BARI Part) (3rd Revised) (January 2011 to June 2017) (BARI)	584.00			I4. Project on Agricultural Mechanization, Preservation of Rainwater and Extension of Irrigation Facilities through the Maximum Use of Surface Water, July 2017-June 2021 (BADC Part)	1122.00 World Bank Funding	I4. Introduction of renewable energy to provide irrigation. (BADC, BARI, BRRI, BINA, BSRI, BJRI, CDB)	BARI 2000 BSRI100 BJRI100 CDB 150 BRRI300 BINA300				
				I5. Panchagarh, Thakurgaon, Dinajpur & Joypurhat Integrated Agriculture Development Project. (July'2010-June'2017) (BMDA)	2322.54			I5. Improvement and Quality Seed Production of Wheat and Maize 2 <sup>nd</sup> Phase 2017-2020 (BARI)	233	I5. Strengthening Capacity Building of DAM in Research and Policy Analysis of Agricultural Marketing Information. (DAM)	DAM1200 GOB/PA				
				I6. Barind Rainwater Conservation and Irrigation Project (March'2011-June'2018) (BMDA)	1999.95			I6. Development of smallfarm toolsand machinery (BARI)	500	I6. Promotion of Marketing Extension Service throughout the country. (DAM)	1000.00				
				I7. Quality Seed Production, Distribution & Farmers' Training Project for crop	98.62			I7. Strengthening Farm Machinery Research for Mechanized Rice 25. Cultivation (Jul 2017 to Jun 2022) (BRRI)	BRRI 1000	I7. Development of market infrastructure, Improvement of storage facility	3000.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				production (July'2015 - June'2020) (BMDA)				(Move to target 9.5)		throughout the country. (DAM)					
				18. Development of Horticultural New Crop Varieties and Management Technologies through Mutation and Advanced Techniques programme July 2014–June 2017 (BINA) (move to 9.5 target)	16.30			18.Strengthening field inspection, lot administration & market monitoring facilities in DAM	DAM 600.00	18. Strengthening seed certification and seed laboratories of SCA2021-2030	SCA 3000 GOB/PA				
				19.Development and Dissemination of Agricultural Technologies on Jute and Allied Fibre Crops (July14-June 2018) (BJRI)	213.90			19. Promotion of Marketing Extension Service throughout the country. (DAM)	1000.00						
								20. Development of agri-business & entrepreneurs, Establishment of sustainable value chain, Renovation of agro-processing infrastructure. (DAM)	2500.00						
								21. Development of market infrastructure, Improvement of storage facility throughout the country. (DAM)	3000.00						
								22.Modern Minor irrigation project through berried pipe, sprinkler irrigation in in vegetable & fruit production (BMDA)	2000.00 BMDA						

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
								23.Strengthening seed certification and seed laboratories of SCA 2017-2020	1500.00 SCA						
								24. Production and Dissemination of sugar crop clean seed (BSRI) (July 2018 June 2021)	500.00 GOB						
Target 9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	9.2.1 Manufacturing value added as a proportion of GDP and per capita.	Lead: MoInd	FD; GED; MoC; BFID (BB); SID; ICTD; MoTJ	1. Expansion and Strengthening of BSTI (At 5 districts)	5144.50	95.0%	4,159.81	1. Strengthening Bangladesh Institute of Management	1478.61	1. Programme on high efficiency and pollution free production process	Regular Activities	1. Provide technical assistant to make 1600 local made boiler	Regular Activities		
				2. Establishment & Modernization of BSTI Regional Offices at Chittagong & Khulna.	28291.00	38.04%	7752.70	2. "Bangladesh Glass Factory Establishment" project in the premises of existing CCC, Barabkund, Chattogram	23276.8	2. Increase the productivity of industries by applying modern management technique	Regular Activities	2. Taking Boiler attendant exam at least 15 times	Regular Activities		
	9.2.2 Manufacturing employment as a proportion of total employment			3.Expanding the Training Network by e-learning platform	Regular Activities	5.00%	2.68%	3. Setting Up of Urea Formaldehyde -85 (UF-85) Planting the premises of Shahjalal Fertilizer Company Ltd, Fenchugonj, Sylhet	7265.14	3. Establishment of Regional Offices of BIM in Divisional Level	3500.00	3.Installation of a new pulp and paper mill.	20000.00 (Approx.)		
	4. To provide necessary Technical guidance for quality control of local made boiler.			Regular Activities	151.42% (Target 700 Achievment-1060)		4. Feasibility Study Project for Installation of Ship Building & Ship Repair Industry in Patuakhali (BSEC)	49.80	4. Strengthening Management System Certification (MSC) and Voluntary Product Certification System (VPCS) of BSTI	50.00	4.Installation of a new Urea Fertilizer Factory	100000.00 (Approx.)			
	5. Certification of Boiler attendants after conducting examination of assistant boiler attendants.			Regular activities	Target 3000 Achievment-3910 Progress -30.33%		5. Feasibility Study of Motorcycle Manufacturing Project in Atlas Bangladesh Ltd. (BSEC)	45.00	5. Initiation of Automation system for Issuing and Renewal of CM License Service	20.00	5. installation of a new Cement Clinker mill.	30000.00 (Approx.)			
	6. Conversion of Wet process to dry process at Chhatak Cement Company Ltd (CCCL). (January 2016 to				8901.072	24.00%	2.95%	6. BSCIC Industrial Park, Valuka, Mymensing (01.07.2019-30.06.2022)	35000.00	6. Establishment of BSTI Office at 12 Districts	2002.50	6.Establishment of a new Ammonium Sulphate, Alum Factory.	8000.00 (Approx.)		

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				December 2020)											
				7. Modernization and Strengthening of TICI	525.62	99.70%	97.09%	7. BSCIC Salt Industrial Estate, Cox's Bazar (01.07.2019-30.06.2022)	500.00	7. Provide technical assistant to make 1500 local made boiler	revenue Budget	7. Production of battery for automobile at Pragoti Industries Ltd. (BSEC)	999.90		
				8. GhorasalPolash Urea Fertilizer Project (GPUFP)	104609.10	0.18%	0.16%	8. Repair and Reconstruction of 8 (Eight) Industrial Estate of BSCIC (01.07.2019-30.06.2021)	742.50	8. Taking Boiler attendant exam at least 15 times	revenue Budget				
				9. Construction of a 13 (Thirteen) Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing	6021.60	28.87	17.98	9. BSCIC Industrial Estate, Nilphamary (01.07.2019-30.06.2022)	200.00	9. Installation of a Sulphuric Acid, Phosphoric Acid, Alum or paper mill in KNM Premises by joint venture/ PPP / ADP	20000.00 (Approx.)				
				10. Construction of a 34 (Thirty-Four) Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing.	19830.40	0.041	0.037	10. Development of Agar Shilpa, Srimongal (01.07.2019-30.06.2022)	1757.30	10 Installation of a new Di-Ammonium Phosphate Factory / NPFS Factory in the premises of existing DAP, Rangadia, Chattogram by joint venture / PPP/ ADP.	12000.00 (Approx.)				
				11. LED Light CKD Assembling Plant in ETL (BSEC)	482.80	90%	70%	11. Completion of Incomplete works of Electronics Complex (01.07.2019-30.06.2021)	122.00	11. Installation of a new Urea Fertilizer Factory in a suitable place of North Bengal by joint venture / PPP/ ADP	100000.00 (Approx.)				
				12. Feasibility Study project of Environment Friendly Ship Re-Cycling Industry at TaloliUpazila in	49.80	35%	20%	12. BSCIC Industrial Park, Bogra (01.07.2019-30.06.2022)	6718.40	12. Installation of a new Chloro-Alkali Plant, Alum Plant and any other suitable Chemical Plant in the	10000.00 (Approx.)				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				Barguna District (BSEC)						premises of existing CCC, Barabkund, Chattogram by joint venture / PPP/ ADP.					
				13. Feasibility Study of Northern Agromachineries Project in Bogura (BSEC)	13.90	80%	30%	13. BSCIC Automobile Industrial Estate, Chattagram (01.07.2019-30.06.2022)	500.00	13. Establishment of an Ammonium Sulphate, Alum etc. in the premises of Shahjalal Fertilizer Company Ltd, Fenchugonj, Sylhet by joint venture / PPP / ADP	8000.00 (Approx.)				
				14. Modernization and Strengthen of Gazi Wires Ltd. (BSEC)	689.80	10%	0.05%	14. Establishment of Multistoried Commercial Complex in BSCIC's owned land at Khulna, Gazipur and Tangi (01.07.2019-30.06.2022)	6500.00	14. Establishment of a training complex in the premises of Dhaka Leather Company Ltd, Nayarhat, Savar by joint venture / PPP / ADP	10000.00 (Approx.)				
				15. Installation and Modernization of Disposable Razorblade Plant at Bangladesh Blade Factory Ltd. (BSEC)	250.10	10%	0.5%	15. BSCIC Industrial Park, Sirajgonj-2 (01.07.2019-30.06.2022)	25000.00	15. Installation of Environment Friendly Ship Re-Cycling Industry at TaltaliUpazila in Barguna District (BSEC)	Approx. 11000				
				16. Extension of Dhamrai BSCIC Industrial Estate (1 <sup>st</sup> Revised) (01.01.2015-31.12.2019)	370.50	77%	74%	16. Development of KaruShilpo at National Level (01.07.2019-30.06.2022)	500.00	16. Installation of Ship Building & Ship Repair Industry in Patuakhali (BSEC)	15000				
				17. BSCIC Industrial Estate, Chuadanga (1 <sup>st</sup> Revised) (01.07.2014-30.06.2020)	428.00	30%	46%	17. BSCIC Industrial Park, Trishal, Mymensing (01.07.2019-30.06.2022)	10000.00	17. Installation of Agro Machinery Industry in Bogura District (BSEC)	4000				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				18. Active Pharmaceutical Ingredient (API) Industrial Park (3rd Revised) (01.01.2008 – 30.06.2020)	3810.00	89%	63%	18. Revitalization of Kasha Shilpo at Islampur, Jamalpur (01.07.2019-30.06.2022)	100.00	18. Manufacturing of Energy Saving & Sustainable ceiling Fan Project in Atlas Bangladesh Ltd. (BSEC)	370.00				
				19. BSCIC Industrial Estate, Barguna (2nd Revised) (01.07.2011-31.12.2020)	180.80	40%	30%	19. BSCIC Industrial Estate, Sandip (01.07.2019-30.06.2022)	500.00	19. To increase productivity, installation of an auto-assembling plant at Pragati Industries Limited(BSEC)	30000.00				
				20. BSCIC Industrial Estate, Srimongal (2nd Revised) (01.07.2012-30.06.2019)	491.40	100%	99%	20. BSCIC Industrial Park, Thakurgaon (01.07.2019-30.06.2022)	8000.00	20. Poverty Alleviation & Sustainable Development Project of Gaibanda District (01.07.2020-30.06.2025)	15000.00				
				21. BSCIC Industrial Estate, Bhairab (1 <sup>st</sup> Revised) (01.07.2012-30.06.2020)	729.10	19%	60%	21. BSCIC Industrial Park, Munshigonj (Eastern site of Padma Bridge) (01.07.2019-30.06.2022)	22500.00	21. BSCIC Multi-Sectoral Industrial Park, Monohordi, Narsingdi (01.07.2020-30.06.2025)	8000.00				
				22. BSCIC Industrial Estate, Jhalokathi(1 <sup>st</sup> Revised) (01.07.2014-30.06.2019)	167.80	100%	83%	22. BSCIC Industrial Park, Vanga (Western site of Padma Bridge) (01.07.2019-30.06.2022)	10000.00	22. BSCIC Industrial Park, Belabo, Narsingdi (01.07.2019-30.06.2024)	10000.00				
				23. Extension of Rajshahi BSCIC Industrial Estate-2 (Special Revised) (01.07.2015-30.06.2019)	1317.424	35%	68%			23. Development of BanaroshiPalli, Rangpur (2 <sup>nd</sup> Phase) (01.07.2019-30.06.2024)	1000.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				24. Construction of Multistoried Building for BSCIC Bhaban at Tejgaon (01.07.2015-30.06.2019)	620.00	46%	53%			24. Establishment of an Institute/ Service Centre/ Foundation for Development of Tannery Sector (01.07.2020-30.06.2022)	200.00				
				25. BSCIC Industrial Estate, Tangail (1 <sup>st</sup> Revised) (01.07.2015-30.06.2020)	2957.50	60%	77%			25. Development of distress women at Haor oriented districts (01.07.2020-30.06.2025)	1500.00				
				26. BSCIC Plastic Estate (1 <sup>st</sup> Revised) (01.07.2015-30.06.2021)	1330.00	0.06%	37%			26. Women Entrepreneurship Development at Upazila level (01.07.2019-30.06.2024)	5000.00				
				27. Extension of Narshindi BSCIC Industrial Estate (1 <sup>st</sup> Revised) (01.07.2015-30.06.2021)	880.147	8.22%	62%			27. Establishment of BSCIC ISC at UpazilaLevel (01.07.2020-30.06.2025)	20000.00				
				28. BSCIC Printing IndustrialEstate (01.01.2016-31.12.2019)	1387.00	27%	51%								
				29.. BSCIC Electrical Goods Manufacturing & Light Eng. Industrial Estate (1 <sup>st</sup> Revised) (01.07.2016-30.06.2022)	2805.708	83%	84%								
				30. BSCIC Industrial Estate, Rawjan (01.07.2016-30.06.2019)	798.40	36%	30%								



SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				31. BSCIC Industrial Estate, Madaripur (1 <sup>st</sup> Revised) (01.07.2016-30.06.2020)	606.00	53%	53%								
				32. Development of SatranchiShilpa, (2 <sup>nd</sup> Phase) (01.07.2016-30.06.2019)	110.40	40%	54%								
				33. Development of Undeveloped area and Repair/ Reconstruction of Developed area of BSCIC Industrial Estate, Barisal (01.01.2017-31.12.2019)	522.00	2%	2%								
				34. Poverty Reduction through Inclusive & Sustainable Market (PRISM) (01.01.2014-31.12.2024) (BSCIC)	3249.00 (3000.00)	-	44%								
				35. Extension of Jamalpur BSCIC Industrial Estate (01.07.2019-30.06.2022)	634.50	-	-								
				36. Promotion of SMEs through National and/ regional SME Fair	200.00	100%	93%								
				37. Develop Fashion Designers.	3.00	100%	100%								

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
				38. Conducted needs assessments of 71 SME clusters and necessary development programs	27.00	100%	80%								
				39. SME Business Management Related Training Program (New Business Creation, Business Management, Bankable Project Proposal, Basic Accounting, Basic Marketing, Export-Import, Business Communication) [this activity also applicable for target #1.1, 4.4, 8.5 & 8.6]	50.00	100%	80%								
				40. Skill Development Training Program (Jute, Leather, Handicrafts, Jewelry, Natural Dying, Dry Flower, Thai Clay, Beautification, Handicrafts, Block and BATIK) etc. [this activity also applicable for target #1.1, 4.4, 8.5 & 8.6]	20.00	100%	80%								
				41. E-marketing, e-business, social commerce, and ICT-related trainings	15.00	100%	73%	23. Diversification of Handicrafts Products through skilled manpower (SMEF)	2.50	28. Diversification of Handicrafts Products through skilled manpower (SMEF)	5.00				
				42. Assisted in building-up of website SMEs and SME associations.		100%		24. Establishment of Common Facility Centre (CFC) for SME Cluster (SMEF)	50.00	29. Establishment of Common Facility Centre (CFC) for SME Cluster (SMEF)	140.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/Division	Associate Ministries/Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
								25. Extension of BITAC for SEPA through hands on technical training highlighting women project (Phase-2) July 2019 to 2024	1435.50						
				<b>ICT Div.</b> Establishment of Kaliakoir Hi-Tech Park	3,941.40										
				Establishment of Sheikh Hasina Software Technology Park	2,530.95										
9.3: Increase the access of small-scale industrial and other enterprises. In particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	9.3.1: Proportion of small-scale industries in total industry value added.	Lead: MoInd	BFID (BB); LGD; MoInf; ICTD; SID	1. Expansion of Credit Wholesaling Program [Single digit collateral free loan for SME cluster]	450.00	100%	100%	1. Enhancement of Credit Wholesaling Program for Micro and Small Entrepreneurs	1500.00	1. Enhancement of Credit Wholesaling Program for Micro and Small Entrepreneurs	Cont.				
				2. SME Financing Fair	0.50	100%	100%	2. Start up Financing Program	500.00	2. Financing Program for Rural and Ethnic Entrepreneurs	Cont.				
				3. Financial Literacy Program	3.00	100%	100%	3. Strengthening/ Capacity Development of Small Industry Financing Scheme (SMEF)	10.00	3. Strengthening/ Capacity Development of Small Industry Financing Scheme (BSCIC/SMEF)	700.00				
				4. SME Bankers-Entrepreneurs conference	2.40	100%	80%			4. Strengthening/ Capacity Development of Small industry Financing Scheme (BSCIC) (01.07.2020-30.06.2025)	15000.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks			
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)					
						Physical Progress	Financial Progress											
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11			
				5. Strengthening of Advisory Service Desk of SMEs by facilitating SME loan information of Banks & NBFIs	0.00	100%	-											
				6. Preparation of SME Friendly Budget Proposals	1.50	100%	80%											
				7. SME Cluster development program	27.00	100%	80%											
				8. Women Entrepreneurship Development Programs	100.00	100%	90%											
				9.3.2 Proportion of small-scale industries with a loan or line of credit.	Lead: MoInd	BFID (BB); SID	9. Develop special SME loan Products for women entrepreneurs	100.00	100%	100%								
							10. Financial Literacy Program	3.00	100%	100%								
				11. Credit Wholesaling Program [Single digit collateral free loan for SME cluster]	450.00	100%	100%											
9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally	9.4.1: CO <sub>2</sub> emission per unit of value added.	Lead: MoInd Co-Lead: MoLE Co-Lead: MoC Co-Lead: MoTJ	BD; LGD; MoS; RTHD; MoR; MoA; MoFA	1. Tannery Estate, Dhaka (3 <sup>rd</sup> Revised) (01.01.2003 - 30.06. 2019)	10787.10	80%	73%	1. Establishment of Sugar Refinery at 5 (five) Sugar Mills.	3000.0	1. Ensuring the establishment of CETP and STP (Sewerage Treatment Plant) in BSCIC Industrial Estate (01.07.2020-30.06.2025)	50000.00	1. Capacity building of BSTI with Modern Equipment and Trained Manpower	2000.00					

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
sound technologies and industrial processes, with all countries acting in accordance with their respective capabilities.				2. BSCIC Chemical Industrial Park, Munshigonj (1 <sup>st</sup> Revised) (01.07.2018-30.06.2022)	16157.30	-	6%	2. Replacement of Old centrifugal Machine, Juice Clarifier and Rotary Vacuumed Filter at 13 (Thirteen) Sugar Mills	1283.0	2. BSCIC Tannery Industrial Park-2 (01.07.2019-30.06.2024)	34247.00	2. Project on Awareness Building for Waste Recycling through ensuring 3R (Reduce, Reuse, Recycle) (BSCIC) (01.07.25-30.06.30)	30000.00		
				3. Replacement of Old Machinery and Addition of Machinery for Beet Sugar Production at Thakurgaon Sugar Mills Ltd. (1 <sup>st</sup> Revised) (July 2013 to June 2019)	4856.20	The International Tenders are now being evaluated	3.02%	3. Establishment of a Fruit processing, Pulp and Bottling plant at Rajshahi Sugar Mills.	1000.0	3. BSCIC Chemical Industrial Park, Dhohar (01.07.2020-30.06.2023)	20000.00				
				4. Production of Electricity by Co-generation and Establishment of Sugar Refinery at North Bengal Sugar Mills Ltd (1 <sup>st</sup> Revised) (February 2014 to June 2019)	3241.8	The International Tenders are now being evaluated	2.87%	4. Strengthening BAB capacity of accreditation program for Certification bodies certifying ISO 9001:2015 (Quality Management System) and ISO, 14001:2015 (Environmental Management System) and OHSAS 18001:2007 (Occupational Health and Safety Management System)	40.00	4. BSCIC Chemical Industrial Park, Venukhali, Nawabganj (01.07.2020-30.06.2023)	20000.00				
				5. B.M.R of Carew &Co. (Bd) Ltd. (1 <sup>st</sup> Revised) (July 2012 to June 2020)	1022.138	BMTF submitted Tender Document 28-05-2019	45.75%	5. 12(twelve) Training program on Energy Conservation, Machine Management, Productivity & Quality management, 2018-19 to 2020-21.		5. Strengthening BAB towards Multilateral Recognition Arrangement with Asia Pacific Accreditation Cooperation (APAC) and	20.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
										International Accreditation Forum (IAF)					
				6. Feasibility study of Dhaka Steel Works Ltd.'s modernization (BSEC)	30.80	%3	%0	6. Establishment of Technology Incubation Centre (TIC) at BIM.	100.00	6. Modernization of Dhaka Steel Works Ltd.(BSEC)	10500.00				
				7. Training program on Energy Conservation, Mechine Managment, Productivity & Quality management, Green productivity and Material flow cost accounting	Regular Activities	Training on Waste Mgt. & Machine Mgt.		7. Green productivity and Material flow cost accounting. 2018-19 to 2020-21		7. Installation of an integrated Pulp & Paper mill in KPM Premises by joint venture/ PPP / ADP	30000.00 (Approx.)				
				8. Strengthening of BITAC for the Establishment of an Institute for Tool Technology with Common Testing Facilities (1 <sup>st</sup> Revised), January 2016 to June 2020.	819.44			8. Establishment of 4 (four) centers of BITAC at Barisal, Rangpur, Sunamgonj&Jamalpur	10200.00	8. Site Replacement & Installation of a New Bangladesh Insulator &Sanitaryware Factory (BISF) in a new place by joint venture/ PPP/ ADP.	5000.00 (Approx.)				
				9. Construction of women hostel of BITAC Chattogram, BITAC Khulna and BITAC Boguraproject (1 <sup>st</sup> Revised) July 2018 to June 2022	745.98			9. Modernization of BITAC Dhaka, Chattogram, Chandpur, Khulna &Bogura Centre.	7500.00	9. Installation of a new Cement Clinker mill in CCCL, Chhatak / TLMP, Takerghat premises by joint venture/PPP/ADP	30000.00 (Approx.)				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
										10. Installation of a new TSP Factory in the premises of existing TSP Complex, Chittagong by joint venture / PPP/ ADP.	12000.00 (Approx.)				
										11. Rehabilitation of Usmania Glass Sheet Factory Limited (UGSFL).	15000.00 (Approx.)				
										12. Introduction of Electric Traction in Narayanganj-Joydevpur Section of BR.					
										13. Introduction of E-IP in DPDT	518.24				
										14. Retrofit BIM with Green Campuses through developing Green Buildings and Improving Energy Management	500.00				
										15. Capacity Development of BIM for Introducing new Training on Environmental Management	700.00				
										16. Providing Consultancy Services to- I. Measuring Baseline of CO <sub>2</sub> emission II. Process wise emission mapping III. Suggesting emission reduction strategies & tools	1000.00				

SDG Targets	Global Indicators for SDG Targets	Lead/Co-Lead Ministries/ Division	Associate Ministries/ Division	On-going Project/ Programme to achieve 7 <sup>th</sup> FYP Goals/Targets				Requirement of New Project/ Programme up to 2020		Actions/ Projects to achieve 8 <sup>th</sup> FYP Goals/ Targets (2021-2025)		Actions/ Projects to achieve 9 <sup>th</sup> FYP Goals/ Targets (2026-2030)		Policy/Strategy if needed (in relation with Column 8)	Remarks
				Project Title and Period	Cost in BDT (million)	Progress up to 30.06.2019		Project Title and Period	Cost in BDT (Million)	Project Title and Period	Cost in BDT (million)	Project Title and Period	Cost in BDT (million)		
						Physical Progress	Financial Progress								
1	2	3	4	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	9.1	9.2	10	11
										<ul style="list-style-type: none"> <li>✓. Establishing Search System for Environment Friendly Technology &amp; Process</li> <li>✓. Providing Support for Environment Friendly Industrial design</li> <li>✓. Promote Green Technology, Green Factory, Vertical Forestation in Workplace</li> <li>II. Clean Development Mechanism &amp; Carbon Trading</li> </ul>					
								MoR	N/A	I. To be continued.... Completed by December 2022					
								2. Refurbishment of 21 locomotives equipped with the provision for emission reduction (Tier-2 Standard).	N/A	2. To be continued.... Completed by December 2022					
								3. Procurement of 30 BG DE Locomotives equipped with the provision for emission reduction (Tier-2 Standard)	N/A	3. To be continued.... Completed by December 2022					



#### iv. Development projects aligned with SDGs

The Ministry is persistently striving to achieve rapid industrial growth which is a prerequisite for economic development in the country. In order to accelerate the pace of industrialization the Ministry has put emphasis on sustainable and inclusive industrial growth through generation of productive employment to create new entrepreneurs, mainstream women in the industrialization process and to create international market linkages. In this arena, one of the important instruments is to implement the development projects. On the contrary, the SDGs known as the global agendas were adopted by all UN member states as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. Taking all these considerations into account, Ministry of Industries is formulated strategies; projects and programs in align to achieve SDGs related to this ministry.

At present, there are 50 approved development projects is included in the Annual Development Programme. These ongoing projects are being implemented under the ministry of industries. In order to formulate this document, all these projects are allied with the Seventh Five Year Plan, Sustainable Development Goals, National Industrial Policy 2016 and/or other policies, Election Manifestos and Annual Performance Agreement of the ministry. More specifically, all projects are aligned with SDG goals, targets and indicators are pertinent to this ministry. The responsibility in achieving the SDGs as lead, co-lead and associate lead is also documented. Furthermore, the integration of five P's (People, Planet, Prosperity, Partnership and Peace) and the three dimensions (social, economic, and environmental) of sustainable development is also reflected with these development projects. The detail information on projects (objectives, estimated cost, implementation period, main activities, probable output/outcome and integration with SDGs) is attributed in the following pages in the document.

Sl.	Project title, objectives and implementation period	Project cost (In lacs)	Main activities of project	Outputs/outcomes of the project	Addressing of SDG goals, targets and indicators through implementation of projects (describe details)			Responsibility as Lead, co-lead, associate	Linked with SFYP, industrial and/or other policies, election manifesto APA	Remarks
					Alignment with SDG goals, targets and indicators	Alignment with social, economic and environmental dimensions	Association with five 'Ps'			
<b>Ministry of Industries</b>										
01	<p><b>Project title:</b> Fortification of Edible Oil in Bangladesh (Phase-III)</p> <p><b>Overall Objectives:</b></p> <ul style="list-style-type: none"> <li>To contribute to the reduction in prevalence of vitamin-A deficiency in the population of Bangladesh through consumption of vitamin A fortified edible oil.</li> </ul> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>By June 2020,</li> <li>Fortify 100% refined edible palm, soybean and rice bran oil in the country within the acceptable range as per the standard;</li> <li>Strengthen the capacity of project implementing partners and building awareness among mass people;</li> <li>Find the way out of drum oil traceability in order to ensure the supply of fortified edible oil to the consumers.</li> </ul> <p><b>Implementation period:</b> July 2018 to June 2020</p>	<p><b>Total</b> Tk.968.00 (GOB: Tk.42.00 &amp; PA: Tk.926.00)</p>	<ul style="list-style-type: none"> <li>Support to open drum oil management;</li> <li>Support BSTI to get International Accreditation for edible oil fortification laboratory (HPLC);</li> <li>Develop MIS system and provide training on MIS in regional officers of BSTI and other stakeholders;</li> <li>Hire national/international consultants;</li> <li>Develop the structure and mechanism of functioning of NFU</li> <li>Awareness building workshops with different stakeholders;</li> <li>Midterm evaluation;</li> <li>Prepare SBN strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Ensured fortified 100% refined edible oil as per the standard;</li> <li>Developed bulk oil management system;</li> <li>Constituted NFU;</li> <li>Developed monitoring system and introduced;</li> <li>Accredited BSTI fortification lab;</li> <li>SBN strategy developed;</li> <li>Buildup awareness and trained personnel.</li> </ul>	<ul style="list-style-type: none"> <li>Goal-3</li> <li>Target-3.2, 3.8</li> <li>Indicator-3.2.1, 3.7.1</li> </ul>	Social and Economic	People, prosperity and peace	Associate	7FYP and APA	TA project
02	<p><b>Project title:</b> Implementation of the National Quality Policy (NQP) and Establishment of Bangladesh National Quality and Technical Regulation Council (BNQTRC).</p> <p><b>Overall objective:</b></p> <p>To develop and establish an effective and efficient National Quality Infrastructure (NQI) that would demonstrably meet international standards.</p> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>To establish the BNQTRC;</li> <li>Formulation of the Bangladesh National Quality and Technical Regulation Council Act;</li> <li>Strengthening of BAB to achieve international recognition;</li> </ul>	2160.00	<ul style="list-style-type: none"> <li>Formulation of BNQTRC Act;</li> <li>Constitute BNQTRC;</li> <li>Hiring of consultants;</li> <li>Provide</li> </ul>	<ul style="list-style-type: none"> <li>Passed BNQTRC Act;</li> <li>Established BNQTRC;</li> <li>Developed human resource.</li> </ul>	<ul style="list-style-type: none"> <li>Goal- 9</li> <li>Target- 9.1</li> <li>Ind.- 9.2.1</li> </ul>	Social and Economic	People, Prosperity & Partnership	Associate	7FYP	

	<ul style="list-style-type: none"> <li>○To enhance the quality consciousness and awareness in the public and private sectors and amongst society in general.</li> </ul> <p><b>Implementation period</b> July 2016- June 2020</p>									
03	<p><b>Project title:</b> Safe and Environmentally Sound Ship Recycling in Bangladesh-Phase II (Capacity Building).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○To support the alignment between the national legal and institutional framework and international standards;</li> <li>○To effective delivery of training for ship recycling workers following the training modules as developed under the project;</li> <li>○To raising awareness for decision-makers on training modules;</li> <li>○To expand the pool of trainers through train-the-trainer course;</li> <li>○To establish a robust training management and governance system.</li> </ul> <p><b>Implementation period:</b> April 2018 to December 2019</p>	885.40	<ul style="list-style-type: none"> <li>■Developing recommendations and roadmap for accession to and effective implementation of the Hong Kong Ship Recycling Convention;</li> <li>■Implementing training strategy and materials developed by SENSREC Phase I;</li> <li>■Providing IT-Solution for worker's registration and training records.</li> </ul>	<ul style="list-style-type: none"> <li>●Recommendations and roadmap for accession to and effectively implemented of the Hong Kong Ship Recycling Convention;</li> <li>●Implemented training strategy and materials developed by phase I and IT-Solution for worker's registration and training records.</li> </ul>	<ul style="list-style-type: none"> <li>○Goal- 9</li> <li>○Target- 9.2</li> </ul>	Social, economic and environment	People, planet prosperity, and partnership	Lead	Industrial Policy- 2016	TA project
<b>Bangladesh Standards and Testing Institution</b>										
04	<p><b>Project title:</b> 'Expansion and Strengthening of BSTI (5 Districts) (3rd revised)' Project.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○To accelerate the socio-economic development by harmonizing the national standards.</li> <li>○To enable Bangladeshi product into the international market overcoming the TBT;</li> <li>○To expand BSTI's role in the field of mandatory Voluntary Certification, Legal Affairs, Surveillance &amp; Mobile Court operation.</li> </ul> <p><b>Implementation period:</b> July 2011 to December 2019.</p>	5144.00	<ul style="list-style-type: none"> <li>■ Construction of office-cum-laboratory building at 5 districts;</li> <li>■ Establishment of chemical, metrology, food, electrical and physical lab;</li> <li>■ Procurement of latest modern lab equipment for established laboratories.</li> </ul>	<ul style="list-style-type: none"> <li>● Created facility in the district level for ensuring quality product to the consumer;</li> <li>● Enabled Bangladeshi products to enter into the international market overcoming the TBT;</li> <li>● Expanded BSTI's role in the field of QMS/EMS etc., voluntary certification, legal affairs, surveillance and mobile court operation.</li> </ul>	<ul style="list-style-type: none"> <li>○Goal-9.</li> <li>○Target-9.2</li> </ul>	Social and Economic	People, Planet, Prosperity, Peace	Lead	SFYP and Election Manifesto 2018-3.10, 3.14, 3.16	
05	<p><b>Project title:</b> 'Establishment &amp; Modernization of BSTI Regional Offices at Chattogram&amp; Khulna (1<sup>st</sup> Revised)' Project.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○To ensure quality products to the consumer in Chattogram and Khulna division.</li> <li>○To construct the total structure of the ten (10) storied building.</li> <li>○To procure modern laboratory equipment.</li> </ul> <p><b>Implementation period:</b></p>	28291.00	<ul style="list-style-type: none"> <li>■ Infrastructure development of ten (10) storied building at Chattogram and Khulna division;</li> <li>■ Procurement of laboratory equipment.</li> </ul>	<ul style="list-style-type: none"> <li>● Constructed modern office cum-laboratory building at Chattogram&amp; Khulna regional offices;</li> <li>● Procured modern &amp; sophisticated laboratory equipment.</li> </ul>	<ul style="list-style-type: none"> <li>○Goal-9</li> <li>○Target 9.2</li> </ul>	Social and Economic	People planet prosperity and peace	Lead	SFYP and Election Manifesto 2018-3.10, 3.14, 3.16	

July 2015 to June 2021.									
Bangladesh Chemical Industries Corporation									
06	<p><b>Project title:</b> Shahjalal Fertilizer Project (SFP), (2<sup>nd</sup> revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>To set up a new modern, energy efficient &amp; environmentally friendly Urea Fertilizer Factory having production capacity 1760 MTD (5,80,800 MTY) of Granular UREA in the adjacent land of the existing 53 years old Natural Gas Fertilizer Factory Ltd. (NGFFL) at Fenchuganj, Sylhet;</li> <li>To ensure availability of urea fertilizer to the farmers at a lower cost and meet up the growing urea fertilizer demand in the country, thereby ensuring food security of the country.</li> </ul> <p><b>Implementation Period:</b> 1<sup>st</sup> January 2012 to 31<sup>st</sup> December 2019</p>	Total:49849 7.36 (GOB:9988 9.36 PA:398608. 00)	<ul style="list-style-type: none"> <li>Prepare feasibility study;</li> <li>Finalized technical scope of works by BCIC and General Contractor;</li> <li>Lining up of the fund;</li> <li>Procurement of imported &amp; local machinery, equipment and spares;</li> <li>Mobilization of construction materials;</li> <li>Piling, foundation and other civil construction works;</li> <li>Erection and installation of machinery, equipment, vessels etc.;</li> <li>Erection and installation works completion, pre-commissioning, commissioning, performance and guarantee tests.</li> </ul>	<ul style="list-style-type: none"> <li>A new and modern granular urea fertilizer factory installed;</li> <li>Procured machinery and equipment and spares;</li> <li>Modern technologies of granular urea introduced;</li> <li>Knowledge and skills of manpower increased;</li> <li>Produced 5,80,800 M.T granular urea yearly;</li> <li>Employed 646 people;</li> <li>Import of urea fertilizer reduced, thus saved foreign currency.</li> </ul>	<ul style="list-style-type: none"> <li>Goal: -9</li> <li>Target-9.2, 9.4</li> <li>Ind.-9.2.1, 9.2.2, 9.4.1</li> </ul>	Social, Economic and Environment	Five Ps	Lead, Co-lead and Associate Target	SFYF, APA, Election Manifesto- 3.14, 3.16, 3.23
07	<p><b>Project title:</b> Conversion of Wet process to dry process at Chhatak Cement Company Ltd.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>To install a new energy efficient, environmentally friendly, latest technology-based Clinker Factory on dry process instead of existing old inefficient wet process having Production capacity 1500 MT/Day (450,000 MT/Year)</li> </ul> <p><b>Implementation period:</b> 1<sup>st</sup> January 2016 to 31<sup>st</sup> December 2021</p>	89010.72	<ul style="list-style-type: none"> <li>Lining up of the fund;</li> <li>Appointment of consultant;</li> <li>Procurement of imported &amp; local Machinery, equipment and spares;</li> <li>Piling, foundation and other civil construction works;</li> <li>Erection and installation of machinery, equipment, vessels etc.;</li> <li>Erection and installation works;</li> <li>Completions, pre-commissioning, performance and guarantee tests.</li> </ul>	<ul style="list-style-type: none"> <li>Erection, Installation &amp; PGTR (Performance and guarantee Test run) completed;</li> <li>Produced cement 1500 MT/day;</li> <li>Revenue earned.</li> </ul>	<ul style="list-style-type: none"> <li>Goal-9</li> <li>Target-9.2, 9.4</li> <li>Ind.-9.2.1, 9.2.2, 9.4.1</li> </ul>	Social, Economic and Environment.	People, planet: prosperity, peace and partnership	Lead Target-9.2, 9.4 Co-lead Target-6.4, 8.2 Associate Target-total 26	SFYF, APA, Election Manifesto- 3.16, 3.23
08	<p><b>Project title:</b> Construction of a 13 Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>To construct 13 (Thirteen) Nos. Buffer Godowns at different districts of the country for Facilitating Fertilizer distribution.</li> </ul> <p><b>Implementation Period:</b> 31<sup>st</sup> January 2017 to 30<sup>th</sup> June 2020</p>	Total: 60216.01 (GOB- 44506.01 BCIC:15710 .0)	<ul style="list-style-type: none"> <li>Land Acquisition;</li> <li>Civil works: (Land development/earth filling, design, drawing &amp; vetting, piling, foundation, construction of boundary wall, two layers soling, approach road construction &amp; RCC drain and miscellaneous works)</li> </ul>	<ul style="list-style-type: none"> <li>Constructed 13 buffer godowns in different districts of the country;</li> </ul>	<ul style="list-style-type: none"> <li>Goal-9</li> <li>Target-9.2</li> <li>Ind.- 9.2.2</li> </ul>	Social, Economic and Environment	People, planet, prosperity, peace, and partnership	Lead Target-9.2 Associate Target-total 15	SFYF, APA, Election Manifesto- 3.14, 3.16

09	<p><b>Project title:</b>GhorasalPolash Urea Fertilizer Project (GPUFP)</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To set up a new Urea Fertilizer;</li> <li>○ To ensure availability of Urea Fertilizer to the farmer at lower cost meet up the growing Urea Fertilizer demand in the country and thereby ensuring food security of the country.</li> </ul> <p><b>Implementation Period:</b> 1<sup>st</sup>October2018 to 30<sup>th</sup> June 2022</p>	Total:10460 91.0 (GOB-184419.0 & Bidder Financing-861672.00)	<ul style="list-style-type: none"> <li>▪ prepare feasibility study report;</li> <li>▪ Technical Scope of finalization by BCIC and General Contractor;</li> <li>▪ Lining up of the fund;</li> <li>▪ Procurement of imported &amp; local machinery, equipment and spares.</li> <li>▪ Piling, foundation and other civil construction works;</li> <li>▪ Erection and installation of machinery, equipment, vessels etc.;</li> <li>▪ Erection and installation works completions, pre commissioning, performance and guarantee tests.</li> </ul>	<ul style="list-style-type: none"> <li>● Established a new and modern granular urea fertilizer factory;</li> <li>● Produced 9,24,800 MT granular urea yearly and revenue earned;</li> <li>● Employed 968 people;</li> <li>● Import of urea fertilizer reduced, thus hard-earned foreign currency saved.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal-9</li> <li>○ Target-9.2, 9.4</li> <li>○ Ind-9.2.1, 9.2.2, 9.4.1</li> </ul>	Social, Economic and Environment	People, planet, prosperity peace and partnership	Lead Target-9.2, 9.4 Co-lead Target-6.4, 8.2 Associate Target-total 32	APA, Election Manifesto-3.14, 3.16, 3.23	
10	<p><b>Project title:</b> Construction of a 34 (Thirty-Four) Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To construct 34 (Thirty-four) Nos. Buffer Godowns at different districts of the country for Facilitating Fertilizer distribution.</li> </ul> <p><b>Implementation period:</b> 1<sup>st</sup>September2018 to 30<sup>th</sup> June 2021</p>	198304.00	<ul style="list-style-type: none"> <li>▪ Land acquisition;</li> <li>▪ Civil works: (Land development/earth filling, design, drawing &amp; vetting, piling, foundation, construction of boundary wall, two layers soling, approach road construction &amp; RCC drain and miscellaneous works)</li> </ul>	<ul style="list-style-type: none"> <li>● 34 nos. buffer godowns constructed;</li> <li>● Storage capacity of fertilizer increased;</li> <li>● Easier distribution of fertilizer;</li> <li>● Employed78 people.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal-9</li> <li>○ Target-9.2</li> <li>○ Ind.- 9.2.2</li> </ul>	Social, Economic and Environment	People, planet, prosperity, peace, and partnership	Lead Target-9.2 Associate Target-total 15	APA, Election Manifesto-3.14, 3.16	
11	<p><b>Project title:</b>Godown construction for temporary facilitating Chemicals storage projects.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ For the sake of general people security, chemical material transfer to a safe place;</li> <li>○ Godown construction and quickly transfer chemical materials from risky place of puran Dhaka;</li> <li>○ Preserve the flammable material in a scientific way.</li> </ul> <p><b>Implementation period:</b> 1<sup>st</sup> March 2019, 2018 to 30<sup>th</sup> June 2020</p>	7941.51	<ul style="list-style-type: none"> <li>▪ Construction works: <ul style="list-style-type: none"> <li>i) Land development/earth filling;</li> <li>ii) Design, drawing &amp; vetting;</li> <li>iii) Piling work and foundation;</li> <li>v) Construction of boundary wall;</li> <li>vi) Two layers soling;</li> <li>vii) Approach road &amp; RCC drain.</li> </ul> </li> <li>▪ Miscellaneous works.</li> </ul>	<ul style="list-style-type: none"> <li>● Constructed 54 godowns (35'X 35'X15' size);</li> <li>● Established three storied two office building (72'X36' size);</li> <li>● Ensured storage of chemical materials in a scientific way.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal- 9</li> <li>○ Target- 9.2</li> <li>○ Ind.- 9.2.2</li> </ul>	Social, Economic and Environment	People, planet, prosperity, peace, and partnership	Lead Target-9.2 Associate Target-total 15	APA, Election Manifesto 3.23	
Bangladesh Industrial Technical Assistance Center										

12	<p><b>Project title:</b> Strengthening of BITAC for the Establishment of an Institute for Tool Technology with Common Testing Facilities (1<sup>st</sup> Revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Providing technical facilities for manufacturing engineering sector including Light Engineering Sector (LES);</li> <li>○ Providing testing facilities to increase productivities and develop the activities of LES.</li> <li>○ Providing opportunities to use ultramodern machine as common facilities to SME working in LES.</li> <li>○ Providing facilities for research work with technical Universities.</li> <li>○ Providing assistance for creating entrepreneurship in LES.</li> </ul> <p><b>Implementation period:</b> January 2016 to June 2020</p>	8194.35	<ul style="list-style-type: none"> <li>■ Establish an Institute for Tool Technology with Common Testing Facilities;</li> <li>■ Essential support through training and technology transfer, advisory and machining services.</li> <li>■ Assist, promote and sustain the development of die/mold making industries and LES;</li> <li>■ Establish a Common Testing Facilities equipped with sufficient machinery and instrument.</li> <li>■ To develop firm consciousness among the entrepreneurs of LES and increase competitiveness in market</li> </ul>	<ul style="list-style-type: none"> <li>● Created a well-equipped tool institute;</li> <li>● Capable domestic industries to introduce product variation and improvements;</li> <li>● Prices of engineering, plastics and consumer products declined in domestic market;</li> <li>● Skilled technical personnel;</li> <li>● Buildup capacity of local light engineering industries to maintain international standard;</li> <li>● Entrepreneurship developed at home.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal- 9</li> <li>○ Target- 9.2</li> <li>○ Ind.- 9.2.2</li> </ul>	Social and Economic	People, prosperity and peace	Lead	SFYP- 2.7.10, 3.1, 6.5, 12.6 Election Manifesto- 3.16	
13	<p><b>Project title:</b> Construction of Women Hostel of BITAC Chattogram, Bogura and Khulna (1<sup>st</sup> Revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Constructing women hostel and thus 284 women will be provided with accommodation facilities;</li> <li>○ Providing training facilities to 270 women trainees of 9 trades for skill development to satisfy the need of labor market;</li> <li>○ Eliminating gender discrimination both in training facilities and employment and create regional equality of working opportunities of labor force;</li> <li>○ Increasing working facilities for the trainees both in home and abroad.</li> </ul> <p><b>Implementation period:</b> July 2018 to June 2022.</p>	7459.78	<ul style="list-style-type: none"> <li>■ Construction of infrastructural building for women.</li> <li>■ Train up 284 trainees through 9 trades;</li> <li>■ Elimination of gender discrimination in the area of training and employment;</li> <li>■ Provide employment opportunities for trainees both at home and abroad.</li> </ul>	<ul style="list-style-type: none"> <li>● Constructed women hostel for 284 trainees;</li> <li>● Trained and efficient women labor force provided in industrial sector;</li> <li>● Unemployment problem for women alleviated;</li> <li>● Gender discrimination in job market reduced.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal- 9</li> <li>○ Target- 9.2</li> <li>○ Ind.-9.2.1, 9.2.2, 9.4.1, 9.5.1</li> </ul>	Social and economic	People, prosperity and peace	Lead	SFYP- 13.3.4, 13.3.2, 13.3.3 Election manifesto 2018-3.11, 3.12, 3.13	
Bangladesh Steel and Engineering Corporation										

I4	<p><b>Project title:</b> LED Light CKD Assembling Plant in ETL</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Increase productivity, facilities and working capacity;</li> <li>○ Ensure utilization of modern technology;</li> <li>○ Manufacture of power saving electric light by using modern technology;</li> <li>○ To reduce electricity utilization by using power saving electric light; and</li> <li>○ Manufacture of environment friendly electric light and save foreign currency.</li> </ul> <p><b>Implementation period:</b> Jan' 2016- Dec'2019</p>	4828.00	<ul style="list-style-type: none"> <li>■ Construction of 6 (six) storied building;</li> <li>■ Installation of LED tube light &amp; bulb (CKD) Machinery;</li> <li>■ Installation of sub-station for power supply.</li> </ul>	<ul style="list-style-type: none"> <li>● Established factory building;</li> <li>● Four lac pieces LED tube &amp; four lac pieces LED bulb supplied/year to the market;</li> <li>● 83 MW electrical powers saved.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal-9</li> <li>○ Target-9.2</li> <li>○ Indicators- 9.2.2</li> </ul>	Economic and Environment	People and prosperity,	Lead	SFYP, Election manifesto- 3.3, 3.16 APA-3(1.8)	
I5	<p><b>Project title:</b> Construction of 'Progoti Tower'</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Construction of 14 storied commercial building with 37 storied foundations;</li> <li>○ To increase facility for maintenance of post selling car;</li> <li>○ To increase selling target and profit.</li> </ul> <p><b>Implementation period:</b> Jan' 2016- June 2023</p>	38600.82	<ul style="list-style-type: none"> <li>■ To Construct 14 storied building with 37 storied foundations and 3 basements.</li> </ul>	<ul style="list-style-type: none"> <li>● Established 14 storied commercial building with 37 storied foundations and 3 basements.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal-9.0</li> <li>○ Target-9.2</li> <li>○ Indicators- 9.2.2</li> </ul>	Social, Economic and Environment	People, planet, prosperity, peace and partnership	Lead	SFYP, Election manifesto- 3.16 APA-3(1.1,2.1)	Self-financ e project
I6	<p><b>Project title:</b> Modernization and Strengthen of Gazi Wires Ltd.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To increase capacity building, and production capacity for sustaining competitive market;</li> <li>○ Establishing of Modern factory building and machineries to reduce production cost &amp; wastage and ensure opportunity to work in a safe and healthy environment.</li> </ul> <p><b>Implementation period:</b> Oct'2018 – Dec'2021</p>	6898.00	<ul style="list-style-type: none"> <li>■ Construct a factory building;</li> <li>■ Procure various types of machines for production of wire.</li> </ul>	<ul style="list-style-type: none"> <li>● Established of Modern factory building;</li> <li>● Established new facilities to produce good quality wire.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9.0</li> <li>○ Target-9.2</li> <li>○ Indicators- 9.2.2</li> </ul>	Social, Economic and Environment	People, planet, prosperity, peace	Lead	SFYP, Election manifesto- 3.16 APA-3(1.3, 2.4)	

17	<p><b>Project title:</b> Installation and Modernization of Disposable Razor Blade Plant at Bangladesh Blade Factory Ltd.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Disposable Razor Blade Plant Installation for newly production of Disposable Razor Blade.</li> <li>○ Existing Plant Modernization for Quality improvement of Existing product of Double Edge Razor Blade.</li> </ul> <p><b>Implementation period:</b> Oct'2018 – Sep'2020</p>	2501.10	<ul style="list-style-type: none"> <li>■ Procure various type of Machines for production of wire;</li> <li>■ Construct an office building;</li> <li>■ Repair of existing factory building and machinery.</li> </ul>	<ul style="list-style-type: none"> <li>● Established new facility to manufacture of Razor blade;</li> <li>● Constructed new office building.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Indicators- 9.2.2</li> </ul>	Social, Economic and Environment.	People, prosperity, peace and partnership	Lead	SFYP, Election manifesto- 3.16 APA-3(1.9,2.5)	
18	<p><b>Project title:</b> Feasibility Study project of Environment Friendly Ship Re-Cycling Industry at Taltali Upazila in Barguna District</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish a establish an environment friendly ship recycling Industry in Barguna District</li> </ul> <p><b>Implementation period:</b> Oct'2018 – Dec'2019</p>	498.00	<ul style="list-style-type: none"> <li>■ Collect different types of data;</li> <li>■ Prepare various type of modeling, channel design, master plan;</li> <li>■ Techno economic analysis, BOQ,</li> <li>■ Estimate environmental impact assessment plan.</li> </ul>	<ul style="list-style-type: none"> <li>● Produced a detailed report that will help to establish an environment friendly ship recycling industry in Barguna district</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Indicators- 9.2.2</li> </ul>	Social, Economic and Environment.	People, prosperity, peace and partnership	Lead	SFYP, Election manifesto- 3.16, 3.22 APA-3(2.2)	
19	<p><b>Project title:</b> Feasibility study of Dhaka Steel Works Ltd.'s modernization.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish an environment friendly re-rolling Steel mill</li> </ul> <p><b>Implementation period:</b> April 2019- June 2020</p>	308.00	<ul style="list-style-type: none"> <li>■ Techno-economic feasibility study for modernization of Dacca Steel Works Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>● Produced a report that will help to establish an environment friendly re-rolling steel mill</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal-9.0</li> <li>○ Target-9.4</li> <li>○ Indicators- 9.4.1</li> </ul>	Social, Economic and Environment.	People, prosperity, peace and partnership	Lead	SFYP, Election manifesto- 3.16 APA-(1.6,2.7)	3
20	<p>Project title: Construction of Chemical Godown.</p> <p>Objectives:</p> <p>53 warehouses of size 35x35, two office buildings for BSEC and Chemical merchants with other ancillary. Construction of other infrastructures.</p> <p>Implementation period: March 2019 – Dec'2020</p>	9174.46	<p>Construction of offices &amp; 53 warehouses for chemical merchants and others facility for safety of chemical product handling</p>	<ul style="list-style-type: none"> <li>● Established 53 warehouses of size 35x35;</li> <li>● Two office buildings for BSEC and chemical merchants with other ancillary;</li> <li>● Constructed of other infrastructures.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -6.0</li> <li>○ Target-6.3</li> <li>○ Indicators- 6.3.1</li> </ul>	Social, Economic and Environment	People, prosperity, peace and partnership	Associate	SFYP, Election manifesto- 3.16 APA	
<b>Bangladesh Institute of Management (BIM)</b>										
21	<p>Project title: Strengthening of Bangladesh Institute of Management Dhaka Project.</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>○ To construct 12 storied modern building with 2 car parking basements for creating international standard training facilities;</li> <li>○ To provide proper training for increasing capacity</li> </ul>	14786.07	<ul style="list-style-type: none"> <li>■ Construct ten storied modern training complex by 2020;</li> <li>■ Arrange training at home and abroad;</li> <li>■ Procure office equipment and furniture;</li> <li>■ Selection of specific number research proposals;</li> <li>■ Arrange workshop/Seminar;</li> </ul>	<ul style="list-style-type: none"> <li>● Strengthened and developed capacity of BIM, thus skilled manpower;</li> <li>● Established modern training complex;</li> <li>● Developed effectiveness of BIM training courses at least 20%</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.3, 9.4</li> </ul>	Social and economic	People, prosperity and partnership	Lead and Associate	Industry Policy 2016, Election manifesto 2018	



	of the faculty members, officers and staff at home and abroad; o To renovate and repair the existing administrative building (32,250 SqF). Implementation period: 01 April 2018 to 30 June 2021		■ Collaboration/MoU/agreement signed with other 5-8 training Institutions by June 2021 both national and International.	by 2021.						
<b>National Productivity Organisation</b>										
22	<b>Project title:</b> Construction of office building for National Productivity Organisation (NPO) and Department of Patents, Designs and Trademarks(DPDT) with Modern Facilities. <b>Objectives:</b> o To construct a new office building for NPO and DPDT with modern facilities having air condition, audio visual unit and an information centre consisting of a library and IT unit <b>Implementation period:</b> October 2015- June 2020	6592.92	■ Construction of 15 storied office building with two basement; ■ Procurement of office equipment and furniture.	● Established 15 storied office building alongwith two basement for NPO & DPDT ● Created 13239.97 sqm office space at international standard.	o Goal -9 o Target-9.4 o Indicators- 6.3.1	Social, economic and environment	People, prosperity and partnership	Lead	SFYP, Election manifesto- 3.3, 3.21, Industry Policy 2016-8.4	
<b>Bangladesh Sugar and Food industries Corporation</b>										
23	<b>Project title:</b> B.M.R of Carew & Co. (BD) Ltd. (1st Revised). <b>Objectives:</b> o To rehabilitate the 73 years old plant of Carew & Co. (BD) Ltd. sugar unit. o To restore the existing crushing and production capacity. o To modernize the crushing and process equipment to minimize process loss. <b>Implementation period:</b> July 2012 to June 2020.	10221.38	■ Construction of boiler house; ■ Construction of machinery & equipment foundation; ■ Procurement of machinery & equipment; ■ Commissioning of machinery and equipment.	● All infrastructural development taken place; ● Improved sugar production of Carew & Co. (BD) Ltd.	o Goal -9 o Target-9.4	Economic and environment	People and prosperity.	Lead	SFYP, Industrial policy 2016-7.1, Election manifesto- 3.16 APA -5.5.1	
24	<b>Project title:</b> Replacement of Old Machinery and Addition of Machinery for Beet Sugar Production at Thakurgaon Sugar Mills Ltd. (1st Revised). <b>Objectives:</b> o To replace some old machinery of Thakurgaon Sugar Mills Ltd through balancing, modernization and replacement; o To retain the installed cane crushing and sugar production capacity of the mill; o To modernize the crushing and process equipment to minimize process loss; o To produce sugar from beet on experimental basis by addition of some machinery; o To earn additional revenue by diversification of products in addition to sugar; o To meet the countries partial demand of electricity;	48562.00	■ Procurement of machinery; ■ Foundation of machinery and equipment; ■ Installation and commissioning of machinery and equipment; ■ Establishment of sugar refinery, a distillery unit, a beet sugar plant, a bio-gas plant, a bio-compost plant and installation of machinery for co-generation of electricity and BMR at TSM.	● Infrastructural development taken place; ● Production of sugar at TSM increased; ● Experimental beet sugar production in TSM; ● Produced 6 MW electricity; ● Produced 30000 liters alcohol, 11250-meter cube biogas and 48 M.T of bio-compost per day.	o Goal -9 o Target-9.4	Economic and environment	People and prosperity.	Lead	SFYP, Industrial policy 2016- 7.1, Election manifesto- 3.14, 3.15 & 3.16 APA-5.5.2	

	<ul style="list-style-type: none"> <li>○ To reduce the use of Fossil fuel by using Bio-gas and efficient use of Bagasse as fuel.</li> <li>○ To prevent pollution by using the effluent and waste as raw materials in the composite project.</li> <li>○ To reduce the use of conventional energy by using renewable energy derived from Biomass (bagasse) and Biogas thus contribute to CDM (Clean Development Mechanism).</li> </ul> <p><b>Implementation period:</b> July 2013 to June 2021.</p>									
25	<p><b>Project title:</b> Production of Electricity by Co-generation and Establishment of Sugar Refinery at North Bengal Sugar Mills Ltd (1st Revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To earn additional revenue by diversification of products in addition to sugar namely refine sugar, alcohol, electricity, biogas and bio-compost;</li> <li>○ To meet the countries partial demand of electricity;</li> <li>○ To improve the soil health by using bio-compost instead of chemical fertilizer;</li> <li>○ To reduce the use of Fossil fuel by using Biogas and efficient use of Bagasse as fuel;</li> <li>○ To prevent pollution by using the effluent and waste as raw materials in the composite project;</li> <li>○ To reduce the use of conventional energy by using renewable energy derived from biomass and Biogas thus contribute to CDM.</li> </ul> <p><b>Implementation period:</b> February 2014 to June 2021.</p>	32418.00	<ul style="list-style-type: none"> <li>▪ Procurement of machinery;</li> <li>▪ Foundation of machinery and equipment;</li> <li>▪ Installation and commissioning of machinery and equipment;</li> <li>▪ Establishment of sugar refinery, a distillery unit, a bio-gas plant, a bio-compost plant and installation of machinery for co-generation of electricity at NBSM</li> </ul>	<ul style="list-style-type: none"> <li>• Established infrastructure;</li> <li>• Production of sugar at NBSM increased;</li> <li>• Produced 6 MW electricity;</li> <li>• Produced alcohol, biogas and bio-compost.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.4</li> </ul>	Economic and environment	People and prosperity.	Lead	SFYP, Industrial policy 2016-7.1, Election manifesto-3.15 & 3.16, APA- 5.5.3	
26	<p><b>Project title:</b> Establishment of Effluent Treatment Plant (ETP) at 14 Sugar Mills.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To ensure a pollution free healthy environment of the adjacent areas of the sugar mills for man and animals;</li> <li>○ To save the terrestrial and aquatic eco-systems from non-biodegradable heavy metals;</li> <li>○ To save the environment of the adjacent areas of the sugar mills from obnoxious odour and unpleasant colour of the effluent;</li> <li>○ To protect the agricultural land, water bodies and irrigation water from the adverse effect of suspended solids of a sugar mill which contains heavy metals and effluent sludge.</li> </ul> <p><b>Implementation period:</b> July 2018 to June 2020.</p>	8510.31	<ul style="list-style-type: none"> <li>▪ Procurement of machinery &amp; equipment;</li> <li>▪ Construction of machinery &amp; equipment foundation;</li> <li>▪ Installation &amp; commissioning of machinery &amp; equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Save the environment from degradation;</li> <li>• Save the terrestrial &amp; aquatic eco-system;</li> <li>• Protection of agricultural land &amp; irrigation water from pollution.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -12</li> <li>○ Target-12.4</li> </ul>	Social and environment	People, planet and prosperity	Associate	SFYP, Industrial policy 2016-7.1, Election manifesto-3.16, APA -5.5.4	

27	<p><b>Project title:</b> BSCIC Industrial Park, Sirajganj (3rd revised)</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish an industrial park of 400 acres of land for developing 820 industrial plots;</li> <li>○ To provide on-site infrastructure, utilities and facilities to the private sector entrepreneurs for establishing 570 industrial units in the industrial park.</li> </ul> <p><b>Implementation period:</b> July 2010-June 2021</p>	62810	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of road, drain, culvert, utilities: electricity, water, gas and other relevant facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 820 industrial plots and established 570 industrial units;</li> <li>• Generated employment about 1.00 lac people;</li> <li>• Contributed to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and prosperity	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal-I, Election manifesto 2018	
28	<p><b>Project title:</b> BSCIC Industrial Park, Tangail.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish an industrial park of 50 acres of land for developing 271 industrial plots;</li> <li>○ To provide on-site infrastructure, utilities and facilities to the private sector entrepreneurs for establishing 250 industrial units in the industrial park.</li> </ul> <p><b>Implementation period:</b> July 2015-June 2020</p>	29575.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Retaining wall;</li> <li>▪ Construction of office building &amp; infrastructure, pump driver quarter &amp; pump house, road construction &amp; boundary wall;</li> <li>▪ Deep tube well, electric &amp; Gas line, drainage facilities, dumping yard;</li> <li>▪ Construction of culvert and solar panel (1250watt).</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 271 industrial plots and established 250 industrial units;</li> <li>• Generated employment about 6,500 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and prosperity	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
29	<p><b>Project title:</b> Active Pharmaceuticals Ingredients Industrial Park (3<sup>rd</sup> revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish an environmentally suitable Industrial Park to produce Active pharmaceutical ingredients;</li> <li>○ To provide on-site infrastructure, utilities and facilities to the private sector entrepreneurs for establishing 42 industrial units;</li> <li>○ To facilitating a steady supply of raw materials of drugs to reduce import dependency.</li> </ul> <p><b>Implementation period:</b> January 2008-June 2020</p>	38100.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house;</li> <li>▪ Road construction, firefighting arrangement;</li> <li>▪ Establish deep tube well, water supply line, electric &amp; gas line, retaining &amp; boundary wall;</li> <li>▪ Establish CETP, dumping yard and incinerator;</li> <li>▪ Construction of box culvert, Main gate, drainage facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed industrial plots and established 42 industrial units;</li> <li>• Generated employment about 2,500 people;</li> <li>• Earned foreign currency;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Economic, social, and environment	People and prosperity	Co-lead and Lead	SFYP 2.2, 3.2, Industrial policy 2016 6.1, Delta plan goal I, Election manifesto 2018	
30	<p><b>Project title:</b> BSCIC Chemical Industrial Park, Munshigonj.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Building a chemical park with all types of infrastructural facilities aimed at transferring the old factories and warehouse of old Dhaka/ establishing an environmentally friendly park in relatively less populated area of the Dhaka City.</li> </ul> <p><b>Implementation period:</b> July 2018-June 2022</p>	161573.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house;</li> <li>▪ Road construction, fighting arrangement;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line</li> <li>▪ Construction of boundary wall &amp; gate;</li> <li>▪ Establish CETP, dumping yard and incinerator;</li> <li>▪ Construction of drain &amp; culvert, drainage facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed industrial plots and established industrial units;</li> <li>• Established an environmentally friendly chemical park;</li> <li>• Conservation of environment.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social, economic and environment.	People, Planet, partnership and peace.	Co-lead and Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	

31	<p><b>Project title:</b> Extension of Gopalganj BSCIC Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To meet up entrepreneurs increasing demand for developed plots through extension of existing industrial estate in 50 acres of land;</li> <li>○ To provide on-site infrastructure, utilities and facilities to the private sector entrepreneurs for establishing 360 industrial plots in the industrial estate;</li> <li>○ To reduce poverty through establishing approximately 250 industrial units for SMEs in the estate.</li> </ul> <p><b>Implementation period:</b> July 2010-June 2020</p>	I0283.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house;</li> <li>▪ Construction. road, drain &amp; culvert, boundary wall &amp; gate;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line, solar panel;</li> <li>▪ Rainwater preservation reservoir.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 360 industrial plots and 250 units for SMEs;</li> <li>• Generated employment about 2500 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFY-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
32	<p><b>Project title:</b> Extension of Dhamrai BSCIC Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To meet up entrepreneurs increasing demand for developed plots through extension of existing industrial estate in 12.49 acres of land;</li> <li>○ To provide on-site infrastructure, utilities and facilities to the private sector entrepreneurs for establishing 72 industrial plots in the estate;</li> <li>○ To reduce poverty through establishing approximately 60 industrial units in the estate.</li> </ul> <p><b>Implementation period:</b> January 2015-December 2019</p>	3705.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of bungalow, road, drain &amp; culvert, boundary wall and gate;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 72 industrial plots of which 60 units for SMEs;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFY-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
33	<p><b>Project title:</b> Extension of Narsingdi BSCIC Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To attract entrepreneurs by providing an integrated infrastructure in one location;</li> <li>○ To increase the contribution of SMEs in GDP;</li> <li>○ To create employment opportunities in the SME sector;</li> <li>○ To reduce the environmental and social impact of the industrial uses.</li> </ul> <p><b>Implementation period:</b> July 2015-June 2019</p>	8801.47	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house, road, drain, culvert, boundary wall, gate and dumping yard;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line, solar panel;</li> <li>▪ Pala siding work and plantation.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 135 industrial plots for SMEs;</li> <li>• Generated employment about 5750 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFY-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
34	<p><b>Project title:</b> Extension of Madaripur BSCIC Industrial Estate.</p>	6060.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 158 SME plots;</li> <li>• Generated employment about</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> </ul>	Social and economic	People and partnership	Lead	SFY-2.2, 3.2,	
35	<p><b>Project title:</b> Rajshahi BSCIC Industrial Estate-2.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To extent existing Rajshahi BSCIC industrial estate consisting 50 acres of land;</li> </ul>	13174.24	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house, road, drain, box culvert, boundary wall, gate</li> </ul>	<ul style="list-style-type: none"> <li>• Developed industrial plots and established industrial units;</li> <li>• Generated employment about 2,500 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFY-2.2, 3.2, Industrial policy 2016-6.1,	

	<ul style="list-style-type: none"> <li>○ To attract entrepreneurs by providing an integrated infrastructure in one location;</li> <li>○ To increase the contribution of SMEs in GDP;</li> <li>○ To create employment opportunities in the SME sector.</li> </ul> <p><b>Implementation period:</b> July 2014-June 2019</p>		<ul style="list-style-type: none"> <li>▪ and dumping yard;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line, solar panel;</li> <li>▪ Pala siding work and plantation.</li> </ul>						Delta plan goal I, Election manifesto 2018	
36	<p><b>Project title:</b> BSCIC Industrial Estate, Borguna.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To meet up entrepreneurs increasing demand for developed plots;</li> <li>○ To establish small and medium industrial units for new entrepreneurs.</li> </ul> <p><b>Implementation period:</b> July 2011-December 2020</p>	1808.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building &amp; other infrastructure, road, drain, boundary wall, gate and dumping yard;</li> <li>▪ Setting up water supply line, electric &amp; gas line.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed industrial plots and established industrial units;</li> <li>• Generated employment about 2,200 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
37	<p><b>Project title:</b> BSCIC Industrial Estate, Chuadanga.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish industrial estate in the environment friendly place of Chuadanga district;</li> <li>○ To establish 158 small and medium industrial units for new entrepreneurs.</li> </ul> <p><b>Implementation period:</b> July 2014-June 2020</p>	4280.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building, pump driver quarter &amp; pump house, road, drain, box culvert, boundary wall, gate and dumping yard;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>▪ Pala siding work at pond and rainwater preservation reservoir.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed industrial plots and established 158 industrial units;</li> <li>• Generated employment about 8,000 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	

38	<p><b>Project title:</b> Tannery Industrial Estate, Dhaka (3rd Revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To attract foreign investment by setting up an eco-friendly industrial estate, Dhaka to provide infrastructure for the leather industry entrepreneurs and increase production and export contribute of economic growth by creating employment and developing &amp; modernizing the tannery industry;</li> <li>○ To shift 155 leather industries in an environment friendly place through protecting the environment by controlling the contamination of waste emitted from leather industries;</li> <li>○ For the production of leather and leather products to create pollutant free environment with the necessary infrastructure facilities.</li> <li>○ Establish integrated STP with a CTEP;</li> </ul> <p><b>Implementation period:</b> January 2003-June 2019</p>	107871.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building &amp; other infrastructure, pump driver quarter &amp; pump house, road, drainage, box culvert, boundary wall, gate and dumping yard;</li> <li>▪ Construction of firefighting arrangement and police Station;</li> <li>▪ CETP with integrated STP &amp; SPGS</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>▪ Tree plantation</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 250 industrial plots and established 155 tannery industries;</li> <li>• Generated employment about 1.00 lac people;</li> <li>• Earned foreign currency;</li> <li>• Contribution to export and national GDP;</li> <li>• Conservation of environment.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social, economic and environmental	People, peace, planet and prosperity	Co-lead and Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
39	<p><b>Project title:</b> BSCIC Industrial Estate, Bhairab (1st Revised).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To establish an industrial estate with ancillary facilities;</li> <li>○ To reduce poverty through establishing industrial estate;</li> <li>○ To increase contribution to GDP in the industrial sector through the industrialization and employment generation.</li> </ul> <p><b>Implementation period:</b> July 2012-June 2018</p>	7291.00	<ul style="list-style-type: none"> <li>▪ Land acquisition and land development;</li> <li>▪ Construction of office building &amp; other infrastructure, pump driver quarter &amp; pump house, road, drainage, boundary wall and gate;</li> <li>▪ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>▪ Pala siding work at pond Plantation.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed 247 industrial plots;</li> <li>• Generated employment about 3,800 people;</li> <li>• Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	

40	<p><b>Project title:</b> Poverty Reduction through Inclusive &amp; Sustainable Markets (PRISM).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Reduced poverty across Bangladesh by promoting sustainable pro-poor growth.</li> </ul> <p><b>Specific:</b></p> <ul style="list-style-type: none"> <li>○ Enhance competitiveness of cottage and small enterprises in order to create increased job opportunities in targeted areas and sub-sectors;</li> <li>○ Increased household income and social welfare gains; and</li> <li>○ Involvement of more female in income generation activities especially in entrepreneurs, managers and workers.</li> </ul> <p><b>Implementation period:</b> January 2015-December 2024</p>	Total: 32490.00 (2490.00 & P.A 30000.00)	<ul style="list-style-type: none"> <li>▪ Launching call for proposals and contracting;</li> <li>▪ Establishment of an Online ISS;</li> <li>▪ Establishment of appropriate project and program monitoring and impact assessment systems;</li> <li>▪ Linkage between specialized vocational training courses/on-job-training/apprenticeship and the SMI sector;</li> <li>▪ Capacity building and up- gradation of BSCIC and BIOs;</li> <li>▪ Strengthening of linkages between BSCIC and the wider economic development community;</li> <li>▪ Information Exchange Program to scaling up and replication of project innovations and learning.</li> </ul>	<ul style="list-style-type: none"> <li>• Pro-poor economic development sub projects in the SMCI sector successfully developed and implemented;</li> <li>• Increased supply and quality of vocational and technical training supports to the SMCI sector;</li> <li>• Capacity of BSCIC and of other Business Intermediary Organizations (BIOs)-active in the area of SMCI support strengthen;</li> <li>• Quality of institutional and policy support provided to the SMCI sector improved.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.I, Delta plan goal I, Election manifesto 2018	
41	<p><b>Project title:</b> Repair and Modernization of 4 Skill Development Training Centers of BSCIC.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To develop skill manpower through reconstruction and modernization of 4 skill development centre with existing 15 SDC;</li> <li>○ To provide enable and effective skill development environment through reconstruction of 3SDC multistoried building with dormitory and supply modern training equipment;</li> <li>○ To create enable training environment for the trainees through the reconstruction and modernization of 4 SDC.</li> </ul> <p><b>Implementation period:</b> January 2015-December 2019</p>	2493.00	<ul style="list-style-type: none"> <li>▪ Construction of 3 storied training and dormitory with 6 storied foundation of (Pabna, Narsinghdi and Cumilla) at 3 SDC and construction of one storied at Gopalganj SDC;</li> <li>▪ Procure of training equipment, furniture and office equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Developed infrastructure for training centers;</li> <li>• Well-equipped training centre;</li> <li>• Management system developed;</li> <li>• Skilled manpower.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.I, Delta plan goal I, Election manifesto 2018	
42	<p><b>Project title:</b> Construction of Multi-Storied Building of BSCIC at Tejgaon.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To construct a multi-storied building for BSCIC headquarters;</li> <li>○ To transfer of all offices in the same building from the present BSCIC headquarters;</li> <li>○ To establish regional office and project offices to the same building.</li> </ul> <p><b>Implementation period:</b> July 2015-June 2019</p>	6200.00	<ul style="list-style-type: none"> <li>▪ Construction of office building, boundary wall, gate and drainage facilities;</li> <li>▪ Setting up water supply line, electric &amp; gas line;</li> <li>▪ Establish firefighting system.</li> </ul>	<ul style="list-style-type: none"> <li>• Established office building with modern facilities;</li> <li>• Developed environment friendly and decent workplace.</li> </ul>		Social and Environment	People and prosperity		SFYP-2.2, 3.2, Industrial policy 2016-6.I, Delta plan goal I, Election manifesto 2018	

43	<p><b>Project title:</b> BSCIC Plastic Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Transfer of unplanned plastic factory from old Dhaka city to a convenient environment friendly location;</li> <li>○ Provide support for producing quality plastic materials;</li> </ul> <p><b>Implementation period:</b> July 2015-June 2019</p>	13300.00	<ul style="list-style-type: none"> <li>■ Land acquisition and land development;</li> <li>■ Construction of office building, pump driver quarter &amp; pump house, road, drainage, dumping yard, retaining wall, boundary wall and gate;</li> <li>■ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>■ Fire station, solar panel and rainwater preservation reservoir.</li> </ul>	<ul style="list-style-type: none"> <li>● Developed 360 industrial plots and established 250 units for SMEs;</li> <li>● Generated employment about 18,000 people;</li> <li>● Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social, economic and environment	People, prosperity, partnership and planet	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
44	<p><b>Project title:</b> BSCIC Printing Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To facilitate relocation of printing industries which have established in an unplanned way in the different spots of Dhaka city &amp; other places to an environmentally suitable place;</li> <li>○ To alleviate poverty through creation of employment generation as well as accelerating of economic growth and thereby raise of contribution to GDP.</li> </ul> <p><b>Implementation period:</b> January 2016-December 2019</p>	13870.00	<ul style="list-style-type: none"> <li>■ Land acquisition and land development;</li> <li>■ Construction of office building, pump driver quarter &amp; pump house, road, drainage, dumping yard, retaining wall, boundary wall and gate;</li> <li>■ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>■ Pala siding work and rainwater preservation reservoir.</li> </ul>	<ul style="list-style-type: none"> <li>● Developed 377 industrial plots and established industrial units;</li> <li>● Generated employment about 15200 people;</li> <li>● Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social, economic and environment.	People, prosperity, partnership and planet	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
46	<p><b>Project title:</b> BSCIC Electric Goods Manufacturing and Light Engineering Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To relocate and establish new industrial units of electrical goods manufacturing and light engineering industries in a potential and environment friendly location;</li> <li>○ To increase the contribution of SME in GDP;</li> <li>○ To create employment opportunities of about 10650 persons through establishing SME units in the estate.</li> </ul> <p><b>Implementation period:</b> July 2016-June 2019</p>	28057.08	<ul style="list-style-type: none"> <li>■ Land acquisition and land development;</li> <li>■ Construction of office building, pump driver quarter &amp; pump house, road, drainage, dumping yard, boundary wall and gate;</li> <li>■ Setting up deep tube well, water supply line, electric &amp; gas line;</li> <li>■ Solar panel and tree plantation.</li> </ul>	<ul style="list-style-type: none"> <li>● Developed 351 industrial plots and established 305 industrial units;</li> <li>● Generated employment about 10,650 people;</li> <li>● Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social, economic and environment.	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	



47	<p><b>Project title:</b> BSCIC Industrial Estate Rawjan.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To established industry based on use of local raw materials and to meet up entrepreneurs increasing demand for creating developed plots;</li> <li>○ To attract entrepreneurs by providing an integrated infrastructure in one location;</li> <li>○ To increase GDP through establishing SMEs.</li> </ul> <p><b>Implementation period:</b> July 2016-June 2019</p>	7984.00	<ul style="list-style-type: none"> <li>■ Land acquisition and land development;</li> <li>■ Construction of office building, pump driver quarter &amp; pump house, road, drainage, dumping yard, retaining wall, boundary wall and gate;</li> <li>■ Setting up deep tube well, water supply line, electric &amp; gas line;</li> </ul>	<ul style="list-style-type: none"> <li>● Developed 96 industrial plots and established 148 units for SMEs;</li> <li>● Generated employment about 7,500 people;</li> <li>● Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -8, 9</li> <li>○ Target-8.1, 8.3, 9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
48	<p><b>Project title:</b> Development of undeveloped area and repair/reconstruction of developed area of BSCIC Industrial estate, Barisal.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To develop residual undeveloped area of BSCIC Barisal Industrial Estate for establishing 100 SMEs unit;</li> <li>○ To repair/reconstruct developed area of existing BSCIC Industrial Estate;</li> <li>○ To meet up entrepreneurs increasing demand for establishment of SME units in the estate;</li> <li>○ To increase productivity of the existing SME.</li> </ul> <p><b>Implementation period:</b> January 2017-December 2019</p>	5220.00	<ul style="list-style-type: none"> <li>■ Land development;</li> <li>■ Construction of office building, pump driver quarter &amp; pump house, road, drainage, dumping yard, retaining wall, boundary wall, Side wall, and gate;</li> <li>■ Setting up deep tube well, water supply line, electric &amp; gas line;</li> </ul>	<ul style="list-style-type: none"> <li>● Developed 37.59 acre of land;</li> <li>● Developed 100 industrial plots for SMEs;</li> <li>● Contribution to national GDP.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	
49	<p><b>Project title:</b> Development of SatranchiShilpo, Rangpur (2nd Phase).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ To impact skill development training among 2775 weavers on satranchishilpa for upgrading their socioeconomic development by 2019;</li> <li>○ To provide credit facilities of Tk. 285.28 lacs among the weavers</li> <li>○ To facilitate training for the entrepreneurs through establishing a permanent centre;</li> <li>○ To create employment opportunity through self-employment of 2500 persons by establishing 700 satranchishilpa units.</li> </ul> <p><b>Implementation period:</b> July 2016-June 2019</p>	1104.00	<ul style="list-style-type: none"> <li>■ Impart training;</li> <li>■ Establish training and production centre;</li> <li>■ Provide credit facilities;</li> <li>■ Employment generation (2,500).</li> </ul>	<ul style="list-style-type: none"> <li>● Skilled and trained manpower;</li> <li>● Increased quality &amp; productivity and diversified satranchishilpa;</li> <li>● Established training, sales and display centre.</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016-6.1, Delta plan goal I, Election manifesto 2018	

50	<p><b>Project title:</b> Extension of Jamalpur BSCIC Industrial Estate.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>○ Expansion of Jamalpur BSCIC Industrial Estate to lease 50 acres of developed land from BEZA;</li> <li>○ To developed industrial plots in the expanding industrial estate;</li> <li>○ To create employment opportunities by establishing new SMEs units in the estate.</li> </ul> <p><b>Implementation period:</b> July 19-Dec 20</p>	4604.05 1	<ul style="list-style-type: none"> <li>■ Acquire of 50 acres land from BEZA;</li> <li>■ Procurement of vehicle, furniture and office equipment.</li> </ul>	<ul style="list-style-type: none"> <li>● Developed industrial plots;</li> </ul>	<ul style="list-style-type: none"> <li>○ Goal -9</li> <li>○ Target-9.2</li> <li>○ Ind.-9.2.1, 9.2.2</li> </ul>	Social and economic	People, prosperity and partnership	Lead	SFYP-2.2, 3.2, Industrial policy 2016- 6.1, Delta plan goal 1, Election manifesto 2018	
----	---	-----------	--	---	--	---------------------	------------------------------------	------	--	--

## v. Capacity development and special events related to SDGs

Bangladesh experiences unsustainable industrialization, especially with respect to insufficient food processing including fruits, vegetables, spices and sugarcane; localization of dress producing industries; professional and technological drawback in leather, hide and footwear processing; inorganic fertilizer production; and lack of technological innovation for spare parts production. Bangladesh has resources to reverse the current situation by way of capacity building and implementing sustainable development in line with the requirements for achieving SDGs

**Ministry of Industries (MoInd)** is working on SDG targets 2.3 (2.3.2), 9.2, 9.3 and 9.4 as lead ministry. MoInd has arranged a notable number of trainings, meetings, seminars, workshops etc. and some special events as part of the capacity building programmes for implementing SDGs. On 1st February 2018, a meeting was held in the Ministry with the focal point officials of the other relevant Ministry/Division having the role of co-lead and associates on the aforesaid targets. Later, on 1st July 2018 a meeting was held to achieve the targets of the SDGs in MoInd with senior officials (additional secretary, joint secretary and head of offices/organizations) working under the Ministry along with the focal point officials. A National Conference was held on 5<sup>th</sup> July 2018 with the title 'SDG implementation Review (SIR)'. A day long workshop on fixing the roles/responsibilities of MoInd regarding the SDGs was held on 26<sup>th</sup> December 2018. On 6<sup>th</sup> January 2019, a follow-up meeting was held to update the Action Plan for implementing SDGs. Side by side, a discussion meeting was held on implementation of SDG on 25 February 2019. On 3rd March 2019 a meeting was held on publishing a Book titled 'Mainstreaming SDGs for the Ministry of Industries' as a guideline to implement SDGs relating to MoInd. In implementing SDGs as an associate, the activities of MoInd, a meeting was held on 4<sup>th</sup> March 2019. Later, a training program with the focal points and alternate focal points was held on 20<sup>th</sup> March 2019. On 24<sup>th</sup> March 2019 again a meeting was held with the focal point officials of the lead, co-lead and associate ministry/division for implementing SDGs. After that discussion meeting was held on 16<sup>th</sup> April 2019 with focal points on determining cluster wise activities of SDGs. On the same day, a meeting was arranged for publishing a Book on SDGs in Bangladesh.

To determine the cluster-wise activities a discussion meeting was held with the Focal Points of different organizations under the Ministry on 16<sup>th</sup> April 2019. On the same date a meeting of Editorial Committee to publish the book 'Mainstreaming SDGs for Ministry of Industries' was held. From 14-26 October 2019 20 officials from the Ministry and its different organizations attended in a training program as titled 'Capacity Building Program for SDG Localization for Sustainable Industrialization in Bangladesh'. The training took place in the Curtin University of Australia. Later, day long training program was arranged in the Ministry where Dr. Mustafa Moinuddin, Senior Policy Researcher and Research Manager of IGES, Japan presented a 'Draft Report on Integrated Approach to SDG (Bangladesh Case Study)'. Later, a Feedback Seminar on 'Understanding Bangladesh in terms of Localization of Industries: SDG 9 perspective' was arranged in the ministry where Professor Dr. Amzad Hossain of Curtin University presented a keynote paper. Ministry of Industries was selected as the Coordinating Ministry to coordinate all the target-oriented activities of SDG 9 by the government. To that end, a 'Consultation Workshop on SDG Implementation: Progress of Goal 9' was held in the Ministry of Industries on 13<sup>th</sup> January 2020. On 5<sup>th</sup> February 2020, a Feedback Presentation on 'Action Research Projects' was also held in the ministry. Officers took training from Curtin University

and the Focal Points and alternate Focal Points of different organizations under the Ministry attended the presentation sessions. In the Presentation Professor Dora Marinova of Curtin University shared views with the participants. In the Feedback presentation a total of 5 Groups presented their Action Research Projects. The projects are: (i) Strengthening product Development and Marketing Capacity of MSMEs: Leather Cluster Perspectives, (ii) Action Research on Technology Incubation for Light Engineering Sector (LES) of Bangladesh, (iii) Implementation of Green Industrialization in the BSCIC Industrial Park, Sirajganj. (iv) Zero waste Discharge in Sugar Industries in Bangladesh Sugar and Food Industries Corporation (BSFIC) and (v) Indigenous Technology Adoption in Training Institution for Chemical Industries (TICI).





**Bangladesh Institute of Management (BIM)** is focusing on the SDGs targets assigned to Ministry of Industries, BIM has sketched out an action plan and is working in accordance with that. Three of the BIM's faculty member took part in the 2-days training on SDG in August 2017 held at National Local Government Institute (NILG). Another faculty member had received the Training of Trainers on 'Core Principles and Philosophy of SDGs: An Implementation Perspective' organized by Governance Innovation Unit, Prime Minister's Office in June 2017 and also the Training of Trainers Course on 'Sustainable Development Goals' held at Bangladesh Civil Service Administration Academy in February, 2018. The focal point and alternative focal point officers for SDGs desk of BIM have received "Capacity Development Program for SDG Localization for Sustainable Industrialization in Bangladesh" at Curtin University, Perth, Australia in October 2019.

Considering the importance of learning SDGs, BIM had designed and piloted one-day training on it in July 2017. Focusing on SDG target 13.3, a tool-based session on climatic change was incorporated in the regular training on Supply Chain Management by the support from GIZ in 2018. Sessions on 'SDGs related budgeting' and 'SDGs and Public Procurement' were also included, respectively, in the customized trainings on 'Rules and Regulation of Upazila Parishad' and 'Procurement Training for SESIP Project Officials' delivered to over two hundred government officers.

BIM has participated in the national rollout training program for SDG localization organized by Governance Innovation Unit, Prime Minister's Office. In the month of November 2019, an orientation program on 'SDG and Localization of Industries in Bangladesh' was delivered to the faculty members and officers working in BIM.



Assigned by the GIU, PMO, Mohammad SayeedurRahman, MC, BIM, had participated in the SDG localization program in AdamdigiUpazila, Bogura, as the keynote speaker on 29<sup>th</sup> April, 2019



An orientation program on 'SDG and Localization of Industries in Bangladesh' was delivered to the faculty members and officers working in BIM on 28<sup>th</sup> November, 2019

**Department of Patent, Design and Trademarks(DPDT)** is organizing awareness and capacity building programs like meeting, seminar, workshops etc. on Intellectual Property to support *Research and Innovation* to achieve Goal 9b of Sustainable Development Goal (SDG). Up to June 2019 more than 1280 scientist/ researcher and related stakeholders have been trained through 11 meeting / seminars. Apart from that DPDT has also emphasized on capacity building of the officers. Few officials are trained from the local institutions including Ministry of Industries and few officials are trained from international institutions like World Intellectual Property Organizations(WIPO). One of the officials has participated in two weeks training program on SDG localization for sustainable industrialization in Bangladesh which is organized in Curtin University, Australia.



Awareness Program on Intellectual Property Rights (IPRs) (28, April 2019)



Round Table Discussion about IP at MCCI, Dhaka, Bangladesh

**Bangladesh Steel and Engineering Corporation (BSEC)** has been conducted 4 (Four) training course under which 100 (one hundred) officers are imparted training on "Office Management", "Accounting Management Strategy and Application", "Marketing Management Strategy & Application" and "Industrial Automation Based on PLC(Programmable Logic Control)". BSEC marketing department has taken the opportunity of conducting marketing strategy use and they are given adequate knowledge on marketing management techniques and they are now able to conduct strategic marketing activities competing with both public and private sectors. For outlining marketing planning and strategy, 5 (five) workshops were conducted both in BSEC and in industries level where relevant officers participated to exchange their ideas and views. These ideas were used during the preparation of the said marketing planning and strategy. These training and workshop were necessary for inclusive and quality education to improve human resource development.



Mr. Md Abdul Halim, Secretary, Ministry of Industries is presiding over the session of technical training program

**National Productivity Organization (NPO)** has given some responsibility to promote productivity and quality as per National Industrial Policy-2016. There is a co-relation between productivity and sustainable development. Investing in sustainable development Goals (SDGs) can also foster productivity. For achieving the targets of SDGs; Industrialization, Economic Growth, Competitiveness and Productivity have significant role. NPO has started to work align with UN stated SDGs for some indicators. NPO have been working on some project name ‘Measurement of Labour Productivity level of Bangladesh’; “Training on food processing and agro business industries”; “Entrepreneurship Development”; “Energy Conservation and Green productivity” in 2018-18 to 2020-21 for achieving the targets of 2.3, 9.2, 9.4.

**Bangladesh Industrial Technical Assistance Center (BITAC)** has taken many initiatives to implement Sustainable Development Goals (SDG) targets aligning with the national initiatives and programmes. Main focus has been given how to improve the quality of training to produce skilled workforce and employment creation. BITAC is also implementing the construction of a Workshop cum Training Complex under SEIP project with all machinery and equipment. Moreover, there is another project is under preparation to strengthen BITAC through capacity building of the employees as well as machinery.



Female trainees are in hands on training



Honorable Industry Minister and State Minister, Industry Secretary visiting BITAC workshop



**BSTI** has taken some short term, midterm & long-term initiative on waste management considering vision 2021, 2041 & SDGs. BSTI has planned to encourage the industries about waste management those will come to BSTI for license. To Reuse, Reduce & Recycle the plastic material BSTI is going to impose some rules on product labeling.

Training Institute for Chemical Industries (TICI) of **Bangladesh Chemical Industries Corporation (BCIC)** conducts subject wise and quality training programs that are suitable for working in industries.

By these training programs every year almost 1700 people from different industries, public and private universities are trained up for industrial production. TICI also provides training programs for apprentices who are appointed in different private and government industries after the training programs. For building strong human resources TICI conducts training programs with modern and new technology equipment. In this respect TICI works for SDG 4.3. TICI conducts training programs related to environment protection like Environment Pollution Monitoring and Control, Wastewater Treatment Techniques. By these training programs trainees are trained up for implementing target 12.5 (sustainable productions)



Conducting Training Program in TICI



Conducting Training Program in TICI lab

Regarding SDG implementation the **Office of the Chief Inspector of Boilers** provides necessary Technical guidance for quality control of local made boiler and Certification of Boiler attendants after conducting examination of assistant boiler attendants



Boiler Manufacturing Stage Inspection  
(Ultrasonic Flow Detection Test)



Boiler Attendance Examination

Since its inception, **Bangladesh Accreditation Board (BAB)** has arranged different capacity development programs for its staff at home and abroad. BAB has also arranged 25 assessor trainings on different accreditation standards where experts from national/multinational organizations have received the training to become BAB assessor. More than 500 assessors in different technical fields have been developed to work for BAB in different arena. Moreover, it regularly arranges different training-workshops for the technical personnel working in different laboratories, inspection bodies and



certification bodies. Through 29 general and technical trainings, a total of 900 persons from national and multinational organizations have been given training who are contributing in national quality.



Honorable Industries Minister handing over BAB Accreditation Certificate to DG BSTI in a certificate giving ceremony where Honorable Industries State Minister and Industries Secretary were seen in the picture



Director General, BAB, Mr. Md. Monwarul Islam (Additional Secretary) with all participants and resource persons of the 24th Assessor Training Course on ISO/IEC 17020:2012 held in Dhaka from 03-07 February 2019.

**Small Medium Enterprise Foundation (SMEF)** arranged various workshops and seminars as part of the capacity building for SME personnel as well as for other stakeholders on 'Role of SMEs for achieving SDGs', 'Financial Literacy on SME Banking', 'Relationship Banking & Sustainable Financing: Experiences of SMEF', 'Non-Financial Challenges for Women SMEs and Way Forward'. Moreover, it arranged some Training Program on 'Social Commerce for SMEs' and 'e-Marketing for SMEs'. Besides that, a dissemination Program of the Study Report on 'Women Entrepreneurs in SMEs: Bangladesh Perspective' have also been held in 2017.



In order to increase capacity building on SDGs, **Bangladesh Small and Cottage Industries Corporation** sends its officers to participate different training, seminar, workshop. BSCIC is the pioneer organization for industrialization in Bangladesh. Currently this corporation is providing technical training through its Skill Development Centre (SDC) of which SDG 4.3 is being ensured. Small and Cottage Industries Training Institute (SCITI) which is a training institute of BSCIC is providing

training to the potential entrepreneur for the sustainable industrialization in Bangladesh and this activity will reflect on SDG 4.4.

## vi. Strategy to Implement SDG Action Plan

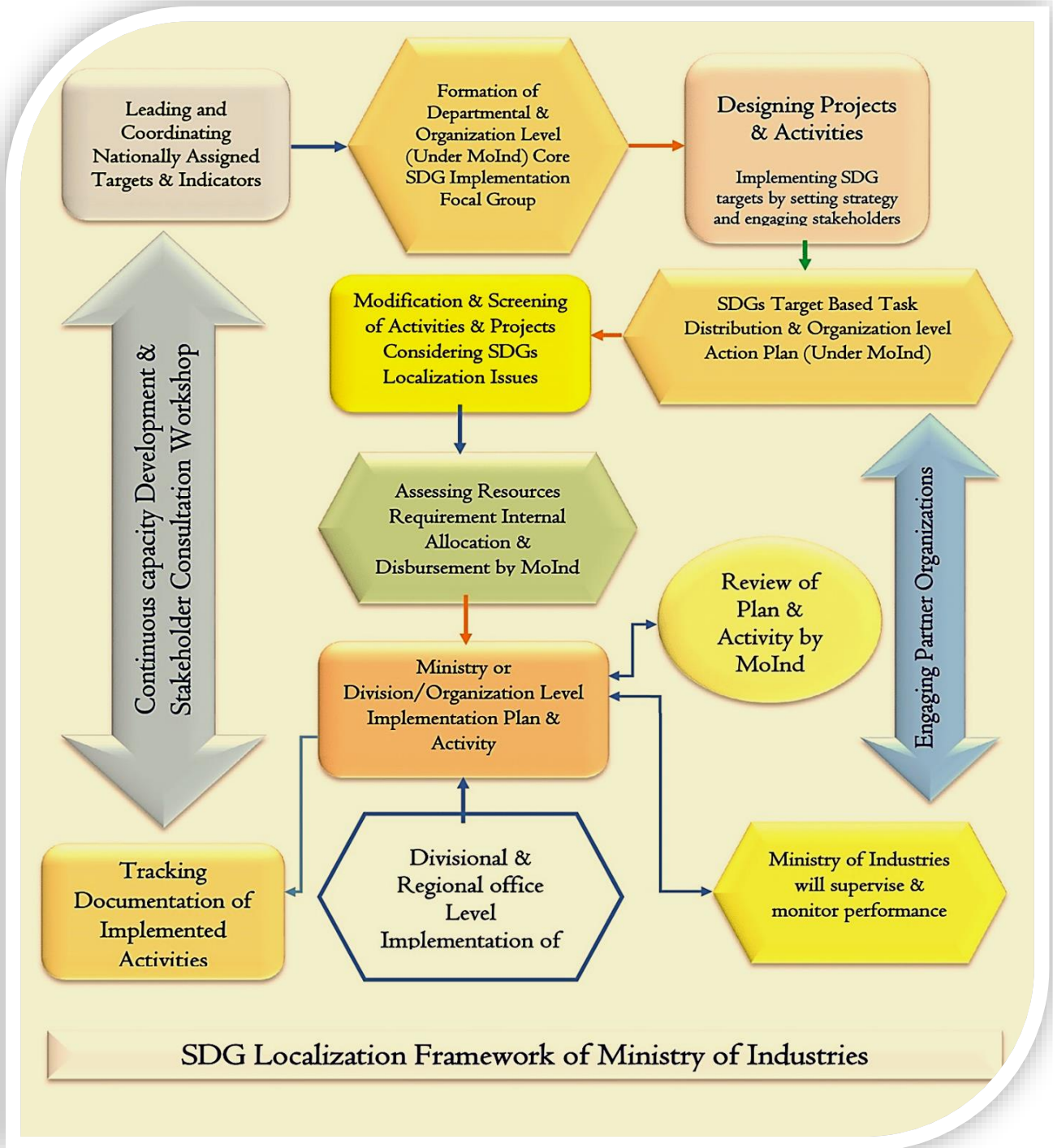
Successful implementation of SDGs in Bangladesh largely depends on effectively integrated national planning as well as localization. Thus, the strong initiatives to achieve SDGs, responsibility mapping for working ministries and stakeholders was done to fully integrated into the national development plan and strategies where segregation of duties ensured to depict and prioritize action to implement.

Ensuring localization and inclusiveness not sufficient condition to materialize what SDGs are meant for that is inclusiveness to leave no one behind and reach the furthest behind. Government has put forward proposal for a framework to implement schematic localization model involving government agencies and local government bodies. Natore district administration by this time has put into practice this localization model at district level action programme for all government agencies of Natore district. The experience of implementing Millennium Development Goals pilot projects based on localization framework at Upazila level and those experiences can be replicated and extended in attaining the SDGs. Localization of SDGs focused on (39+1) targets based on context and priority for Bangladesh.

In recognition of the fact the government has adopted a "whole of society" approach for implementation and attainment of the SDGs. As part of this, consultations were held on stakeholders' engagement on the SDGs implementation involving the concerned Ministries/ Divisions, NGOs, CSOs, business community, development partners, ethnic minorities, professional groups, Industry Associations, Labour Associations, and the media. In fine, for inclusive attainment of the SDGs, participation of all stakeholders is a must. Coordination among ministries and government agencies can only ensure attainment of SDG targets at the grass-roots level.

**SDGs Localization of MoInd:** Ministry of Industries has developed a dynamic SDG Localization Framework for selecting, implementing and monitoring activities. The idea is to promote local resource utilization, reutilizing utilization of traditionally skilled workforce and up-skilling traditional knowledge and infrastructure with required facilities that will ensure benefits for rural level people by reducing pollution. The localization framework starts with Formation of Departmental & Organization Level (Under MoInd) Core SDG Implementation Focal Group where focal and alternative focal persons are working to initiate SDGs focused activities and help to implement





SDGs in organization level. Ministry and entities under ministry will Designing Projects & Activities for implementing SDG targets by setting strategy and engaging stakeholders. After designing target-based task Distribution will be ensured by ministry of industry that will be listed in organization level Action Plan (APA). Ministry level project screening will ensure localization issues of projects and asses the resource requirement for the project. Ministry will ensure the internal resource allocation for the activities or projects. Ministry will review the implementation activities and take corrective actions or take measures for modification of activities while finalizing organization level implementation Plan & Activity. Ministry of Industries will supervise & monitor performance at divisional and regional level.

Reporting and tracking documentation of implemented activities will allow us to create central database for research, impact analysis and conducting study for improving through innovation. Ministry will emphasis on capacity development for employees in Bangladesh as well as in abroad. However, Ministry will engage Partner Organizations and Stakeholders to ensure sustainable development.

**Financing:** With the aim to assess the cost of implementation of SDGs, MoInd will be considering four major areas other than regular budget.

- Resilient Infrastructure
- Retrofitting Industries and Modernization
- Innovation and Industrial Revaluation (Industry 4.0)
- Capacity Development of Workforce (Education 4.0 and Society 5.0)

Five potential sources of financing have been suggested aligned with national strategy:



### Ministry of Industries:

Ministry of Industries has participated in national planning and implementing activities by focusing on priority area to achieve the targets. The implementation process includes following general model which depicts relevance with published in “Report 2—Canada’s Preparedness to Implement the United Nations’ Sustainable Development” Goals designed below.



Source: Adapted from the International Organization of Supreme Audit Institutions' seven-step model to assess governmental preparedness for sustainable development goals (CANADA) ([www.oag-bvg.gc.ca/internet/English/parl\\_cesd\\_201804\\_02\\_e\\_42993.html](http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201804_02_e_42993.html))

**Commitment and Responsibility** MoInd attempts to adopt SDG Achievement Priorities and assigned responsibility accordingly to the organization under the Ministry based on organizational activity. Thus, the specific action plan implementation framework finalized comprising time-based commitments after conducting several meetings, training programme, workshop and exercise focusing SDG localization. Ministry of Industries included organizations, representative from different bodies and stakeholders to sensitize the spirit of SDGs and its localization in Industrial sector of Bangladesh. Intakes from such initiatives drew attention and hold impact on individual thinking and execution of organizational task. To enhance personal effort and commitment of ministry and organization under it, Ministry of Industries focused on Individual Action Plan (IAP) aligned with the organization level Annual Performance Agreement (APA). Individual level understanding and organization level sensitization effort will allow employees to demonstrate responsible attitude in personal life. Thus, internalization of the SDG spirit will derive the inclusive industrial development where the reflection of social accountability tools will depict organizational commitment and responsibility

**Establishing Governance:** World Bank defined Governance as the traditions and institutions by which authority in a country is exercised for the common good. This includes (i) the process by which those in authority are selected, monitored and replaced, (ii) the capacity of the government to effectively

manage its resources and implement sound policies, and (iii) the respect of citizens and the state for the institutions that govern economic and social interactions among them. (World Bank Institute website 2004: <http://www.worldbank.org/wbi/governance/>)

Ministry of Industries took the leadership role and formed a dedicated team involving top level officials' from the Ministry. Officials from different organization level under the Ministry are acting as focal points to carry out the task in execution level. To uphold the values and culture of Sustainable development, different experience sharing sessions and workshops were organized by the ministry for its organizations where leading local and international SDG implementing organizations and individual level resources enlightened the personnel. The context and development story sensitized and inspired the officials.

SDG implementation activity monitoring and process improvement was considered as one of the significant topics of Monthly coordination meeting to accelerate decision-making where Head of the Organizations under ministry participates and top-level officials of the ministry attend SDG issues.

Applicable SDGs and targets were included in Annual Performance Agreement (APA) as well as in the budgetary Framework of all the organization under ministry of Industry. Such integration in Social accountability tools like APA, Citizen Charter, NIS and GRS will ensure public-private stakeholder engagement where SDG spirit will develop the sustainable development culture.

To ensure social accountability not only ministry but also several organizations under ministry holds workshop and stakeholder engagement activities where participants from business organizations, trade bodies, students, third gender people, teachers, banking and financial Institutions , regulatory bodies, focal points of different organizations and other stakeholders attended to share and demonstrate their need. Thus, the social accountability tools like Citizen Charter, NIS and GRS will enhance public service accountability and resource utilization in effective and efficient manner.

To ensure personal effort and commitment of ministry and organization under it, Individual Action Plan (IAP) is introduced aligned with the organization level Annual Performance Agreement (APA). Such initiatives will ensure participation, promote problem solving attitude and will result in depicting more positive opinion.

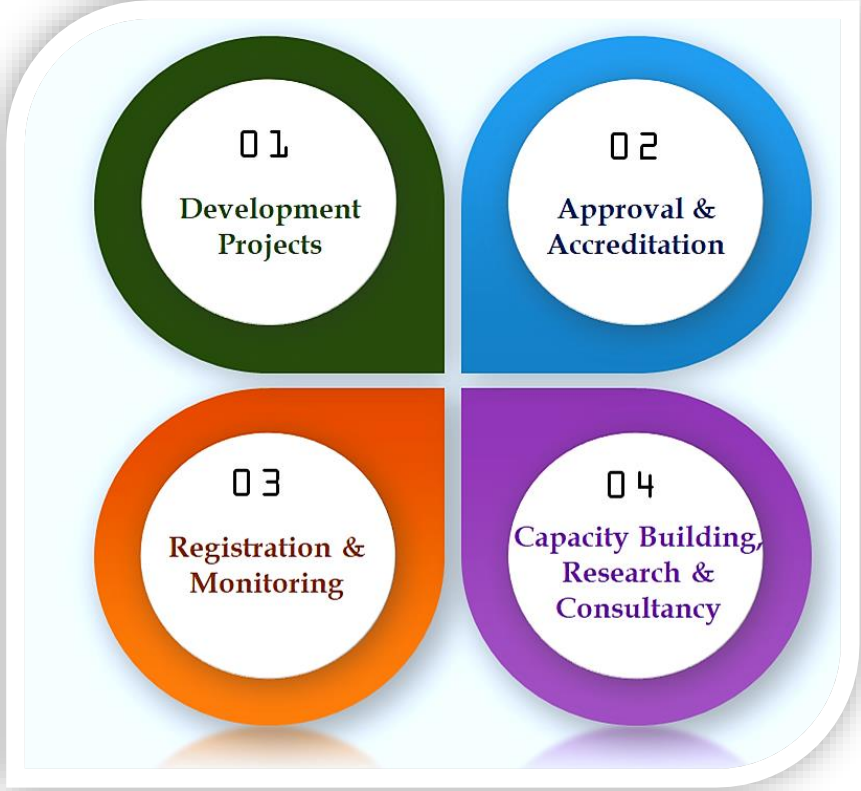
Ministry of industry gradually updated different core policy to extend policy level support for the industries. Besides Ministry of industries to policy level reform and enactment of act to strengthen its functional organizations.

Procurement activities and budgetary frameworks emphasizing projects and activities considering sustainable development and industry 4.0

Ministry not only confined its activities within the ministry but extended in organization under ministry through engaging them in the action plan road map of the ministry. Such support will deliver values in root level execution.

**Engaging and Consulting:** The Ministry arranged several meetings, training programme, workshops and exercise focusing SDG localization with its stakeholders. Before finalizing action plan several sessions, workshops and relevant organization's opinion was taken. A significant effort and rigorous template-based exercise was involved depicting in-depth SDG localization focus which extended further by arranging foreign training.

**Planning:** Among SDGs 5 goals are directly or indirectly associated with this Ministry. It leads in four targets with 5 indicators, co-leads in two targets with 3 indicators and plays an associate role with 45 targets. However, the Ministry is playing a central role on Goal9. To address these targets MoInd has prepared its action plan for SDGs in line with the 7th FYP targets. The action plan involves different projects and activities which can be differentiated in four categories of tasks.



**Measuring System:** Measuring performance the ministry has incorporated SDG indicators SDG mapping document, SDG Implementation Review and Metadata available. The contribution of manufacturing value added as a proportion of GDP is augmented from 17.6% to 19.01%. Similarly, manufacturing value added of GDP per capita is raised from USD130 to USD 168. The manufacturing employment as a proportion of total employment was 14.4% in 2015-16, however no change has been made of its target to reach 20% up to 2020. In the case of the three indicators and one target, Meta data is yet to be finalized. Several development projects and programs are incorporated in the action plan to achieve the SDGs.

**Monitoring System:** Segment based monitoring system in different phase of implementation established and up- to date SDG-Tracker can be launched. Moreover, the ministry has periodical monitoring and quarterly performance tracking tool to take major decision.

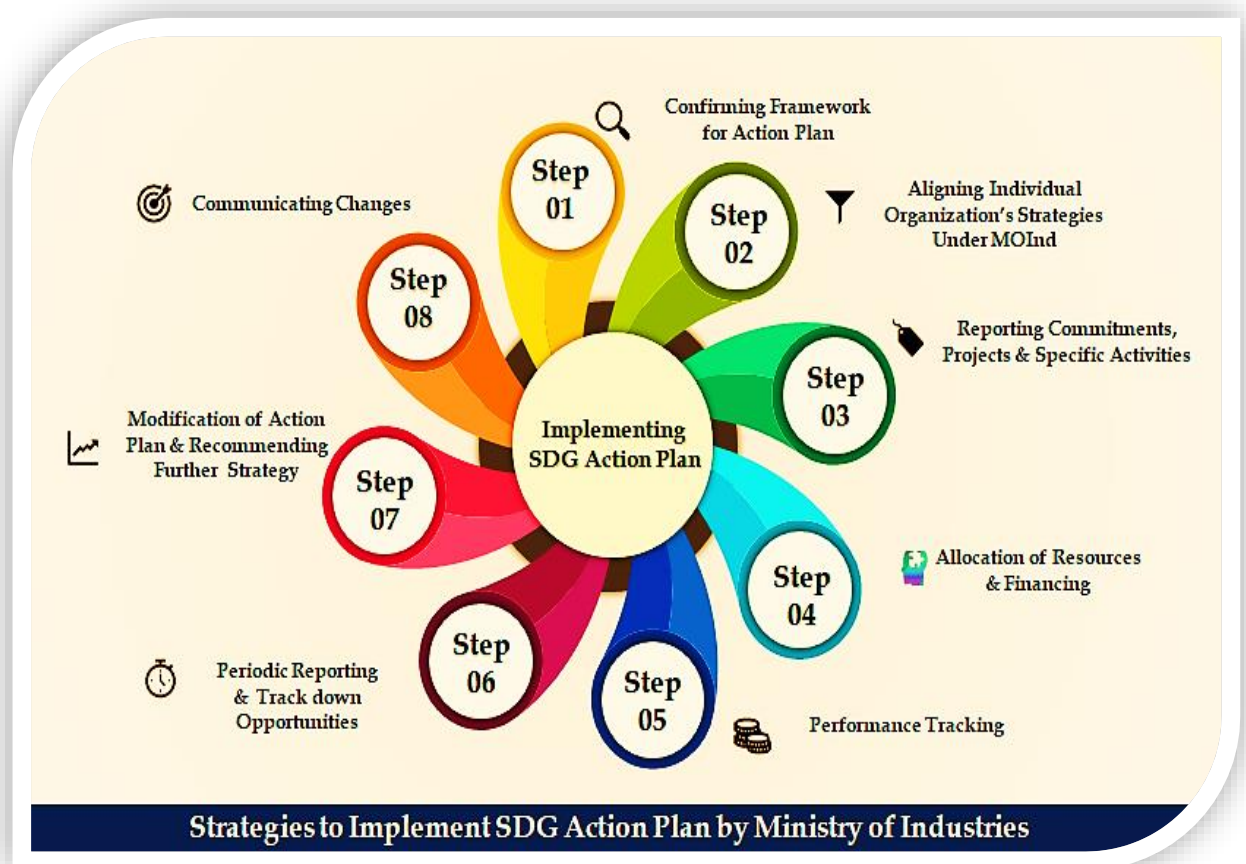


**Reporting System:** A uniform time based quarterly reporting considering presently working, Mid-term (refers the task involvement require time till 2025) and long term (refers the task involvement require time till 2030) and target based action plan implementation reporting frame work for Lead role, Co-lead role and associate Role was developed. The progress report is prepared by considering four targets with 5 indicators that are summarized.

**Implementation of SDG Action plan**

Implementing SDG Action plan the ministry has identified Policy and Enabling Environment

**Following 8 step model can explain the strategy for Implementing SDG Action plan**




**Means of Implementation**

- Formation of SDG implementation and monitoring committee;
- Building of strong institutional arrangements;
- Increased emphasis on strong and effective inter-ministerial coordination for implementation of common targets;
- Enhancement of the capabilities of officials;
- Monitoring and reviewing of the action plan on a regular basis.




## SDG Achievement Priorities

### Ministry of Industries as Lead Role

 <p><b>TARGET 2-3</b> DOUBLE THE PRODUCTIVITY AND INCOMES OF SMALL-SCALE FOOD PRODUCERS</p>	<p><b>Target: 2.3</b> By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and nonfarm employment</p>	<p><b>Indicator</b> 2.3.2 Average income of small-scale food producers, by sex and indigenous status</p>
--	--	--

#### Major Initiatives


<p><b>Current Activities Within 2020</b></p>	<ul style="list-style-type: none"> <li>➤ Establishment &amp; Modernization of regional office for better service Enhancement of crop production through Farm Mechanization Project 2nd Phase</li> <li>➤ Agro based industry like Pineapple Processing Industry, Madhupur will help to encourage new entrepreneurs and increase incomes of small-scale food producers</li> <li>➤ 'Introducing Good Agricultural Practice (GAP) for Export Promotion (Mainstream and Ethnic Market)'.</li> </ul>
<p><b>Mid Term 2021-2025</b></p>	<ul style="list-style-type: none"> <li>➤ Regional expansion of training and administrative facilities will allow small scale industries to grow further and entrepreneurs can acquire skill and knowledge</li> <li>➤ Establishment of Common Facility Center (CFC) for SME Cluster</li> </ul>
<p><b>Long Term 2026-2030</b></p>	<ul style="list-style-type: none"> <li>➤ Policy support and framework will allow every three/ four years measurement of productivity level of all economic Sectors</li> <li>➤ Diversification of Handicrafts Products through skilled manpower</li> </ul>

 <p><b>TARGET 9-2</b> PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION</p>	<p><b>Target 9.2:</b> Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries</p>	<p><b>Indicator</b> 9.2.1 Manufacturing value added as a proportion of GDP and per capita 9.2.2 Manufacturing employment as a proportion of total employment</p>
--	---	--


#### Major Initiatives

<p><b>Current Activities Within 2020</b></p>	<ul style="list-style-type: none"> <li>➤ Organizational strengthening program and capacity development will allow the ministry to serve the local level enterprise more effectively and efficiently.</li> </ul>
<p><b>Mid Term 2021-2025</b></p>	<ul style="list-style-type: none"> <li>➤ Regional expansion of training and administrative facilities will allow small scale industries to grow further and entrepreneurs can acquire skill and knowledge</li> <li>➤ Industrial Park and industrial estate at <b>18 different places</b> of the country will increase GDP contribution significantly.</li> <li>➤ Large scale industry feasibility study will allow more sustainable industry in automobile and ship building sector.</li> <li>➤ Strengthening Management System Certification (MSC) and Voluntary Product Certification System (VPCS).</li> </ul>

<b>Long Term 2026-2030</b>	<ul style="list-style-type: none"> <li>➤ Monitoring and technical support for new boiler attendant will increase efficiency and area of work.</li> <li>➤ Poverty Alleviation &amp; Sustainable Development Project, Establishment of an Institute/ Service Centre/ Foundation for Development of Tannery Sector, upazila level Women entrepreneurship program will help to uphold GDP.</li> <li>➤ Environment Friendly Ship Re-Cycling Industry and Manufacturing plants with Energy Saving &amp; Sustainable auto-assembling plant will help to achieve the targets.</li> </ul>
--------------------------------	--

	<b>Target 9.3:</b>  Increase the access of small-scale industrial and other enterprises. In particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	<b>Indicator</b>  <b>9.3.I: Proportion of small-scale industries in total industry value added.</b>
---	---	---

<b>Current Activities Within 2020</b>	<ul style="list-style-type: none"> <li>➤ Present capacity development program by different institute of Ministry is contributing</li> </ul>
<b>Mid Term 2021-2025</b>	<ul style="list-style-type: none"> <li>➤ Regional expansion of training and administrative facilities will allow small scale industries to grow further and entrepreneurs can acquire skill and knowledge</li> <li>➤ Develop special SME loan Products for women entrepreneurs</li> <li>➤ Enhancement of Credit Wholesaling Program and Start up Financing Program for Micro and Small Entrepreneurs.</li> </ul>
<b>Long Term 2026-2030</b>	<ul style="list-style-type: none"> <li>➤ Capacity Development of Small industry Financing Scheme will help to increase in total industry value added</li> <li>➤ Installation of Agro Machinery Industry in Bogura District will help to increase proportion of small-scale industries in total industry value added</li> <li>➤ Productivity Training for Entrepreneurs to Business Management.</li> </ul>

	<b>Target 9.4:</b>  By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	<b>Indicator</b>  <b>9.4.I: CO2 emission per unit of value added.</b>
---	---	---

**Major Initiatives:**

<b>Current Activities Within 2020</b>	<ul style="list-style-type: none"> <li>➤ Strengthening capacity of Certification bodies to promote accreditation program and training institute to certifying ISO 9001:2015 (Quality Management System) and ISO 14001:2015 (Environmental Management System) and OHSAS 18001:2007(Occupational Health and Safety Management System)</li> <li>➤ Establishment of Technology Incubation Centre (TIC) at BIM.</li> </ul>
<b>Mid Term 2021-2025</b>	<ul style="list-style-type: none"> <li>➤ Retrofitting present structure with green environment and promoting circular economy concept can reduce CO2 emission.             <ul style="list-style-type: none"> <li>i. Measuring Baseline of CO<sub>2</sub> emission</li> <li>ii. Process wise emission mapping and Suggesting emission reduction strategies &amp; tools</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>iii. Establishing Search System for Environment Friendly Technology &amp; Process</li> <li>iv. Providing Support for Environment Friendly Industrial design</li> <li>v. Promote Green Technology, Green Factory, Vertical Forestation in Workplace</li> </ul> <p>➤ Clean Development Mechanism &amp; Carbon Trading</p>
<p><b>Long Term 2026-2030</b></p>	<ul style="list-style-type: none"> <li>➤ Multilateral Recognition Arrangement with Asia Pacific Accreditation Cooperation</li> <li>➤ Ensuring the establishment of CETP and STP (Sewerage Treatment Plant) in BSCIC Industrial Estate will allow reduce CO2 emission.</li> <li>➤ Expansion of service for the new growing industries as well existing industries with their modern sophisticated equipment and trained manpower.</li> </ul>

## Chapter 5: Resource Mobilization and Stakeholder Engagement

### i. Resource Mobilization Strategy

Resources of MoInd are not only the funds but also the human resources, goods and services. Global estimate shows that US\$ 3-5 trillion would be required annually throughout the world. In Bangladesh, around 928.48 Billion US\$ additional funding would be required from 2017 to 2030 to fully implement the SDGs (2015-16 constant prices). Annual average cost would be 66.32 billion US\$. It would be 19.75% of the accumulated GDP under 7th FYP during the period FY2017-FY2030.

As a lead Ministry, MoInd has taken challenges to implement SDGs for ongoing project/program to achieve 7th FYP goals and targets, where the total investment would be approximately BDT 167 billion. To implement the SDGs additionally approximately BDT 258 billion is needed for requirement of new project/programme up to 2020. This means 54 percent additional amount of taka is needed in the upcoming 8<sup>th</sup> FYP to implement SDGs as a lead ministry.

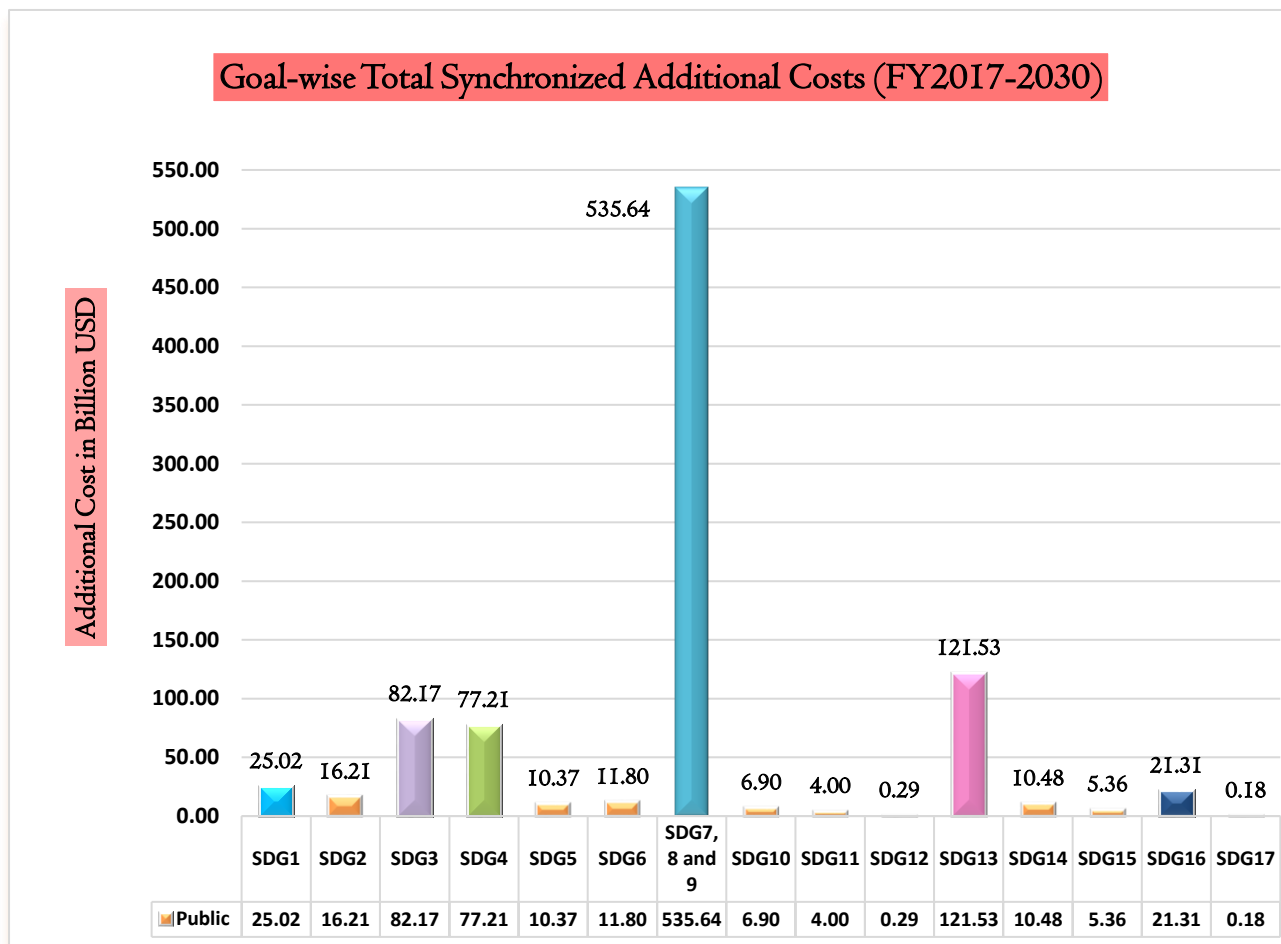
Apart from that MoInd plays role not only as a Lead Ministry but also as Co-Lead Ministry and as an Associate Ministry and invests approximately BDT 403 billion for ongoing project/program to achieve 7th FYP goals and targets. Additionally, BDT 529 billion is needed for requirement of new project/programme up to 2020. Moreover BDT 277 billion is needed for the period of 2020-2025 for the successful achievement of SDGs. The amount of money will be mitigated by the budget allocated from the government, annual development programme and internal resources. According to the last 2018-2019 FYP the MoInd earn total amount of Tk. 4977.55 million as a non-tax revenue and current 2019-2020 FYP target of Tk. 5581.20 million.

**Table Financing Strategy for Implementation of SDGs (US\$ in Billion)**

	FY 17-20	FY 21-25	FY 26- 30	FY 17- 30
Total additional amount from domestic sources (85.11% of total)	107.72	257.49	430.87	796.09
Total additional amount from external Sources (14.89% of total)	22.07	43.15	67.17	132.39
Total additional amount from both domestic and external sources (100%)	129.79	300.63	498.04	928.48
Annual average additional amount from domestic sources	26.93	51.50	86.17	56.86
Annual average additional amount from external sources	5.52	8.63	13.43	9.46
of which: FD:	2.73	6.45	10.70	6.91
Grants and aid	2.79	2.17	2.74	2.55

Source: SDGs Financing Strategy, GED, Planning Commission 2017

General Economic Division (GED), Planning commission of Bangladesh clearly defined the target-wise fund requirement where they used Multiple factor analysis (MFA) to find out the synchronized and unsynchronized yearly requirement of cost. Following bar diagram represent required yearly synchronized national cost allocation. The allocation shows Goal 7, 8 and 9 has synchronization.



Presentation session of Finance division on “Bangladesh’s SDGs Needs Investment and Financing Strategy” published by GED focussed on below mentioned issues for fund sourcing:

- Additional cost will be 24.1 percent of GDP by 2030 starting from 10.2 percent in FY16
- **Public Sector Financing:** Enhancing the SDG orientation of the budget: in FY 2016, 78% expense related to SDG.
- **Enhancing tax effort:** improve 9 percentage point over next 13 years Bond, Deregulation of energy prices, Debt financing, Savings from efficiency gain.
- **Private Sector Financing:** 7th FYP period 77.3% of the total outlays where 37-46% of total additional SDGs cost during FY 2017- FY2030.
- **FDI:** From 2 billion per year to 6.91 billion per year, Green Climate Fund

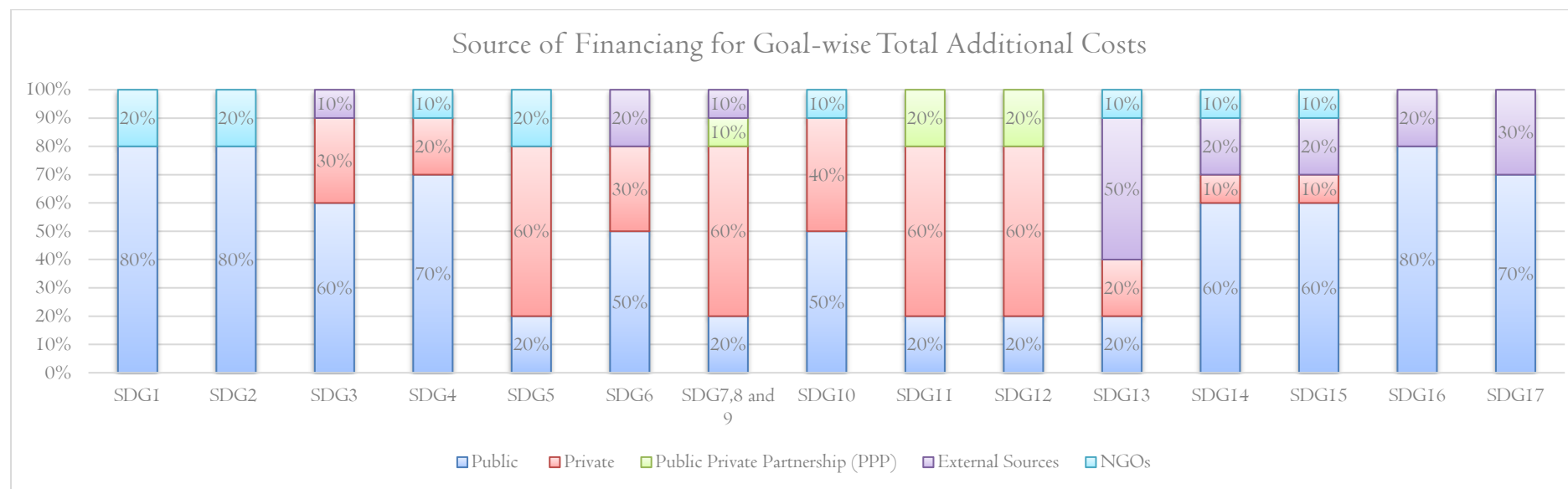
Source:file:///E:/FinalSDG%20%20Book%20For%20Info%20Graphic%20setup/Financing%20part%20of%20SDG%20Bd/Session\_5\_01\_Bangladesh\_Rahman%20SDG%20Needs%20Investment%20(1).pdf

In Bangladesh Development Forum 2018 “SDG financing and strengthening multi-stakeholder partnerships, GED” publication clearly demonstrated the composition of goal-wise source of financing for financing additional costs that is depicted in table and figure.

Matrix of Source of Financing for Goal-wise Total Additional Costs

Sources of Financing/SDGS	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7,8 and 9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Public	80%	80%	60%	70%	20%	50%	20%	50%	20%	20%	20%	60%	60%	80%	70%
Private			30%	20%	60%	30%	60%	40%	60%	60%	20%	10%	10%		
Public Private Partnership (PPP)							10%		20%	20%					
External Sources			10%			20%	10%				50%	20%	20%	20%	30%
NGOs	20%	20%		10%	20%			10%			10%	10%	10%		
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: GED Estimates



Source: GED Estimates

Ministry of Industries is leading Target 2.3 of goal 2 where Public Financing will contribute 80% and NGO financing will be 20% of the fund. In Goal 2 methodology for calculation (**Source: SDGs Financing Strategy, GED, Planning Commission 2017, Annex 2.1,2.2 and 2.3**) shows Ministry of Food and its units will invest the additional in three steps with their **Bangladesh Country Investment Plan(CIP)**. In Step 1 USD 2 billion will be invested up to 2025 where step 2 will contribute 1.5 billion USD and Step 3 will be adjustment for inflation. So far Ministry of Industry can access **NGO contribution in skill development, Education facilities for Industry 4.0 and climate action awareness.**

Breakdown of Total Additional Cost for SDG 2							
Total Additional Cost/ Fiscal Year	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
Total Additional Cost (In Billion BDT Current Price)	157.40	166.84	166.37	166.06	165.74	165.58	165.43
Total Additional Cost (In Billion USD Current Price)	1.94	1.99	1.93	1.87	1.81	1.76	1.72

**Source: GED Estimates**

Breakdown of Total Additional Cost for SDG 2							
Total Additional Cost/ Fiscal Year	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Total Additional Cost (In Billion BDT Current Price)	165.27	156.27	156.86	148.60	140.21	131.96	123.60
Total Additional Cost (In Billion USD Current Price)	1.67	1.63	1.51	1.40	1.29	1.18	1.08

**Source: GED Estimates**

In target 2.3 Bangladesh **Country Investment Plan(CIP)** has 5 interventions. The interventions are

- Intervention 01: Sustainable and diversified agriculture through integrated research and extension.
- Intervention 02: Improved water management and infrastructure for irrigation purpose
- Intervention 03: Improve quality of inputs and soil fertility
- Intervention 04: Fisheries and aqua culture development
- Intervention 05: Livestock development, with a focus on poultry and dairy production.

The composition shows that for SDG 9 where lead Ministry of Industries playing coordinating role as leading in Target 9.2, 9.3 and 9.4, Public source will provide only 20% of the fund and private sector will contribute 60% of the fund. Contribution Public Private Partnership (PPP) will be 10% and external sources like FDI will be 10%.

Breakdown of Total Additional Cost for SDG 9							
Total Additional Cost/ Fiscal Year	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
Total Additional Cost of Infrastructure (In Billion BDT at Current Price)	665.57	754.76	855.14	970.58	1467.52	1664.17	1887.17

Total Additional Cost of Industrialization (In Billion BDT at Current Price)	137.73	145.99	145.58	145.30	222.09	221.88	221.67
Total Additional Cost of Innovation (In Billion BDT at Current Price)	22.19	50.32	85.51	129.41	183.44	249.63	330.36
Total Additional Cost (In Billion BDT at Current Price)	825.48	951.06	1086.23	1245.30	1873.06	2135.68	2439.10
Total Additional Cost (In Billion USD Current Price)	10.19	11.35	12.58	14.01	20.49	22.74	25.30

Source: GED Estimates

Breakdown of Total Additional Cost for SDG 9							
Total Additional Cost/ Fiscal Year	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Total Additional Cost of Infrastructure (In Billion BDT at Current Price)	2140.05	2428.95	2756.87	3131.80	3557.73	4045.14	4599.32
Total Additional Cost of Industrialization (In Billion BDT at Current Price)	221.46	221.46	216.30	216.30	216.09	216.09	215.89
Total Additional Cost of Innovation (In Billion BDT at Current Price)	428.01	546.52	689.22	861.25	1067.32	1314.67	1609.76
Total Additional Cost (In Billion BDT at Current Price)	2789.51	3196.94	3662.38	4209.35	4841.14	5575.90	6424.97
Total Additional Cost (In Billion USD Current Price)	28.22	31.54	35.27	39.57	44.47	50.04	56.40

Source: GED Estimates

In 9.2 to promote inclusive and sustainable industrialization and by 2030 a significant increase in by 2030 significant to raise in Industries and gross domestic product in line with National circumstances and double its share in least developed countries by implementing 100 economic zone.

In 9.3 increase the access to small scale industrial and other enterprise, in particular in developing countries to financial services, including affordable credit and their integration to value chain markets by implementing 100 economic zone.

For 9.4 increase investment in infrastructure as a percentage of GDP with help to active the target.

### SDG Target-wise Additional Fund Requirement for MoInd (Approximately)

SDG Targets	in Million BDT			
	Short-term	Mid-term	Long term	Total
	till 2020	2021-2025	2026-2030	2017-30
2.3 (2.3.2)	28,795.00	3,000.00	30.00	31,825.00
9.2	357,763.92	286,787.50	158,999.90	803,551.32
9.3	3,147.40	15,700.00	50.00	18,897.40
9.4	60,783.76	229,485.24	32,000.00	322,269.24
<b>Total</b>	<b>450,490.08</b>	<b>534,972.74</b>	<b>191,079.90</b>	

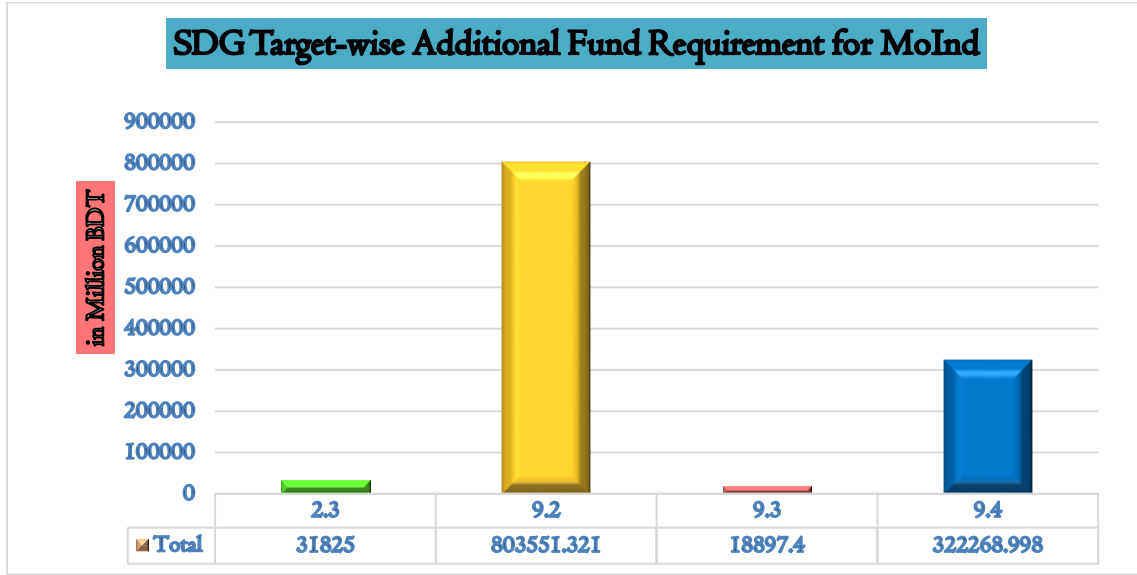


Grand Total

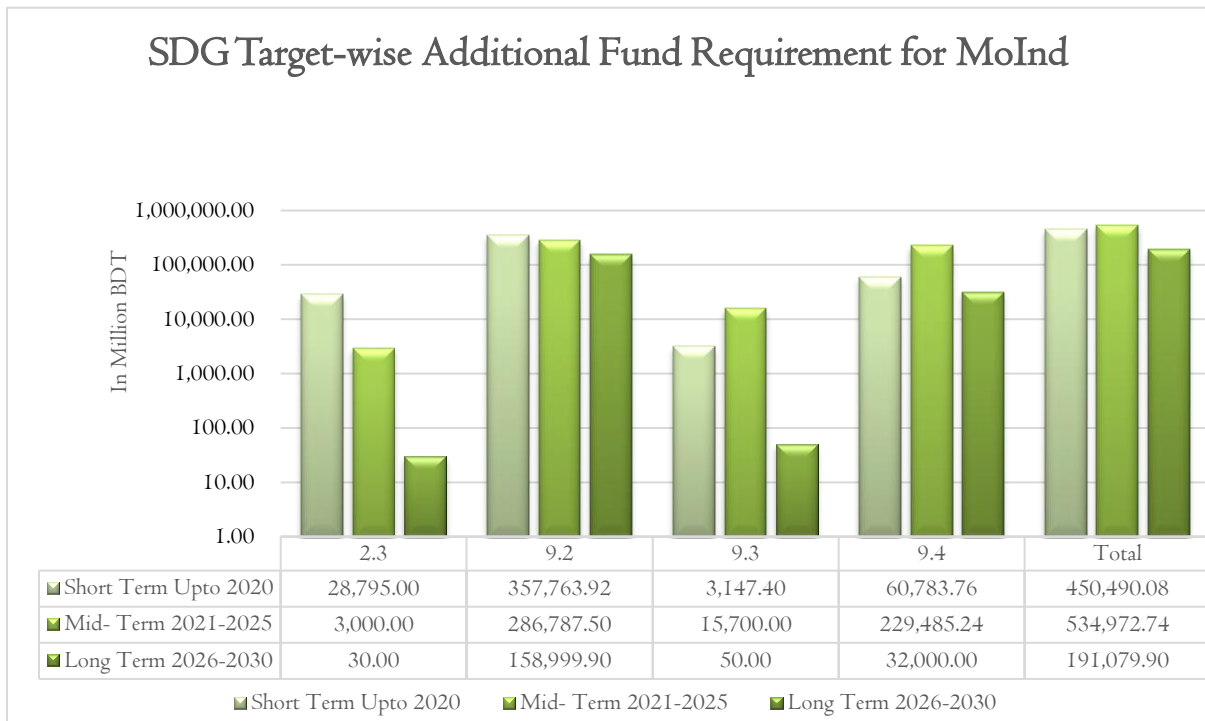
**1,176,542.72**

From the table and figure, we see that Ministry of Industries will require additional cost of taka 31,825.00 million for Target, taka 803,551.32 million additional cost for Target 9.2, taka 18,897.40million additional cost for Target 9.3and taka 322,269.24 million additional cost for Target 9.4.

The ministry will require short term additional cost of 450,490.08 million taka and Mid-term additional cost of 534,972.74 million taka and long-term additional cost of 191,079.90 million taka where the total amount of additional cost will be1,176,542.72million takas.



## SDG Target-wise Additional Fund Requirement for MoInd



### Additional fund requirement for Industrial Revolution 4.0:

Transformation from Industry 3.0 or 2.0 to Industry 4.0 is really costly and especially for most of the cases State Owned Enterprise will require new setup to implement Industry 4.0. So, the source of financing will be really a challenge for the Ministry. The investment requirement should consider type of technological intensity, size of business, coverage type of product and localization concept. The investment requirement area for Ministry will be

**Future Technology Adaptation:** Technology adaptation can be done with collaborating with National AI initiatives consisting ix strategic pillars of AI, Bangladesh consists of i) research and development, ii) skilling and reskilling of AI workforce, iii) data and digital infrastructure, iv) ethics, data privacy, security & regulations, v) funding and accelerating AI start-ups, and vi) industrialization for AI technologies. Ministry of Industries can share the resources and data management platform of national and international



organization which will reduce the cost of infrastructure. With National Data support ministry can share central data management unit to meet the need and factory setup and investment will be required. The required factory technology cost will cover

- Information and communication technology (ICT)
- Cyber-physical systems for additive manufacturing;
- Network communications
- Simulation, modelling and virtualization in the design of products
- Collection of vast quantities of data: Big data analysis and cloud computing;
- Greater ICT-based support for human workers, augmented reality and intelligent tools.

**Capacity Development:** Long term skill development cost involvement for existing employee, researchers and trainers of Ministry and Skill development Institutes (BIM, BITAC, TICI and SKITI) will be performed by taking project (TAPP). Skill development and Management institutes can play of consultant and continuous problem-solving team for manufacturing and service units of Ministry of Industries. **Resource allocation for Industry 4.0 of MoInd**

**Policy Support:** Considering Industry 4.0 and Sustainable Industrialization, MoInd updated more than 7 policies and acts to extend its support in Industrial technical assistance, ship reprocessing, standard and testing, Leather goods development, SME and Intellectual property rights area. Besides to ensure inclusive, environment friendly and sustainable industrialization the ministry will extend policy support in coming years. The policy reform includes Industrial Policy 2021, capacity development institute strengthening for IP rights and Management Development (BIM act), subcontracting act 2020, Formulation of the Bangladesh Quality Council Act 2021, Plastic and Packaging, Automobile act, Biotechnology policy, Agro-food Processing Industry Promotion Policy, Ship Building policy and Industrial plot distribution Policy. All these Acts and policies are reforming and updating in order to develop the capacity and internal strength of the Organizations of MoInd to cope with the challenges and adverse situations that might be created during the Industrial Revolution 4.0 era.

**Engaging Suppliers, Distributors and Stakeholder:** Resource allocation for workshop, technical training and meeting will be required.

**Research for Required Assessment and Feasibility:** Research budget for requirement assessment, localization factor planning, feasibility and impact assessment will be required.

**Facility Support in Industrial Zone/Park/City:** Centralized modern and future technical facility will be required.

## Highest/Best/ Optimum utilization of resources

On the earth resources are very scarce in comparison to the existing population and population to come in future, let alone Bangladesh. Bangladesh is a very small developing country with a huge population to feed,

shelter, clothe, educate and provide necessary healthcare as well as carry out sustainable industrialization for years to come. Hence, all kinds of resources have to be utilized in such a way that the highest return/benefit and marginal utility can be squeezed by the user/s of mills and factories. Therefore, resources must be utilized judiciously so that available resources are not exhausted without the best return due to our imprudent, inappropriate and useless consumption. Bangladesh is lucky enough to have most of her arable fertile land and human resources other than water resources, fisheries, forest resources, underground natural resources, marine resources and so on. We have to ensure the highest utilization of the resources that we possess in our country to pave the way for continued sustainable industrialization for a better and happier lives of Bangladeshi people. Judicious and highest usages of inputs, raw materials and resources will lead to optimum and better production of intermediate as well as final goods and services.

Human resources are the most pivotal of all resources available in Bangladesh. For achieving the SDGs human resources must be transformed into human capital in all sectors which is emphasized in the documents of SDGs. For ensuring the highest utilization of other types of resources, human resources need to be developed and transformed in line with this purpose. Taking this reality into cognizance, Ministry of Industries has been implementing various sorts of befitting training programs for the officials and personnel working in the Ministry and organizations under the ministry and private industries towards developing enhanced productivity and quality of the products. Besides, the ministry is promoting practices of QMS in the offices for rendering improved and expeditious services to the stakeholders and the service receivers.

At the same time, twelve corporations and departments under the Ministry of Industry are also trying their level best to materialize their targets entrusted in APA aligned with SDGs 2030 to fulfill the goals relevant with the Ministry of Industry.

BSCIC is contributing to develop the quality and skills of the manpower working in small, medium and cottage industries. Products of these industries are crucial for diversification of the export basket and promoting our culture and heritage to the global context. The enhancement of the quality of these products is attained through imparting appropriate training to the manufacturers contributing to uplifting the quality of the products to international demand standard of the markets. **Plots in 72** BSCIC Industry Cities throughout country have been allotted to different kinds of industries for quick industrialization with a view to localization of industries. As a result, industries will not be developed scattered and arable fertile land will be saved to produce agricultural products. Hence, the highest utilization of land in the BSCIC Industry Cities will be ensured. On the other hand, inter-connectivity among the set factories/industries in these cities will have a great scope for which the cost of communication among them will be less.

At the same time, the ministry through SMEF is providing training to the entrepreneurs of small and medium enterprises on different areas of ICT ranging from basic computer learning to e-marketing and e-commerce towards augmenting the capacity in digital office management and online-based marketing and commerce.

Ministry of Industry has been contributing significantly to providing skilled manpower to the private sector industries, especially in the fields of accreditation, productivity enhancement, boiler operation,

supplying skilled human resources in various trades according to the national and international demand of the market. Separate departments are working under the ministry for providing these services. The ministry is developing a pool of experts by Bangladesh Accreditation Board through rigorous training regularly in different areas of accreditation, who are outsourced by the Ministry later on. Similarly, the Office of the Chief Boiler Inspector under the ministry works for developing adequate capacity at a different stage for operating boilers in the mills and factories.

For industrial development, the importance of natural resources is boundless for the mills and factories which are using natural resources for generating their products. After years of exploitation of natural resources, symptoms of depletion are becoming evident.

Ministry of Industry is very aware of the scarcity of the resources and is working on maximizing the output of the products with minimum resources. One of the bright examples of the highest utilization of natural resources is GPUFP which will produce near about three times of present production using the same amount of natural gas. This is a large-scale example. A significant number of small examples are being implemented by the industries. The cottage industries supported by BSCIC use paltry elements available near the households to produce high-quality fancy and day-to-day items. Some other initiatives are at the planning stage. A new industrial town beside Dhaka Tannery Industry at Savar will be developed. Here forward linkage and backward linkage industries of tannery industry will be set up. Besides, for ensuring the highest utilization of fuel and power Ministry of Industries is emphasizing on optimum production of the mills and factories and less emission of environment pollutants by them.

The government under the visionary leadership of Honorable Prime Minister Sheikh Hasina is determined to enhance the capacity of the industries through introducing latest technologies from the western world. In line with this, new projects are either under implementation or in the planning phase for Balancing Modernization Rehabilitation and Expansion (BMRE) through which advanced technology from the developed countries are being introduced in the industries, particularly those run by BCIC, BSEC and BSFIC. Besides, for a sustainable industrial development, the ministry of industries emphasizes the standardization of the products in terms of their quality and measurement to be capable of competing in the highly competitive world market. For this, advanced instruments for testing and calibration, gauges and other scientific apparatus are set up in modern labs at regional offices of BSTI. Besides the Ministry of Industries fosters local industries so that they can play a vital role in achieving SDGs. In line with this, the ministry is implementing numerous projects including building a light engineering industrial town in Munshigonj. The ministry also promotes local production of boilers of all sizes through approving the locally produced boilers after appropriate tests.

Capital resources refer to the instruments, tools, machines etc. used in manufacturing and production in a factory. Most of the machineries in the factories operating under the ministry of industries have ended their production life. Previously, these weary industries were kept on running by changing the necessary parts of the factory. But this measure has failed to give the desired output of production and the highest utilization of input/resources. The ministry is seriously thinking about building new industrial setups with state-of-the-art technology from the developed countries for keeping the industries financially and economically

viable to ensure the highest utilization of resources needed to produce goods and services. This initiative will contribute to the highest utilization of both natural resources like land, gas, water, minerals etc.

For achieving the SDGs by 2030, there is no alternative of highest utilization of resources. Ministry of industries is working for the optimum output of the products by both public and private mills and factories. The integrity of the environment and sustainability of the natural resources are also in active consideration. With concerted and multidimensional efforts, the highest utilization of the resources for sustainable industrialization is expected to be achieved in due course of time.

## **ii. Role of Private Sector, NGOs, Development Partners and Industrial Sector Associations**

The private sector is one of the main partners in the implementation of Sustainable Development Goals (SDG) for any country. In any developing country, it has been found in general that, private sector operations constitute 60 percent of GDP, while generating 90 per cent of jobs, 80 per cent of capital inflows in formal and informal sectors. Bangladesh's economy is no different from this trend. The SDGs have been designed with special focus on business-led solutions and technologies that can address the world's biggest sustainable development challenges. A vibrant private sector can play an important role towards achieving the 2030 Development Agenda.

The Role of Private Sector in SDGs implementation lays in employment generation, creating business opportunities, enhancing disposable income of middle class, International business cooperation and technology transfer, Investment in potential sectors for inclusive growth, corporate social responsibility (CSR), Innovation and Quality of Life, Strengthening domestic markets.

The private sector led by the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) along with Bangladesh Employers' Federation (BEF), Chambers of Commerce, Industry Associations, Local Chambers, Bilateral Chambers and Industry Skill Councils (ICS) has been proposed to be integrated into the SDG Governance Structure, which has created urgency of high level coordination among the ministries, for achieving the SDGs. FBCCI has already formed 10 thematic consultation groups targeting implementation of all SDGs. Bangladesh Employers' Federation (BEF) in a recent program considering the role of private sector in achieving SDGs recommended a governance structure for the private sector emphasizing the engagement of relevant chambers and sectoral associations, local chambers and joint chambers. BEF in the same program prioritized some goals. They are Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal-9: build resilient infrastructure, promote sustainable industrialization and foster innovation, Goal-12: ensure Sustainable consumption and production patterns; and Goal 13: Climate Action in which objective is to take urgent action to combat climate change and its impacts.

The private sector of Bangladesh is experiencing and moving forward with innovative technologies and strategies being followed. They urge the government to come forward with renewed policy and technical

support to reduce the cost of doing business and take other appropriate steps that can help the private sector to grow further and remain sustainable. Bangladesh has already proven its ability by taking the driving seat of economic growth and development. The government is creating favorable business environment where different industries under the private sector are playing their roles in achieving the SDGs.

This Global 2030 Agenda is a milestone in global, national and local development efforts and calls for actions through the help of global partnerships along with both the public and private sectors. To achieve these SDGs, Governments must take the lead in living up to their pledges pursuing a 'whole of society approach'. At the same time, the private sector of the country should come forward in response to the government with new initiatives, new ideas and new technologies for the rapid industrialization and betterment of the people.

The private sector has been the driver of economic growth and development of economy in Bangladesh like other countries (77 per cent of total investments comes from private sector). Many of SDG targets are related to growth, employment, and the delivery of key services such as education, health and sanitation, which cannot be achieved without the active participation of the private sector.

Bangladesh already is in a very good position in meeting SDG goals on energy, poverty eradication, hunger and nutrition, gender equality and global partnership. The private sector also believe that, they need to work hard in areas like infrastructure, good governance, education, industrialization & innovation, health, inequality, urban & human settlement, sustainable consumption & production, ecology & biodiversity, use of sea & marine resources as well as growth & employment for all.

The private sector of Bangladesh also playing a crucial role in helping countries meets the national goals. They are already involved in reducing unemployment, providing important services like health and education, meeting the large demand of the population through production. There is a greater need for alignment, measurement and communication for the sustainable efforts to enable a strong private sector contribution to the SDGs.

NGOs and Private Organizations of the country are an important player in implementing of SDGs at the grass-root levels by operating in the remote areas. It has been estimated that around five percent (on average) of the total additional resource requirement may be contributed by the NGOs. Greater cooperation between government, private sectors, universities, and many facets of civil society is necessary to accomplish the SDGs by 2030 and to sustain the human habitat for current and future generations. At the end, we aspire to have a better planet in a live able society through the globe.

## Chapter 6: SDG Thematic Progress

### i. Leave no one behind (LNOB)

The LNOB approach of the SDG implementation is all-inclusive approach. Particularly it means inclusion of the backwards in development initiatives. The inherent meaning of LNOB is to include all the section of the society those who are in backward or in weak position or under privileged section of the society. On the other hand, ensure proper attention, facilities, resource mobilization for all strata of the society. People who are left behind in development are often economically, socially, spatially and/or politically excluded- for example, due to ethnicity, race, gender, age, disability, or a combination of these, leading to multiple discriminations.

MoInd has taken a significant number of initiatives such as developing Industrial Parks, Ship-breaking Industry and Shipyard, Economic Zones and Food Processing Zones to facilitate industry sector for achieving its SDG targets including 2 priority targets. BITAC is working hard to reach poor, under privileged section of remote areas and train them for employment. SMEF is working to assist SMEs through cluster identification, training, organize finance and creating market linkage for their products. BSCIC is contributing SMEs through developing industrial park and other facilities. BEPZA and BEZA are working for large industries and attracting foreign investment. MoInd and its other organizations are continuously assisting and contributing to implement SDGs on LNOB principle. Under SEPA project BITAC conducts training programs for ethnic minorities, under-privileged women group as a part of leaving no one behind strategy. Rendering training to the boys and girls and providing jobs and facilitating entrepreneurship is one of the prioritized activities of BITAC.

Besides the regular activities, SME Foundation conducts separate programs for ethnic minorities, third gender group and women as a part of leaving no one behind strategy. Bring the women entrepreneur to mainstream development process and facilitate them for women empowerment is one of the prioritized areas of SME Foundation (SMEF). SMEF runs a separate program to develop and empower the women. Main activities under Women Entrepreneurship Development (WED) are institutional capacity building of women chamber/ trade bodies, formulate gender action plan, encourage bankers for finance to women entrepreneurs, conduct study on women entrepreneurs, organize women entrepreneur conference, national SME entrepreneurship award, SME product fair for entrepreneur etc.

Skill Development Training is being conducted in the hill tracts region so that people with less access to skills can come under the purview of the human resources development program. Credit facilities rendered to assist the unprivileged people in Angorpota and Dohogram is another mention worthy program taken by BSCIC. Development of Agor Industry in Sreemongol, extension and development of khadi industry in Moulabibazar, Pineapple processing Industry in Modhupur, development of BenaroshiPolli in Rangpur are the few initiatives taken by BSCIC for the inclusion of the unprivileged small entrepreneurs. Transgender training initiatives have been undertaken by BITAC to include the third gender to the mainstream activities of the country.



**Efforts for raising lower income people:** The Ministry of Industries and its organizations have been trying to eradicate poverty from the country and raise the lower income people through the rapid industrialization in the country. The Moind and its affiliated organizations take some measures for raising lower income people which are as follows:

In the context of setting up a new fertilizer or non- fertilizer factory in BCIC, there is an opportunity to create new job or scope of works for unemployed youth and lower income people. After setting up a new factory, many people around that factory will be benefited directly and indirectly from that endeavor. It will ensure to raise lower income people in those respective areas. In these factories latest technologies are being used for producing skilled and well-trained manpower that is excelling the buildup process for a prosperous Bangladesh. This skilled manpower can work abroad and earn a lot of foreign currencies. The progressive trend of participation of women in the factory will be continued as a result of implementation of the projects of BCIC. Our country will be benefited, and it will bring peace and prosperity.

BSEC is concerned about its labor and staff who are lower income people. Almost all the industries of BSEC have staff quarters and labor colonies where they can live with minimum expenses. They also get some facilities like transport, tiffin allowance etc. Children of these lower income people get scholarship from BSEC. It has been contributing a lot for raising the lower income people by providing direct or indirect job opportunities in its factories.

In BSFIC, around 50 million people directly and indirectly depend on this industry that indicates important effects in the national economy of northern region of Bangladesh. BSFIC is ensuring social and economic development by securing every staffs life of sugar industry through allocating earnings, gratuity at a rate of two times of their basic salary per year after retirement. Moreover, every staff, their family members as well as the children of sugarcane growers get medical facilities and educational supports from all the 16 units that are run under BSFIC.

**Table-I: Status of Manpower in 2017-18**

Sector	Permanent			Seasonal		Temporary	
	Officers	Staffs	Labor	Staffs	labor	Staffs	Labor
Sugar Mills & Others	780	3290	2428	1993	1908	1136	742
Head Office	16	31	81	0	0	29	22

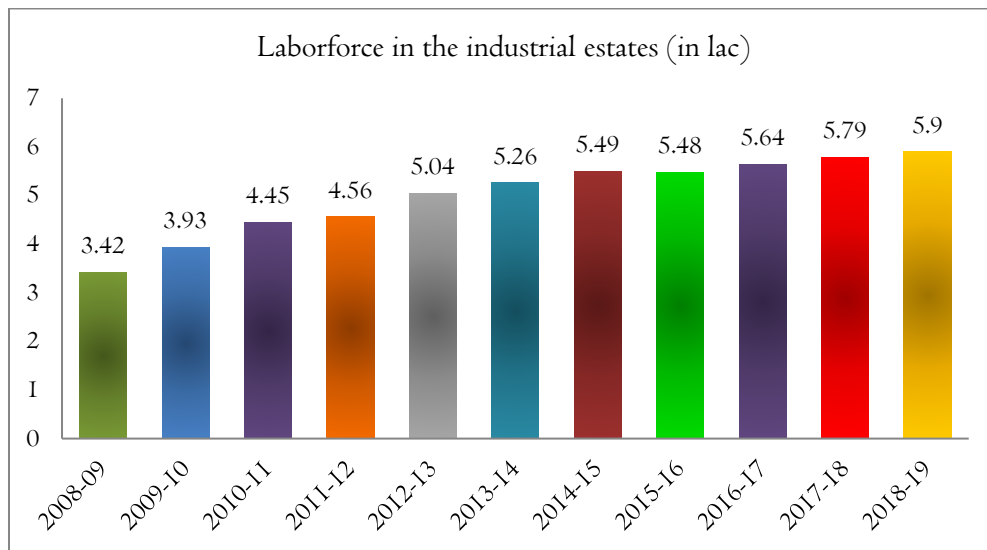
**Source:** Annual Report 2017-18, BSFIC

BSFIC provides all kind of agricultural equipment/support to the sugarcane growers through cane grower's loan management system. Sugarcane growers are getting all kinds of digital support through mobile banking sure cash system, e-punji, e-gazette, cane growers loan management system. BSFIC regularly arrange training for its officers and workers locally and internationally to develop their capacity in QA/QC and production process. BSFIC is strongly committed to move on with the World Development Agenda for 2030. There is an enormous scope of achieving goals and targets of SDG through establishment of

agrobased industries with its resources which will reduce poverty, create employment and foster socio economic development<sup>23</sup>

BSCIC was established to ensure Balanced Regional Development. For this BSCIC has established 76 Industrial estates all over the country. Moreover, twenty-six projects are being implemented under direct supervision of BSCIC. Besides, there are sixty-four Industries Service Centers. These centers have been working for physical infrastructure development for industrial enterprises, poverty alleviation, and women entrepreneurship development, providing training and credit and pursuing financial assistance for entrepreneurs. Development of Beekeeping through Modern Technology is another project which gives technical support to the beekeepers. It is also contributing through the salt production project.

**Figure-2: Labor force in the industrial estates (in lac)**



**Source:** Annual Report, BSCIC

BSCIC has been implementing a project titled 'Poverty Reduction through Inclusive and Sustainable Markets (PRISM) funded by European Union, to upgrade the Small, Medium and Cottage Industries (SMCI) by developing skills of enterprises, piloting pro-poor innovative support schemes and promoting new and effective approaches suitable to the development of the SMCI. BSCIC is also working for the development of small and cottage industries in Chattogram Hill Tract Region (CHT). Thus, BSCIC has been contributing to materialize SDG in reducing poverty, inequality, creating employment and empowering women.

BSTI has a separate SME counter at One Stop Service Centre of BSTI, where small and medium entrepreneurs can receive the services with special care. Furthermore, it also has been working for generating employment and thereby alleviating poverty in Bangladesh through helping the entrepreneurs.

<sup>23</sup><http://www.bsfc.gov.bd/site/page/ddca22ac-d151-43b6-aaf2-bcdbc2535f0c/->

**Table-2: e-services of BSTI**

SL	Name of e-services
1.	List of 181 mandatory items with BDS no. have been furnished on the Website.
2.	Govt. has made 55 imported products compulsories in the Import Policy 2015-2018 for which BSTI's certification is essential. The list of those 55 items with BDS no. has been furnished on the Website.
3.	A Complaint Box has been included in the BSTI Website.
4.	An On-line Application Form for the Certification Marks (CM) license has been included in the BSTI website.
5.	BSTI has introduced Citizen Charter. Manufacturers, importers, buyers, consumers and others have been receiving services as per citizen charter.

BITAC has been working for productivity promotion and improvement of productivity through its laboratory and workshops support. The main objective of BITAC is therefore, promotion of the national economy through development of product, process and skilled manpower. The main mandate of BITAC is to provide technical training for skills development and make ready for self-employment and employment in the industry sector. Therefore, the economic and social life has been improved particularly in rural Bangladesh. It has great success in creating skilled manpower, employment generation, entrepreneurship development, women empowerment, poverty reduction, reducing gender and area-based discrimination. Government provides the necessary facilities on technical training including food, lodging, transport allowance, books etc. through BITAC. The training package is designed based on demand, firmly targeted towards the goal of employment, directly linked with the demand of the factory and self-employment program. Unemployed poor youth specially distressed girls live in village areas are selected based on the degree of helplessness. The degree must be counted through point system related with income of family, education, burden of the family. Orphan, widow, tribal are given priority.

BIM has included the 'entrepreneurship training' in its annual training program. The BIM has a great impact on SDG, as it is contributing to poverty alleviation and thereby employment generation through its human resource development programs. The major thrust during the last decade has been on training and Post-Graduate Diploma Programs. BIM offers two types of courses-short courses of one to four weeks and diploma courses of six months to one-year duration. BIM has technical cooperation with various international agencies like World Bank, USAID, UNDP, ITC/GATT/UNCTAD, UNIFEM and others.

SME Foundation has been working to raise the lower income people as well as to achieve the Vision 2021, SDG 2030 and Vision 2041 of the present government through implementing multifaceted programs related to micro, small and medium enterprises development. It has been contributing in the employment generation and poverty alleviation process. To make SME entrepreneurs competitive, SMEF regularly organizes various training programs like dedicated programs for women entrepreneurs, ICT based training programs, technology-based training programs and various skills & management-based training programs.

SMEF organizes SME product fairs throughout the country. It also organizes special types of fairs for facilitating and nurturing the artisan products of Bangladesh through heritage handloom festival. SMEF has been assisting entrepreneurs to participate in the international product fairs. SMEF assisted entrepreneurs to participate in the International Product Fairs in Germany, Japan, India and China. SMEF has also special programs to position the women entrepreneurs into the mainstream business community. SMEF has been offering collateral free & single digit (9%) loan to the entrepreneurs with its credit wholesaling program through banks and NBFIs. This program is basically helping the SME access to finance. Though it is a very small-scale financing, but this program is equipping the entrepreneurs to become bankable and thereby contributing to eradicate poverty. As of September 2019, SME Foundation has provided BDT 92 crore as loan through banks and non-banks financial institution to 1850 entrepreneurs among them 1338 are male and 512 are female entrepreneurs.

SME Foundation has also been implementing various cluster-based development programs for uplifting the naturally grown SME clusters all over the country. These activities are contributing a lot in creating business opportunities and thereby generating employment opportunities for lower income people.

BAB is contributing in the area of food and nutrition safety by enhancing the quality of relevant conformity assessment bodies. BAB is working on ensuring access for all to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines. Accreditation to medical laboratories and drug testing laboratories is the key achievement. BAB has been providing different technical trainings on quality aspects to upgrade the competence of entrepreneurs. As a result, people are engaging in the high demand technical jobs. This acts as a tool to raise the lower income people in the mainstream job market.

DPDT administers activities related to Industrial Property. It facilitates innovation and brand creation that indirectly affect the lower income people. Apart from that it is registering geographical indication (GI) goods. DPDT is helping entrepreneurs to protect their Intellectual Property Rights (IPR).

NPO is a national level specialized organization to promote productivity and thereby accelerate pace of economic development through its multidimensional activities like creation of productivity awareness, development of productivity infrastructure and implementation of productivity improvement program. The issue of productivity has got more attention in the seventh five-year plan (7FYP) of the Government. The policy has suggested different means and instruments for raising productivity not only in manufacturing sector but also in agricultural and service sectors. NPO has successfully introduced regular training programs on different subjects of productivity targeted at management and trade union officials in the public and private sector.

Office of the Boilers is also playing a vital role in raising the lower income people in various ways. As the boiler attendant comes from lower income family so the office of the chief inspector of boiler is providing best efforts for the lower income people. It has trained the boiler attendant for better performance and

getting good job. This Office has already provided 6983 certificates to the boiler attendant. They are serving many industries all over the country and contributing to the national economy.

Finally, it can be concluded that most of the organizations under the Ministry of Industries have been playing a pivotal role in raising lower income people of the society through multifaceted programs related to skill development, management development, productivity improvement and so forth.

## ii. Economic, Social & Environmental Development:

Ministry of Industries carries out its mandate and contextualized economic, social and environmental aspects of the SDGs through its different subordinate offices.

**BCIC** is one of the big contributors of agriculture sector which is considered as a lifeline of the Bangladesh society for many years though its contribution is decreasing compare to industry and service sector. BCIC produces huge amount of chemical fertilizer for the country and this fertilizer used by the farmers. It contributes food crops and cash crops production and helps also low-cost food supply achievable through productivity gains. Farmers are directly benefitted by BCIC. With the advancement of crop diversification, many youths are now engaged in agriculture as self-employment, creates opportunities for household income, ultimately increase purchasing power of the poor, which has direct linkage with PRSP.

BCIC has taken many short-term, mid-term and long-term initiatives, projects planned are given below:

1.	Shahjalal Fertilizer Project (SFP) on G2G basis.
2.	“Conversion of Wet process to Dry process at Chatak Cement Company Ltd (CCCL)” by GoB financing.
3.	Modernization and strengthening of Training Institute of Bangladesh Chemical Industries Corporation (TICI) providing technical assistance from South Korea.
4.	Construction of a 13 (Thirteen) Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing.
5.	Establishment of a new Urea Fertilizer factory (GPUFL) in place of UFFL and PUFFL premises under bidder funding.
6.	Construction of a 34 (Thirty-Four) Nos. Buffer Godowns in different districts of the country for Facilitating preservation and distribution of Fertilizer by GoB financing.
7.	Construction of Godowns for preservation of Chemicals on temporary basis by GoB financing.

It is expected that after implementing these projects, the economic, social & environmental aspects of SDGs will be ensured by the BCIC in a more comprehensive way.

**BSCIC** is involved in creating infrastructural facilities around the country for promoting and extension of small, micro, medium and cottage industries. BSCIC develops industrial parks as part of its Annual Development Program (ADP) implementation. In most cases, projects are made considering the economic,

social and environmental sustainability aspects. Most of the Industrial Parks are being developed in those areas where disturbances to the eco system biodiversity can be avoided.

**BSEC** and its industries have full focus on sustainable economic development by implementing various projects which usually create huge opportunities for employment as well as increase productivity. Better productivity enhances size of the local market and saves a huge amount of foreign currencies. BSEC is expanding by re-skilling some of its very old industries. In the long run it will help to contribute in our economy. BSEC has been playing a vital role in economic growth by contributing to the national revenue. These not only help in building capital but also is being used as the fund for the new industries. Thus, it has been a part of economic development for the last few decades. Moreover, BSEC has been contributing development of the business as well as contributing to the development of social and environment, such as employment generation; assistance for various social and religious activities; tree plantation; ensuring environment friendly and safe work environment; training for skill development; assembling the vehicles which have less toxic emissions and environment friendly.

Around 50 million people are directly and indirectly dependent on this industry that indicates important effects in the national economy of northern region of Bangladesh. Currently there are 14470 employees working in the **BSFIC** Headquarters and its affiliated institutions. The remaining people belong to sugarcane growers and daily basis labor that are mostly dependent on sugar industries for their living beings. BSFIC is ensuring their social and economic development through allocating earnings and resources. BSFIC has also taken appropriate measures regarding the environmental development by establishing ETP and using environment friendly automated machineries in all its sugar mills, using subsoil water instead of underground water in the production process as well as green farming in the available land.

The system of globalization has brought a revolutionary change in every sphere of human life and society and is making the world move fast towards the development of trade, commerce, industry and the quality of industrial products. Through setting standards of products and processes, and testing, **BSTI** is contributing huge in economic and social aspects as well as contributing in environmental sustainability. Internationally recognized accredited laboratories of BSTI conform to the requirements for quality, safety, health, social and environmental impact. It also ensures safe, standard food and other items that's are very useful for human and animal sustainability. Therefore, BSTI is greatly contributing directly in economic and social sustainability and indirectly in environmental sustainability.

**BIM** organizes many training programme on management issues for the public and private sector officials and employees. There are many sessions that include awareness programme on Economic, Social & Environmental Development for Diploma participants. Awareness building on environmental issues is one of the core practices in BIM training courses. BIM also conducts small scale research where socio-economic and environmental aspects are covered by participants in their academic curriculum.

**BITAC** is working on skills development training for industry sector, produce and repair import substitute spare parts towards uninterrupted production and save foreign currency, dissemination of knowledge and

innovation achieved through experience and research. Through skills development training, it is contributing youths, ready for self-employment and employment in industry. In last three years, BITAC has trained more than ten thousand youths and out of them above four thousand have been directly employed in many industries. Many of the trainees have become entrepreneurs. BITAC selects trainees usually from less educated, poor, under privileged and vulnerable rural youths. Priority is given for women and providing them employment opportunity. Therefore, the economic and social life has been improved particularly in rural Bangladesh. Moreover, it is contributing economic progress through developing machine parts for industry sector.

Safe & Standard Boiler is very essential for sustainable industrialization & environment protection. Office of the Chief Inspector of **Boiler** provides certificate to each & every boiler by proper inspection & Testing. A good quality boiler emits less quantity of Nox, Sox, Co2, Co i.e. very important for protecting natural environment. Boiler Office also provides guidance to stakeholders about standard operating procedure of boiler (such as limited fuel consumption, safety requirement etc). Moreover, it provides training for the boiler operators who have better opportunities of jobs in the industry.

**BAB** is closely working with some export-oriented business like RMG, jute products, fisheries, footwear etc. to improve their quality and promote the international business and thereby enhance the economic development of the country. Accreditation also creates base of trust and confidence of domestic consumers in internal market. Different accreditation schemes significantly ease the life of citizens.

**DPDT** is playing an important role to the national economy. More than eighty thousand certificates have been issued to the inventors and businessperson and companies for the commercial use of their goods and services. The creative works as patent, design or trademark which is registered in DPDT is used in the domestic market and have a greater economic and social impact. The invention or brand which is against the development of environment or which is hazardous for environment is being cancelled for registration of Intellectual Property.

“National Industrial Policy-2016” focuses on increasing labor productivity as well as resource productivity. **NPO** is working hard to increase Bangladesh productivity with the help of Regional Productivity Organization giving especial emphasis on green productivity. Productivity in general, is an economic term and is related to growth and economic development of a country. Increase in productivity is the key element in achieving sustained growth of output which results increase in per capita income.

**SMEF** is one of the best institutions for SME growth and nurturing in Bangladesh. It provides training on entrepreneurship development, product development and market linkage. SMEF contributes in economic, social & environmental development of Bangladesh by expanding collateral free & single digit interest rate loan for SMEs (through its Credit Wholesaling Program) in association with banks & non-bank financial institutions. SMEF enhances market promotion of SME products through national & regional (district

level) SME product fairs and heritage handloom festival. It also provides appropriate business information through SMEF Business Support Service Center.

**iii. Inclusions of 5Ps (People, Planet, Prosperity, Peace and Partnership)**

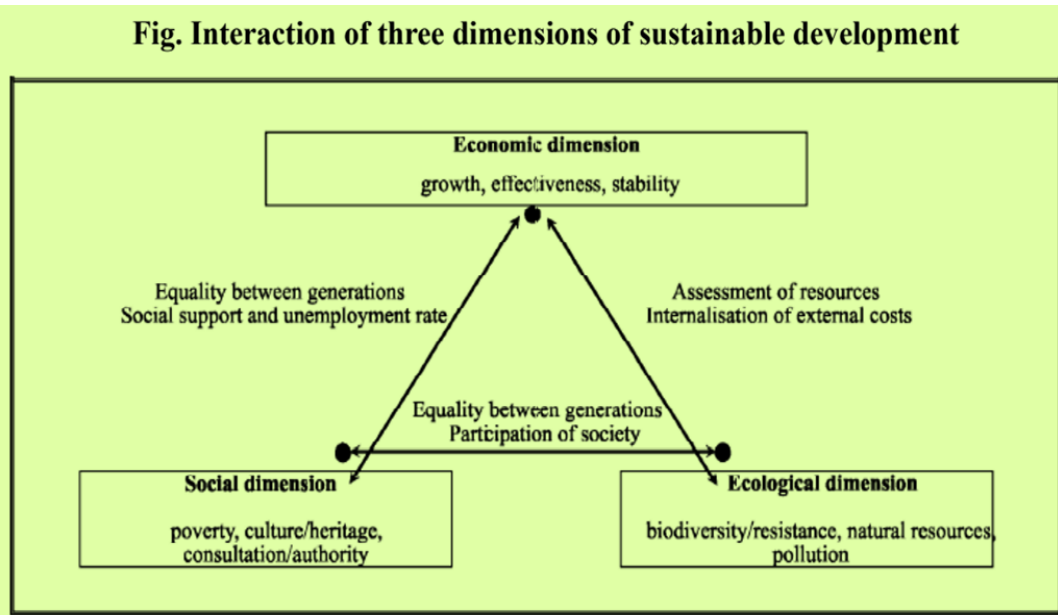
The sustainable development that is our aspiration can be understood through five lenses or the “5Ps” -People, Prosperity, Planet, Peace, and Partnership. The “5Ps” are the ground or five pillars of sustainable development. Agenda 2030 is broader in scope which includes social and economic issues, human rights and access, equity and gender issues. The Declaration focuses on “achieving sustainable development in its three dimensions which are economic, social and environmental in a balanced and integrated manner”. Country representatives resolved furthermore - between now and 2030 – to:

- “end poverty and hunger everywhere;
- combat inequalities within and among countries;
- build peaceful, just and inclusive societies;
- protect human rights and promote gender equality and the empowerment of women and girls;
- Ensure the lasting protection and sustainable management of the planet and its natural resources”.

Figure: Info graph of the 5P’s



**Fig. Interaction of three dimensions of sustainable development**





Modified by I. Balsytė (2007) based on Markandya A., Harou P., Bellu L., Cistulli V. (2002).

**People:** This includes empowerment of people by achieving of Good Health and Prosperity. Ministry of Industries is determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfill their potential in dignity and equality and in a healthy environment mentioned in objectives of goal 1 to 3.

MoInd is trying to eradicate extreme poverty from the country. There are many job facilities in different organizations of MoInd. Many people work in different organizations of MoInd. Many casual labors who are very poor also work in different corporations/ organizations of MoInd. It provides different kinds of products like fertilizers (Urea, TSP, DAP), Papers, Cement, Sugar, handicraft, Steel, glass, etc. The products are sold very cheap rates. Companies under MoInd maintain secured lives of their employees & daily labors.

**Prosperity:** This includes the objectives of goal 4 to 10 that means to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Different organizations of MoInd has enhanced facilities for training, workshops, education and taken initiatives for human resource development. Research, training, skill development and special technical courses by BIM, TICI (under BCIC), BITAC and SME foundation can gain efficiency by applying economic, social and technological progress in harmony with nature. In these centers we promote gender equality and access to all levels of education and vocational training. As a result, the number of youths and entrepreneurs with relevant skills are getting the opportunities for employment which results substantial increase in supply side towards decent jobs. Sustainable and Resilient Land Use by maintaining Quality Infrastructure is focused in factories and projects. Innovation, treatment plants, environmental management tool and process simplification promotes social accountability and environmental concern.

Industrial Policy ensures labor rights and promotes safe and secure working environments for all workers. It prohibits child labor, including in all its forms. The Policy also encourages productive employment and decent work for all women and men, including for young people and persons with disabilities. MoInd always encourages research and innovations. The Ministry is also giving financial support to its organizations for conducting research and innovative works.

**Planet:** This lens includes the objectives of goal 11 to 13 that means to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and

future generations. MoInd has taken initiatives to strengthen and modernize projects at organizations under the ministry considering nature.

Companies/ Factories take steps to replace existing old infrastructure and technologies of its industries by providing modern technology minimizing environmental pollutions that are cause for production losses. They also take steps for managing industrial wastes. Industries use waste management system to minimize the environmental pollution for saving planet of the solid, liquid or gaseous pollutants. Factories replace old technology providing modern technology for saving power and natural gas. BSTI under MoInd gives management system certification scheme which help the industries to use low energy & natural resources that reduce environmental impact in the planet.

**Peace:** This lense includes the objectives of goal 16 that means to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

All corporations, organizations and companies under MoIndis working on poverty alleviation and employment generation which are very important aspects to maintain a peaceful society in the country. Moreover, MoIndis trying to protect corruption and bribery in all their forms and trying to develop effective, accountable and transparent institutions at all levels. MoIndputs emphasize on responsive, inclusive, participatory and representative decision-making at all levels.

**Partnership:** This lense includes the objectives of goal 17 that means to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people. MoInd focused coordinated approach with Government and private sectors in decision making. MoIndbelieves to extend cooperation and communication with stakeholders for integrity and inclusiveness.

MoIndmaintains liaison with almost all stakeholders regionally and internationally specially in relation to standards, conformity assessment and metrology. Officials of MoIndparticipate actively in the work of the SAARC standing committee on standards, metrology testing and quality. The Ministry maintains relation with ISO, IEC, WTO, OIML, Codex, FOA and other international and regional organizations.

#### iv. Role of Industrialization on principle of ‘whole of the Society Approach’ and ‘whole of The Government Approach’

Why industrialization is being needed desperately for Bangladesh? This simple asking might be raised in anyone’s mind having seen the title of this topic. Industrialization led to the development of factories for large-scale production with consequent changes in society in order to achieve rapid and consistent economic growth of a nation. Thus, industrialization is only the driving force to create an increase variety and volume in the availability of manufactured goods. It is a process that help to create an improved standard of living for Bangladesh.

Having seen the core essence of industrialization we can see the economic growth of a nation is the main goal here. Achievement of this goal comes into true when the government and the society complementarily work together in the same melting pot. In this regard, Government of Bangladesh has taken enormous initiatives for rapid, consistent and sustainable economic growth through its Five-Year Plan aligning with United Nation’s guideline “The Sustainable Development Goals 2030” approaching with the whole of society and the whole of government together.

The term the whole of society approach includes the NGOs, businesses community, development partners, ethnic minorities, professional groups, labor associations, women network, media, students, youths, farmers, fishermen, small traders, informal sector laborers, community leaders, transgender group, orphans, widows etc. Beside the whole of society approach, the whole of government approach comprises the collective activities of all diverse ministries, public administrations and all allied agencies.

#### **A combine journey of the whole of society and the whole of government towards industrialization of Bangladesh: Recent perspectives of Ministry of Industries**

A Quick improvement of living standard of the people was the main goal of Bangladesh liberation struggle in 1971. Soon after independence of Bangladesh, the Government led by Father of the Nation Bangabondhu Sheikh MujiburRahman considered this vision for higher living standard for the mass people. It has been preserved in the Bangladesh Constitution as well. The state of Bangladesh through its Constitution (article-15) committed to a higher living standard for its people by providing basic needs to all its citizens through planned development. Therefore, also article 16 of the Constitution was written for the development of the agriculture, rural electrification, cottage and other industries, education, communication and public health. Under this commitment of the Constitution, the first Five Year Plan (1973-78) by The Planning Commission introduced a great pathway to rebuild and develop the newborn country’s economy despite unavailability of comprehensive and reliable data.

The 2030 Agenda for Sustainable Development is the most ambitious action plan for people of the planet with partnership having prosperity and peace with a set of goals and targets formulated by the United Nations. Among these set of goals and targets, goal nine is exclusively written for sustainable

industrialization by building resilient infrastructures and fostering innovation. The targets of goal nine are clearly indicated agenda for industrialization with definite time frame to address whole nation, people and all parts of society. Thus, the development of industry sector is considered as a course of pathway where multi-stakeholder plays a great role fostering economic growth both globally and nationally. Thus, primarily SDGs focus on institutional coordination (government approach) and stakeholder engagement (society approach).

As the commencement of collective voyage of all countries and all stakeholders (society and government), no one will be left behind from the benefit of sustainable development. To take this philosophy into account, Ministry of Industries has taken initiatives to implement our common vision, resolve and ingenuity. In this regard, a whole of government and whole of society approach must become to its new model. By Industrialization, meaningful multi stakeholder partnership will be developed in designing implementation, financing and evaluation of development solutions. Ministry of Industries is transforming industrialization following the “Mapping of Ministries by Targets in the implementation of SDGs aligning with Five Year Plans” along with Industrial Policy, modernizing & renovating state-owned enterprises, developing SME's, micro & cottage industries, protecting standards of products, intellectual property rights and enhancing productivity.

A close observation from all agencies of Ministry of Industries is telling us that DPDT is taking and implementing actions, programs and activities in align with the stakeholder partnership by providing services for registering patent, design, trademarks and strengthening activities in protecting intellectual property. BSTI has strengthened its activities on industrial product certification, harmonizing national standards in consistent with the international standards of commodities and services. BSFIC is taking and implementing environmentally sustainable projects along with the multi stakeholder partnership. Moreover, associate activities performed with diverse organizations keep continuing production by producing bio-fertilizer and other agricultural products. These activities will promote create new job and reduce poverty in a local area. BITAC is serving for skills development by technical training to young generation, technological development through research and producing machine parts. Moreover, BITAC focuses on productivity through providing training support to entrepreneurs on industrial management and technical know-how involving all stakeholders, including civil society, academia, media, business sectors and people from all strata of the society. BSEC is coping up with world class technology by taking time-appropriate sustainable projects which are practically involved to many entrepreneurs.

The basic objective of BCIC is to help building the national economy through implementation of industrial policy to develop socio-economic condition and infrastructures, ensuring operation of the enterprises at the optimum level of efficiency and productivity, making available import substitute and quality products at reasonable prices, achieving the country towards food autarky by producing and supplying agricultural inputs at door steps of the people all over the country. It is providing training and developing managers at all levels engaged in commercial, industrial and service organizations of private & public sector and NGOs incorporate with SDGs framework.

BAB is providing accreditation programs for various types of conformity assessment bodies, such as laboratories, certification bodies, inspection bodies, training institutions or persons in accordance with the relevant international organizations. According to the National Industrial Policy, NPO promotes productivity and thereby accelerates pace of economic development through its multidimensional activities. SME Foundation has taken the role of a facilitator with a view to creating increased SMEs in the marginal part of society in order to poverty alleviation and employment generation. BSCIC is contributing its efforts to implement Vision 2021: Digital Bangladesh incorporate with SDGs 2030 by enhancing its capacity building through ICT based infrastructure and services for entrepreneurs for the interest of small and cottage industries throughout the country.

MoInd is now on the board of experiencing the effects of the SDGs 2030 Agenda by contributing to the transformation of social and economic sustainable development process for the grassroots level of Bangladesh. Now, we can come into the point that aforesaid narrative discussion of Ministry of Industries along with its agencies has been reflected the role of industrialization in Bangladesh based on the principle of whole of the society approach and whole of government approach followed by SDGs 2030 guideline.

### **Holistic approach is being done under a strong and visionary leadership**

Hon'ble Prime Minister Sheikh Hasina who is the Chairperson of National economic Council has emphasized in her speech, "The Agenda 2030 is our collective journey to transform the world" at 70<sup>th</sup> UNGA 2015. Following her strong leadership Bangladesh Planning Commission has successfully done the Mapping of Ministries/Divisions by SDGs targets (who to do what in terms of targets) which includes directly linked 41 lead Ministries/Divisions including Prime Minister's Office and Cabinet Division associated with specified 34 Co-Lead Ministries/Divisions and all Ministries/Divisions which are associated following her strong guidance. The second immediate step/task which has been initiated is devising/formulating actions/ interventions projects chosen for attaining each of the targets leading to fulfillment of the goals as enunciated in the SDG agenda.

Governance Innovation Unit (GIU) of Prime Minister's Office has taken initiatives so that the SDGs and its associated targets are well reflected in ministries/divisions annual work plans through Annual Performance Agreement (APA), a result-based performance management system across the whole spectrum of public sector with a view to improving efficiency as well as ensuring transparency and accountability. Ministry of Industries has taken an integrated approach following APA system.

### **Great leaders don't tell what to do they show how to do**

Father of the Nation Bangabandhu Sheikh MujiburRahman envisioned a prosperous Sonar Bangla (literally, Golden Bengal) free from hunger, poverty, deprivation, inequality and malpractices from whole of the society. To materialize this dream, one of the first decisions of the Bangladesh Government was to establish the Planning Commission to prepare the short-term, mid-term and long-term plans viz. Annual

Development Program, Five Year Plans and Perspective Plans and other major economic policies. Hon'ble Prime Minister Sheikh Hasina has been carrying forward Bangabandhu's dream. Her policy initiatives and thoughts are always focused on the needs of the citizens (the whole of society). She has given us a clear trajectory of development: Bangladesh will be a middle-income country by 2021 and a developed one by 2041 where Agenda 2030 will be a connecting junction.

## Chapter 7: Aspects considered in Implementing SDGs

### i. Environmental Protection for Sustainable Industrialization

The nexus between industrialization and environmental protection is well known. Historically, all most all the countries invite foreign direct investment (FDI) for rapid industrialization to foster GDP growth. To tackle the unemployment problem of the working class and persuasive pressure of the industrialist class the industrialization is encouraged all most everywhere in all most all the time regardless of its environmental impact. But in the recent days, the concern over environmental protection has raised and the agenda 2030 has properly incorporated the environmental protection issues, especially in SDGs-12, 13, 14 and 15. The processes related to industrial zoning, waste management, effluent treatments, circular economics, etc. are in the trails to be integrated in the industrialization plan even in the least developed and developing countries. In Bangladesh, like many other countries, number of ministries and agencies are involved in environmental protection, as well as, industrialization processes. Bangladesh is a party to different international instruments on environment protection and also enacted several relevant laws, such as, Environment Conservation Act 1995, Environment Conservation Rules 1997, Environment Court Act 2010, Brick Burning (Control) Act, 1989, Forest Act 1927 (amended in 2000), Water Pollution Control Ordinance 1973, Hazardous Waste and Ship Breaking Waste Management Rules 2011, etc. Legitimated by Bangladesh Economic Zones Act, 2010, the Bangladesh Economic Zones Authority or BEZA, the centralized economic zones authority, is working, directly under Prime Minister's Office, for establishing and managing of Special Economic Zones (SEZs) in the country. On the top of all these, Ministry of Industries is providing policy supports and exercising to identify further scopes for ensuring such support to its internal and external industrial entities with a core spirit of 'Environmental Protection for Sustainable Industrialization' in Bangladesh. The mentioned support has a visible impact on the thriving of the private industrial sector of the country and the share of manufacturing value added in GDP has increased more than 7% in the current decade.

To utilize the current population dividend, there is no way to ignore the importance of rapid industrialization towards achieving sustainable economic development in Bangladesh. In this connection, the MoInd is alert that environment-unfriendly and unsustainable industrialization may pose a tremendous detrimental effect on the environment and overall quality of life, more precisely on the surrounding ecology of the industrial set up. The pollutants released from the industries to the environment significantly deteriorate the quality of natural resources like water bodies, air and soil. Not only that, utilization of resources in an unsustainable way rapidly depletes the availability of the resources. So, in the policy context, in a country with lowest availability of per capita resource, environment-friendly means of uses of natural resources is very challenging with a vision to keep these resources sustainable for the generations to come.

Conforming achievement of the SDGs, the government of Bangladesh has included the concept of the green economy in its core development policy which has been in sector-based development policies of the government. Industrial Policy-2016 formulated by the Ministry of Industries encourages the private sector for investing in environment-friendly industrial management. The policy promotes setting up ETP,

CETP or CDM for controlling emissions of pollutants and GHGs to the environment. Also, the policy urges the ministry to actively take into consideration of establishing waste recycling industries and encourages local and foreign investors with provisions of financial incentives for waste management industries. The policy also fosters the practice of 3R while setting up and managing the industries. With this key policy guideline regarding sustainable industrial development, the corporations and departments under the ministry of industries are implementing environment-friendly initiatives.

While encouraging the private sector investing in sustainable and green industries, the Ministry of Industries and the corporations and departments under it have adopted projects, programs and initiatives for fostering sustainable industrialization and environmental protection. One of the remarkable measures in this regard is introducing the latest energy efficient industrial technology in the country. Ghorashal Polash Urea Fertilizer Project is a vivid example in this regard which is now in the implementation phase. This fertilizer factory is being installed by a Japanese company. It will take advantages of energy-efficient, sophisticated and environment-friendly technologies. It will capture carbon-di-oxide gas to enhance its production by 10%, which would be the first of its type in Bangladesh. State-of-the-art technologies will be employed in preventing urea gas emission, treating liquid effluents before releasing and internal recovery from solid wastes.

Another bright example of sustainable industrialization is the expansion of Pragati Industries Limited (PIL) exploiting latest and environment-friendly technology. Initiatives have been taken to build a modern automatic CKD assembling plant and to manufacture parts locally. This plant will be gradually transformed into a completely sustainable and environment-friendly plant. At present, PIL avoids using environmentally harmful materials, chemicals, paints. It only uses MMC (Metal Matrix Composite) standard materials. PIL only produces high-tech vehicles which release fewer toxic emissions in the air.

Ministry of Industries strongly emphasizes on building ETP, CETP in individual industries and industrial areas for controlling the spread of toxic material into the ecology. Establishing Dhaka Tannery Estate located at Savar with full functional CETP is a beacon of CETP, for industrial use in the country. This CETP is contributing to conserving the ecology in the adjacent river Dhaleswari. All projects adopted for building industrial parks under the present government mandatorily incorporates the provision of CETP. The ministry also monitors new and old industries run by private management to operate properly ETPs and CETPs by themselves. In addition to building CETP on Dhaka Tannery Estate in Savar a new project has been taken to manage the solid wastes in environment-friendly and sustainable means. Under this project, industries will be set up using solid tannery wastes to produce valuable items. This project will ensure 3R practices highlighted in Agenda 2030. Also, for the sugar industries under Bangladesh Sugar and Food Industries Corporation ETP has been established in Natore Sugar Mill and a proposal has been taken to build individual ETPs at another 14 sugar industries. Chimneys with right height have been set for releasing the gaseous discharges of the sugar mill above the breathing level.

In relation to the environmental protection and decent work issues, MoInd has another important sector to regulate is ship-breaking industry. This sector is engaged in disposing old vessels and collecting virtually every part of the hull and machine complex for being reused or recycled as scrap metal. It supplies not only



a substantial quantity of scrap metal for the iron and steel industries, but it creates huge job opportunities for people. However, ship breaking industries poses significant threat to the environment as ships contain many hazards that can have significant detrimental effects on humans and the environment if not dealt with properly. The “Ship Recycling Act, 2018” has been enacted by the initiatives of the Ministry of Industries and a proper monitoring system is being devised currently under the ministry.

Finally, Ministry of Industries has recently initiated an action research on integrating concept of circular economics<sup>1</sup> in the BSCIC industrial estate at Sirajgonj which is in the preparation phase now.

## ii. Implementation of 3Rs (Reuse, Reduce & Recycle) and Circular Economy

The popular and well-known concept of "3R" refers to reduce, reuse and recycle, particularly in the context of production and consumption. It calls for an increase in the ratio of recyclable materials, further reusing of raw materials and manufacturing wastes, and overall reduction in resources and energy used. The 3Rs offer environment friendly alternatives which deals with the wastes and its impact on human health, environment and economy as well. The ‘3R Initiative’ was officially launched at the 3R Ministerial Conference hosted by the Government of Japan in April 2005, with an aim to promote global action on 3R. In March 2006, a Senior Officials Meeting on 3R was organized in Japan resulting in strong commitment of governments and other stakeholders to implement 3R at local, national, and regional level. Over the last decade, waste generation has increased tremendously due to improved living standards, rapid economic growth and industrialization in big cities. The term 3R is an acronym for Reduce, Reuse & Recycle, whereby to reduce means to use less; to reuse is to use something again instead of throwing it away or sending it off to a recycling company; and to recycle is to turn items into new objects instead of throwing them in the trash (Kivi, 2011). According to Kivi (2011), recycling centres melt down cans, bottles and other items to create new materials in order to manufacture new products.

The 3Rs concept is an ideal solution of environmental, human health and economic issues caused by the wastes. Regarding production and consumption, the 3Rs refers to reduce, reuse and recycle which are discussed as follows:

**Reduce:** The top preference is to reduce. It refers to the reduction of waste in the production processes such as manufacturing. It cut back on the amount of trash is made. Optimal uses of raw material with quality product will decrease production cost. Limiting waste in the workplace through reuse and recycling efforts has a positive impact on the environment. One of the biggest reasons to reduce waste is to conserve space

---

<sup>1</sup>*an economic system aimed at eliminating waste and the continual use of resources.*

in our landfills and reduce the need to build more landfills which take up valuable space and are a source of air and water pollution. By reducing our waste, we are also conserving our resources. Many wastes are liquid, semi-solid, or contained gaseous material which deteriorates the environmental health. Most consumable products like electronics, clothes, personal care products, toys and so forth which are made of metal, cotton, synthetic or natural materials or cotton, some of are not easily recyclable.

**Reuse:** To reuse is to use something again instead of throwing it away or sending it off to a recycling company. Reuse of waste means any operation by which products or components that are not wastes are used again for the same purpose for which they were conceived. It is the second-best way to conserve and be earth-friendly because it keeps items out of landfills and reduces the greenhouse emissions caused by purchasing a new product. It is finding a new way to use trash so that we don't have to throw it out. Reuse reduces the strain on valuable resources, such as fuel, material and water supplies, creates less air and water pollution than making a new item or recycling, results in less hazardous waste, saves money in purchases & disposal costs, increase productivity, save energy, conserves nature and also reduces greenhouse gases. It also provides an excellent, environment-preferred alternative to other waste management methods, because it reduces air, water and land pollution, limits the need for new natural resources.

**Recycle:** Recycling is the third best way to conserve and be earth friendly. Recycling means to turn items into new objects instead of throwing them in the trash. Recycling centers melt down cans, bottles and other items to create new materials to manufacture new products. It conserves landfill space and saves energy because it takes less energy to manufacture products out of recycled materials than it does to manufacture them out of virgin materials. It can prevent the waste of potentially useful materials and reduce the consumption of fresh raw materials, thereby reducing energy usage, air pollution (from incineration), and water pollution (from landfilling). It is using trash to remake new goods that can be used again and thereby, help the environment to be green again. It also prevents the emissions of many greenhouse gases and water pollutants and saves energy. Using recovered material generates less solid waste. It helps to reduce the pollution caused by the extraction and processing of virgin materials. Recycling is very important as waste has a huge negative impact on the natural environment. Harmful chemicals and greenhouse gases are released from rubbish in landfill sites. Recycling helps to reduce the pollution caused by waste.

**Promoting a circular economy:** The concept of circular economy needs to address not only to settle the waste issues but also to conserve the natural resources. Some of the Asian countries like Japan, China and South Korea are successfully moving forward to this concept. There are several ways to define Circular Economy. The accepted working definition may be interlinked to manufacturing and service businesses seeking the enhancement of economy and environmental performance through collaboration in managing

environmental and resource issues. The theme of the CE concept is the exchange of materials where one facility's waste, including energy, water, materials as well as information is another facility's input. The new terms that are widely relevant are Eco-Industrial Networking and Industrial Symbiosis. These activities, if exercised correctly, could prove to be a stepping-stone towards sustainable Asian cities and possibly the best gift for our future citizens.

To recycle, reduce and reuse provides environment-friendly ways to reduce negative impacts of growing amounts of waste on the natural environment. It promotes sustainable economic growth, full and productive employment and decent work for all.

### 3Rs can improve

- Efficient production practices
- Economic returns
- Public image
- Quality of products produced
- Environmental responsibility

**Implementation of 3Rs:** The implementation of 3R could be started from the household wastes. Internationally recognized waste management hierarchy prescribes that the first priority should be given to waste minimization. Recycling, reusing, recovering, treatment and disposal in these orders may follow the minimization of all kind of waste. The 3Rs are meant to be a hierarchy, in order of importance. The waste hierarchy has taken many forms over the past decade, but the basic concept has remained the cornerstone of most waste minimization strategies [1, 5 & 6]. 3Rs could be the only way to save the nature from environmental deterioration. Bangladesh is quickly running out of space this why the 3Rs philosophy is a must to understand and put it into practice considering the social, economic and environmental issues.

Figure-I: Waste Management Hierarchy adopted from waste4change



As per National Industrial Policy, Government is working on encouraging local and foreign entrepreneurs to establish Waste Processing Industries. Government will do all possible cooperation including financial incentive for them. Business entities are also encouraged to participate actively for industrial waste management.

**3Rs in Practice:** The philosophy of 3Rs has been practicing by different organizations of Ministry of Industries which are as follows:

BCIC has been operating fertilizer factories, cement factories, insulator and sanitary ware factories and hardboard & paper mills in different locations of the country. During past few years both Ghorasal Urea Fertilizer Factory Limited (UFFL) and Polash Urea Fertilizer Factory Limited (PUFFL) of BCIC used 64.7 MMCF natural gas to produce 1700 MT urea fertilizer per day and emits huge amount of CO<sub>2</sub> gas that are the greenhouse gas and it pollutes the environment. Recently a new urea fertilizer factory named Ghorasal Polash Urea Fertilizer Project (GPUFP) has been established which can produce more urea fertilizer by using the same amount of natural gas and can control the environment pollution as well. In this factory environmental pollutant Carbon dioxide (CO<sub>2</sub>) will be captured from the primary reformer flue gas and it will be reused to produce urea fertilizer at that factory. As a result, new fertilizer factory will produce 2800 MT urea per day using same amount of natural gas that is 64.7 MMCF. The captured CO<sub>2</sub> will increase about 10% productions as a result no carbon will be emitted from the factory which prevent climate change and save energy & money. By using modern Effluent Treatment Plant (ETP) in the fertilizer factories, liquid effluents released into the environment is minimized. In Chhatak Cement Company Limited (CCCL) where residues of cement recycled with clinker for Cement production. As a result, waste reduced, and productivity increased. In Usmania glass Sheet Factory Limited (UGSFL) rejects product of sheet glass reused as raw materials for sheet glass production. Karnaphuli paper Mills (KPM) of BCIC has taken steps to set-up a new process operation unit to recycle wastepaper to make pulp for the paper production. In this paper Mills chemicals (sodium hydroxide and sodium sulfide) are also recovered from black liquor (The black liquor is an aqueous solution of lignin residues, hemicellulose, and the inorganic chemicals-sodium hydroxide and sodium sulfide used in the process). In recovering process steam also produced. By this steam process related different works are done. Therefore, the technology has proven as environment friendly, economic and energy saving. On the other hand, Ashuganj Fertilizer and Chemical Company Limited (AFCCL) of BCIC is using waste sulfuric acid which is produced during demineralized water production (DM water) for waste water treatment which contains liquid ammonia in the lagoon and thus saves extra acid for waste ammonia treatment.

Apart from this, industries under BSEC take quality policy where scrap & other things are reduced and recycled. Moreover, water is reused with the help of cooling tower in the factories. Sugar industries of

BSFIC use machinery that made from cast iron (roller, pump, coupling, trash plate, etc.), gun metal and brass. BSFIC has an engineering workshop that recycle the old machinery through casting method that uses in the sugar mills again which reduces wastage and expenses as well. Apart from that, sugar mills produce some byproduct such as bagasse, molasses and spent wash along with sugar. Bagasse is used in boiler for heat generation, molasses is used to produce alcohol in distillery unit, and spent wash is used in producing organic fertilizer. This organic fertilizer is used in sugar cane cultivation. In order to sustain the industrialization, BSFIC is gradually implementing some development projects of Balancing, Modernization and Replacement (BMR) in sugar mills, product diversification project like by-product based fertilizer plant and production of electricity through co-generation, establishing of sugar refinery and effluent treatment plant (ETP). BSFIC has taken appropriate measures to discharge its industrial liquid and gaseous waste in order to protect the planet from degradation and better health through establishing ETP in sugar mills as well as green farming in the available land and releasing the polluted gas above the breathing level. Sugar Mills also use their resources by recycling the byproduct, reuse solid waste as well as reduce expenditure. In addition, BSFIC is issuing environment-friendly automated machineries in every sugar mill, using subsoil water instead of underground water in the production process as well as green farming in the available land.

Apart from this, Savar tannery has introduce new technology which will reduce the water usage for cleaning the tannery products. For example, the new plant will use 30 MT of water to clean 1 MT Tannery which is just half of previous usage (Previous usage 60 MT of water for 1 MT). Besides, solid waste generation in the tanneries is the topmost significant aspect. A very short summery with recommendation for implementation 3R's is given below:

Table: The status of solid waste and possible use of solid waste

Name of the waste	Amount@year ton	Previously used in Hazaribagh	Possible use
Raw Trimming	11625	Production of hide glue, Animal feed stuff, dog chew	Biogas, Thermal treatment, Landfill, poultry feed/fish feed, glue, gelatin
Solid salt	4389	Reuse	Re-use after treatment
Lime fleshing	30262	glue/gelatin, Recovery of fat/tallow,	Energy recovery, protein hydrolysate, Composting, Biogas, controlled landfill by law
Unusable Tanned splitting	4500	Fish feed, Chicken feed (recently banned by court)	Leather fiber board production, Protein hydrolysate
Shaving dust	11270	Fish feed, Chicken feed (recently banned by court)	Leather fiber board production Protein hydrolysate, brick industry, paper industry
Crust & finished trimmings	2320	Local goods factory (key ring, money bag, sandal etc.	Leather fiber board

BSCIC established dumping yard in every industrial estates/ park to dump industrial wastes for reducing environmental hazards. BITAC usually produce cast iron, steels and other metals. The wastes from these productions are used by melting further in the furnace. Therefore, waste materials are reduced by reusing which increases productivity.

**Direction of Future Work:** The success of 3Rs will be dependent on the appropriate formulation and implementation of policies and programs in the designated industries and municipal areas where the wastes are produced. As the Japanese experience has shown, the key spheres of action will revolve around governance issues such as:

- Laws, legislation, rules and procedures;
- Education and awareness building issues;
- Stakeholders in the public and private sectors including the communities and consumers;
- Technology issues;
- Ensure minimum impact on the environment through industrial, manufacturing and market activities;
- Production of least amount of wastes possible;
- Financial issues, focusing on subsidies and taxation to facilitate action in the right direction, and to discourage unsafe practices

Finally, 3Rs can play a vital role for achieving sustainable environment by reducing the greenhouse gases and converting the wastes into resources. It will also ensure environmental as well as economic benefit for the society and the nation. Emphasis should also be laid on developing policy and mechanisms to promote 3R activities at the community and institutional level and integrating locally tailored solid waste management systems based on upstream waste minimization and sound downstream disposal, emphasizing strong community participation. Policy formulation and transfer of required technology is essential for promoting 3R. Ministry of Industries has been taken initiative to implement the SDG Targets by implementation of 3Rs (Reuse, Reduce & Recycle).

**5R principle of Waste Management:** In order to protect our environment from harmful waste the 5R Concept is introduced after the 3R concept. 2 more stages of waste management process are added in the 5R Concept: the first being Recover/Repurpose and second is Refuse/Reject.

**Recover:** It means converting wastes into resources. For example, In Karnaphuli paper Mills (KPM) under BCIC chemicals (sodium hydroxide and sodium sulfide) are also recovered from black liquor which is produced in pulping process. We should think better in our industries that how can we recover more resources.

**Refuse:** Refusing helps eliminate a lot of waste from the start. We can refuse products that are hazardous for environment. For example, we can refuse small size water bottle for carrying water and some things that we can refuse on our daily basis: single-use plastics like disposable coffee cups, utensils, and straws, etc. We should think that we can refuse in our daily and industrial life.

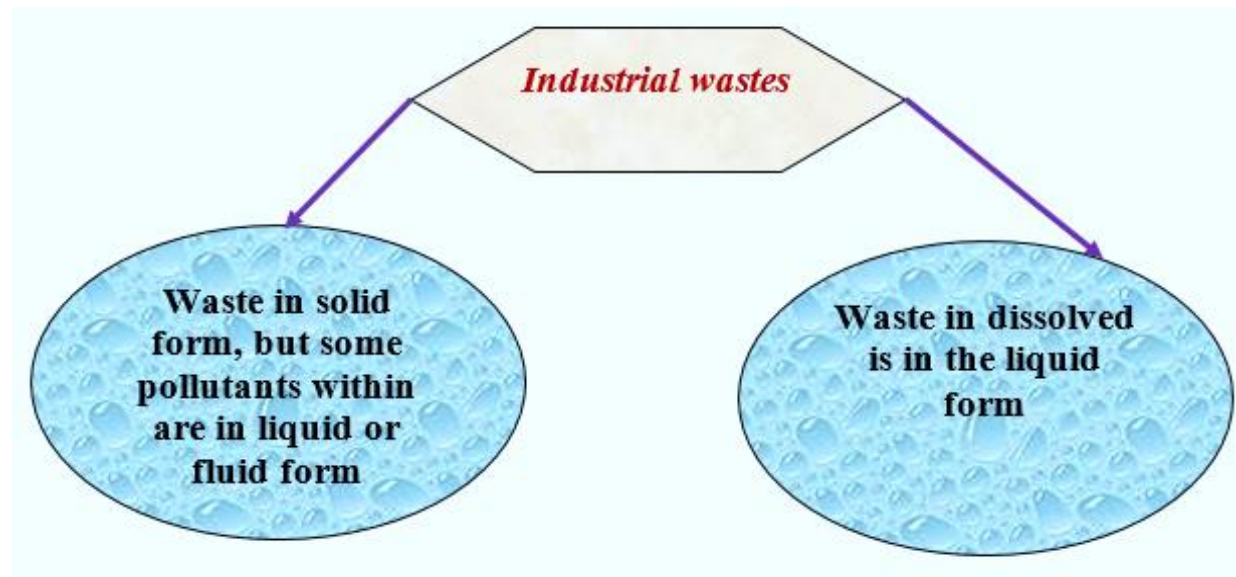
Ministry of industry can use those concepts in internalizing for sustainable world.

### iii. Waste Management in Industrial Sector

Industrial wastes have done distress to the environment and human health. Industrial wastes can be organic wastes or inorganic wastes based on their components; solid wastes, semi-solid wastes; liquid and gaseous wastes based on their species; hazardous wastes and common wastes depending on pollution characteristics.

In Bangladesh there are many chemicals, pharmaceuticals, foods, textiles and other industries. From these industries every year, large quantities of industrial wastes are generated from the growing industries and have become a major source of pollution and serious health concerns. As a developing country, Bangladesh face a major challenge in management and disposal of industrial waste and specially need to confront the adequate treatment, disposal facilities and training of qualified personnel.

Industrial wastes can be classified based on their characteristics:



**Environmental Impact:** Factories and power plants are typically located near water bodies due to the need for large amounts of water as an input to the manufacturing process, or for equipment cooling. Many areas that are becoming industrialized do not yet have the resources or technology to dispose of waste with lesser effects on the environment. Both untreated and partially treated wastewater are commonly fed back into a

near lying body of water. Metals, chemicals and sewage released into water bodies directly affect marine ecosystems and the health of those who depend on the waters as food or drinking water sources. Toxins from the wastewater can kill off marine life or cause varying degrees of illness to those who consume these marine animals, depending on the contaminant. Metals and chemicals released into water bodies affect the marine ecosystems. Wastewater containing nitrates and phosphates often causes eutrophication which can kill off existing life in the water.

**Air Pollution:** Another obvious effect of industrial waste is air pollution resulting from fossil fuel burning or from production process emissions. This affects the lives of many people because this spreads illnesses. Over time, this issue has been widespread. Several environmental issues have a devastating effect on third world countries because they don't have enough resources to solve this issue. This also affects the quality of soil because farmers must try and deal with this massive issue. In addition, nitrogen dioxide is a common air pollutant found in the air. Air pollutants have a devastating effect on the human population because it causes sicknesses. Ammonia ( $\text{NH}_3$ ) also causes a lot of respiratory problems that can be contracted from the air. "Illnesses that can occur from air pollution range from irritation to eyes, skin, nose, or throat. There is also a chance to get Pneumonia or Bronchitis both being very dangerous. Commonly, people have reported to have gotten headaches, nausea and dizziness from air pollution.

**Water pollution:** One of the most devastating effects of industrial waste is water pollution. For most industrial processes, heavy amount of water is used where there are harmful chemicals. These chemicals are usually metals or radioactive material. This heavily effects the environment because most of waste ends up in oceans, lakes, or rivers. As a result, water becomes polluted posing as health hazard to everyone. Farmers rely on this water but if the water is polluted, then crops that are produced can become polluted. These affect the health of society because if industrial companies can't clean up their waste, this begins to affect the life of humans but also animals. Sea creatures' health is affected because their lives become endangered by this polluted water. Water pollution can have devastating effects on the human body with the main ones being infections from bacteria, parasites, and chemicals. "Diseases that human can be exposed from drinking unsafe water range from cholera, typhoid, or Giardia.

Waste management usually follows some general approaches shown in the diagram

- I. **Avoidance:** This is most preferable and challenges an individual and organization to precisely calculate and purchase only what is necessary and avoid obtaining any materials that are not essential and could ultimately be wasted or

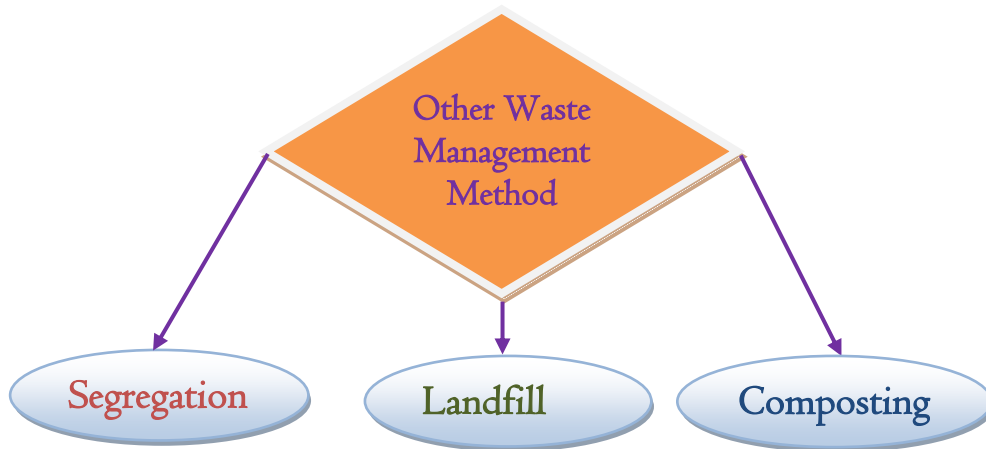




passed along to the next steps in the hierarchy.

2. **Reduce:** The first step in managing solid waste is to reduce and strictly limit the amount of materials used. Consumers have become more educated in ways of saving money and conserving energy thereby reducing waste. Waste reduction can often be accomplished by minimization of consumption and purchasing fewer materials.
3. **Reuse:** Reusing items takes place when a product that has been used for its original purpose is later used in to accomplish the same task or to an entirely new one based on its ability to be reused. This eliminates the need to consistently reorder products and can give companies a way to be creative and find new use for existing materials. The best goods to reuse are those with no diminishing value; instead of single use plastics or disposable items, products that can be used more than once have recurring value and ultimately minimize waste.
4. **Recycle:** Recycling acts as a last resort for companies, allowing them to send away materials, they cannot use to be made into something else. Recycling has played a major role in the creation of new and proactive environmental policies, while at the same time, creating a market of materials that can be made into new products. Markets are created when materials such as scrap metal and higher-grade plastics are separated and sold to companies that might recycle and re-figure the materials for future use.
5. **Recovery:** Includes any technique or method of minimizing the input of energy to an overall system by the exchange of energy from one sub-system of the overall system with another. The energy can be in any form in either subsystem, but most energy recovery systems exchange thermal energy.

Other waste management methods are as follows:

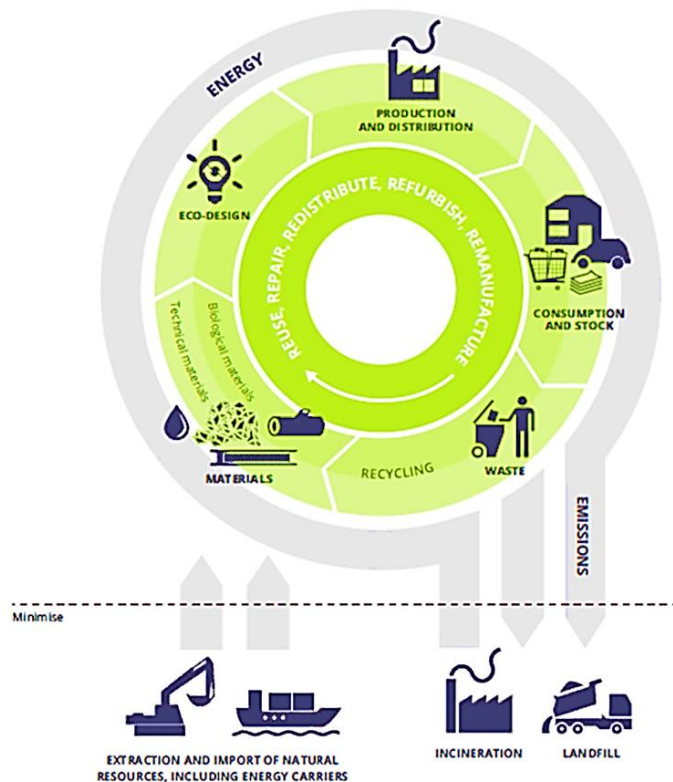


**Segregation:** It is very required to maintain green practices so waste management should be done with proper segregation. Thus, we should be sure to assist in eliminating hazardous waste from compostable organic waste, non-hazardous solid waste, recyclable materials and other regulated material.

**Landfill:** Generally, when it comes to waste disposal, landfill is one of the most popular and favored approaches. In the process of landfill, the process buries the waste in the land, but still there is a lot more to it. In relation to right landfill management, it is important to deal with the entire waste first and send only the waste that is not possible to compost and recycle. There is also a procedure that eliminates the dangers and the odour of rubbish before placing them on the ground

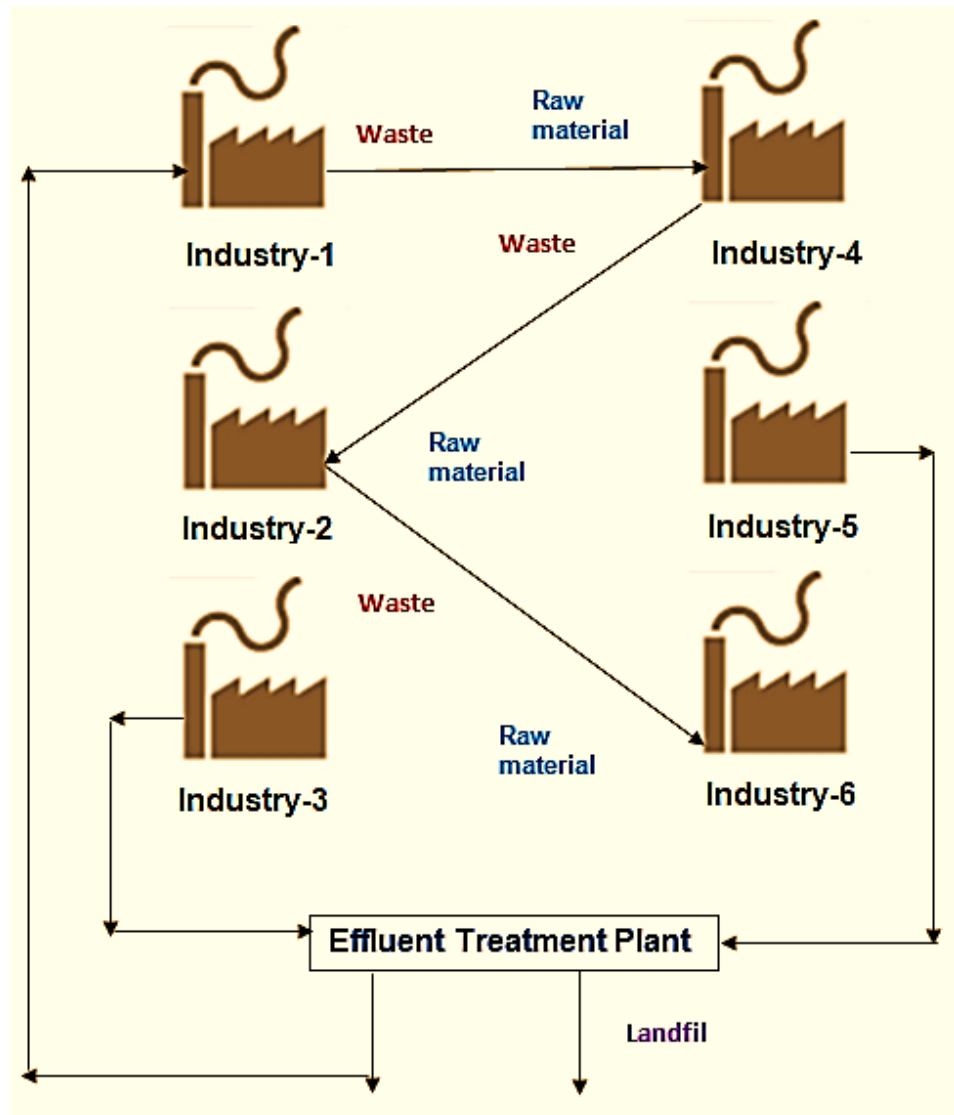
**Composting:** This waste management process turns waste into organic compounds that can be used to feed plants. In terms of the environment advantages this is actually beneficial technique. Making use of this method, it's easy to turn unsafe organic products into safe compost.

The circular economy concept for waste management



### Another Concept for Industrial Waste Management

By localization of many types of industries we can minimize the wastes. The concept is as like as the below:



### Industrial Waste Management under MoInd

BCIC of MoInd has several chemical fertilizers and paper industries that generate hazardous industrial wastes. Some of the industries have Effluent Treatment Plant (ETP) and there is a plan to establish Effluent Treatment Plant (ETP) in other industries of BCIC. Through establishing ETP BCIC tries to green environment which will satisfy the SDG goal # 3, 6, 13, 14 & 15.

Under Ministry of Industries Bangladesh Industrial Technical Assistance Centre (BITAC) manufactures different of types of import substitute machine part and during this process some metal blank unwanted or useless portion is produced which is sold to the metal melting recycling industries. Therefore, all wastages materials generated in BITAC is reused.

Different sugar industries under BSFIC has some discharged materials and/or by product such as Bagasse, Molasses, Spent Wash, Press mud, Factory wash water/effluent, Gaseous Materials (carbon dioxide and carbon content materials). Bagasse is used in boiler for heat generation; molasses is used to produce foreign liquor, Spirit, Vinegar in distillery unit. Other discharged materials like spent wash, Press mud is used in producing organic fertilizer. This organic fertilizer is used in sugarcane cultivation in different sugar mills farm and its stakeholder agricultural field. In future we have plan to make sugar industry Zero Waste discharge by using discharged materials as the raw materials of other products to produce finish goods.

The different types of industries of BSEC manage their wastages in various processes. BSEC's Industries produce metal scrap / wastages and minimum amount of liquid wastages. The industries are taking various types of action plan to minimize this wastage such as modernization of existing facilities/ machineries, Installation environment friendly machineries etc. BSEC's Industries do not produce any harmful wastage for environment.

#### iv. Water management in industrial sector

The industrial sectors contribute significantly in improving the quality of life through breakthrough innovations like pure drinking water, fertilizers, chemicals and its products, petrochemicals, fertilizers, paints, gases, pharmaceuticals, different types of chemicals, reliable medical treatment, stronger homes, greener fuels, dyes and etc. The chemical industry is critical for the economic development of any country, providing products and enabling technical solutions in virtually all sectors of the economy. The industrial sector is one of the major water intensive sectors, requiring water for multiple processes. A large portion of water used by the industries is for return-flow applications. This generates large quantities of effluents. Effluents produced by this sector often contain solid, organic and inorganic matter in varying concentration.



Treating the effluent to safe limits and disposal remains a major challenge for the sector. It should be imperative for companies to replace the inefficient processes and hazardous materials; reduce the water consumption, energy consumption and chemical usage to the extent possible; and recycle/ reuse the treated effluent by adopting zero liquid discharge. However, an important pre-requisite will be to identify major water-using processes and equipments' at each production unit. This should lead to the development

of a complete water balance for the industry. A water balance will help in identifying areas where water can be saved. Monitoring the water balance at frequent intervals would help in implementation of water conservation practices. The water demand for the industrial sector increases day by day. The Water Management in Industrial sector is therefore important in highlighting some of the best practices adopted by the industry in minimizing freshwater intake, enhancing effluent treatment and reuse.

### Water Use in Industrial sector

Water is a key raw material for the industrial sector. Hundreds of different chemicals are produced and there can be several routes for manufacture of a given product, so the water use for a particular product might vary significantly across companies. The largest use of water in the industrial sector is for cooling, steam generation and process water (for mixing, dilution, reactants, wash, or rinse water) being the other significant uses. Chemical facilities are made up of varying combinations of these unit processes and water flows between the processes. Historical data on distribution of water use at the facility level is not available. However, it is estimated that process cooling, process dilution, and steam production represent the most significant water uses at chemical facilities. Broadly classified, water can be used as process water, process support water and plant services water in any industries. Some of the common uses of water in industrial sector are indicated below:

**Dilution:** Dilution is the process of reducing the concentration of a solute in solution, simply by mixing with more solvent. In many chemical processes water is used as a solvent to reduce the concentration of solute in the solution.

**Dissolution:** The process of dissolution occurs when a solute is placed in contact with a solvent and it dissolves to form a solution. Water is used as a solvent for making solution of chemicals. The chemicals change their state from solid or gas to liquid when comes in contact with water.

**Cooling:** Water is used in process cooling (i.e. direct heating and cooling of chemical reactions) as well as cooling of the plant (i.e. in cooling tower).

**Glassware washing and rinsing:** Water is used in washing and rinsing of laboratory glassware and equipment. The water required for glassware and equipment washing and rinsing is purified water or distill water. In some cases, a solvent is also used for cleaning purpose.

**Steam generation:** Water is used in generating steam for various chemical processes (e.g. in autoclaving). Only demineralized water is recommended for generating steam. Water is integral to the function of an autoclave. Water is used for maintenance and plant wash-up activities, flushing, hand washing etc. in the plant and for safety related activities like firefighting etc. The service water is generally river water, groundwater or municipal supply water. Some industries also recycle treated wastewater for use as service water.

**Potable Water:** Water is used for drinking water for the employees in plant. Groundwater or municipal water or mineral water is generally used as potable water. The various processes in the worldwide chemical industry have the capacity to use over 100 trillion gallons of water annually. Although there are some consumptive uses, such as water in the product and evaporative losses, most water used by the chemical industry is for return-flow applications.

### **Water Management Techniques in Industrial Sector**

- ❖ Creating a water balance
- ❖ Increasing Cycles of Concentrations (COC)
- ❖ Use of blow-down water or reverse osmosis (RO) rejects
- ❖ Equipment cooling
- ❖ Reducing leaks and overflows
- ❖ Scale-down approach
- ❖ Flow control
- ❖ Wastewater recycling
- ❖ Use of treated municipal wastewater

**Creating a water balance:** The first step is to document all major water-using equipment's and processes at the site with usage amounts and prepare a complete water balance for the industry. It would help in identifying the possible areas where water can be saved. Monitoring the water balance on frequent intervals would help in implementation water conservation practices.

**Increasing Cycles of Concentrations (COC):** Cooling towers use water in three ways: evaporation, drift, and bleed-off or blow-down. A huge amount of loss occurs in the cooling tower in the form of evaporation, drift and blow-down loss. Make up water is provided to compensate for these losses. Since the water is circulated many times in the close loop, the concentration of dissolved solids in the circulating water increases over a period of time which decreases the cooling efficiency of the tower. Thus, water is intentionally wasted and make up water is used to compensate the loss in order to reduce the concentration of dissolved solids.

The best way to increase the cycles of concentration is through better monitoring and management of the water chemistry. The first step is to understand the quality of the incoming water and what the controlling parameter should be, such as hardness, silica, or total dissolved solids. There will be a relationship between these parameters and conductivity, based on the water chemistry specific to a site.

**Use of blow-down water or reverse osmosis (RO) rejects:** The blow-down water from cooling tower and/or the RO rejects can be used as service water in flushing and/or as firefighting water. It can significantly reduce the amount of freshwater intake.

**Equipment cooling:** Single pass cooling typically consumes more water than any other cooling method in a chemical industry. In single-pass or once-through cooling systems, water is circulated once through a piece

of equipment and then discharged into the sewer. Single-pass systems use approximately 40 times more water than a cooling tower operating the best way to combat the water waste associated with single-pass cooling is to use a process or cooling loop. This loop provides water at a preset temperature to cool equipment.

**Reducing leaks and overflows:** Leakages from valves, taps, firefighting hoses, underground firefighting lines, cooling towers, gardening hoses account for huge amount of water loss. There lies a possibility of reducing the water consumption by plugging the leakages.

**Scale-down approach:** The chemical process optimization can be achieved by scale-down approach wherever possible. It would not only save resources but also lead to significant amount of water savings.

**Flow control:** Many equipment in a chemical industry remains 'on' continuously, even when the process runs only a few hours per day or a few days per year and water is continuously flowing to some of this equipment. Using a control or solenoid valve in these applications allows water to flow only when the unit is being used. Another option is to use shut-off valves or timers to turn equipment off after normal working hours and when a process is shut down for maintenance or other reasons. This can result in significant amount of water as well as energy saving.

**Wastewater recycling:** Studies have shown that water is mainly used as a media in chemical processes resulting in high amount of wastewater/effluent generation. There is huge opportunity of recycling/ reuse of wastewater/effluent after necessary cost-effective treatment. It will not only reduce the intake of freshwater but also help in reduction of contamination of nearby freshwater resources.

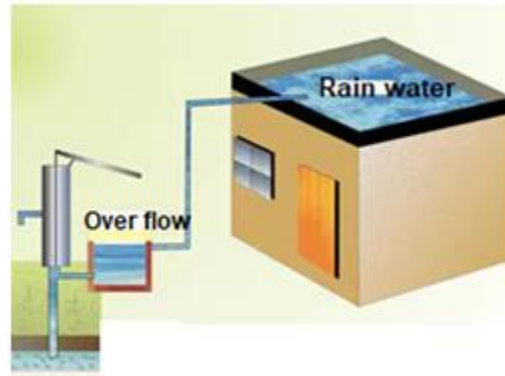
**Use of treated municipal wastewater:** Reclaimed wastewater is an option in limited circumstances, when an industry has access to municipal wastewater that has been treated to a secondary disinfection level. Reclaimed wastewater can be used for some non-potable applications, such as service water, firefighting water, and cooling tower make-up etc.

**Other Water Management Methods:** The methods that are generally used in domestic or agricultural purposes also can be used in industrial sector. By using the other non-conventional methods, the industries can optimize their water usages. As a result, an industry needs less underground water or surface water or municipal water. Other methods are described below:

- I. **Water harvesting:** The technique to save water is called water harvesting. It can be done by two major processes:
  - ❖ **Rainwater harvesting:** It's a method of collection and storage of rainwater into natural tanks or reservoirs. An industry can build a reservoir to store rainwater for future use.

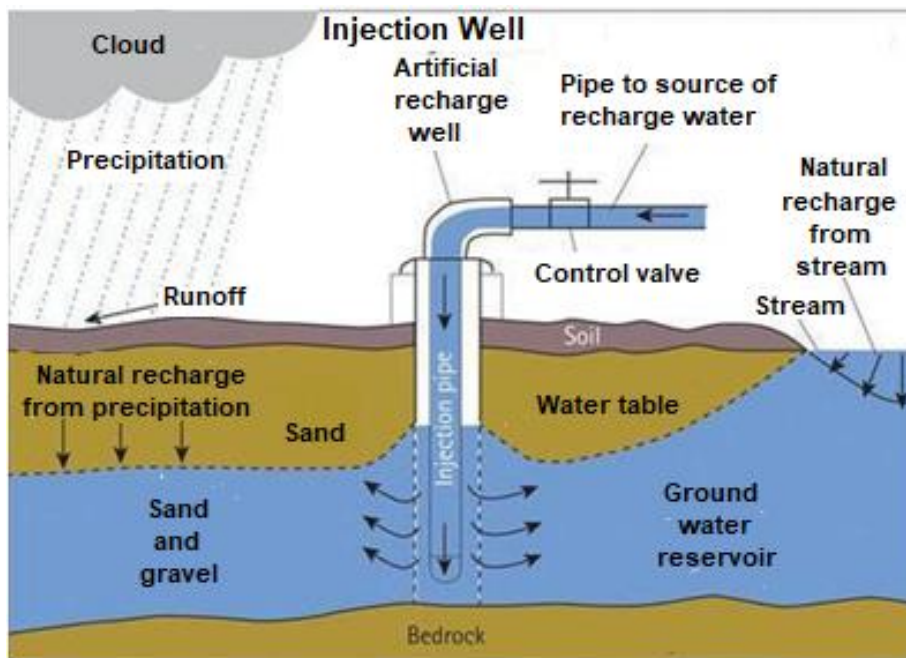


**Figure: Rainwater harvesting**



**Figure: Groundwater harvesting**

- ❖ **Groundwater harvesting:** Groundwater harvesting is a method to save water placed under the ground.



**Figure: Water Recharge in aquifers**

**2. Water Recharge in aquifers:** This process is used where the withdrawal of water is more than the rate of recharge an imbalance in the groundwater reserves is created. Recharging of aquifers (an aquifer is an underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials like gravel, sand, or silt) are undertaken with the following objectives:

- ❖ To maintain or augment natural groundwater as an economic resource
- ❖ To conserve excess surface water underground
- ❖ To combat progressive depletion of groundwater levels
- ❖ To combat unfavorable salt balance and saline water intrusion



**Water management by garments and tanneries in Bangladesh:** Data on the volume of water is used by the industries in Bangladesh is not available. However, the two most prominent industrial sectors in Bangladesh namely garment industry and leather industry consumes a huge volume of water in their process of production. Though few garments industries have adopted green initiatives most of the industries in Bangladesh have failed to use water sustainably. Rather water is used in such a way that it is viewed as an unlimited resource.

In the context of becoming a middle-income country by 2021, the Government of Bangladesh and entrepreneurs of garments and leather sector have decided to increase the export volumes. The garments sector wants to enhance its export volume to USD 50 Billion by 2021 whereas leather sector from USD 1 billion to USD 5 billion. As the key initiative for achieving the target of leather sector tannery Industries in Hazaribagh have been relocated to Savar in a separate industrial estate with a Central Effluent Treatment Plant CETP installed by the government. However, in the context of using the limited volume of water as prescribed by Leather Working Group (LWG) the tanneries still need to go a long way. The responsibility of using the limited volume of water goes to the entrepreneur and the workers of the tanneries. Keeping the water uses limited is a compliance issue for exporting leather goods and footwear in developing countries. Through complying water and other issues, tannery owners can make a larger profit. However, considering the national interest the ministry of the industry should enforce the law strictly in this regard.

**Water and other related issues in Industrial Policy 2016:** The Industrial Policy 2016 in its preamble has given emphasis on green development and acknowledged environmentally friendly industrialization for sustainable development. Industrial water management is one of the key issues under the umbrella of sustainable and green industrialization. One of the objectives of the industrial policy is to motivate and assist to ensure sustainable environment-friendly industrialization. The objective also ensures the best utilization of local natural resources in the sectors like agriculture, forest, animal, ocean and other natural resources.

The policy has identified 12 strategies where standard waste management and utilization of the local resources have been incorporated respectively in the strategies 3 & 4 of the Industrial policy. The policy has decided to give incentives for the industries that are using renewable energy.

The policy dedicates a separate chapter (Chapter-14) on environment-friendly industrial management.

14.1 In the case of allocation of land and water resources for industrial projects, the decision will be taken by studying its impact on the environment. In addition, public awareness will be created on the harmful effects of air, land and water due to smoke and waste in industrial plant.

14.2 Establishing ETP and CETP will be encouraged to control environmental pollution in industrial establishments. In this regard, the Government will ensure the application of the Environment Conservation Act 1995, Bangladesh Water Act 2013 and other related laws.

14.3 The government will provide assistance in bringing the industries who have adopted mechanisms for controlling greenhouse gas emission under the Clean Development Mechanism (CDM).

14.4 Priority will be given reducing the risk of disaster and the environmental surroundings while setting up of industries. Environmental pollution controlling or climate change preventive industrial establishments will be encouraged if necessary.

14.5 Domestic and foreign entrepreneurs will be encouraged to establish waste processing industries and the government will provide all possible assistance, including financial incentives in this regard.

14.6 Business organizations, NGOs and other social organizations will be encouraged to actively participate in industrial waste management, environmental conservation activities.

14.7 The green and climate change mitigation industries will be encouraged.

14.8 The use of intensive cultivable and more productive farmland will be discouraged in setting up industrial establishments.

14.9 Investors will be encouraged to undertake large-scale environmentally friendly projects in partnership with the public and private sectors.

14.10 Setting up and operating the industries on the principle of 3 R (Reduce, Reuse & Recycle) strategies for entrepreneurs to follow to be encouraged.

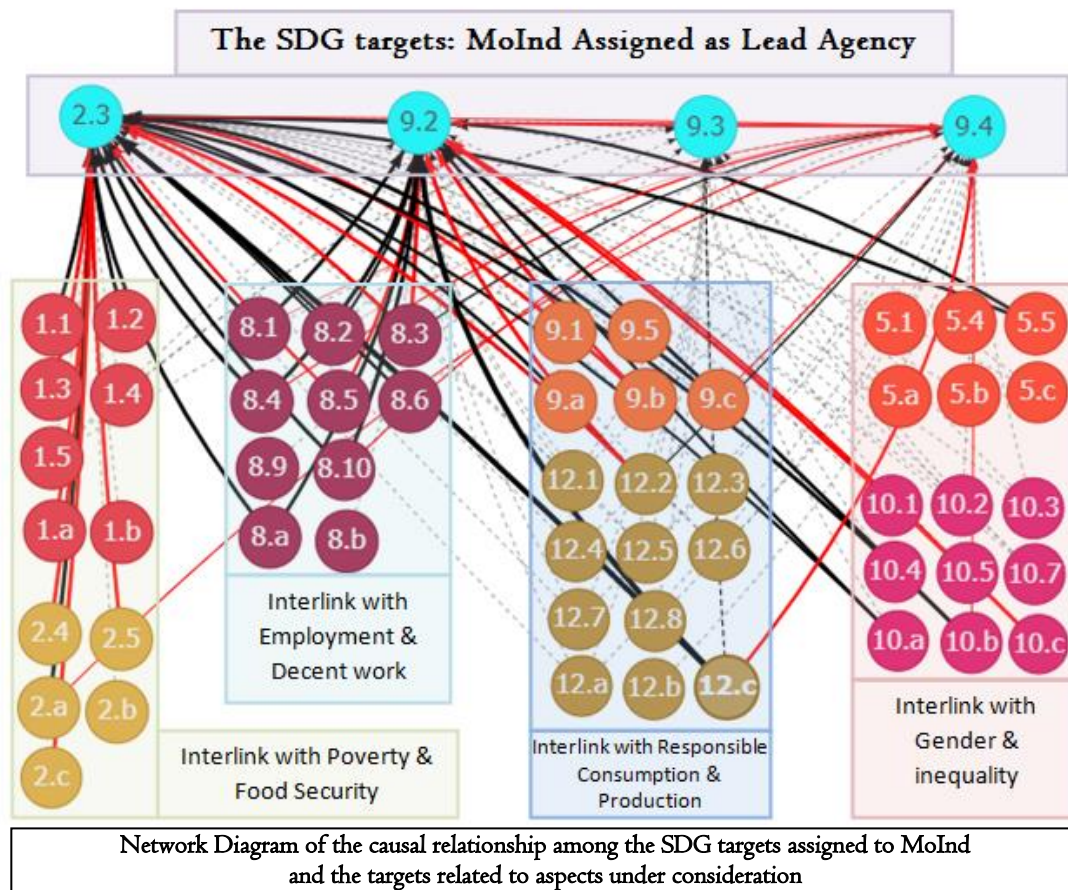
**Minimal use of underground water, maximum use of surface water and recycling of water use:** Access to safe water is an essential part of human rights and the foundation for a healthy life. However, even today, the world witnesses many instances of people lacking access to this essential commodity. To counter this situation, a new global agenda - the Sustainable Development Goals (SDGs) - was unanimously adopted by the member states of the United Nations in 2015. The agenda included a dedicated goal on water (Goal 6) that aims to “ensure availability and sustainable management of water and sanitation for all.” Target 6.1 of Goal 6 estimates that “by 2030, achieve universal and equitable access to safe and affordable drinking water for all.” Bangladesh and most of the countries use water for various purposes from different sources such as ground water (shallow wells & Deep wells), surface water (rivers dam reservoirs & lack), riverbank infiltration and others.

Clean good quality groundwater is an excellent water source. However, quality of groundwater and the operation and maintenance requirements must be carefully assessed. Bangladesh has abundant water resources to utilize. Utilities collaborate among themselves and with other users in water resources development and water quality conservation. Groundwater is the largest source of usable, fresh water in the world. In many parts of the world, specially where surface water supplies are not available, domestic, agricultural and industrial water needs can only be met by using ground water. It is said that water stored in the ground is like money kept in the bank. If the money is withdrawn at faster rate than new money is deposited, there will eventually be account-supply problems. Pumping water out of the ground at a faster rate than it is replenished over the long term causes similar problems.

#### **v. MoInd’s SDG a related activities and consideration of poverty reduction, food security, employment generation, women empowerment and responsible consumption & production**

Ministry of industries keenly considers the aspects of poverty reduction, food security, employment generation, women empowerment and responsible consumption and production during planning and executing its assigned task as the lead agency. For these purposes, a scientific understanding on the interlinks between/ among the different SDG targets of the mentioned aspects is a necessity. In the relentless drive of upgrading SDGs related knowledge and improvement of capacity of the officials, MoInd

has searched for and learnt about the statistical relation of the measure of the interconnectivity of the SDG targets under consideration. The learning and uses of IGES SDG Interlinkages Analysis & Visualization Tool<sup>2</sup> enables MoInd to visualize the interlinkages between the targets of Sustainable Development Goals (SDGs), MoInd working as a lead agency and target related to the aspects under deliberation in the national context. The following figures can provide a snapshot on the stated interlinkages.



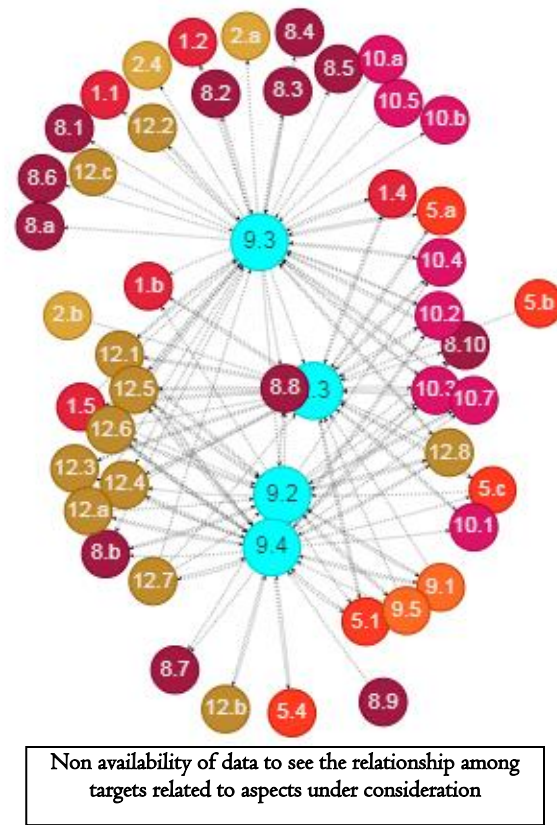
Adopting from the website of IGES, in the above diagram, each node represents an SDG target. The targets (2.3, 9.2, 9.3, 9.4) assigned to MoInd, as the lead agency, are presented in fluorescent blue. The interlinkages between the assigned targets and other targets (under consideration) are visualized in a network chart. Each line with an arrow linking two nodes represents a causal relation between the two targets. The lines in black represent positive causal linkages and the lines in red represent negative linkages. The dotted lines refer to non-availability of data. The causal relationships between the pair of targets may have one direction or two directions and the directions are indicated by arrow heads. As explained by the IGES, the web-based tools is interactive and placing the cursor over the line will highlight the linkage and display the information on the direction and the strength of the causal relation, for example, achieving target 2.3 (agricultural productivity) will impact on achieving target 1.1 (end extreme poverty). Moreover, in the interactive web-based tool, placing the cursor over the line also displays a value that indicates the strength of the causal relation. The value is estimated by the correlation analysis of the indicator-level time-series data corresponding to the pair targets. The example, the stated diagram, on the web, shows that with

<sup>2</sup>The SDG Interlinkages Analysis & Visualization Tool is developed by Institute for Global Environmental Strategies (IGES), Japan where interlinkages are defined as direct causal relations between the targets. The details on it can be found at <https://www.iges.or.jp/en/pub/sustainable-development-goals-interlinkages/en>

a correlation coefficient value of 0.97, there is a strong positive linear relationship between Target 1.1 and Target 2.3.

As per the detailed explanation of the SDG Interlinkages Analysis & Visualization Tool, in terms of the scope of SDG interlinkages, interlinkages can refer to those between goals, between a goal and relevant targets, or between targets. Interlinkages include direct relations between two targets or indirect relations that connect two targets via a third target or more intermediate ones. A causal link also has a direction pointing from the cause to the effect. Furthermore, interlinkages can be defined by causalities or by other types of relations. For the SDG Interlinkages Analysis & Visualization Tool, interlinkages are defined as direct causal relations between the targets.

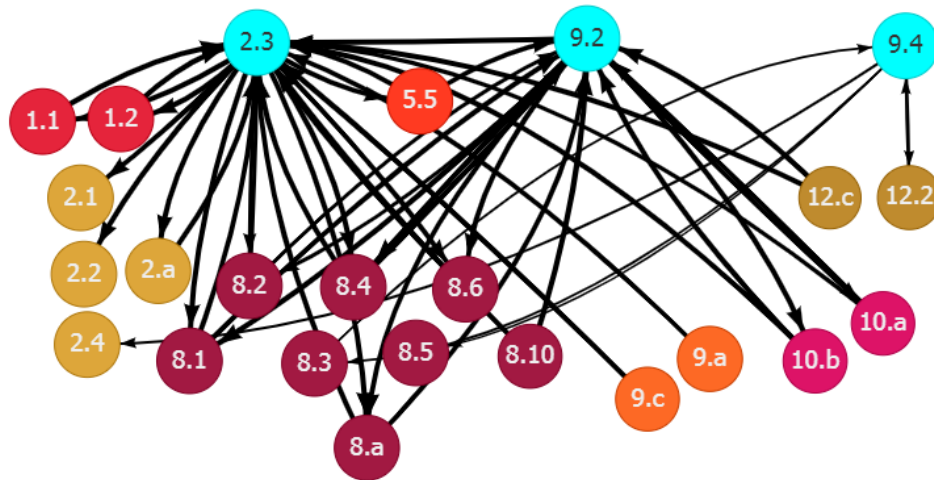
Identifying the causal relations between relevant SDG targets is a challenging task. Existing knowledge and literature in this area is limited due to the short history of this new research field with most of the existing works started since 2015, before or after the adoption of the SDGs in September 2015. For the SDG Interlinkages Tool, the interlinkages identified at the target level are based on a comprehensive literature review related to specific goals or targets<sup>3</sup> as well as the knowledge obtained from relevant international consultation processes on SDG indicators, such as the Inter-agency and Expert Group on SDG Indicators (IAEGSDGs). This analysis uses a set of indicators with trackable data based on the global SDG indicators as the main reference for 113 targets out of total 169 SDG targets<sup>4</sup>. Moreover, in case of Bangladesh, full set of data is not available for 46 targets out of mentioned 113 targets. So, finding the causal relationship is not possible in the cases of non-availability of data. A visual summary of the non-availability of data related to the consideration of MoInd can be found from the network diagram presented on the right-hand side-



For getting a glimpse on the positive i.e., supportive relations in the SDG related working areas of MoInd and its considerable aspects, such as, poverty reduction, food security, employment generation, women empowerment and responsible consumption and production, the following diagram can be sighted.

<sup>3</sup>Zhou and Moimuddin, 2017.

<sup>4</sup>[https://sdginterlinkages.iges.jp/files/Detailed%20Explanation\\_Display\\_V3.0.pdf](https://sdginterlinkages.iges.jp/files/Detailed%20Explanation_Display_V3.0.pdf)



Network Diagram of positive causal relationship among the SDG targets assigned to MoInd and the targets related to aspects under consideration

MoInd is working to take an advantage of positive intra-relation between its two assigned targets i.e., target-2.3 (double the agriculture productivity) and target-9.2 (inclusive and sustainable industrialization). The unidirectional relation depicts that inclusive and sustainable industrialization will (with a correlation coefficient value of 0.963) strongly support making the agriculture productivity double. Construction of Buffer Godowns in different districts for facilitating preservation and distribution of fertilizer, the implementation of the Ghorashal Polash Urea Fertilizer Project to install energy-efficient and sophisticated manufacturing plant to support agriculture productivity and establishment & modernization of BSTI regional offices are few notable examples of the many activities in this regard. The causal relationship of any of the targets with target-9.3 (increase access to financial services) could not be measure due to data deficiency. No intra-relationship is observed between another assigned target-9.4 (resource-efficient and clean technology-based industrial retrofit) and target-2.3 or target-9.2.

Achievement of target-2.3 (double the agriculture productivity) is seen as very crucial for achievement of target-1.1 (end extreme poverty), target-1.2 (halve national poverty), target-2.1(end hunger), target-2.2(end malnutrition) and target-2.a (investment in agriculture extension program). Achievement of target-2.3 is also strongly interlined with targets of SDG-8, such as target-8.1 (sustain inclusive economic growth), target-8.2 (improve economic productivity), target-8.4 (improve resource efficiency), target-8.6 (improve youth employment), target-8.10 (strengthen financial institutions), target-8.a (increase aid for trade). All of the mentioned targets of SDG-8 have both ways very strong causal relationships except target-8.10 which has a unidirectional relationship. Side by side, achievement of target-9.2 (inclusive and sustainable industrialization), target-9.a (enhance international aid to build resilient infrastructure), target-9.c (universal and affordable access to ICT) and target-12.c (remove market distortion) seem to have very significant impact on achievement of target-2.3 as all theses 4 target have unidirectional relationship with the target-2.3. Considering the women empowerment this assigned target-2.3 has both way causal relationships with target-5.5 (enhance women’s participation in decision-making and public life).

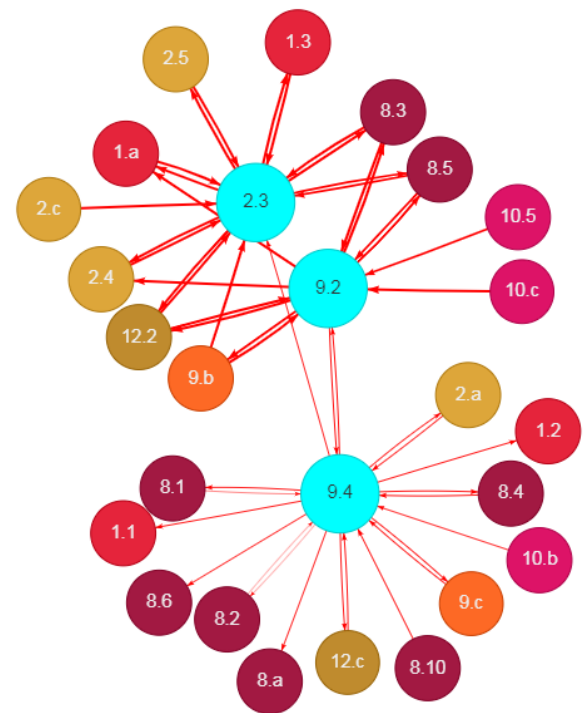
Alike target-2.3, achievement of target-9.2 (inclusive and sustainable industrialization) has strongly interlined with targets of SDG-8, such as target-8.1 (sustain inclusive economic growth), target-8.2 (improve economic productivity), target-8.4 (improve resource efficiency), target-8.6 (improve youth employment), target-8.10 (strengthen financial institutions), target-8.a (increase aid for trade). All of the mentioned targets of SDG-8 have both ways very strong causal relationships except target-8.6 which has a

unidirectional relationship. Considering the women empowerment this assigned target-9.2 has a causal bonding originated from target-5.5 (enhance women’s participation in decision-making and public life). A similar but stronger causal link originated from target-12.c (remove market distortion) also has been observed. In the aspect of inequality reduction target-9.2 has both way causal link with special trade treatment (target-10. a) and encouragement of ODA (target-10. b). Unlike target-2.3, no direct relationship of target-9.2 is seen with the poverty reduction and food security aspects.

The other assigned target-9.4 (resource-efficient and clean technology-based industrial retrofit) has weak or moderate relationship with target-2.4 (build sustainable food production systems), target-8.3 (create decent work), target-8.5 (decent work for all) and target-12.2 (sustainable resource use). Among these target-8.3 and target-12.2 have two-way bonding with target-9.4.

The proper care of the positive relationships can lead to better synergy in achieving various related SDG targets. But, for policy formulation and facilitation or designing any supportive systems, optimizing the trade off, raised from negative causal relationships, is a critical challenge. The following diagram can be observed to get a quick understanding on the trade-offs between/among the SDG targets under consideration of this analysis.

SDG Interlinkages Analysis & Visualization Tool shows that. among the SDG targets assigned to MoInd, target-9.4 (resource-efficient and clean technology-based industrial retrofit) has an unidirectional moderately negative, with a correlation coefficient value of - 0.405, relation with target-2.3 (double the agriculture productivity) and a similar but both dimensional causal relationship of target-9.2 (inclusive and sustainable industrialization). So, any initiative for achieving target-9.4 may have a degree of adversity on achieving target-2.3 and target-9.2, if not measures are taken to mitigate or neutralize the negative effects for the specific intervention and the reverse relation is observed only between target-9.2 and target-9.4.



**Network Diagram of the negative relationship among the SDG targets assigned to MoInd and the targets related to aspects under consideration**

However, considering poverty elimination, both target-2.3 and target-9.2 show negative causal relationships with target- 1.a (create pro poor policy framework), Target-2.3 has both-way adverse bonding with target- 1.3 (implement social protection system to poor) and Target-9.4 shows depressing relation to target- 1.1 (end extreme poverty) and target- 1.3 (halve national poverty).

Considering food security, both target-2.3 and target-9.2 show negative causal relationships with target-2.4 (build sustainable food production system) whereas target-2.3 is negatively related to target-2.5 (maintain agricultural genetic diversity) and target-2.c (well-functioning food market), the target-9.4 has similar but both way causality with target-2.a (investment in agricultural extension).

The highest number of negative relationships of target-9.4 is observed with the targets of goal-8. It shows adversity with target-8.1 (sustain inclusive economic growth), target-8.2 (improve economic productivity), target-8.4 (improve resource efficiency), target-8.6 (improve youth employment), target-8.10 (strengthen financial institutions), target-8.a (increase aid for trade). Exactly all these targets have positive relationship with target-2.3 which has been described earlier. On the other side, both target-2.3 and target-9.2 show two-way negative causal relationships with target- 8.3 (create decent work) and target- 8.5 (decent work for all). Both target-2.3 and target-9.2 have negative relationship with target- 9.b (policy support for industrial value addition) and also to target-12.2 (sustainable resource use). The target-9.4 has similar relationship with target- 9.c (universal and affordable access to ICT) and target-12.c (remove market distortion). To reduce the probable impact of the negative relation on the job market (SDG-8) raised by strengthening effort to achieve target-9.4, a number of regular activities are going on under administrative control of MoInd and a good number of projects is in planning phase. The whole ministry, with all its organs, is working for sustainable and inclusive economic growth by upgrading the SOEs. The diversification and progressive manufacturing initiatives of BSEC, increasing recovery rates in the sugar mills under BFSIC, increasing fertilizer production and improvement of its distribution channels are a few examples in this connection. The NPO is relentlessly working to improve economic productivity. Strengthening supervision and monitoring of the ongoing projects is leading to improve resource efficiency. The training centers, namely, BITAC, TICI, SCITI, are working for youth employment. BIM is organizing courses on social compliance for technical skill development related to decent works. BSEC and SMEF roles in entrepreneurship development and business facilitation and BSTI's roles on reducing market distortion are also contributing to neutralize the adverse effects.

In view of the reduction of inequality, target-9.2 has negative relationships with target-10.5 (strengthen the enforcement of regulation) and target-10.c (reduce the transaction cost of migrant remittance). The target-9.4 has similar relationships with target-10. b (encourage ODA to LDCs). But none of the three SDG targets assigned to MoInd shows any adverse relationship with women empowerment.

This analysis of causal relationship is done based on time series data available for different indicators of different targets under consideration. This statistical understanding reveals the relationships between historical trends of two phenomena (variable). Hardship of non-availability of the data is already discussed. Sometimes, some of the relationships may stand against commoners' understanding or normative learning or traditional mind-set. Issue based further studies is required to explain the causal relationship and use it for policy suggestions. The MoInd has intensified efforts to keep essential focus on the complex interrelation of the different sustainable development targets to accomplish its assigned tasks.

## Chapter 8: Cross Cutting Issues in Implementing SDGs

### i. Industrial Research and SDG: Creating insight for mainstreaming SDGs in Ministry of Industries and foster inclusive industrial development

With a crude concentration in the labor-intensive manufacturing base, Bangladesh needs a many fold research activity to understand the reality and potentials of sustainable industrial development to achieve every target of SDGs. A wide range of research activities are interconnected with sustainable industrialization, such as scientific, social and business researches. Considering the facts, the Ministry of Industries has already formed Industrial Development Research Coordination Committee (IDRCC). The committee is in the third year of its action and gaining maturity to contribute to pace-up the industrialization processes in Bangladesh and also to help in achieving relevant SDG targets. Besides, IDRCC, the different organizations/ agencies, under the MoInd's administrative control, have different research activities and further requirements. Considering the types, mentioned organizations can be grouped into three categories, such as, (a) Corporations, (b) Capacity Development Organizations and (c) Registering, Quality Control and Accreditation Authorities.

#### (a) Research Activities in Four Corporations- BCIC, BSFIC, BSEC and BSCIC

A good number of State-Owned Enterprises (SOEs) are operating under the administrative control of Ministry of Industries. Considering the nature of the business, these SOEs fall under three broader sectors of corporations, namely, BCIC, BFSIC, BSEC. On the other hand, BSCIC works for facilitation of small-scale private enterprises. Though the research activities are not sufficient to meet operational and development requirements of the corporations, still some noticeable examples are there.

**BCIC:** BCIC has initiated an action research titled 'Identification, Characterization and Classification of Waste Catalysts Used in Urea Fertilizer Factories and Feasibility of Reuse Catalyst and Solid Waste Minimization'. In the old aged units of BCIC, the catalyst is not regenerated but replaced by new catalyst when it is deactivated. Therefore, an enormous amount of the catalyst is piled up in the open yard. Washing through the rainwater, it is causing soil contamination in the adjacent areas. Successful completion the research works will provide baseline data and information about the wastage catalyst of urea fertilizer factories, open up a possibilities of reusing of catalysts containing valuable metals, keep the soil safe from toxic metallic pollution and go a long way to suggest solid waste minimization strategy as well as cost reduction strategy for waste disposal.

The Research and Productivity Department of BCIC recently has been initiated another research on 'Reduction of Ammonia in Air at Urea Fertilizer Factory Ltd (UFFL) Locality' to protect the environment in the mentioned area as well as to enhance for implementing the SDG Target 6.3, 6.4. 6a. Due to leakage of vessels and pipeline of the 50 years old fertilizer plants, ammonia comes out and is trapped by water of the nearby ponds and Shitalakha River harming environment and fish production. After completion of this research, a proposed process diagram of Effluent Treatment Plant (ETP) is expected to be frame in to



reduce ammonia from wastewater aiming to improve the neighboring atmospheric condition as well as the water quality of the river Shitalakha especially in the dry season.

**BSFIC:** Up to 1988, the necessary research activities of BSFIC, were carried out by Sugarcane Research and Training Institute. In 1989, the institute was upgraded to Bangladesh Sugar-crop Research Institute (BSRI) and vested under administrative control of Ministry of Agriculture. However, BSFIC maintains a regular communication with Bangladesh BSRI to know about invention of high yielding variety of sugar cane, diseases and pest resistance, spaced transplanting technology, ratoon management technology etc. Moreover, BSFIC continues action research in the experimental farms situated inside the factory areas of each of the 15 sugar mills operated by BSFIC to grow seeds of new varieties invented by BSRI. BSFIC has also formed a research cell comprised of engineer, chemist and agriculturist. The cell is assigned with the responsibility to prepare at least research proposal every year.

**BSEC:** The BSEC authority recently has formed a four-member research team to foster the research and development activities in the different enterprises. Prior to form the research team, BSEC used to outsource such activities. In 2018-19, it commissioned a research titled 'Market Analysis and Feasibility Study for Further Investment by BSEC in Honda Bangladesh Limited' to comply with the condition of Ministry of Finance to get the fund to go for a progressive manufacturing plant for the enterprise retaining the equity in existing level.

**BSCIC:** BSCIC is well known for its historical research activities on 'product Development' for the crafts market of Bangladesh. Every year BSCIC develops hundreds of designs of different products. For market analysis, BSCIC conducts surveys on markets. Recently, BSCIC has published research papers on 'Growth potentialities of different products to feed the crucial information needs for cluster developments approaches. BSCIC also established a product specific research center in Jamdani Industrial Estates located in Narayanganj District where research activities for the quality improvement and market development of Jamdani cloths are hosted. In addition to above, Research and Development Department of BSCIC has plan to conduct extend research scopes on new technologies, new products development, industrial design fashion, etc.

## (b) Research activities in Capacity Development Organizations- BIM, BITAC, NPO and SMEF

There are four organizations, under the administrative umbrella of MoInd work that for creation and utilization of relevant knowledge and capacity development of the stakeholder's work for industrial development in the country. All these organization need research activities to serve purposes of the greater interest beyond own organizational boundary.

**BIM:** The action plan of National Industrial Policy, 2016, assigned BIM to foster research in the area of Intellectual Property Rights (IPRs) and two studies had been conducted in this area. The responsibility of establishing a Technology Incubation Centre is also bestowed to BIM. A success in setting up center is expected to create a momentum in research related to technology acquisition, innovation, industrialization and commercialization. All these activities are expected to have positive impact in SDG indicators no 9.5, 9.b, 17.6 and 17.8.

BIM has a plan to take several initiatives for assisting mainstreaming of SDGs in the Ministry of Industries. With an objective to identify industrial research scopes, mainly, such scopes related to SDG target 9.2, BIM has a plan to organize a workshop by July 2020. The pertinent stakeholders, such as, ministry officials, trade bodies, regulatory authority, development partners, NGOs and academics will be invited to identify the research scopes and prepare a priority list of research area and topics. Then BIM will invite different organizations for partnership to foster research activity in line with that priority list. It is expected to enhance the research activities in the focused areas of industrial development and innovation through optimum use of multilateral resources.

**BITAC:** BITAC has already started some research activities to survey the market-based training needs and to improve quality of the product. An additional resource has been allocated from its internal budget for this purpose. It has also received an allocation from the budget of Ministry of Industries too. The titles of the ongoing research projects are - Skills Development Training Programs in Bangladesh: A Case Study on Self-Employment and Poverty Alleviation (SEPA) Project and Ductile Iron Development in Bangladesh.

**NPO:** NPO has a strong track record in research activities. Recently, NPO has completed five research works related to low-rate productivity of state-owned sugar mills, barriers to improve productivity in the Eastern Cable's Ltd, current status of BSCIC industrial areas of Sylhet division, current status of Productivity of Bangladesh Road Transport Corporation and productivity of Jute Mills under BJMC. In present FY 2019-20, NPO has targeted to conduct two more research in two new fields of industry/ service sector.

**SMEF:** The SMEF has been conducting research to support the formulation of SME Policy Strategies, provides guidelines, recommendation and implementation plan in the country. For sustainable industrialization, one of the major focuses of SMEF's research activities is resolving the challenges on legal and administrative regimes like regulatory barriers on trade license, patent and trademark, product certification, environmental issues etc. for SMEs. Another major focus is to work on 3R (Reuse, Reduce & Recycle) in the five cluster areas located in Gobindoganj, Saidpur, Pabna, Chapainabganj and Adamdighi.

#### (c) Research Activities in Registering, Quality Control and Accreditation Authorities- DPDT, BSTI, BAB and OCIB

There are four organizations, under the administrative control of MoInd that work for the registering Intellectual Property Rights, Assurance of quality, providing accreditation and safe use of boiler. The research scopes of these organizations are very diverse in nature.

**DPDT:** DPDT has identified the scopes to work on Intellectual Property for Sustainable Industrialization. The plans are prepared to do researches on intellectual property to support fostering innovation as well as creating new product or process and brand for commercial use with an objective for sustainable industrialization. The program has a direct relation to SDG Goal 9(5) and alignment to the 7th fifth year plan of Bangladesh.

**BSTI:** Recently, BSTI has involved in a research activity titled 'Development of an efficient method for analysis of vitamin A in Fortified Edible Oil'. A fund for research has been proposed in a new project titled 'Development and extension of National Metrology Laboratory (NML) of BSTI' to achieve SDG target 9.5.

**BAB:** BAB activities are focusing on SDG agenda 2.1- safe and nutritious food, 3.8-safe, effective, quality and affordable essential medicines and vaccines, 6.1- safe and affordable drinking water and 12.4 - industrial development and waste management. To achieve all these targets, BAB has started exercising on identifying relevant research themes.

**OCIB:** OCIB has invested its limited research capacity in action research to improve safety, quality and efficiency of boiler. Such an action research project, funded by IDRCC, is underway in collaboration with Bangladesh Council of Scientific and Industrial Research (BCSIR).

## ii. Skill Development to achieve SDGs

Attainment of SDGs is greatly dependent on availability of appropriate skilled work force. Not only skill development but also the requirement of reskilling has emerged due to fast changing techno-functional structure in the industrial environment. To face the challenges of timely attainment of SDGs, government of Bangladesh has emphasized on skills development programmes. The National Skills Development Authority (NSDA) has been on boarded, National Skills Development Policy (NSDP) has been approved and National Skills Development Fund (NSDF) is created for improving the spectra of skills in different trades and technology.

At present, more than 2.2 million young workforces are entering into the job market of the country every year. Only a few of them are found employable according to the employability parameter since most of the graduates have general degree. As a result, employers do not find the right skilled persons to employ in their factories/industries. In 2016, BIDS conducted the study "Skills Gap Analysis for Selected Sectors" and found out that existing skills gap is the highest in the agro-food sector. RMG Sector is the second in this consideration. Skills gap for "skilled workers" is also high in IT Sector with 40% and it is a constraint in the leather sector too.

In Bangladesh middle and high-level management positions are being manned by experts from neighboring countries because of skill deficiency of local workforces. For replacing the foreign personnel with the local work force, skill-based education is a must. Presently, the estimated size of inward remittances is \$15.0 billion from non-resident Bangladeshi workers but \$5.0 billion is paid up every year as wages and salaries to the expatriates in our country. Therefore, to save the \$5.0 billion foreign currency, general education has to be reformed. The present government under the prudent and visionary leadership of Honourable Prime Minister Sheik Hasina visualized and realized the scenario and hence, emphasized on skills development programmes for our 60+ millions of workforces to transform them as asset instead of liability to the society as an unemployed person.

Ministry of Industries has multiple training institutes which are directly involved in skills development programmes. Training Institutes for Chemical Industries (TICI) generates technical manpower in the area

of chemical industries. Bangladesh Steel and Engineering Corporation (BSEC) are producing experts in steel and engineering sectors. They provide training not only to their employees but also to the students from different Universities and colleges. In order to increase productivity and skilled manpower in sugar industries Bangladesh Sugar and Food Industries Corporation (BFSIC) plays an important role. Bangladesh Small and Cottage Industries Corporation (BSCIC) has been established to provide support services to micro, small, rural, and cottage industries in Bangladesh. Apart from this, BSCIC has three more special institutions which are producing skilled manpower and entrepreneurs. Skill Development Centre (SDC) of BSCIC is offering training courses in different trades and IT sectors. Design centre of BSCIC is offering training programmes and supplying designs to the local and international markets. Small and Cottage Industries Training Institute (SCITI) of BSCIC has been offering entrepreneur development courses and managerial courses in management, financial, marketing and industrial sectors.

The principal mandate of BITAC is to produce skilled manpower through providing technical training in different trades and technology. It has 27 different long term, mid-term and short-term training courses including Programmable Logic Controller (PLC), Computer Aided Design-Computer Aided Machining (CAD-CAM), Welding, Machine Maintenance, Electrical Maintenance etc. The BSTI experts also attend meetings, seminars and workshops held at home and abroad as well as contribute developing regional and international cooperation.

Bangladesh Institute of Management (BIM) has been playing a vital role in training the managers of the corporate and industrial sectors. NPO Bangladesh is striving to fulfill its responsibilities entrusted with it. It has successfully introduced regular training program on different subjects of productivity targeted at management and trade union officials in the public and private sector.

### **iii. SDG and Blue Economy (Ship Recycling)**

The potentiality of harnessing Blue Economy i.e., maritime resources is immense. Bangladesh possess a high opportunity to utilize the blue economy to get benefit from it. The government has recognized the role of blue spaces as a key source of future economic growth. The sectors related to explore the source of blue economy are fishing, sea-mining, ship building, ship recycling, coastal shipping, seaports and others sea resources. Bangladesh is now getting a significant amount of revenue from ship recycling industry and it is estimated about 1400 crore BDT per year. This industry annually produces over 2.00 Million tonnage of scrap steel that is used as raw materials for rerolling mills. In addition, this industry generates employment opportunity for nearly 70000 skilled and semi-skilled workers. Over five decades of its operation, the Ship Recycling Industry has been established as a full-fledged industry and supporting many national and local economic activities. Thus, it is supporting the endeavors of Government of Bangladesh to accomplish the SDGs, in particular the goal-9 i.e., Industry, innovation and infrastructure.

In 1960, after a severe cyclone, the Greek ship MV Alpine was stranded on the coast of Sitakunda, Chittagong. Failing to re-float, it had been scrapped by Chittagong Steel House in 1965. That gave birth to the ship breaking industry in the country. During the Liberation War of Bangladesh, a Pakistani ship Al

Abbas was damaged by bombing. Later on, the ship was salvaged by a Soviet team who were working at Chittagong port at that time. The ship was brought to the Faujdarhat seashore. A local company, Karnafully Metal Works Ltd bought it as scrap in 1974 and introduced commercial ship breaking in the country.

Now, Bangladesh is one of the major ship recycling countries in the world. It recycles about 200 ships per year with a global market share of about 30-35% percent (in terms of light displacement tonnage) and has become a preferred destination for end-of-life ships. The ship recycling activities are being practiced here in Bangladesh for last five decades. This industry produces about 2.50 million tonnages of scrap steel that fulfills 60-70% of country's raw iron demand. The industry has made significant contributions to the country's national economy and it is estimated that this industry generates output worth USD 770 million (BDT 6000 crore) per year and the Government gets BDT 1400 crore as tax and duty per year from this industry.

This industry creates about 35000 full-time equivalent jobs. On the other hand, many business centers have been established nearby and around ship recycling zone at Chattogram and respective business classes for trading outfitting goods of the ship such as furniture, generator, cables, electrical and electronic items, lube oils etc. which creates over 50,000 indirect jobs. As indirect contribution, the ship recycling industry is supporting many national and local economic activities. Considering its importance, Government of Bangladesh (GoB) in 2011 has declared the ship recycling activities as an 'industry' with a view to attain sustainable development for the industry. Since then the GoB is putting its utmost efforts for the development of environmental and occupational safety standards for the industry.

In 2011, the Bangladesh Ship Breaking and Ship Recycling Rules was enacted. By this time MoInd established ship recycling zone in seven mouzas of Sitakunda Upazilla under Chattogram district to ensure better management practices in the industry. Since 2011, MoInd is looking after the ship breaking and ship recycling industry. During this period, MoInd has taken up lot of initiatives for the improvement of environmental as well as occupational health & safety standards in the ship recycling yards. Most importantly in February 2018, the Bangladesh Ship Recycling Act, 2018 was enacted with a view to assist the industry to achieve international standards and sustainable development of the industry. Ensuring workers health and safety and appropriate management of hazardous materials generated from the ship recycling operations are great concern of MoInd. No worker is allowed in the yards without having training on occupational safety. So MoInd has already appointed three safety agencies with the responsibility to prepare the Ship Recycling Plan (SRP), guide and monitor the cutting of ships following the SRP. In addition, the safety agencies identify, mark, asses, quantify of and help to handle, manage and dispose of hazardous materials, provide technical assistance to the yard owners for temporary storage and management of hazardous materials.

Furthermore, three training institutions under the administrative control of the Ministry are providing training to the ship recycling workers for their skill development. The Ministry is now working on establishing of the Bangladesh Ship Recycling Board and a dedicated One-stop Service under this Act. According to the provision of the Bangladesh Ship Recycling Act, the government will have to attain the provisions of the Hong Kong Ship Recycling Convention, 2009 (HKC) within February 2023. The

MoInd is working seriously to attain this goal and legal obligation. One of the key goals of the HKC is to ensure environmentally sound ship recycling practices in the industry. The MoInd is putting its utmost efforts to attain the provisions of the HKC to make country's ship recycling industry sustainable and accomplish international standards. However, both financial and technical support is crucial to tackle this complex challenge.

As a part of achieving HKC compliance by a good number of our ship recycling yards, Ministry has decided and directed the yard owners and Bangladesh Ship Breakers and Recyclers Association (BSBRA) to develop the Ship Recycling Facility Plan (SRFP). It would be a great achievement for our industry to achieve HKC compliance certificate. MoInd appreciates and acknowledges that the PHP Ship Recycling Industries Ltd. is the first ship recycling yard which has already received HKC compliance certificate. Besides that, some other yards owners have already started to develop their yard following the HKC standards.

For the development of environmental and occupational safety standards of the recycling industry, the MoInd with the technical assistance from the International Maritime Organization (IMO) and financial assistance from the Norwegian Government, implemented the Project titled 'Safe and Environmentally Sound Ship Recycling in Bangladesh (SENSREC)-Phase- I' for the period of 2015-2017. After successful completion of Phase-I, the Ministry has started implementing the SENSREC Phase II (Capacity Building) from April 2018. Under Phase-II' 700 workers will be providing technical training for their skill development and capacity building. At the same time a trainers' pool will be established through TOT courses. After completion of the project, the MoInd will continue the training under the administrative control of the Ship Recycling Board. The aims of these projects are to improve the present situation from managing waste to building awareness and train the concern people on safe environment, health and safety issues.

Handling hazardous waste accrued through dismantling of end of life ships is a big challenge. However, to minimize the environmental pollution by the ship recycling yards to an acceptable level the MoInd has decided to establish a Treatment Storage and Disposal Facility (TSDF) for the management of hazardous waste derived from the ship recycling activities as well as from other major industries in Chattogram region. In this regard, the Ministry is taking up a feasibility study project to examine whether the proposed TSDF establishment project is feasible in terms of technical, environmental and social aspects.

Considering the potentials of country's ship recycling industry, the Government of Bangladesh aims to extend this industry to southern part of the country. This MoInd is working to establish Ship Recycling Zone in 105.50-acre land area at Taltoli upazila under Barguna district following the kind directives from Honorable Prime Minister. In addition to this, the Ministry of Industries is also working seriously on establishing ship building and repairing industry in 100-acre land area near Payra port at Kalapara upazila under Patuakhali district. All these activities related to blue economy have direct effects in achieving SDGs, specially the goals- 8 (decent work), 9 (industry, innovation & infrastructure) and 14 (life below water).

## Chapter 9: Issues related to Future Directions

### i. Fostering Green Innovation

Green innovation has currently been receiving a great deal of international attention because of the growing concern of consumers, governments, and the community as a whole with regard to the degradation of natural resources and environmental pollution. Green innovation is “innovations that consist of new or modified processes, practices, systems and products which benefit the environment and contribute to environmental sustainability”. It has been recognized as one of the key factors to achieve growth, environmental sustainability, and a better quality of life. Today’s competitive world, green innovation attracts increased attention of industries which aim high market ratios and competitive advantage. Specially, manufacturing industries focus on new product designs that enable lower energy consumption during its usage by consumer, minimum waste after consumption or no hazardous material including. These all examples show tendency of industries regarding environmental care and protection. Industries also pay attention to their processes in terms of environmental respect. They seek any solutions to decrease material and energy usage during production phase or recycling of used material and decreasing waste and disposals material after production activities.

Sustainable, eco, environmental and green innovation show minor differences in their descriptive precision. With regards to content they seem to examine the same topic and can be used largely interchangeably. Nevertheless, we identified six important aspects in the different definitions:

1. Innovation object: Product, process, service, method
2. Market orientation: Satisfy needs/ be competitive on the market
3. Environmental aspect: Reduce negative impact (optimum = zero impact)
4. Phase: Full life cycle must be considered (for material flow reduction)
5. Impulse: Intention for reduction may be economical or ecological
6. Level: Setting new innovation/ green standard to the firm

Bangladesh economy is growing at 7-8%, and soon will be a middle-income country. As a developing country Bangladesh must play catch-up when it comes to green innovation. Bangladesh Government has taken step toward green innovation and MoInd is also putting emphasis on it. Ministry of Industries and its organizations are doing their activities of green innovation with utmost sincerity.

Like United Nations Industrial Development Organization (UNIDO) described MoInd focuses on following issues

- **Target 9.b** Supporting domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for industrial diversification and value addition to commodities

- **Target 9.c:** Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet
- The value added of an industry (industry value added) is a survey concept that refers to the given industry's net output derived from the difference of gross output and intermediate consumption.

Innovation Incubation Center can be established in BIM to record, track, and discriminate Information on invention and innovation to replicate those in field level. MoInd will take comprehensive policy for expediting private and public sector to give emphasize on innovation for producing green & eco- friendly product. BIM will retrofit with Green Campuses through developing Green Buildings and Improving Energy Management and will undertake capacity development program for introducing new training on Environmental Management.

BIM will be Providing Consultancy Services to-

- Measuring Baseline of CO<sub>2</sub> emission
- Process wise emission mapping
- Suggesting emission reduction strategies & tools
- Establishing Search System for Environment Friendly Technology & Process
- Providing Support for Environment Friendly Industrial design
- Promote Green Technology, Green Factory, Vertical Forestation in Workplace
- Clean Development Mechanism & Carbon Trading

BCIC is emphasizing on their effluent/waste management and is trying to innovate a way to turn their effluent/waste into useful product. During DPP formulation for new projects they are also ensuring ETP for all Industries with adequate fund allocation and they consider Renewable Energy, Green Building, Water management, Waste management, Plantation, Clean transportation and Land management.

BSFIC is promoting green innovation by using biomass fuel instead of fossil fuel in the production process. BSFIC is implementing 4 (four) development projects of BMR, by-product-based fertilizer plant, production of electricity through co-generation, establishment of sugar refinery and ETP. Water recycling and many other environment friendly activities are taken by BSEC. Energy saving light and solar panel are used in almost all industries. Every year tree plantation program is arranged by all industries. BITAC has planned to build all new constructions with modern green building concept and with solar energy.

The regular activities of SMEF related to green innovations are establishment of CNC machining center; technology up-gradation through the implementation of Food Safety Management System (FSMS) for ISO 22000:2005; skill development program on Good Manufacturing Practice (GMP); Productivity & Quality (P&Q) enhancement through KAIZEN.

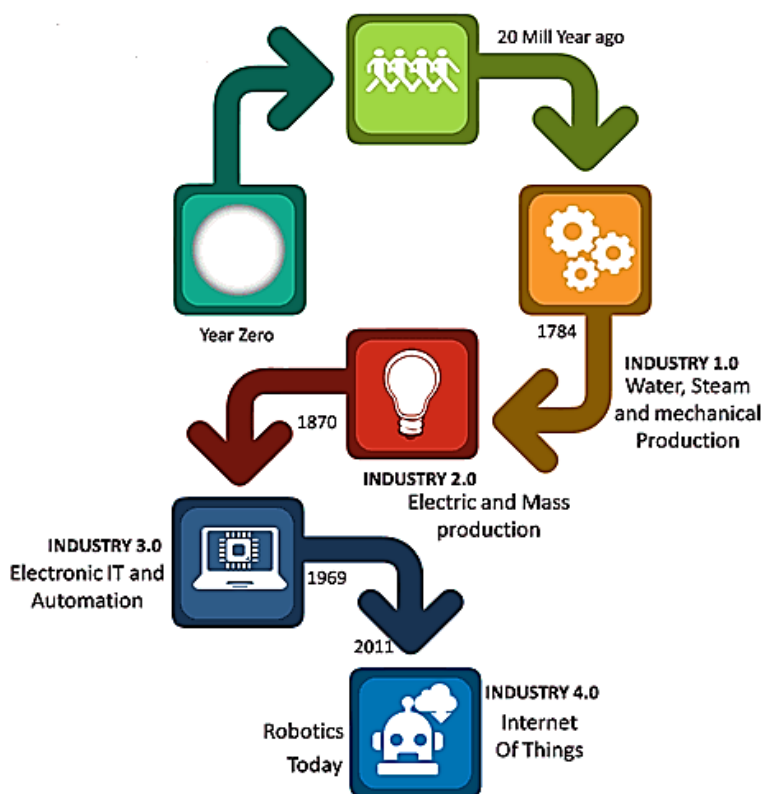
DPDT has prepared Patent Law to create and promote new innovation which will help to establish balanced green innovations environment. BAB provides accreditation to the industries working in the renewable energy sector and promotes competence in energy management certifications.



On the other hand, BSTI has Air Conditioner Testing Laboratory, Refrigerator Testing Laboratory, Electric Fan Testing Laboratory, Electric Motor Testing Laboratory and Lighting Products Testing Laboratory to test the energy efficient electrical product and issues Star Label Certificate. Energy efficient electrical products ensure better output using low electrical energy consumption. Green innovation activities are mostly relating to Environmental Management System EMS I4001:2015. Some organizations have been quick to accept concepts like environmental management system EMS I4001:2015 as a part of green innovation activities. Environmentally rewarded like ISO I4001 certificated companies have much more competitive advantage than others. BSTI is only national body who has accreditation to issue EMS I4001:2015 Certificate.

Since the organizations under MoInd are implementing many projects and activities relating to fostering green innovations, they should keep continuing their efforts to implement those. Moreover, activities/projects that has already been taken should be completed within the stipulated time. As BCIC has taken so many steps to foster green innovation, they can also come up with setting up green tannery. Office of the chief inspector of boilers can take necessary steps to design green boiler. Being a research-oriented organization, NPO should play the lead role in green innovations by conducting their regular research works. BSCIC has a great role to fostering green innovation since they are providing the basic infrastructural facilities in their industrial parks for new entrepreneurs. BSCIC authority should develop their industrial park in such a way so that green innovation concept can be implemented by the entrepreneurs. Necessary provisions will take place in the upcoming Industrial policy to foster green innovation.

**ii. SDGs and 4th Industrial Revolution: The Poise of the Ministry of Industries and different entities under it**



**Industrial Revolution 4.0:**

**Global Context:** Rapidly reaching technology and the future innovation has emerged the 4th revolution in industrial sector to integrate process and overall value chain. The integrated approach combining Internet emphasizing sustainable development and smart real time collaborative approach.

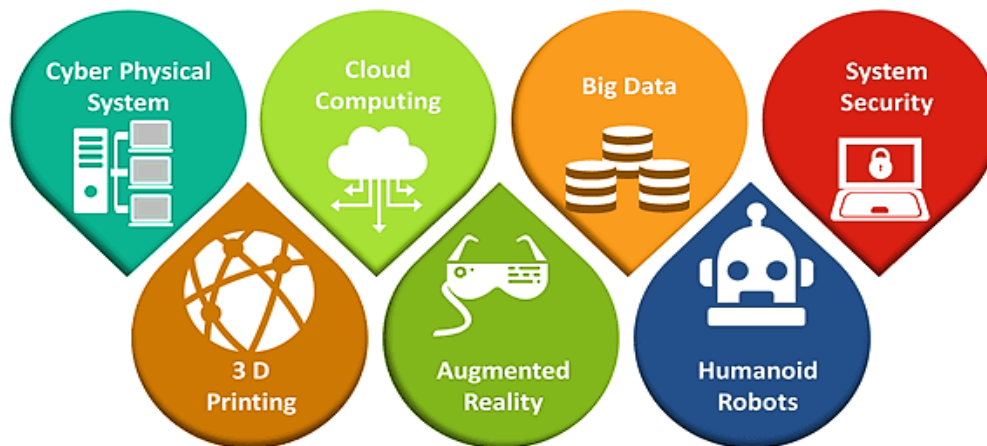
**Industry 4.0** can be referred as a term applied to a group of rapid transformations in the design, manufacture, operation and service

of manufacturing systems and products. Fourth industrial revolution featured grossly on following features

- Internet of Things (IoT)
- Internet of Service (IoS)
- Internet of Data (IoD)

It will influence four long-term relationship paradigm shifts mentioned in UNIDO background paper on Industry 4.0

- **Factory and nature:** improvements in resource efficiency and sustainability of manufacturing systems;
- **Factory and local communities:** increased geographical proximity and acceptance, integration of customers in design and manufacturing processes;
- **Factory and value chains:** distributed and responsive manufacturing through collaborative processes, enabling mass customization of products and services; and
- **Factory and humans:** human oriented interfaces and improved work conditions



#### Core Technology make up Industry 4.0

European parliament in its briefing on September 2015 (European Parliamentary Research Service) mentioned in published document “**Industry 4.0 Digitalisation for productivity and growth**” that -

**Industry 4.0 depends on a number of new and innovative technological developments:**

- The application of **information and communication technology (ICT)** to digitise information and integrate systems at all stages of product creation and use (including logistics and supply), both inside companies and across company boundaries;
- **Cyber-physical systems** that use ICTs to monitor and control physical processes and systems. These may involve embedded **sensors**, intelligent **robots** that can configure themselves to suit the immediate product to be created, or **additive manufacturing**;
- **Network communications** including wireless and internet technologies that serve to link machines, work products, systems and people, both within the manufacturing plant, and with suppliers and distributors;
- **Simulation**, modelling and virtualisation in the design of products and the establishment of manufacturing processes;

- Collection of vast quantities of **data**, and their analysis and exploitation, either immediately on the factory floor, or through **big data** analysis and **cloud computing**;
- Greater ICT-based support for human workers, including robots, **augmented reality** and **intelligent tools**.

in

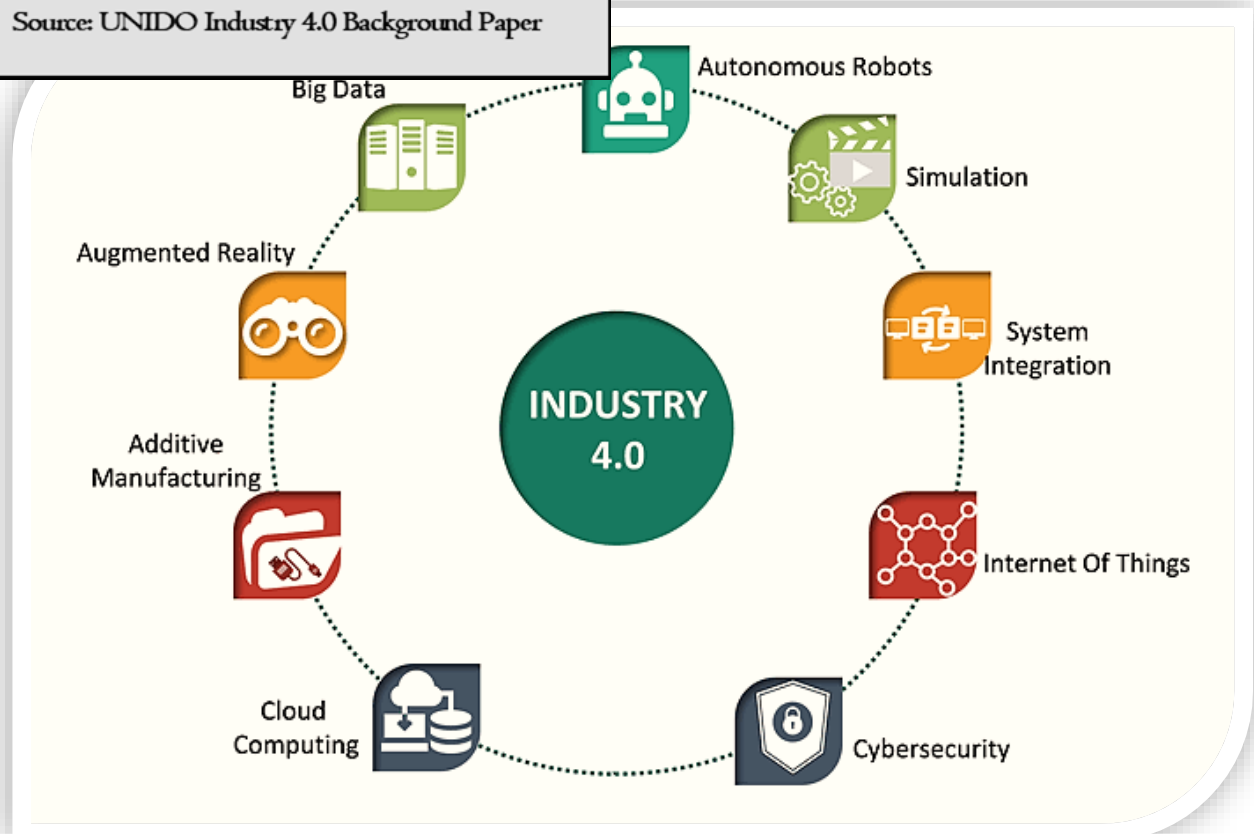
Industry 4.0 Characteristics	
1.	<b>Interoperability:</b> cyber-physical systems (workpiece carriers, assembly stations and products) allow humans and smart factories to connect and communicate with each other
2.	<b>Virtualization:</b> a virtual copy of the smart factory is created by linking sensor data with virtual plant models and simulation models
3.	<b>Decentralization:</b> cyber-physical systems make decisions of their own and produce locally (by using 3D)
4.	<b>Real-time capability:</b> enabling the collection and analysis of data and providing the derived insights immediately
5.	<b>Service orientation</b>
6.	<b>Modularity:</b> the flexible adaptation of smart factories to changing requirements by replacing or expanding individual modules
7.	<b>Convergence</b>
8.	<b>Cost reduction and efficiency</b>
9.	<b>Mass customization</b>
Source: UNIDO Industry 4.0 Background Paper	

United Nations Industrial Development Organization (UNIDO) in its background paper on Industry 4.0 identified the characteristics mentioned in the table:

Smart factory where machine will be connected through Internet of Things for updating live data. Big data analysis with real-time communication & Autonomous vehicles, warehouse, supplier, waste management, circular economy, maintenance and shifting product facility will require high speed network facility and infrastructure.

Industry 4.0: 9 Core Technical Components:

Major issues to be considered in



## Industrial Revolution 4.0 for better preparedness that are

**Education 4.0:** Training and education for up skilling existing work force to meet requirements of Industrial Revolution 4.0 (IR 4.0) is required. Identifying the area and assessment for future job skill requirement done by different renowned organizations. Technological transformation will require focussed skills match. countries like Malaysia and Indonesia already taken measure to update the methods and content considering Industry 4.0 fundamental paradigm shift by combination of future technology uses. In the article “Malaysian higher education system towards industry 4.0 – Current trends overview” (27 September 2018) Maylinda, Faaizah & Naim mentioned about education revolution. Complexity,

Education 1.0 to 4.0 Comparison		
Education Revolution	Methods	Technology
Education 1.0	Dictation Instructivism Direct transfer of information	Not allowed during education process
Education 2.0	Progressivism Begins to open to internet access	Limited access
Education 3.0	Knowledge producing Co-constructivism	Full access for knowledge construction and transmission
Education 4.0	Innovation producing Replacing classrooms	Always changing Learners as major source technology evolution

diversity in content, variety of available settings, formats and technology, emergence of cross and trans-disciplinary problems will require effective, timely and problem-solving practical response from the institutes.

**World Economic Forum** considering future skill match for industry 4.0 with **Social and Emotional Learning (SEL) through Technology**

Top 10 Skills in 2020	
1. Complex Problem Solving	6. Emotional Intelligence
2. Critical Thinking	7. Judgement and Decision Making
3. Creativity	8. Service Orientation
4. People Management	9. Negotiation
5. Coordinating with Others	10. Cognitive Flexibility

Source: *The future of jobs and skills*, World Economic Forum

# 21st-Century Skills

## Foundational Literacies

How students apply core skills to everyday tasks



1. Literacy



2. Numeracy



3. Scientific literacy



4. ICT literacy



5. Financial literacy



6. Cultural and civic literacy

## Competencies

How students approach complex challenges



7. Critical thinking/ problem-solving



8. Creativity



9. Communication



10. Collaboration

## Character Qualities

How students approach their changing environment



11. Curiosity



12. Initiative



13. Persistence/ grit



14. Adaptability



15. Leadership

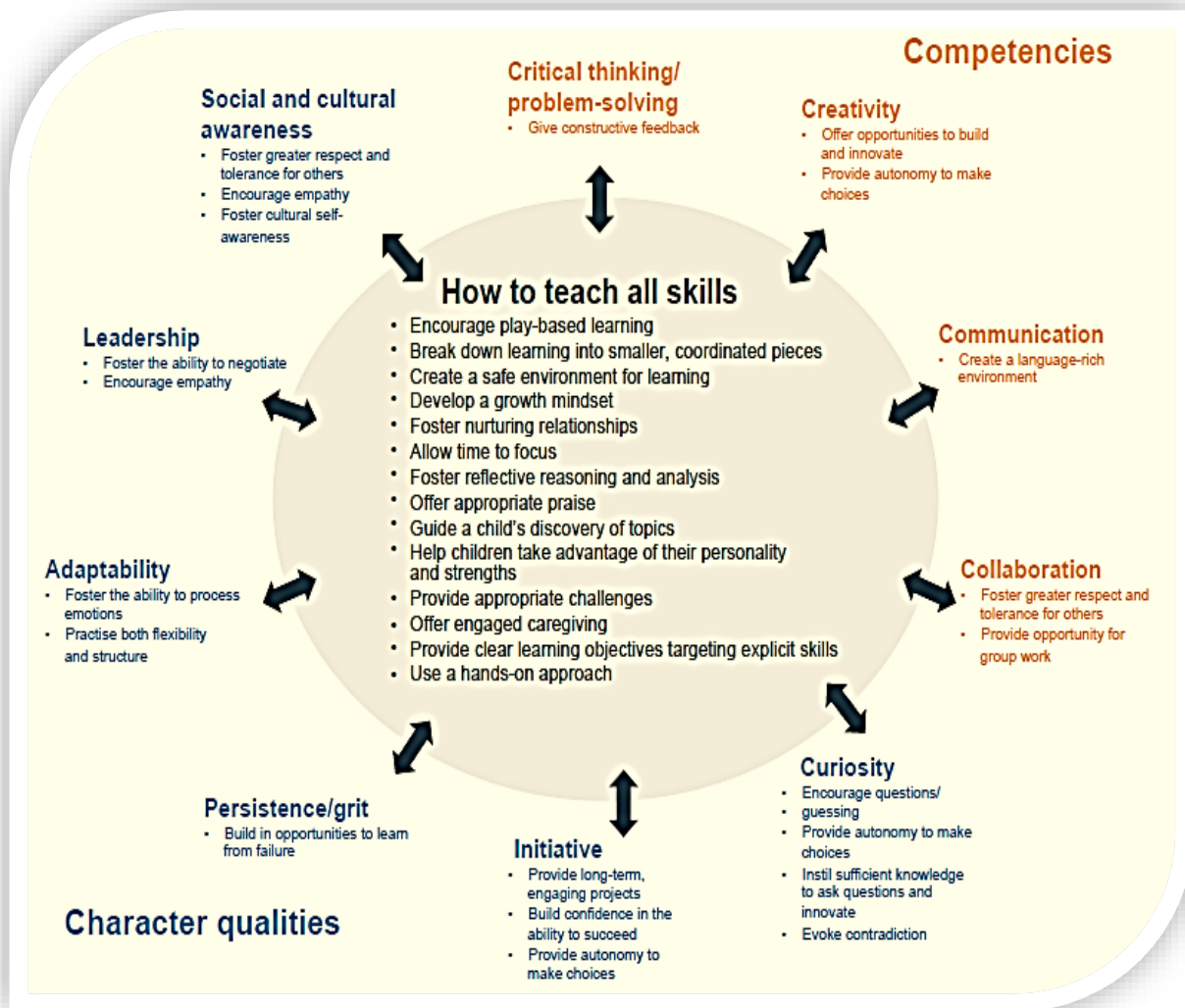


16. Social and cultural awareness

Source:

New Vision for

Education: Fostering Social and Emotional Learning through Technology, World Economic Forum on March 2016



Source: New Vision for Education: Fostering Social and Emotional Learning through Technology, World Economic Forum on March 2016

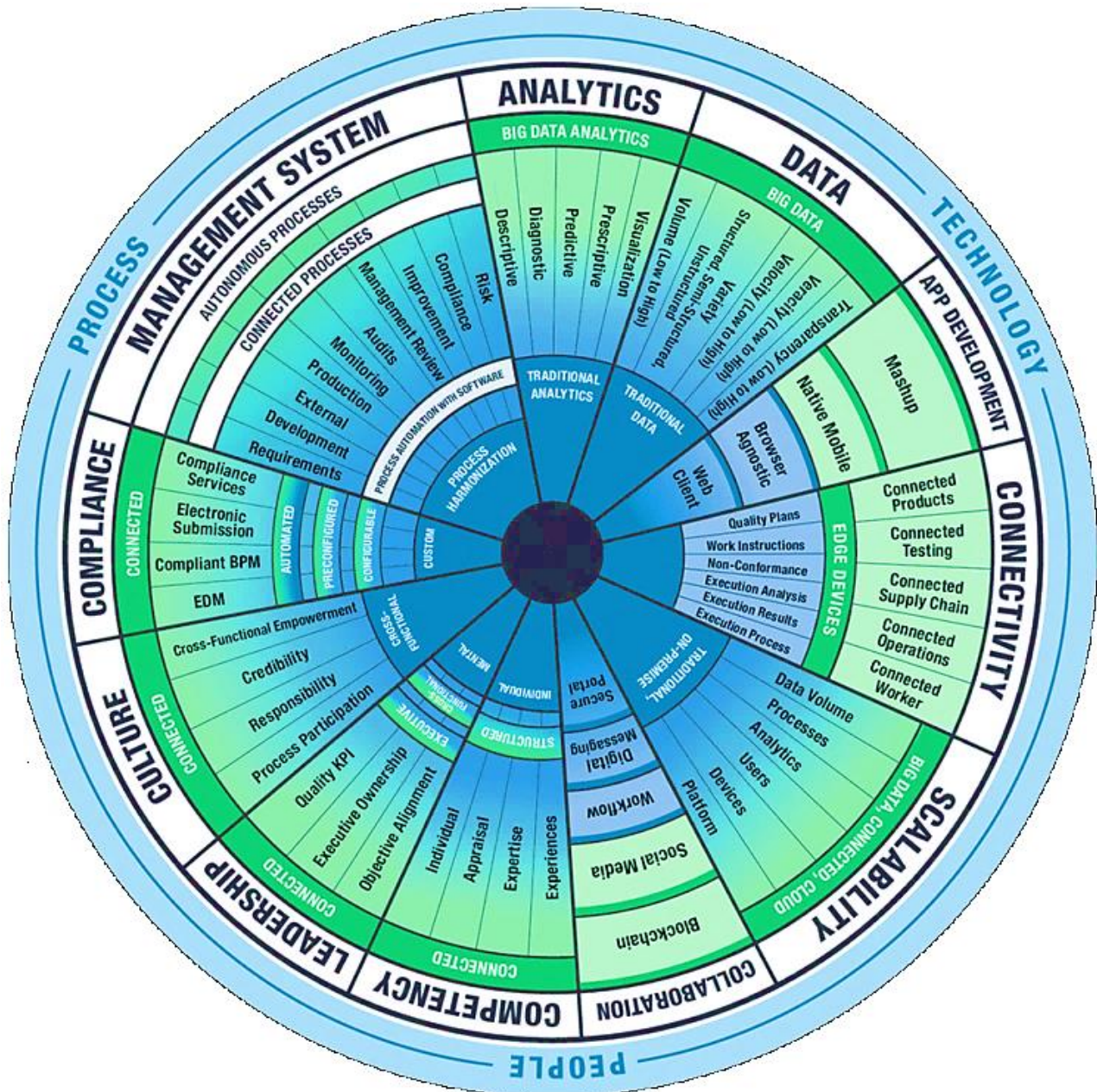
**Factory 4.0:** Smart factory concept where machine will be connected through Internet of Things for updating live data that will require high speed network facility and infrastructure which includes following requirements

<ul style="list-style-type: none"> <li>➤ Robots, Autonomous Vehicle (unmanned vehicles)</li> <li>➤ 3D Printing / Additive Manufacturing</li> <li>➤ Advanced Manufacturing System</li> </ul>	<ul style="list-style-type: none"> <li>➤ Sensors (sensors - data collections)</li> <li>➤ Industrial mobile devices (platform)</li> <li>➤ Nanotechnology / advanced materials</li> </ul>
---	---

(Source: <https://www.researchgate.net/publication/303561107>)

**Logistics 4.0:** The integrated visual goods tracking system with high definition camera facility for logistics movement and encounter damage risk.

**Quality 4.0:** Quality assurance service and digital transformation enabled new quality dimensions. Business analysis carried out by LNS Research identifies the 11 key components, or “axes” of the Quality



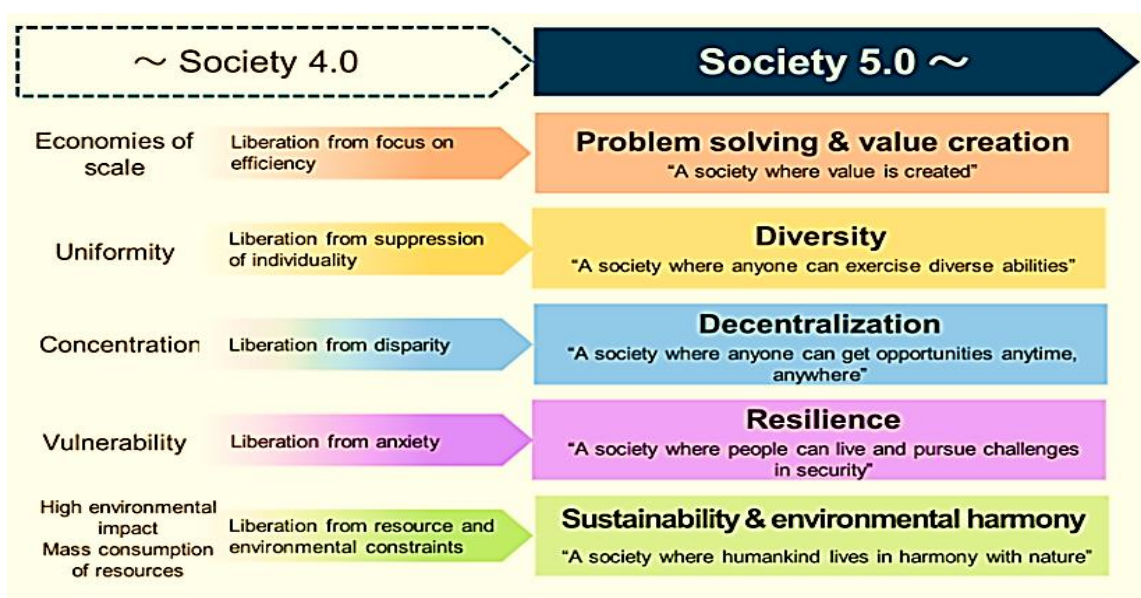
4.0 framework

Source: <https://www.juran.com/blog/quality-4-0-the-future-of-quality/>

**Society 5.0:** World Economic Forum mentioned its online release “Modern society has reached its limits. Society 5.0 will liberate us” Japan encountering future technology has taken the initiative in guiding the world towards a brighter future by showing an ideal concept of the next society, which we call Society 5.0.

In its latest report, Keidanren (Japan Business Federation) has redefined **Society 5.0** as the "**Imagination Society**".

People will be expected to exercise rich imaginations to identify a variety of needs and challenges scattered across society and the scenarios to solve them, as well as creativity to realize such solutions by using digital technologies and data. Society 5.0 will be an Imagination Society, where digital transformation combines with the creativity of diverse people to bring about "**problem solving**" and "**value creation**" that lead us to **sustainable development**. It is a concept that can contribute to the achievement of the SDGs adopted by the United Nations. (**Hiroaki Nakanishi**, Chairman, Keidanren. Published in World Economic Forum on



January 09, 2019)

Source: <http://www.keidanren.or.jp/en/policy/2018/095.html>

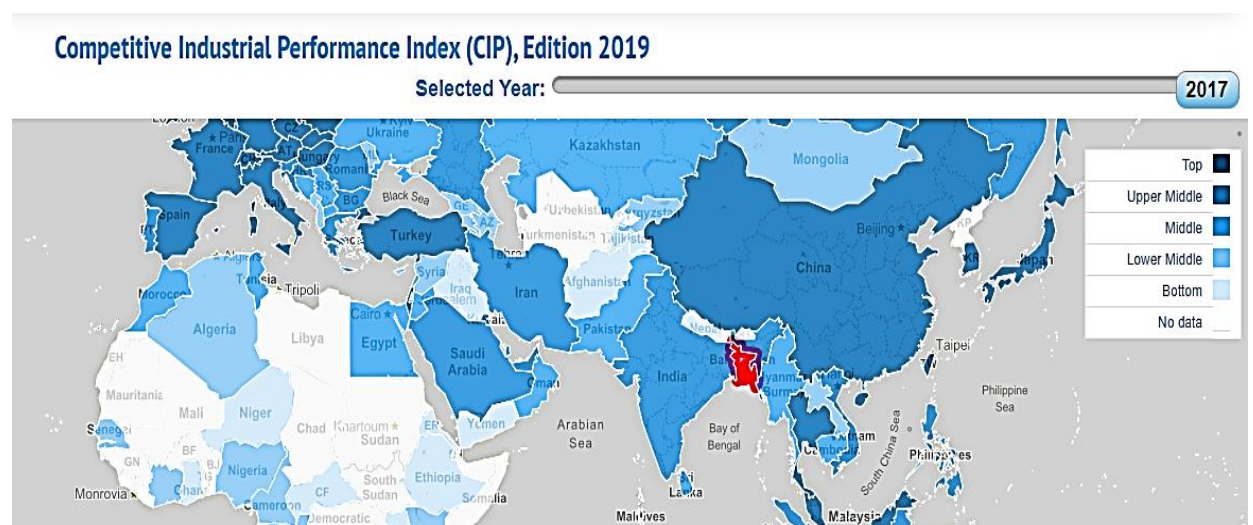
**BRIDGE for Cities 4.0:** UNIDO and the Finance Centre for South-South Cooperation (FCSSC), "BRIDGE for Cities" is a large-scale annual event, which aims to advance the implementation of the 2030 Agenda for Sustainable Development in the context of the Belt and Road Initiative. It encourages municipal officials and development stakeholders to scale up their engagement in inclusive and sustainable urban-industrial development initiatives and establish a municipal platform through which cities can share their development successes and challenges, and ultimately scale up their capacities (Vienna Summit from 3rd to 4th September 2019).

The 2019 summit Edition explored the impact of the fourth Industrial Revolution and how technology driven Innovation can facilitate the transition toward Smart City development. The concept considered key role of circular economy in the digital transformation of cities and the application of Smart Mobility Technologies which result development by reducing pollution.



## National Context of Adopting Industrial Revolution 4.0

Bangladesh is a labour oriented production base where Competitive Industrial Performance Index 2019 (UNIDO) shows Bangladesh ranked 75 out of 150 countries where the country profile shown below.



### Performance indexes

	Rank 2017	Score 2017	World Average	Rank 2016	Trend 1990	2017
<b>Competitive Industrial Performance Index</b>	72	0.034	0.071	71 ↓		

### Manufacturing Value Added Indexes

<b>Manufacturing Value Added per Capita Index</b>	112	0.008	0.083	117	
<b>Share of Manufacturing Value Added in GDP Index</b>	18	0.598	0.352	18	
<b>Share of Medium and High-Tech Activities in Total Manufacturing Value Added</b>	107	0.122	0.308	107	
<b>Industrialization Intensity Index</b>	59	0.360	0.330	61	
<b>Share of World Manufacturing Value Added Index</b>	42	0.012	0.027	43	

### Manufacturing Export Indexes

<b>Manufacturing Export per Capita Index</b>	111	0.006	0.104	111	
<b>Share of Manufacturing Exports in Total Exports</b>	1	1.000	0.625	1	
<b>Share of Medium and High-Tech Activities in Total Manufacturing Export</b>	139	0.019	0.361	142	
<b>Index Industrial Export Quality Index</b>	72	0.510	0.493	72	
<b>Share in World Manufacturing Export Index</b>	43	0.014	0.040	43	

- 1<sup>st</sup> DIMENSION: CAPACITY TO PRODUCE AND EXPORT MANUFACTURES
- 2<sup>nd</sup> DIMENSION: TECHNOLOGICAL DEEPENING AND UPGRADING
- 3<sup>rd</sup> DIMENSION: WORLD IMPACT

Source: <https://stat.unido.org/SDG>

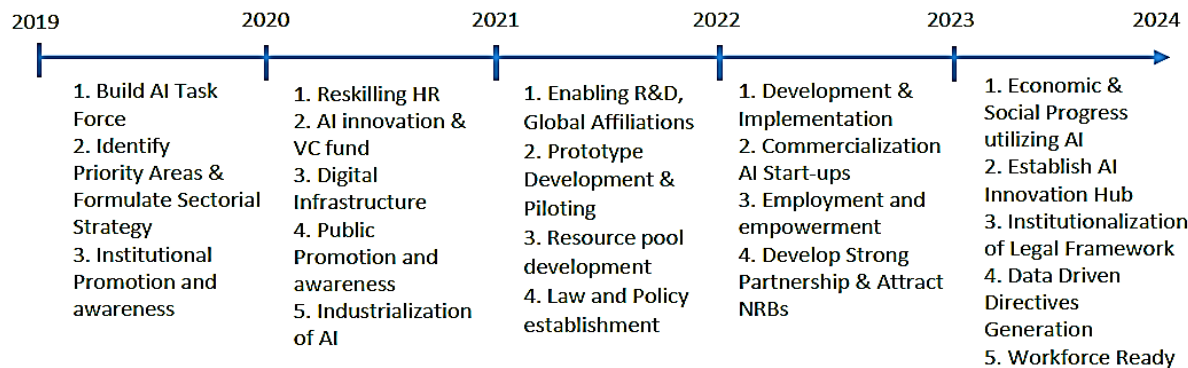
The present growth and development show promising fact for Bangladesh and industrial development. To face the upcoming technological advancement Bangladesh is preparing and strengthening its footprint towards digital transformation. Though readiness of the industries holds different picture but Government initiative towards Artificial Intelligence (AI) has started. Bangladesh is moving towards 5g. Required AI



and data analytics requirement for Industrial Revolution 4.0 depicted below.

Source: <https://www.sketchbubble.com/en/presentation-industry4>

Six strategic pillars of AI, Bangladesh consists of i) research and development, ii) skilling and reskilling of AI workforce, iii) data and digital infrastructure, iv) ethics, data privacy, security & regulations, v) funding and accelerating AI start-ups, and vi) industrialization for AI technologies. In each of the strategies strategic brief, we have included a road map, action plan, identified related stakeholders and lead ministries. The road map is depicted below.



Source: Draft Version 3:0 National Strategy for Artificial Intelligence of Bangladesh

## Digital Bangladesh Transformation

### ICT Education

**75,000**

ICT professionals being trained by Government

**170,000**

educational institutions to have multimedia labs

**24,122**

teachers being trained on ICT equipment

### ICT Export Earnings



**\$300**  
Million  
in 2016

### ICT Sector Earnings

**\$600**  
Million

**\$26**  
Million  
2008

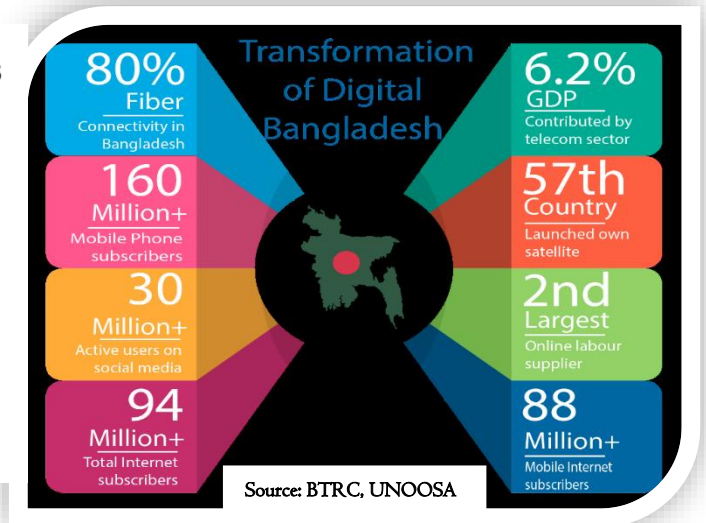
2015



### Budgetary Allocation for ICT

2016 **\$205.4**  
Million

2008 **\$25.6**  
Million



Source: Draft Version 3:0 National Strategy for Artificial Intelligence of Bangladesh

AI adoption is greatest in sectors that are already strong digital adopters in Bangladesh. The sectors are

High AI Adoption	<ul style="list-style-type: none"> <li>• High tech/telecom</li> <li>• Automotive/assembly</li> <li>• Financial services</li> </ul>
Medium AI Adoption	<ul style="list-style-type: none"> <li>• Retail</li> <li>• Media/entertainment</li> <li>• Consumer packaged goods</li> </ul>
Low AI Adoption	<ul style="list-style-type: none"> <li>• Education</li> <li>• Healthcare</li> <li>• Travel/tourism</li> </ul>

### National AI Priority Sectors for Bangladesh

- AI for public service delivery,
- AI for manufacturing,
- AI for agriculture,
- AI for smart mobility and Transportation,
- AI for skill & education,
- AI for finance & trade, and
- AI for health

Source: Draft Version 3:0 National Strategy for Artificial Intelligence of Bangladesh

## Ministry of Industries Role:

Ministry of Industries can adopt 15 broad approaches to face Industry 4.0.

- I. **Collaborative approach:** Empowering organizations to collaborate with national and international level organizations for using data driven platforms (a2i, ICT ministry, National level data centre

and other foreign data base managing organizations) and solution for ensuring automation, up skilling and readiness of industries in relevant field.

2. **Digitization Framework:** Preparing framework for factories of different state-owned corporation and associations need to be upgraded. New factory set up and operations can be upgraded.
3. **Data management & Analytics:** Big data analysis and data validation is the key factor for management decision making. So Common Data Centre/ Platform and skilled human resources for analytics to solve the problems will be required.
4. **Capacity Development:** Capacity development of the Facilitators (institute level as well as operation level) and employee will enable up skilling activities.
5. **Resource Planning:** Financial schemes for funding technological convergence and enabling the adoption of the Fourth Industrial Revolution (4IR) technologies in a wide variety of countries are expected to emerge in support of start-ups and R&D.
6. **Research and Consultancy:** Assessing readiness, impact, requirement, facility support and feasibility can be done through industrial research. **Problem-solving** resource panel and expert pool can be created initially for local up skilling of existing resources. Practical task-based capacity building training and real-time problem-solving online platform need to be integrated in data base platform. Improvement and innovation activities can be done by R& D as well as open source use of data by the researchers.
7. **Industry Classification:** Aligning nation AI roadmap and industry requirement MoInd will update the classification like UNIDO base on industry groups by technologic intensity, namely:
  - a. Medium-high and high technology (MHT industries)
  - b. Medium technology
  - c. Low technology
8. **Policy and Industry Environment:** Policy framework and Industrial environment should support to encourage localization of Industry 4.0. Resilient Infrastructure and advanced technological environment can be emphasized.
9. **Industrial Zone/ Area Setup:** New industrial zone should focus the technological elements of Industry 4.0 and renovation facilities in possible existing industrial park/zone/area can attain the priority.
10. **Engaging Local Suppliers:** In the same vein, many global companies are indirectly participating in global value chains through their interactions with suppliers locally (supporting qualification and production activities locally). These synergies will be instrumental in enhancing the performance of local economies in a global market. (Source: UNIDO, The Global Manufacturing & Industrialisation Summit, 27 - 30 March 2017)
11. **Retraining the Workforce:** We must be mindful of the ramifications of advanced technologies on employment and we should offer the existing workforce training and reskilling opportunities. Economies need integrated vocational training and education packages which reflect future opportunities for young men and women. (Source: UNIDO, The Global Manufacturing & Industrialisation Summit, 27 - 30 March 2017)
12. **Climate Action:** Safeguarding the environment remains a priority to both businesses and policymakers to ensure that any negative corollary effects resulting from industrial processes are

minimised or mitigated (wherever possible). Existing technologies like smart grids, offshore wind, carbon capture and sequestration technology, algae biofuel, geothermal energy, lithium-ion batteries, and concentrated solar voltaic can significantly reduce the emission footprint. (Source: UNIDO, The Global Manufacturing & Industrialisation Summit, 27 - 30 March 2017).

Stand and benchmarking with proper long-term monitoring framework can be planned considering sectorial approach.

13. **Smart Cities:** Smart cities with collaborative platform within the country to ensure localization approach that will synchronize development activity and focus on need based allocation of resources. Thus, the urbanization attempt to reduce pollution evolving circular economy, increase mobility and improvement of living standard need to be ensured at local areas.
14. **Standards:** Clear, concise and reliable international standards on technology interoperability, adoption, transfer and development are important to sustaining investments and minimising technological risks, whilst streamlining the global approach toward skills and capabilities development to help promote and accelerate knowledge transfer and fair trade. Source: UNIDO, The Global Manufacturing & Industrialisation Summit, 27 - 30 March 2017).
15. **Stakeholder Alignment:** Bringing together the key stakeholders – including different branches of governments, private companies, and academic institutions – offers an opportunity to modify existing paradigms that need to adapt quickly to emerging conditions in the future.

## Chapter 10: Challenges and Way Forwards

### i. Challenges:

The three major economic sectors for development of Bangladesh are agriculture, industry and services. Keeping it in mind, Bangladesh needs strategic development plans for its economic development. Through industrial development Bangladesh can achieve sustainability. Industrial growth not only refers to higher productivity and more output in industrial enterprises, but also generates more and better jobs. But sustainability of industrialization itself is a concern for many reasons including resource scarcity, technological transformation, infrastructure constraints, environmental concerns, and so on. However, the major challenges to implement the targets of SDGs for the Ministry of Industries are mentioned below.

1. Major challenges to implement SDGs are the implementation of two priority areas under Ministry of Industries viz. (i) manufacturing value addition at proportion of GDP to 35% and (ii) increase employment at a proportion of total employment to 25%. We have to identify the barriers to industrial manufacturing. The major areas to address is related to 5 indicators of SDGs- where utmost attention should be given with priority to industrial manufacturing and employment generation.
2. We need huge amount of investment to materialize the SDGs. Ministry of Industries bears a vital part nationally in implementing development projects/programs. Here resource mobilization is one of the major challenges for implementing SDGs. Ministry of Industries has taken a good number of development projects/programs to promote inclusive and sustainable industrialization and by 2030 significantly raise country's share of employment to gross domestic product. Global estimate shows that USD 3-5 trillion would be needed annually throughout the world where Bangladesh would need 928.48 billion USD for the period of 2017-2030. Since Ministry of Industries has taken some challenging development projects/programs the total investment for that would be approximately BDT 167 billion to achieve during implementation of the 7<sup>th</sup> Five-year Plan. To implement the SDGs additionally approximately 258 billion is needed for new projects/programs up to 2020. It means 54 per cent additional amount of taka would be needed in the upcoming 8<sup>th</sup> Five Year Plan to implement SDGs on the part of industrial sector. Thus, traditional sources of funding are not sufficient to implement the SDGs. We need to hunt ways of financing from the public sector, private sectors, development partners and other sources.
3. We must adopt the latest technology of Industry 4.0 (4<sup>th</sup> Industrial Revolution) which would ultimately replace the human labor force worldwide. Since it is a global endeavor to implement the 4IR Bangladesh in no way can lag behind in adopting higher technology in the industry sectors. We must keep in mind always the intense human labor issues during applying the technological

transformation considering the volume of our population and the economy at large. Industrialization should be expanded with the up gradation of existing technology and adopting new technology to sustain in the global competition. The world is already experiencing industry 4.0 with higher level of technology. Automation, Robotics, Artificial Intelligence, IOT, CNC in production system is forthcoming. Our industry must cope with latest industrial technology. Otherwise, the industry will not be sustainable in present competitive global market. So, we need vigorous research and academic fitness for adopting Industry 4.0.

4. Access to financial services, including credit for small-scale, micro and cottage industries (SMEs) and other enterprises in Bangladesh is a great challenge. There is a huge financing gap for availing credit facilities for large, medium, small and micro enterprises in Bangladesh. Developing a Business Model for SMEs & Start-Ups into Financial Services requires policy support. Moreover, high interest rate of loan is still a big issue for attracting investment though the Government is trying to bring the rate in single digit. SMEs need increase Strengthening Refinancing Schemes or Credit Wholesale Fund.
5. Insignificant allocation in Research and Development sector usually do not bring good results in invention and innovation. It affects the process of producing potential researchers. As a result, innovative ideas and knowledge are not spurring at optimum level in industry sector in Bangladesh. As mentioned in the Global Innovation Index 2019, only 0.36% of GDP is allocated in research and innovation in Bangladesh. It is too low to conduct higher technological research and innovation.
6. The existing education system of the country cannot cope with both the local and external market demands. This is extremely evident in industrial sectors. Every year hundreds of thousands of educated youths add in the job market but they are not quite fit for productivity. The academic subject of different universities/higher education seats are not need based. Thus, restructuring educational curriculum to meet the present industrial requirement is demand of time.
7. Industrial waste management is another challenge to achieve goal 9 of the SDG. Most of the firms or industries dump their wastes in open places which ultimately go to canals and rivers and pollute the water and environment and cause diseases and contaminations to human and other living beings. Use of Effluent Treatment Plant (ETP) or Central ETP is insignificant in the industries. Measures and awareness for 3R ( Reuse, Reduce and Recycle) is inadequate for efficient optimal use of resources in the industry sector.

Challenges are also associated in implementing SDG 9 since Bangladesh is on the journey to graduate from Least Developed Countries (LDCs) within a few years. At present, Bangladesh being an LDC is enjoying various exemptions of the Special and Differential Treatment (S & DT) under WTO regulations. Bangladesh is enjoying exemptions and longer transition in the implementation of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement till January 2033 for introducing patent

protection on pharmaceuticals. Hence, Bangladesh might face potential trade related obstacles once the country graduated from LDCs in 2024. Besides, the country is facing tariff and non-tariff barriers in some global markets. Bangladeshi exporters face the challenges of meeting such compliances. Labor and environmental compliance for sustainable and green industrialization has been a great issue before us. Moreover, preparedness for achieving international recognition of Local Skill Training Certifications is still absent in most of the cases. Need for creating new jobs in industrial sector still remains unnoticed.

## ii. Way forward

Resource mobilization, coordinated approach, international co-operation, peace and justice and partnership are the key factors for achievement of SDGs. However, special attention and efforts are needed to achieve goal 9 under Ministry of Industries. Upon the review of industrial development to achieve SDG 9 in Bangladesh, following recommendations are suggested.

- a. **Policy support by MoInd** - Ministry of Industries has taken many initiatives to improve skill of public enterprises. Now it is reviewing/updating the Industrial Policy 2016. SME Policy has been formulated in 2019. Moreover, MoInd has updated and reformed several acts and policies during 2019-2020 fiscal year which have been included in the Annual Performance Agreement (APA) of the Ministry. To be further mentioned, MoInd is in the process of enacting new acts, updating existing acts and preparing new policies, guidelines for implementing SDGs. The ministry is continuously urging to prepare new development projects for improving the conditions and alternative use of resources.
- b. **Establish Industrial Park** - Ministry of Industries is mandated to establish industrial parks and it is implemented by BSCIC. Land acquisition and connectivity of utility services needs quicker response to that end. Many SMEs are not able to afford industrial plots. Therefore, BSCIC has initiatives to complete the projected industrial parks and allocate the plots at the quickest possible time. Separate industrial parks for Light Engineering Sectors (LES), Plastic and Chemical industries are the need of the time and BSCIC has been working to implement the projects.
- c. **Skilled human resource development** - Goal 9 of SDGs articulates skilled workforce, decent work and employment. BITAC, SCITI and TICI are entrusted with the responsibility of creating trained manpower. The training course and curriculum need updated technology so that after training youth learners are able to apply for jobs or earn entrepreneurship/self-employment. The Government meets the challenges by fostering creation of productive and inclusive employment. Improvement in management skills, higher technology and upgrading of labor skills will help a lot.
- d. **Patronizing SMEs including resource mobilization** - SMEs are the backbone of national economy. SME Policy 2019 has a time bound action plan. SME Foundation and BSCIC are the major counterpart to implement the policy. Both the organizations extend support to SMEs development.



e. **Fostering research and innovation**- Government of Bangladesh has a plan to invest at least 1% of the GDP for research and innovation annually. Ministry of Industries and its organizations are committed to invest maximum resource for research work and innovations.

f. **Harmonized tax/vat policy for LES**-Light Engineering Sector (LES) is one of the largest sectors of employment in Bangladesh. LES is producing import substitute products and subsequently saving huge amount of foreign currency. However, the sector is facing challenges of higher level of tax/VAT. Light Engineering Sector should be patronized through harmonizing tax/VAT policy as it is declared 'Product of the Year 2020' by Honourable Prime Minister. For harmonizing tax/VAT, the National Board of Revenue (NBR) and Bangladesh Tariff Commission have to take major initiatives.

g. **Increase Productivity**- Productivity is the key factor to industrial sector. Productivity in terms of human resources, financial resources, cost minimization, use of raw materials must be ensured to increase wealth of the organization and also for the country as a whole. Therefore, organizations under Ministry of Industries would take necessary steps to increase productivity.

h. **Resource mobilization**:Both public and private sector financial institutions, Public-Private Partnership (PPP) initiatives, External Financing and Non-Government Organizations (NGOs) have to mobilize financial resources to implement SDGs.

i. **Infrastructure Development**: Infrastructure development is the prerequisite and major part of development work for a growing economy. Bangladesh Government has stressed top priority to the sector. It covers all modes of transport and Information and Communications technology. Government is providing policy supports to boost up the private sectors which would ultimately help attracting both foreign and domestic investments.

j. **Build resilient infrastructure**: Since Bangladesh is a natural disaster-prone country; resilient infrastructures have to be built keeping the magnitude of devastation of natural calamities in mind so that infrastructures can withstand the shocks in time.

k. **Global Partnership**:: The public and private sectors should collaborate effectively and efficiently through public private partnership (PPP) initiatives. Bangladesh Government is setting up 100 Special Economic Zones (SEZs) for new industries where both public and private sectors would get opportunities for investment. At present, 24 High-Tech Parks are ready for commercial operation. However, the government must take challenges to ensure timely and cost-effective delivery of the projects. With materializing the aforesaid projects Bangladesh might move on to the path of industrialization and achieve the SDGs. Bangladesh must reduce cost of doing business; bring more transparencies by adopting digital business processes and proceedings; foster economic diplomacy to strengthen inter-government initiatives for access to technologies and attract FDI as well as to avail best practices. For that investment in research and development sector must get priority alongside technological transformation.

## Chapter II: Conclusion

### Conclusion:

The book 'Mainstreaming SDGs for the Ministry of Industries' is a publication of the Ministry of Industries, the first of its kind on SDG in Bangladesh. SDGs: Bangladesh perspectives and SDGs: Ministry of Industries perspectives with alignment of Annual Performance Agreement (APA) and Election Manifesto 2018 have added especial significance to the book. Discussion on strategy and implementation for sustainable industrialization has got priority. Challenges and way forward has some future directions. Issues like 5Ps (People, Planet, Prosperity, Peace and Partnership), 3R (Reuse, Reduce and Recycle), decent work, lifelong learning, end poverty and hunger, Blue Economy, water and waste management, 3 dimensions of SDGs-social solidarity, economic efficiency and environmental responsibility etc. have been brightly highlighted. Alongside, transformation from 'Whole of Government Approach' to 'Whole of Society Approach' has been elaborated justifiably. SDGs are for achieving a better and more sustainable future for all. So it can be believed that inclusive and sustainable industrialization together with innovation and infrastructural development would flourish our economy through creating employment and empowering women and under privileged section. Through efficient use of resources and promoting new technologies including Industry 4.0 (Artificial Intelligence) we would be able to accelerate the development of industry sector. To that end, it is believed-the book 'Mainstreaming SDGs for the Ministry of Industries' would be a guideline for all stakeholders.

## References:

7<sup>th</sup> Five-year plan. Planning Commission, Ministry of Planning, Bangladesh.

A Handbook Mapping of Ministries by Targets in the implementation of SDGs aligning with 7<sup>th</sup> Five Year Plan (2016-20).

A Handbook: Mapping of Ministries by Targets in the implementation of SDGs aligning with 7<sup>th</sup> Five Year Plan (2016-20) by General Economic Division, Planning Commission, Bangladesh

Annual report, BIM, 2017-18

Annual report, BSTI, 2017-18

Anwar, Tanvir B; Alam, A. S. M and Hossain, M. Parvez (2006). "Industrial Sector of Bangladesh Can Overcome Extreme Poverty through More Inclusive Growth".

Asian Development Bank, Institute for Global Environmental Strategies, United Nations Environment Programme, 3R South Asia Expert Workshop, Metro Manila, Philippines, ADB, 2006

Bangladesh Continues to Reduce Poverty but at Slower Pace. World Bank. The World Bank. Retrieved 11 April 2018

Bangladesh Delta Plan 2100 by General Economic Division, Planning Commission, Bangladesh

Bangladesh Journal of Political Economy, Vol. XII, No.1, Bangladesh Economic Association

Bangladesh Voluntary National Review (VNR) 2017 by General Economic Division, Planning Commission, Bangladesh

Bangladesh". Business Environment Final Term Paper. Institute of Business Administration

C. Visvanathan, R. Adhikari and A. P. Ananth, 3R Practices for Municipal Solid Waste Management in Asia Kalmar ECO-TECH '07 and The Second Baltic Symposium on Environmental Chemistry Kalmar, Sweden, November 2007, 26-28.

Chaudhury, Dipanjan Roy (3 November 2018). "At current pace, Bangladesh to end extreme poverty by 2021". The Economic Times. Retrieved 6 November 2018

Dhaka Chamber of Commerce & Industry (DCCI).

Election Manifesto 2018 by Bangladesh Awami League [Bangladesh on the march towards Prosperity]

Export Promotion Bureau, Bangladesh. Website: [www.epb.gov.bd/details.php?page=24](http://www.epb.gov.bd/details.php?page=24)

Ferdaus Ara Begum: CEO of Business Initiative Leading Development (BUILD), a Public-Private Dialogue platform;

Highest concentration of poor in Rangpur, Prothom Alo, October 19, 2017.

<http://www.inforbd.com/Bangladesh/industry>

[http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e\\_6ba3\\_467b\\_bdb2\\_cfb3cbbf059f/A-Handbook-Mapping-of-Ministries\\_-targets\\_-SDG\\_-7-FYP\\_2016.pdf](http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e_6ba3_467b_bdb2_cfb3cbbf059f/A-Handbook-Mapping-of-Ministries_-targets_-SDG_-7-FYP_2016.pdf)

[http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e\\_6ba3\\_467b\\_bdb2\\_cfb3cbbf059f/Final\\_Data-Gap-Analysis-of-SDGs\\_Bangladesh-Perspective\\_23\\_02\\_2017.pdf](http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/3acbc97e_6ba3_467b_bdb2_cfb3cbbf059f/Final_Data-Gap-Analysis-of-SDGs_Bangladesh-Perspective_23_02_2017.pdf)

<http://bdf2018.erd.gov.bd/wp-content/uploads/2018/01/BDF18-SDG-financing-and-strengthening-multistakeholder-partnerships-.pdf>

<http://boi.gov.bd/about-bangladesh>

[http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44\\_b276\\_455a\\_a9bd\\_30caa5c53495/Annual%20report%2017-18.pdf](http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44_b276_455a_a9bd_30caa5c53495/Annual%20report%2017-18.pdf)- accessed on 18/09/2019

[http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44\\_b276\\_455a\\_a9bd\\_30caa5c53495/Annual%20report%2017-18.pdf](http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44_b276_455a_a9bd_30caa5c53495/Annual%20report%2017-18.pdf)- accessed on 18/09/2019

[http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44\\_b276\\_455a\\_a9bd\\_30caa5c53495/Annual%20report%2017-18.pdf](http://boiler.gov.bd/sites/default/files/files/boiler.portal.gov.bd/page/6f311f44_b276_455a_a9bd_30caa5c53495/Annual%20report%2017-18.pdf)- accessed on 18/09/2019

[http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51\\_4a40\\_4333\\_ab01\\_66b4be436e26/IP%20Policy.KS.pdf](http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51_4a40_4333_ab01_66b4be436e26/IP%20Policy.KS.pdf)- accessed on 18/09/2019

[http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51\\_4a40\\_4333\\_ab01\\_66b4be436e26/IP%20Policy.KS.pdf](http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51_4a40_4333_ab01_66b4be436e26/IP%20Policy.KS.pdf)- accessed on 18/09/2019

[http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51\\_4a40\\_4333\\_ab01\\_66b4be436e26/IP%20Policy.KS.pdf](http://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51_4a40_4333_ab01_66b4be436e26/IP%20Policy.KS.pdf)- accessed on 18/09/2019

<http://m.theindependentbd.com/#top>

<http://simple.wikipedia.org/wiki/Industrialization>

<http://www.bab.org.bd/site/page/eec08766-836e-41f7-953e-f8d6b11a97fd/>-accessed on 18/09/2019

<http://www.bcic.gov.bd/site/page/151c7c23-03d0-4e6f-b162-b661f1f26750/>-accessed on 17/09/2019

<http://www.brighthub.com/environment/green-living/articles/95401.aspx>

<http://www.bsec.gov.bd/site/page/39cd9d99-5f5c-4037-9721-7a9c632ee696/-accessed> on  
17/09/2019

<http://www.bsfc.gov.bd/site/page/ddca22ac-d151-43b6-aaf2-bcddb2535f0c/-accessed> on  
17/09/2019

<http://www.europarl.europa.eu/cmsdata/160360/DEVE%20study%20on%20EU%20SDG%20imple mentation%20formatted.pdf>

<https://aquatiq.com/en/about-us/un-sustainable-development-goals/>

<https://bdplatform4sdgs.net/wp-content/uploads/2017/01/Citizen%E2%80%99s-Platform-Brief-8-Localising-the-SDGs-in-Bangladesh.pdf>

<https://bernardmarr.com/default.asp?contentID=1576>

<https://clrskills.com/blog/how-is-skill-development-shaping-the-future-of-india/>

<https://cpd.org.bd/wp-content/uploads/2019/07/Four-Years-of-SDGs-in-Bangladesh.pdf>

<https://doi.org/10.7237/sjeer/186>

[https://ec.europa.eu/environment/sustainable-development/SDGs/index\\_en.htm](https://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm)

<https://en.wikipedia.org/wiki/Water>

[https://en.wikipedia.org/wiki/Water\\_resources#Industries](https://en.wikipedia.org/wiki/Water_resources#Industries)

[https://mowca.portal.gov.bd/sites/default/files/files/mowca.portal.gov.bd/download/efad6d3c\\_1828\\_4d9e\\_a42f\\_b0f08b4c61c7/Monitoring\\_and\\_Evaluation\\_Framework\\_of\\_SDGS\\_Book\\_Proof.pdf](https://mowca.portal.gov.bd/sites/default/files/files/mowca.portal.gov.bd/download/efad6d3c_1828_4d9e_a42f_b0f08b4c61c7/Monitoring_and_Evaluation_Framework_of_SDGS_Book_Proof.pdf)

<https://news.un.org/en/story/2019/07/1042421>

<https://sdg4education2030.org/the-goal>

<https://sdgacademy.org/>

[https://stat.unido.org/?\\_ga=2.92615070.2098278121.1585942064-1173951801.1585942064](https://stat.unido.org/?_ga=2.92615070.2098278121.1585942064-1173951801.1585942064)

[https://stat.unido.org/?\\_ga=2.92615070.2098278121.1585942064-1173951801.1585942064](https://stat.unido.org/?_ga=2.92615070.2098278121.1585942064-1173951801.1585942064)

[https://sustainabledevelopment.un.org/content/documents/I9409Poland\\_VNR\\_20180615.pdf](https://sustainabledevelopment.un.org/content/documents/I9409Poland_VNR_20180615.pdf)

[https://sustainabledevelopment.un.org/content/dsd/dsd\\_aofw\\_nsds/nsds\\_pdfs/NSDS\\_map\\_bg\\_note.p df](https://sustainabledevelopment.un.org/content/dsd/dsd_aofw_nsds/nsds_pdfs/NSDS_map_bg_note.p df)

<https://thefinancialexpress.com.bd/views/sdg-implementation-ensuring-localisation-and-inclusiveness-1538579515>

<https://waste4change.com/waste4change-supports-3r-reduce-reuse-recycle-green-concept/>. Accessed on 09/11/2019

<https://www.brighthub.com/environment/green-living/articles/95401.aspx>. Accessed on 09/11/2019.

<https://www.ifla.org/publications/node/91780>

<https://www.juran.com/blog/quality-4-0-the-future-of-quality/>

<https://www.un.org/esa/ffd/ffdialogue/>

<https://www.un.org/sustainabledevelopment/infrastructure-industrialization/>  
<https://www.un.org/sustainabledevelopment/news/communications-material/>

[https://www.un.org/sustainabledevelopment/wpcontent/uploads/2019/01/SDG\\_Guidelines\\_AUG\\_2019\\_Final.pdf](https://www.un.org/sustainabledevelopment/wpcontent/uploads/2019/01/SDG_Guidelines_AUG_2019_Final.pdf)

<https://www.un.org>; <https://sdgacademy.org/goal/no-poverty/>

<https://www.unido.org/4th-bridge-cities-event>

<https://www.unido.org/4th-bridge-cities-event>

<https://www.unido.org/4th-bridge-cities-event>

<https://www.unido.org/news/innovation-and-connectivity-required-smooth-transition-industry-40>

<https://www.unido.org/news/innovation-and-connectivity-required-smooth-transition-industry-40>

<https://www.unido.org/news/new-unido-report-explores-potential-industry-40-accelerate-transition-towards-sustainable-energy>

<https://www.unido.org/resources/policymaking-organs-and-other-related-bodies>

[https://www.unido.org/sites/default/files/files/2018-11/UNIDO\\_GCI7\\_Industry40.pdf](https://www.unido.org/sites/default/files/files/2018-11/UNIDO_GCI7_Industry40.pdf)

<https://www.unido.org/sites/default/files/files/2019-12/Event%20report.pdf>

<https://www.unido.org/unido-industry-40>

Implementation Challenges of SDGs Country Study: Bangladesh; Centre for Policy Dialogue (CPD), Dhaka;

Implementing SDGs in Bangladesh: Challenges and Policy Options, Bangladesh Institute of International and Strategic Studies (BISS);

Industrial Policy 2016, Government of the People's Republic of Bangladesh

Integration of Sustainable Development Goals into the 7<sup>th</sup> Five Year Plan (February 2017);

Japan's Experiences on Water Supply Development; March 2017; Japan International Cooperation Agency, Water Partners Jp Co., Ltd. and Nihon Suido Consultants Co., Ltd.

Joma, S., Baba, O., & Sunoko, H. R. ,2015, Evaluation of Municipal Solid Waste Management System (Case Study: Graha Padma Estate, Semarang), 2015(2004), 5– 10.

[journals.openedition.org](http://journals.openedition.org); [www.unoosa.org](http://www.unoosa.org); [extremetechchallenge.org](http://extremetechchallenge.org); [www.space4water.org](http://www.space4water.org)

Kivi, R., 2011, Reduce, Reuse, Recycle: Sorting it All Out. Retrieved from

Kopf, Dan. "Bangladesh's rapid growth is one of the world's happiest economic stories". qz.com. Quartz. Retrieved 11 April 2018

L. Arsova, Anaerobic digestion of food waste: Current status, problems and an alternative product Thesis (M.S. Degree in Earth Resources Engineering), Columbia University, 2010.

Learning from Bangladesh's journey toward ending poverty".

Ministry of Industries, Bangladesh. Website: [www.moind.gov.bd](http://www.moind.gov.bd)

Misha, Farzana; Sulaiman, Munshi. "Bangladesh Priorities: Poverty, Sulaiman and Misha Copenhagen Consensus Center".

National Policy Forum, Dhaka: 20-22 August 2001

National Sustainable Development Strategy (2010 - 2021) (May 2013). Per capita income increases by 149% in 10 years". Dhaka Tribune. 25 September 2018. Retrieved 13 October 2018.

Post 2015 Development Agenda: Bangladesh Proposal to UN by General Economic Division, Planning Commission, Bangladesh

Poverty rate comes down to 21.8% in 2018", Dhaka Tribune, May 13, 2019.

Private Dialogue platform;

Project/Programmes of 2019-2020 of Ministry of Women and Child Affairs, Bangladesh.

Running Project/Programmes of Department of Social Welfare, Ministry of Social Welfare, Bangladesh.

S. Jain, and M.P. Sharma, Power generation from MSW of Haridwar city: A feasibility study, Renewable and Sustainable Energy Reviews, Vol 15, 2011, 69-90.

Sarkar, M. A. R.; Islam, S. M. Nazrul; Chowdhury, S. "A review of Bangladesh

SDGs Financing Strategy: Bangladesh Perspective, June 2017, published by General Economics Division (GED), Bangladesh Planning Commission, Ministry of Planning, GoB.

Special Supplement on World Youth Skills Day – 2018, published by NSDC Secretariat (NSDA);

Sustainable Development Goals: Bangladesh First Progress Report 2018;

Sustainable Development Goals: Bangladesh Progress Report 2018, December 2018, published by General Economics Division (GED), Bangladesh Planning Commission, Ministry of Planning, GoB.

Sustainable Development Goals; Role of Ministry of Industries, Dr. Ismat Mahmuda, Director, Governance Innovation Unit, Prime Minister's office, Dhaka.

The 2030 Agenda for Sustainable Development, United Nations, A/RFS/70/1. UNDP in Bangladesh, Report posted on 03-02-2019 "Combined effort needed for Bangladesh to attain SDGs."

The 2030 Agenda for Sustainable Development, United Nations, A/RFS/70/1.

The Constitution of People's Republic of Bangladesh (1972).

The First Five Years Plan (1973) of Bangladesh by General Economic Division, Planning Commission, Bangladesh

The Seventh Five Year Plan (2015) of Bangladesh by General Economic Division, Planning Commission, Bangladesh

The Sustainable Goals Report 2018 by UN.

Transforming Our World: The Agenda for Sustainable Development Goals (2016). United Nations

Perspective Plan of Bangladesh: Making Vision 2021 A Reality by General Economic Division, Planning Commission, Bangladesh

UNDP in Bangladesh, Report posted on 03-02-2019 "Combined effort needed for Bangladesh to attain SDGs."

UNDP Report on "What does it mean to leave no one behind" on August 2018

United Nations Committee for Development Policy. CDP Report 2018

United Nations, Department of Economic and social Affairs Interim Draft, dated 18-03-2018

[www.bim.gov.bd](http://www.bim.gov.bd)

[www.boiler.gov.bd](http://www.boiler.gov.bd)

[www.bscic.gov.bd](http://www.bscic.gov.bd)



[www.bsti.gov.bd](http://www.bsti.gov.bd)

[www.copenhagenconsensus.com](http://www.copenhagenconsensus.com). Copenhagen Consensus. Retrieved 7 April 2016

[www.daily-sun.com/arcprint/details/345300/2018/10/24/Achieving-SDG9:-Resilient-Infrastructure-Inclusive-and-Sustainable-Industrialisation-and-Innovation-/2018-10-24](http://www.daily-sun.com/arcprint/details/345300/2018/10/24/Achieving-SDG9:-Resilient-Infrastructure-Inclusive-and-Sustainable-Industrialisation-and-Innovation-/2018-10-24)

[www.dhakachamber.com](http://www.dhakachamber.com)

[www.earthgeeks.org](http://www.earthgeeks.org)

[www.iisd.org/blog/infrastructure-industrialization-and-innovation-why-sdg-9-matters](http://www.iisd.org/blog/infrastructure-industrialization-and-innovation-why-sdg-9-matters)

[www.intechopen.com](http://www.intechopen.com)

[www.npo.gov.bd](http://www.npo.gov.bd)

[www.oag-bvg.gc.ca/internet/English/parl\\_cesd\\_201804\\_02\\_e\\_42993.html](http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201804_02_e_42993.html)

[www.pssustainabledevelopment.un.org/content/documents/I4363SDG9format-revOD.pdf](http://www.pssustainabledevelopment.un.org/content/documents/I4363SDG9format-revOD.pdf)

[www.sdg.iisd.org/commentary/policy-briefs/how-can-progress-on-infrastructure-industry-and-innovation-contribute-to-achieving-the-sdgs/](http://www.sdg.iisd.org/commentary/policy-briefs/how-can-progress-on-infrastructure-industry-and-innovation-contribute-to-achieving-the-sdgs/)

[www.smef.org.bd](http://www.smef.org.bd) / [www.smef.gov.bd](http://www.smef.gov.bd)

[www.undp.org/content/undp/en/home/sustainable-development-goals/goal-9-industry-innovation-and-infrastructure.html](http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-9-industry-innovation-and-infrastructure.html)

## List of Publications of the Ministry of Industries

Sl.	Name of Publications.	Published
1.	8 <sup>th</sup> National SME Products Fair 2020	March 2020
2.	10 Years of Success- Ministry of Industries	March 2020
3.	Citizens Charter of the Ministry of Industries	September 2019
4.	Election Manifesto 2018- Action Plan of Ministry of Industries	February 2019
5.	Shilpabarta	Half yearly
6.	Annual Reports of the Ministry of Industries	Each year