

Policy Review/Policy Study/Policy Paper Preparation

on

National Innovation and Intellectual Property Policy 2018

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Submitted to

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Preface

The review paper intends to respond to the requirement according to the provision of the contract agreement signed between Bangladesh Regional Connectivity Project-1 (BRCP 1) and South Asian Network on Economic Modeling (SANEM) for conducting **“Policy Review/Policy Study/Policy Paper Preparation under the Bangladesh Regional Connectivity Project 1”** in collaboration with International Development Association (IDA), The World Bank. The objective of this technical assistance project is to review the existing government policies related to trade to strengthen cooperation in trade, transport, and transit facilities and facilitate the economic empowerment of women traders. The ongoing context and challenges are compared with the existing policies. It has also analysed the best practices of regional comparators to promote and improve trade-related activities as well as the relevance of SHE trade with the existing policies. Finally, based on the findings, the recommendation for future Policy has been identified.

Consultancy services for conducting the **“Policy Review/Policy Study/Policy Paper Preparation under the Bangladesh Regional Connectivity Project 1”** was provided by the South Asian Network on Economic Modeling (SANEM), Bangladesh. The study team consists of four senior-level experts. The major objective of the study is to depict a clear picture of the current situation state of the implementation of the policies, and challenges for upcoming LDC graduation to provide suggestions for future policies. Furthermore, Reviewing and identifying the gaps in the existing policies were also aimed to be found for this study.

Various issues have been identified upon the careful review of the **“National Innovation and Intellectual Property Policy 2018”** which includes an overview of the vision, mission and objectives of the Policy, specific goals and strategies, the current state of innovation in Bangladesh, implementation and infrastructure challenges of the Policy, TRIPS issues and whether the Policy is TRIPS compliant or not, post-LDC graduation and other emerging challenges in the world trade, gender perspective of the Policy, impact of the Policy on the economy, and the need to further improve the Policy.

We hope that the Policy recommendations would be helpful for the policymakers and other relevant stakeholders for the further development of the **“National Innovation and Intellectual Property Policy 2018”**.

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It is indeed a great pleasure that Bangladesh Regional Connectivity Project 1 (BRCP-1), Ministry of Commerce has entrusted International Development Association (IDA), and the World Bank to carry out “Policy Review/Policy Study/Policy Paper Preparation”. The report of the study has been prepared based on a mixed methodology. The studies are 1) The Import and Exports (Control) Act 1950, 2) The Essential Articles (Price Control and Anti Hoarding) Act 1953, and 3) National Innovation and Intellectual Property Policy 2018.

The three Policy papers contain the objective, scope, and methodology for the studies, current context and challenges, deviation from international practices, and the relevance of the policies to the SHE trade. The consultants also described the best practices of regional countries adapted to facilitate trade-related activities. In the end, the findings from the analysis and recommendations for the upcoming Policy papers are portrayed.

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List of acronyms

<i>API</i>	<i>Active Pharmaceutical Ingredient</i>
<i>a2i</i>	<i>Access to information</i>
<i>BAB</i>	<i>Bangladesh Accreditation Board</i>
<i>BAEC</i>	<i>Bangladesh Atomic Energy Commission</i>
<i>BARC</i>	<i>Bangladesh Agricultural Research Council</i>
<i>BASIS</i>	<i>Bangladesh Association of Software and Information Services</i>
<i>BBS</i>	<i>Bangladesh Bureau of Statistics</i>
<i>BCC</i>	<i>Bangladesh Computer Council</i>
<i>BCSIR</i>	<i>Bangladesh Council of Scientific and Industrial Research</i>
<i>BIM</i>	<i>Bangladesh Institute of Management</i>
<i>BIPF</i>	<i>Bangladesh Intellectual Property Forum</i>
<i>BIPO</i>	<i>Bangladesh Intellectual Property Organisation</i>
<i>BRCP</i>	<i>Bangladesh Regional Connectivity Project</i>
<i>BSTI</i>	<i>Bangladesh Standards and Testing Institute</i>
<i>BTRC</i>	<i>Bangladesh Telecommunication Regulatory Commission</i>
<i>BTTCC</i>	<i>Bangladesh Trade and Tariff Commission</i>
<i>BUET</i>	<i>Bangladesh University of Engineering and Technology</i>
<i>BWCCI</i>	<i>Bangladesh Women Chamber of Commerce and Industry</i>
<i>CAAB</i>	<i>Civil Aviation Authority of Bangladesh</i>
<i>CACCI</i>	<i>Confederation of Asia-Pacific Chambers of Commerce and Industry</i>
<i>CEO</i>	<i>Chief Executive Officer</i>
<i>CIPAM</i>	<i>Cell for IPR Promotion and Management</i>
<i>CMO</i>	<i>Collective Management Organisation</i>
<i>COVID-19</i>	<i>Coronavirus Disease 2019</i>
<i>CPD</i>	<i>Centre for Policy Dialogue</i>
<i>DCCI</i>	<i>Dhaka Chamber of Commerce and Industry</i>
<i>DG</i>	<i>Director General</i>
<i>DPDT</i>	<i>Department of Patents, Designs and Trademarks</i>
<i>DU</i>	<i>Dhaka University</i>
<i>ERD</i>	<i>Economic Relations Division</i>
<i>ESCAP</i>	<i>Economic and Social Commission for Asia and the Pacific</i>
<i>EU</i>	<i>European Union</i>
<i>FBCCI</i>	<i>Federation of Bangladesh Chambers of Commerce and Industry</i>
<i>FDI</i>	<i>Foreign Direct Investment</i>
<i>FGD</i>	<i>Focus Group Discussion</i>
<i>FY</i>	<i>Fiscal Year</i>
<i>GATT</i>	<i>General Agreement on Tariffs and Trade</i>
<i>GDP</i>	<i>Gross Domestic Product</i>
<i>GFA</i>	<i>Government Funded Agencies</i>
<i>GI</i>	<i>Geographical Indication</i>
<i>GII</i>	<i>Global Innovation index</i>
<i>GoB</i>	<i>Government of Bangladesh</i>
<i>ICCI</i>	<i>Islamic Chamber of Commerce and Industry</i>
<i>ICT</i>	<i>Information and Communications Technology</i>
<i>IDA</i>	<i>International Development Association</i>
<i>IGO</i>	<i>Inter-Governmental Organization</i>
<i>IoT</i>	<i>Internet of Things</i>
<i>IP</i>	<i>Intellectual Property</i>

<i>IPAB</i>	<i>Intellectual Property Association of Bangladesh</i>
<i>IPOPHL</i>	<i>Intellectual Property Office of the Philippines</i>
<i>IPR</i>	<i>Intellectual Property Rights</i>
<i>ITI</i>	<i>Industrial Training Institute</i>
<i>ITSO</i>	<i>International Telecommunications Satellite Organisation</i>
<i>KII</i>	<i>Key Informant Interview</i>
<i>LDC</i>	<i>Least Developed Country</i>
<i>LFS</i>	<i>Labour Force Survey</i>
<i>MoC</i>	<i>Ministry of Commerce</i>
<i>MOCA</i>	<i>Ministry of Cultural Affairs</i>
<i>MoFA</i>	<i>Ministry of Foreign Affairs</i>
<i>Mol</i>	<i>Ministry of Industries</i>
<i>MoST</i>	<i>Ministry of Science and Technology</i>
<i>MSME</i>	<i>Micro, Small & Medium Enterprises</i>
<i>NAW</i>	<i>National Accounting Wing</i>
<i>NBR</i>	<i>National Board of Revenue</i>
<i>NGO</i>	<i>Non-Governmental Organization</i>
<i>NID</i>	<i>National Institute of Design</i>
<i>NIF</i>	<i>National Innovation Fund</i>
<i>NIFT</i>	<i>National Institute of Fashion Technology</i>
<i>NIIP</i>	<i>National Institute of Intellectual Property</i>
<i>NSCIIP</i>	<i>National and Sectoral Council on Innovation and Intellectual Property</i>
<i>PCT</i>	<i>Patent Cooperation Treaty</i>
<i>PSC</i>	<i>Public Service Commission</i>
<i>QLFS</i>	<i>Quarterly Labour Force Survey</i>
<i>R&D</i>	<i>Research and Development</i>
<i>RCEP</i>	<i>Regional Comprehensive Economic Partnership</i>
<i>RDI</i>	<i>Research and Development by Industry</i>
<i>RGNIIPM</i>	<i>Rajiv Gandhi National Institute of Intellectual Property Management</i>
<i>RIIP</i>	<i>Regional Institutes of Intellectual Property</i>
<i>SAARC</i>	<i>South Asian Association for Regional Cooperation</i>
<i>SANEM</i>	<i>South Asian Network on Economic Modeling</i>
<i>SCCR</i>	<i>Standing Committee for Copyright and Related Rights</i>
<i>SDG</i>	<i>Sustainable Development Goals</i>
<i>SIPEIT</i>	<i>Support for International Patent Protection in Electronics and IT</i>
<i>SME</i>	<i>Small and Medium Enterprise</i>
<i>STEM</i>	<i>Science, Technology, Engineering and Mathematics</i>
<i>TCE</i>	<i>Traditional Cultural Expression</i>
<i>TFA</i>	<i>Trade Facilitation Agreement</i>
<i>TISC</i>	<i>Technology and Innovation Support Centres</i>
<i>TK</i>	<i>Traditional Knowledge</i>
<i>TKDL</i>	<i>Traditional Knowledge Digital Library</i>
<i>TRIPS</i>	<i>Trade-Related Aspects of Intellectual Property Rights</i>
<i>TTO</i>	<i>Technology Transfer Organisation</i>
<i>UK</i>	<i>United Kingdom</i>
<i>UMIC</i>	<i>Upper Middle-Income Country</i>
<i>UNCTAD</i>	<i>United Nations Conference on Trade and Development</i>
<i>UNDP</i>	<i>United Nations Development Program</i>
<i>UNESCO</i>	<i>United Nations Educational, Scientific and Cultural Organization</i>
<i>UNIDO</i>	<i>United Nations Industrial Development Organisation</i>
<i>UPOV</i>	<i>Union for Protection of New Varieties of Plants</i>

<i>USA</i>	<i>United States of America</i>
<i>WB</i>	<i>World Bank</i>
<i>WIPO</i>	<i>World Intellectual Property Organization</i>
<i>WTO</i>	<i>World Trade Organization</i>
<i>4IR</i>	<i>4th Industrial Revolution</i>
<i>8FYP</i>	<i>8th Five-Year Plan</i>

Executive Summary

Bangladesh Regional Connectivity Project 1 (BRCP-1) in collaboration with the International Development Association (IDA), the World Bank is launched by the Government of Bangladesh (GoB) to facilitate trade and enhance regional connectivity. Component two of this umbrella project is being executed by the Ministry of Commerce (MoC). The primary objective of this component of the technical assistance project is to review the existing government policies related to trade, increase trade-related institutional capacity, ensure active and sustainable cooperation among the relevant stakeholders, and facilitate the economic empowerment of women traders. Also, as Bangladesh is on the verge of graduating from the LDC category in 2026, reviewing the existing trade-related policies is necessary for smoother post-graduation trade performance. Preparatory phases of graduation need effective formulation and efficient implementation of trade and trade-related policies.

As a part of this project, we have conducted a thorough review of the National Innovation and Intellectual Property Policy 2018 using a mixed methodology. Formulating and enacting a Policy is exhaustive work and it needs rigorous study and continuous consultation with the stakeholders. Our primary findings point out that the objectives and strategies of the current Policy are well thought out. However, there is a lack of coordination, implementation ability and monitoring, which eventually limits the effectiveness of the Policy.

Section two is the prime part of the whole review paper. It includes an overview of the history and evaluation of the global as well as domestic formulation of the Intellectual Property law and Policy and the institutional arrangements for implementing the IP Policy. This section broadly discusses the practice of IP in Bangladesh; Bangladesh is placed very poor position on the Global Innovation Index. It means the country does not contribute enough to creating new IPs, consequently poor conditions for innovation. Section two also included how Bangladesh has gone so far in achieving SDG 9. The analysis has shown that there remain significant challenges in fulfilling most of the indicators of the SDG-9 goals. In addition, the section established the relationship between FDI and IP protection, and analysed that enacting and changing IPR laws will not promote FDI, it is required proper implementation and regulation of IPRs. This section also analysed the various treaty that Bangladesh has signed to be a member country for improving IP protection. A brief of FTA compulsions is also added at this point because if Bangladesh engages the bilateral or multilateral FTAs with developed countries, the country has to follow the FTA compulsion regarding the IPs.

Changing nature of world trade and its relevance with the Policy is discussed in this section too. Bangladesh needs to lobby with developed countries to extend the period of TRIPS exemptions after graduation from the LDC category and the pharmaceutical industry needs to prepare for the post-LDC era. According to the implementing body of the Policy, DPDT, the impact of COVID-19 was the major reason for the improper implementation. Costs of managing IPs may increase due to the growth of inter-company collaboration in the era of 4IR. One important analysis is given about the WTO roadmap (2010) on IP. The plan to establish the IP regime in Bangladesh was initially adapted from the WTO roadmap. Since the beginning of the IP implementation, the roadmap is continuously followed. Though it was well thought out, it needs a review in the current context and challenges, such as the roadmap should outline how to integrate industry and academics to create new ideas, strategy to

transfer technologies from one industry to another, and technology transfer agreement with an international research institution. An analysis of the international best practices of IP Policy and national arrangement of IP practices by adding IPR into different rules and regulations; such as NBR's IPR enforcement (Import and Export) Rules, 2019 is also discussed in this section. This section also looked into the IP laws/policies of different countries (India, the Philippines, and Ireland) and advocate the important strategies that Bangladesh might adopt for its future IP Policy

Section three of this review identifies the relationship of the Policy with the SHE trade. Bangladeshi women aren't lagging in terms of innovation. Female innovators and creators have revolutionised the world through the strength of their ideas. However, facts show that fewer women than men use the IP system. This gender gap persists for a variety of reasons, including social recognition of women in innovation entrepreneurship, and knowledge-making. We need to recognise the intellectual contribution of women and use it as a means of development.

The key findings from KIIs and FGDs are presented in Section four. Promoting and encouraging innovation and the creation of new ideas is one of the National Innovation and Intellectual Property Policy's primary goals. A National and Sectoral council on innovation and intellectual property (NSCII) was established under the leadership of the Minister of MoI to place more emphasis on the implementation of the Policy. The Council is the central authority to implement the Policy. However, it has been found in the qualitative study that the Council has remained inactive since the beginning of the Policy implementation. In Policy, 22 timely required action plans were designed to actively implement the Policy. Many of the action plans have a 2023 completion date, while qualitative data indicate that many of them are currently in the initial implementation phase. Bangladesh has not yet established a central institute for intellectual property management, which is one main target to implement in the Policy. The Policy emphasizes the creation of multiple institutes to implement the Policy. Many of the institutions that were planned to be established in the Policy, such as Technology Transfer Organizations (TTOs) and Research & Innovation Wings, have not yet been established. Bangladesh's National Innovation and Intellectual Property Policy 2018 is designed to prioritize the establishment of a fund at both the industrial and academic institute levels. However, there is no central funding structure that focuses only on funding innovation and IP protection.

Against this backdrop, some specific recommendations have been suggested for a proper formulation and efficient implementation of future IP Policy in section five. Some aspects of the existing Policy must be revisited and tailor-made given the changing trade scenario, current status and bottlenecks. The recommendations were formulated taking into account the bottlenecks in the current National Innovation and Intellectual Property Policy 2018, as well as the challenges that will arise as a result of LDC graduation, the COVID-19 pandemic, the 4th industrial revolution, and the 8th five-year and the Second perspective plans. Additionally, recommendations have been made in light of the equipment that the nations with the best implementation practices, particularly India and the Philippines, employed to implement the National Innovation and Intellectual Property Policy 2018. The implementation of most of the action plans designed in 2018 is interrupted due to the lockdowns during COVID-19. The government needs to revisit the action plan, design a new

time frame and implement the action plan on a priority basis. To give priority to women in innovation, promotion and starting of entrepreneurship, a time-bound action plan must be added to the current Policy in conjunction with the Ministry of Women's and Children's Affairs (MoWCA) and private women's organizations. In addition to emphasizing the implementation of the action plan, the Policy requires the institutional arrangement (National and Sectoral Council on Innovation) to be more active. Meetings must be held twice a year, and the periodic review of the Policy implementation must be published and assessed. The recommendation also covers the adaptation of the "limitation and exception" of present copyright law in Bangladesh and the cost-benefit analysis for the international IP registration system.

The National Innovation and Intellectual Property Policy 2018 was created to market, protect, innovate, and support innovative ideas and products. However, there are not enough institutional arrangements, including training centers, a central database system and a central IP office. Therefore, the suggestion for the Policy is to centralize IP offices, bringing all IP offices under one roof, share the data set among the IP offices, and form the central database management system with the help of the WIPO to facilitate better services in terms of IP registration and protection. Additionally, it is suggested to offer IP office employees a capacity-building program and to run a widespread program to educate the public about the value of IP. The IP office's infrastructure has to be improved, along with manpower and ICT base services. Furthermore, when Bangladesh will graduate from the LDC category, the country will need to maintain a robust IP enforcement regime to strongly comply with TRIPS and TRIPS-plus. A unique tribunal for IP-related issues is required for the betterment of the enforcement of IPRs.

Bangladesh will lose its flexibility regarding the importation of active pharmaceutical ingredients (APIs) once it quits the LDC group. As a result, all industries, including the pharmaceutical industry, are required to reinvest a portion of their profits into new inventions and creative items. Every industry and academic institution must participate in the encouragement program to promote R&D. Additionally, it is necessary to secure the establishment of an innovation fund in both the public and private sectors, as well as to enhance the budgetary allocation for R&D. The fund and budget should not only for innovation and R&D but also for the commercialization and valuation of IP. A central national innovation institute and national innovation fund must be established to incorporate IP into the route of national growth. For this, improving coordination across the Ministries is important and partnerships between the public and private sectors and various stakeholders are needed. Apart from all of these, to take full advantage of IP practice, it is also necessary to promote human capital development through quality education and training.

1. Introduction

1.1 Background

To transform Bangladesh into a knowledge and technology-based innovative country, the “National Innovation and Intellectual Property Policy 2018” has been established with support from WIPO and relevant stakeholders. This Policy considered the development aspirations and goals of the country echoed in various development plans, policies, strategies, laws, and pertinent international treaties¹. Undoubtedly, the promotion and protection of innovations are pivotal for the development of a country like Bangladesh. Both these themes are not mutually exclusive; rather, mutually reinforcing. To stimulate more innovations, protection in terms of Intellectual Property Rights (IPRs) is imperative which will contribute to creating a knowledge economy. Therefore, Bangladesh being an aspirant of becoming both a developing and a developed economy, is inclined to great importance to that knowledge economy and sustainable development. In this pursuit, Bangladesh has now been experiencing multiple challenges posed by graduation from LDC to a developing country, implementation of SDGs, recovery from the COVID-19 pandemic, and unfolding of the 4th Industrial Revolution.²

Furthermore, an important feature of the enforcement of “National Innovative and Intellectual Property Policy 2018” is the cooperation and coordination among and between the Policy/law enforcement authorities. In Bangladesh, this would comprise the Ministry of Justice, the Bangladesh Police, the Ministry of Industries, the Ministry of Cultural Affairs, the Under-secretariat for Customs, the Department of Patents, Designs and Trademarks, and the Bangladesh Copyright Office. While there is already cooperation between these bodies, the intensity of cooperation is inevitably to be improved and the establishment of robust cooperation and coordination structure is highly significant (Ahmed, 2018).

Against this backdrop, the Government of Bangladesh (GoB) launched the Bangladesh Regional Connectivity Project 1 (BRCP-1) in collaboration with the International Development Association (IDA), and the World Bank. The Ministry of Commerce (MoC) is responsible for implementing component two of the umbrella project. As a part of this umbrella project, we will carefully review the “National Innovation and Intellectual Property Policy 2018”, and point out its impact, effectiveness, relevance with the present trade scenario, and its role in mainstreaming women entrepreneurs to formal trade. The review of this Policy will also address future issues and provide recommendations to include, exclude, and alter the existing provisions of intellectual property rights, to make future policies efficient, forward-looking, and prudent.

1.2 Objectives and research questions

¹https://moind.gov.bd/sites/default/files/files/moind.portal.gov.bd/policies/b1cfda28_fad3_4c4a_a63b_b69691056a42/National%20Innovation%20and%20Intellectual%20Property%20Policy%202018-%20English.pdf

²<https://www.daily-sun.com/printversion/details/335850/National-Innovation-and-Intellectual-Property-Policy:--Challenges-Ahead->

The broad objective of this study is to find out the necessary alterations, extensions, exclusions, and inclusions of the existing provisions of the National Innovation and Intellectual Property Policy 2018 so that the Policy becomes compatible with the emerging challenges and to find out if the objectives of the Policy are aligned with the present context.

The research team mainly focused in this study on the following key research questions:

1. What steps can the ministry take to establish a “National Intellectual Property Institute” to face the challenges in the changing world trade scenario (LDC graduation, 8th Five-Year Plan, graduating to Upper Middle-Income Country category, 4th Industrial Revolution, Implementation of SDG, and COVID-19 Pandemic)?
2. What specific incentives can be provided to female entrepreneurs for increasing investment and how make the IP Policy be gender-inclusive?
3. How can the ministry effectively determine the policies for developing IP infrastructure?
4. What are the potential challenges to ensuring consistency with WTO-IPR rules and procedures and customs rules?
5. What are the current state and bottlenecks of TRIPS compliance and FTA compulsions?
6. What strategies ministry can take to strengthen capacity building and coordination among different governmental institutions?
7. What will be the impact of “National Innovation and Intellectual Property Policy 2018” on Bangladesh’s economy and trade?
8. How to develop the infrastructure and enforcement capacity through this Policy?
9. What are the potential challenges to implementing the Policy properly?
10. What is our progress till now from the aspect of innovation decade 2018-2028 with a time-bound action plan?
11. What are international best practices in IP protection that we can follow?

1.3 Scope and limitations

The scope of this Policy review/Policy study/ Policy paper presentation lies in reviewing the National Innovation and Intellectual Property Policy 2018 and making necessary alteration recommendations to ensure the balance of the interests of inventors on one hand and the interests of the country and its public on the other hand. Another vital purpose of this study is to analyse whether the stated goals, objectives, strategies and plans are capable enough to cope with the current changing global trade scenario and possible future challenges (LDC graduation, UMIC graduation, 8th Five-Year plan, Second Perspective plan of Bangladesh, Implementation of SDG, Attracting FDI, and COVID-19 Pandemic). The review also looked into the IP laws/policies of different countries (India, the Philippines, and Ireland) and advocate the important strategies that Bangladesh might adopt for its future IP Policy. This Policy review paper critically analysed the current state, bottlenecks and implementation challenges, and provisions for mainstream women entrepreneurs and traders in the domestic value chain. Possible recommendations about inclusion, exclusion, revisions, alteration, and extension of the existing Policy made it more relevant to the present context of achieving protection of the inventions.

1.4 Methodology

Considering the objectives and the key research questions of this study, the research team primarily followed mixed methodologies in presenting the deliverables. The methodology is based on two significant tasks in general:

- (i) Rigorous desk research of all relevant policy documents, literature, and secondary data, and
- (ii) Primary data collection and analysis by conducting Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) with stakeholders relevant to the study.

Therefore, the research methodology can be categorised as follows:

1.4.1 Desk research

For this study, the research team employed in-depth desk research on the core elements of the study. The team will review pertinent documents, Policy papers, and existing literature on this area. Also, the team will rigorously examine and analyse the available secondary data. This will support identifying significant potential Policy gaps and differences related to trade, transportation, and women entrepreneurship between Bangladesh and the existing universal best practices. The research team focused on the following documents for desk review:

- National Innovation and Intellectual Property Policy 2018
- Developing National Intellectual Property Policy for Bangladesh (WIPO, 2013)
- Enforcement of Intellectual Property Rights in Bangladesh: To What Extent Is It TRIPS-Responsive? (Chowdhury M. A. A., 2018)
- Existing IPR legislation of the country including patent, design, trademarks, geographical indication, copyright, plant variety, etc.
- WTO roadmap, Customs rules, TRIPS Agreement, FTA compulsions
- The global experience (international good practices by comparator countries).

During the desk research, the research team followed the following steps:

- Evaluating the Policy documents which include all relevant and existing policies, ordinances, legislation, agreements, treaty, and literature, conferring a broader view of the gaps, coherence, and discriminatory provision if any.
- Developing the KII and FGD checklists. It will be devised based on the scanning of the aforementioned documents.
- Complementing the preliminary analysis with the findings from the primary data.
- Comparing Bangladesh's "National Innovation and Intellectual Property Policy 2018" with global comparators such as India, the Philippines etc.

1.4.2 Primary data collection

In collecting primary data, the research team followed a qualitative approach. Social aspects that are mostly unrepresented in the quantitative data can be addressed through qualitative data, which are expected to provide in-depth information on social dimensions and characteristics. As part of the qualitative data, the team conducted FGDs and KIIs.

Focus Group Discussion (FGD)

For this study, the research team carried out two FGDs comprising 8-10 participants in each FGD. The participants of the FGDs were the representatives of the Mol, DPDT, private sector associations, legal experts and researchers from the field.

The FGDs focused on answering the prior-stated research questions:

- 1) What is the current state of implementation of the Policy?
- 2) What steps can the ministry take to establish a “National Intellectual Property Institute” to face emerging and existing challenges?
- 3) What specific incentives can be provided to female entrepreneurs for increasing their investment?
- 4) How can the ministry effectively determine the policies for developing IP infrastructure?
- 5) What are the potential challenges to ensuring consistency with WTO-IPR rules and procedures and customs rules?
- 6) Does the Policy comply with TRIPS and what are the way forwards for FTA compulsion?
- 7) What strategies ministry can take to strengthen capacity building and coordination among different governmental institutions?
- 8) How can the ministry ensure coordination with other ministries and departments?
- 9) What will be the impact of “National Innovation and Intellectual Property Policy 2018” on Bangladesh’s economy?
- 10) What are the potential challenges to implementing the Policy properly?

To smooth the discussion a semi-structured qualitative checklist for the FGD in line with the objectives of the study was prepared beforehand. All the FGDs were conducted in person.

Key Informant Interview (KII)

The KIIs are helpful for an in-depth understanding of the policies, assessment of projects, and identifying gaps. For this particular study, the research team carried out a total of 12 KIIs, with informants from the best possible diversified background.

The modes of the KIIs were face-to-face interviews, virtual meetings, and telephone interviews, depending on the pandemic situation and the convenience of the key informants. A detailed list of the interviewees is provided in the annexe section of this report. To smooth the interview with the key informants, a KII checklist was prepared. The checklist was customized based on the expertise of the target informant and his/her work areas related to the specific objective of the study.

1.5 Evaluation and analysis

All the gathered data and information were evaluated and analysed at this stage. This process will include:

- Identifying the gaps in existing information through rigorous desk research.
- Exploring the potential provisions of the existing ordinance for mainstream women entrepreneurs.
- Analysis of primary data through FGDs and KIIs to evaluate the actual activities of the organization and its actors in the present trade scenario.

- Identifying the weaknesses and implementation challenges of the existing ordinance from stakeholders' experiences, through FGDs and KIIs.
- Comparing international best practices with the current provision of the ordinance.
- Providing possible legal recommendations about changes, alterations, exclusion, and extension of the current ordinance through consultation with legal experts, and recommendations of key informants and FGD participants.

1.6 Organization of the paper

The Policy review paper follows the later-mentioned structure. The paper starts with a brief introduction part that consists of the background of the study, broad and specific objectives of the study, scopes and limitations of the review, a thorough methodological process, and evaluation and analysis of data and other documents. The context and current challenges of the Policy are discussed in Chapter Two. This chapter briefs the scenario of the existing Policy, trade-related provisions, and bottlenecks of existing provisions. The chapter also focuses on the relevant policies of different countries and how our Policy deviates from that. In Chapter Three, the relevance of this Policy to SHE trade is depicted. This chapter also illustrates whether the current provisions of the existing Policy support gender inclusiveness in trade or not. The key findings from the qualitative interviews (KIIs and FGDs) are presented in Chapter Four. Chapter Five suggests necessary recommendations and ways forwards to make it a compatible and strong Policy considering several issues such as LDC graduation of Bangladesh, changing global trade patterns, WTO guidelines, etc. Finally, this paper marks its end with a concluding remark in Chapter Six.

2. Context and challenges of the National Innovation and Intellectual Property Policy 2018

2.1 History of Intellectual Property Policy³

The legalization of intellectual property was initially adopted during the times of British-India. The earliest legal framework of IP protection was the Patents, Trademarks and Designs Act of 1883. However, this Act was dismissed and a new Patents and Designs Act was approved in 1911 and the Trademarks Act in 1940. Both the Patents and Designs Act, 1911 and the Trademarks Act, 1940 were revised and modified in 2003 and by merging two independent offices-the Patent Office and the Trademark Registry Office, the Department of Patents, Designs and Trademarks (DPDT) was created under the Ministry of Industries. In 2016, the Patent and Design Act, of 1911 was divided into two parts- patent law and design law. The Trademarks ordinance was promoted in 2008, the Trademarks Act was authorized in 2009 (Khondker & Nowshin, 2013). The new Patent Act, 2022 passed cognizing the international standards of IPR as established under TRIPS Agreement and replacing the Patent and Design Act, 2011.

³https://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/policies/0b84dc51_4a40_4333_ab01_66b4be436e26/IP%20Policy.KS.pdf

The copyright system in Bangladesh developed from the idea of the British copyright system. Later on, a combination of different existing copyright laws, the Copyright Edict, 1962 was formulated. This copyright law was conducted until 1999 when the Copyright Act was formed in 2000. This Act was revised in 2005. Except for copyrights, which are regulated by the Copyright Office, all of the other intellectual property protections are regulated by the DPDT. Moreover, "The Penal Code of Bangladesh" comprises different penal laws against the infringements of various intellectual property rights (IPRs). The Geographical Indication of Goods (Registration and Protection) Act was formed in Bangladesh in 2013. To implement the Act, the Geographical Indication Rules, 2015 have been enacted registration of GI goods shall remain valid for an indefinite period unless it is revoked or declared invalid. The government enacted the Plant Varieties Protection Act, 2019 for the protection of different classes of plant varieties as well rights of breeders and farmers.

Bangladesh is also part of some major international parties and agreements for the protection of IPRs. Firstly, Bangladesh participated in the founding of the World Intellectual Property Organization (WIPO) in 1985. There are at present 26 international treaties and schemes under the administration of WIPO working on different intellectual property (IP) issues. Moreover, Bangladesh became a legal member of the Paris Convention for the protection of Industrial Property in 1991. It also became a member of the Berne Convention for the Protection of Literary and Artistic Works in 1999. Both of these organizations are monitored by WIPO. The Paris convention was one of the first crucial international agreements for the protection of trademarks, patents, industrial designs and geographical indications. The Berne Convention is an international organization that monitors copyright law and protects against the unauthorized reproduction of a creator's work by any medium.

Bangladesh is also a member of the Trade-Related aspects of Intellectual Property Rights (TRIPS) Agreement monitored by the WTO. This came into action on January 1, 1995. TRIPS is an inclusive and the world's most dynamic IP agreement and works with governments and other international agreements like WIPO to promote the exchange of knowledge, intelligence and creativity, and solve IP debates among WTO members. However, Bangladesh is still not a member of the international trademark protection regime, including the Madrid Union, the Nice Agreement, or the Singapore Treaty on the Law of Trademarks. All of these agreements are administered by WIPO.

Bangladesh has IPR laws as well as an administrative and regulatory structure to enforce these laws. However, further efforts are needed to facilitate the protection and commercialization of innovative and creative works, as the contribution of IP to the country's growth has been insignificant. One of the causes might be the lack of a National IP Policy framework to guide the incorporation of IP into national development plans, programs, and strategies. As a result, the government has pledged to establish an IP Policy to ensure a significant contribution to the achievement of national development goals. The National Innovation and Intellectual Property Policy 2018 was developed with the guidance of WIPO and relevant stakeholders, taking into account the country's development aspirations and goals as reflected in various development plans and relevant international treaties to which Bangladesh is and will be a party.

2.2 Overview of various types of intellectual properties

2.2.1 Patent

A patent is the granting of a property right by a sovereign authority to an inventor. This grant provides the inventor exclusive rights to the patented process, design, or invention for a designated period in exchange for a comprehensive disclosure of the invention. They are a form of incorporeal right. There are mostly three types of patents available: utility patents, design patents, and plant patents. Each has its specifications and durations. Utility and plant patents are granted for 20 years, whereas design patents are granted for either 14 or 15 years, depending on when filed. A patent can protect inventions, and innovations. Trade secrets can do the same thing, but trade secrets can also protect information like data, client lists, software, and things that can be kept as a trade secrets. In Bangladesh, patent rights are guided under the **Patent Act, 2022** of Bangladesh. Under these laws, the DPDT provides patent protection for 20 years.

2.2.2 Copyright

Copyright refers to the legal right of the owner of an IP. In simpler terms, copyright is the right to copy. This means that the original creators of products and anyone they give authorization to are the only ones with the exclusive right to reproduce the work. Copyright law gives creators of original material the exclusive right to further use and duplicate that material for a given amount of time, at which point the copyrighted item becomes public domain. For an original work to be protected by copyright laws, it has to be in tangible form. The main difference between a trademark and a copyright is that a trademark protects the unique identification of a brand or product and must be applied for, whereas, copyright prevents copying, reproduction, or distribution of specific work and is gained automatically if certain criteria are met. Some examples of copyright can be a novel, a poem, lyrics to a song, a painting, etc. In Bangladesh, to get copyright protection, the owner of the work should register it under the Copyright Register in accordance with the law. Under the **Copyright Act, 2000**, registration is optional, not compulsory to get copyright protection.

2.2.3 Trademark

The term trademark refers to a recognizable insignia, phrase, word, or symbol that denotes a specific product and legally differentiates it from all other products of its kind. A trademark exclusively identifies a product as belonging to a specific company and recognizes the company's ownership of the brand. Although trademarks do not expire, the owner must make regular use of them to receive the protections associated with them. Almost anything can be a trademark if it indicates the source of your goods and services. It could be a word, slogan, design, or combination of these. It could even be a sound, a scent, or a colour. Some examples could be the brand name and character format of Coca-Cola, McDonald's, Facebook, etc. A law for that in Bangladesh is the **Trademarks Act, 2009 and Trademarks Rules, 1963**. A registered trademark is valid for 7 years from the date of filing and the renewal term can be for 10 years.

2.2.4 Trade secret

A trade secret is any practice or process of a company that is generally not known outside of the company. Information considered a trade secret gives the company a competitive advantage over its competitors and is often a product of internal research and development.

They are IPRs on confidential information which may be sold or licensed. Popular examples of trade secrets include the recipe for Coca-Cola and the formula for WD-40. In Bangladesh, the legal protection of trade secrets exists but is scattered. The protection of trade secrets is afforded through the exercise of **Section 49 of the Patent and Designs Act, 1911** which prevents disclosures of information about industrial designs and such in bad faith. However, this law is revoked and an appropriate legal mechanism to protect trade secrets is required.

2.2.5 Geographical Indication

A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that is tied to that origin. To function as a GI, a sign must identify a product as originating in a given place. In addition, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. Since the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production. If we compare trademark and GI then a Trademark is a brand name specifying the unique characteristics of a product of any organization while GI is a term used to indicate the geographical uniqueness of a product. For example, Jamdani is a very good example of a GI-registered product in Bangladesh. There is a **Geographical Indication (Registration & Protection) Act, 2013** in Bangladesh which provides protection for GIs.

2.2.6 Plant Variety

A plant variety is a legal term coined by the International Union for the Protection of New Varieties of Plants (UPOV) that recognizes certain cultivars as official plant varieties to grant the creator of the cultivar legal protection. This practice is commonly referred to as plant breeders' rights. The term "plant variety" describes a legally protected cultivar. It refers to a variation within a plant species that develops naturally in the environment. Unlike a cultivated plant, a variety does not require human intervention to grow and reproduce. Bangladesh has adopted a legal regime on plant variety protection through the **Plant Varieties Protection Act, 2019**.

2.2.7 Design

Industrial design is an IP that refers to compositions of colours or lines which give a three-dimensional look to handicrafts or products. This constitutes the aesthetic or ornamental part of an article in a legal sense. "Layout-design (topography)" means the three-dimensional disposition, however, expressed, of the elements, at least one of which is an active element, and of some or all of the interconnections of an integrated circuit, or such a three-dimensional disposition prepared for an integrated circuit intended for manufacture. In Bangladesh, Design Rights are guided under the Patents and Designs Act of 1911 and the Patent and Design Rules of 1933. In 2016, the **Patent and Design Act, 1911** was divided into two parts- patent law and **design law**.

2.3 Brief overview of the National Innovation and Intellectual Property Policy 2018

The National Innovation and Intellectual Property Policy 2018 has been developed to promote and protect innovation and intellectual property. This Policy is effective for stimulating and unlocking creativity along with innovation potential to encourage creative work. The Policy has been made with the support of WIPO and relevant stakeholders by keeping it in line with

the development aims and goals of Bangladesh stated in different development plans, strategies, policies, laws and the international agencies to which the country is and will be a relevant party. This Policy is expected to be used as a guideline in accomplishing awareness, protection and promotion of innovation and creativity, expansion and progression of appropriate, inclusive and balanced IP infrastructure, further integration of IP into national and sectoral development plans and associate the national IP rules with the international IP systems. The National Innovation and Intellectual Property Policy 2018 is expected to be executed over a 10-year period, starting from the date of its approval. Until any new Policy is established, this Policy will be forceful. It will be revised and updated with time, in consideration of new areas of development, based on the assessments of impacts and observing the activities.

The Policy has 6 main goals:

- 1. Enhance IP awareness and encourage creativity and Innovation,*
- 2. Modernize IPR administration,*
- 3. Create IP and derive economic and commercial benefits,*
- 4. Strengthen the legal framework,*
- 5. Foster respect for IPR,*
- 6. Protect promote and manage Traditional Knowledge and Traditional Cultural Expression (TK and TCEs) and Genetic Resources.*

Several strategies are adopted and listed to implement the above-stated goals. The National Innovation and Intellectual Property Policy 2018 is a Policy that covers various aspects and the Policy paper is indeed a well-thought, well-planned and well-designed one. It consists of a total of 5 chapters, each of them describing different aspects of the Policy in detail.

Chapter one gives an introduction to the National Innovation and Intellectual Property Policy 2018 by giving an overall idea about the plan. Chapter two states the vision, mission and objectives of the Policy. Table 1 summarizes chapter two by mentioning the vision, mission, target and objectives.

Table 1: Vision, Mission, Target, and Objectives of National Innovation and Intellectual Property Policy 2018

Issue	Remarks
Vision	Transformation of Bangladesh into a knowledge and technology-based innovative country and to use IP as a tool for the social, cultural, and economic development of Bangladesh in line with visions 2021 and 2041.
Mission	Establishment of development-oriented pro-stakeholders and balanced IP infrastructure in the country and to make IP an integral part of the national development plans and strategy by declaring 2018-2028 as Innovation Decade.
Target	Develop the intellectual property sector in every aspect to enhance the Bangladesh Economy.
Objectives	Develop a clear vision on the part of the government on the promotion and protection of IP issues.
	Encourage and foster creativity and innovation for the generation, management and use of IP assets.
	Reorganize and strengthen IP offices and institutions in both public and private sectors.
	Support implementation of the innovation-related targets of SDGs enshrined for fostering innovation for growth and development through foreign investment, technology transfer and export growth.

Issue	Remarks
	Promote increased awareness, skills and knowledge about IP among the people of the country.
	Establish an appropriate, adequate, pro-stakeholder-oriented, balanced and inclusive IP infrastructure.
	Inclusively integrate all stakeholders to create an understanding of the importance and benefits in the process of promotion and protection of IP issues for all and development of the country.
	Support generation of revenue through reform of the IP regime and infrastructures. Establish appropriate, balanced and meaningful linkages between the national innovation eco-system and the market.
	Establish and strengthen appropriate, balanced and meaningful linkages between the national innovation eco-system and market.
	Build national capacity to facilitate meaningful integration of the national IP system with global IP processes.
	Establish a regime for cooperation and support mechanisms among national IP institutions and the IP offices of partner countries, international organizations, and development partners.
	Create awareness and promote the interests of professionals, researchers and innovators and facilitate their access to the global database and strategic information wherever available, particularly from WIPO.

Source: National Innovation and Intellectual Property Policy 2018

Chapter three of the Policy states the key strategies as Policy guiding principles. Table 2 summarizes chapter three by mentioning the six strategies.

Table 2: Policy Guiding Principles of National Innovation and Intellectual Property Policy 2018

Sl.	Remarks
Strategy 1	Promotion of a culture of better understanding of Innovation and creativity and use of IP system and commitment, promotion and respect for IPR.
Strategy 2	Integration of Innovation and IP Policy 2018 into national development plans and strategies.
Strategy 3	Development of stakeholders-friendly, balanced and inclusive administrative, regulatory and legal IP regime responsive to national aspirations and development needs and priorities.
Strategy 4	Ensuring better access and integration to the IP system to empower all stakeholders to develop, protect, enforce, manage and commercially exploit IPR for the use of economic growth and development.
Strategy 5	Promote within the existing government organizations, the need for institutional and social innovation ensuring the diffusion of innovation and IPR in economic development.
Strategy 6	Establish linkage between IP implementation along with the implementation of SDGs and internalizing all elements in the national planning process.

Source: National Innovation and Intellectual Property Policy 2018

The goal-wise strategies are mentioned in Chapter four. Each of the six goals is targeted to be fulfilled using several strategies. Table 3 summarizes the strategic goals.

Table 3: Goals and Strategies of National Innovation and Intellectual Property Policy 2018

Goal	Strategies (briefly)
Goal 1: Enhance IP awareness and encourage creativity and Innovation	Comprehensive innovation and IP outreach program
	Diffusion of innovation, creativity, entrepreneurial competence and competitiveness toward the benefit of the stakeholders
	Promote IPR education and knowledge
	Activate the Technology and Innovation Support Centres
	Take full advantage of the WIPO database of strategic information
	Prepare effective communication materials for IP advocacy

Goal	Strategies (briefly)
	Encourage the establishment of more TISCs, TTOs, R&D centres and innovation centres
	Promote IP knowledge among press and electronic media
	Preparation of IP promotional materials in Bangla
	IP outreach program for promoting IP as a tool for inclusive growth
Goal 2: Modernize IPR administration	Appropriate reforms, reorganization, skill development, capacity building and support mechanism for human resources of IP offices
	Improve efficiency, transparency, accountability and services
	Establish National Institutes of Intellectual Property: a platform for the permanent flow of IP professionals from all relevant streams
	Initiate and strengthen partnerships with relevant public and private sectors/bodies
Goal 3: Create IP and derive economic and commercial benefits	Strengthen the institutional framework and major entities
	Promote IP education through educational institutions, R&D and innovation centres/lab
	Facilitate college, institute and university-industry linkage
	Support access to and use of international technical-scientific strategic and digital information databases
	Establishment, development and strengthening of TISC, TTO and innovation hubs
	Design and implement national programs for the promotion of an innovation culture with young people and women
	Support start-ups, branding and individual innovators
	Provide financial assistance to/ facilitate access by start-ups
	Establish National Innovation Fund (NIF)
	Set up IP facilitation centres in FBCCI/DCCI and IP associations
	Adequate funds in the national budget to promote science, technology, innovation, and creativity
	Exclusive IP support (budgetary, skill development, capacity building) to MSME and individuals
	Promote the use of IPR tools for business development
	Provide IP support (administrative and legal) against piracy and abuse
	Provide support to establish CMOs and TTOs
	Establish linkage among government, academia, research and technology institutions, and industry associations
	Ensure necessary institutional/governmental support to universities and research organizations
	Educate local scientists on technology transfer issues
	Assist local scientists and research entities for commercialization of innovation and utilization of capacity
	Coordinate innovation, creativity, commercialization and valuation of IP in different public sector research facilities
Goal 4: Strengthen the legal framework	Undertake a comprehensive review of the national IP legal regime, and enact or revise appropriate IP laws
	An effective collaborative mechanism among the administrative ministries of the respective IP offices
	A national multi-stakeholders consultation process
	A permanent mechanism for mapping the gaps
	Periodically review the impact of IP laws
Goal 5: Foster respect for IPR	Comprehensive IP awareness and business strategy
	Provide specialized training programs for relevant officials
	Ensure better enforcement of IPR through appropriate support (legal, institutional, administrative)
	Establish a linkage between IP and law enforcement agencies
	Induct IP matters in the training curriculum for administrative, judicial, police and customs officials
	Set up dedicated IP courts all over the country
Establish effective linkage of the Bar with IP offices and the courts	

Goal	Strategies (briefly)
	Revitalize and strengthen the Anti-Piracy “Task Force”
Goal 6: Protect promote and manage TK and TCEs and Genetic resources	Enact new laws to protect TK and TCE
	Review existing IP laws to complement these new laws
	Set up databases of TK and TCEs and genetic resources
	Necessary mechanisms regulating access to and use of the database
	Extend administrative, financial, and technical support to folklore institutes
	Programs to identify, collect and preserve related literature, evidence and documents
	Establish institutional mechanisms to build effective cultural relations with other countries
	Support capacity building of TK, TCE, and genetic resource holders
	Collection, preservation, and publicity of folk tradition and folk literature
	An effective mechanism in collaboration with departments under relevant ministries (Environment, Forest and Climate change, Agriculture, Textile and Jute, Fisheries and Livestock, Commerce, Telecommunication, ICT, Science and Technology)

Source: National Innovation and Intellectual Property Policy 2018

2.4 Institutional arrangements for National Innovation and Intellectual Property Policy 2018

Various institutions in Bangladesh are engaged in the development, administration, and enforcement of IPRs. The DPDT under the MoI and the Copyright Office under the MoCA are active in IPR enforcement and recognized as IP offices by WIPO. The Intellectual Property Association of Bangladesh (IPAB) and Bangladesh IP Forum also play important roles in the promotion of IPR. The implementing body of the Policy MoI organized a National Council on Innovation and IP to implement the Policy. The Federation of Bangladesh Chambers of Commerce & Industries (FBCCI) and Dhaka Chambers of Commerce & Industries (DCCI) are two important stakeholders of this Policy. The WTO Cell under the MoC works on multilateral trade issues including IPs.

2.4.1 Department of Patents, Designs, and Trademarks (DPDT)⁴

The DPDT under the Ministry of Industries (MoI) administers industrial property matters. DPDT is affiliated with the WIPO. DPDT is funded by the GoB and the revenue it earns from the application fees and other charges is considered government revenue and the DPDT cannot use any fraction of its income. The government provides the DPDT with all its expenditures and takes back the earnings. So, it does not retain any operating surplus. The DPDT mainly functions in two major wings: The Patents and Designs wing and the Trademarks registry wing. Initially, the Patent Office and the Trademarks Registry Office worked separately under the Controller of Patents & Designs and Registrar of Trademarks respectively. Both offices were merged into the Department of Patents, Designs, and Trademarks (DPDT) in 1989. The DPDT is also expected to administer GIs and utility models, along with patents, designs and trademarks. There are several limitations including a shortage of adequate financial resources and manpower in DPDT. Moreover, the DPDT staff has limited technical and legal knowledge of IP issues. On the other hand, the activities of the DPDT have increased over time. In terms of patent, design and trademarks, application and registration has been increased. Even though, the COVID-19 situation did not restrict the trademark application and registration⁵. For this, DPDT’s Trademarks wing is one of the busiest wings in

⁴<http://www.dpdt.gov.bd/>

⁵ <https://ssrana.in/articles/intellectual-property-trends-in-bangladesh-2010-2022/>

the DPDT. Over time, the increased number of applications means that Bangladesh is making progress in terms of providing IP protection. Besides, DPDT provides the registration of the GIs. Since the GI Act was enacted in 2013, DPDT has given 10 GI products registration until now, and a few other products are waiting to get the GI tag. Within this short time, the tagging of 10 products as GIs is a success story of the DPDT. But in terms of reaching the full export potential of GI products, it is needed to increase the promotional activities of the GI products of Bangladesh. Therefore, in terms of IP laws, Bangladesh's government has implemented some modifications. Positive developments have also been made in the area of trademarks and filing registration as a result of 2018's IP Policy, which was adopted to make IP an integral component of economic growth plans and strategies.

2.4.2 Bangladesh Copyright Office, MoCA⁶

Bangladesh Copyright Office is the national-level quasi-judicial organisation responsible for copyright management in Bangladesh and is located in Dhaka, Bangladesh. After the independence of Bangladesh in 1971, the regional copyright office was made the national copyright office. It has been criticized by legal experts and IP researchers for failing to coordinate with the DPDT. The Copyright Office does not have its premises and currently occupies a portion of the National Archive Office. The Copyright Office suffers from the same shortages in the area of resources and capacity as the DPDT. The office now accepts applications online through its website. The Copyright Office continues to receive support from the WTO, WIPO, and UNESCO for enriching its copyright system.

The copyright office has undertaken numerous initiatives, including awareness campaigns to settle new cases. In 2020, the copyright office of Bangladesh conferred the copyright to the ghost-writer Sheikh Abdul Hakim, who was the writer of the famous Masud Rana series (260) and Kausha series (50 books). The copyright office gave the copyright to Sheikh Abdul Hakim because he only received the lump sum amount for writing the first book, he never received any royalty for any of the reprintings. When the publisher (Seba Prokashoni) filed the writ petition against the copyright office decision in the court, the court gave the decision in favour of the copyright office decision and established the right of the original writer. Such a measure of the copyright office is a good strict move to preserve the IP right of the original right holder. Besides that, the copyright office has now taken several measures which are good initiatives and that establish the right of the copyright holder. Some other organisations in the country are working to preserve the folklore resources of our country under the direction of MoCA. The organisations are- Bangladesh Shilpakala Academy, Bangla Academy, National Museum, National Archives and Libraries, Fold Arts and Crafts Foundation, Coxs Bazar Cultural Center, Tribal Cultural Institutes Bandarban, Tribal Cultural Academy, and Bangladesh Cultural and Heritage Foundation (BCHF).

2.4.3 IP Association of Bangladesh (IPAB)⁷

The Intellectual Property Association of Bangladesh (IPAB) was established in 2005 and registered under a government license to work on IPR issues (establish and promote IPR) as a common platform for all relevant IP stakeholders in Bangladesh. Apart from IPR awareness development, IPAB provides support to the concerned stakeholders for protecting IP owners'

⁶<http://www.copyrightoffice.gov.bd/>

⁷<http://www.ipab.org.bd/>

rights, consumers' rights and the Government's rights. IPAB is governed by its Executive Committee which consists of high-level intellectuals of the society, i.e. the Ministry of Industries (Registrar of DPDT, proposed), Ministry of Cultural Affairs (Registrar of Copyrights Office, proposed), Ministry of Commerce (DG, WTO Cell) and Ministry of Home Affairs (Joint Secretary, Political). IPAB has a significant role in the IPR roadmap as well as the development of IP Policy to resolve IPR issues in the country. In association with local, multinational and international sponsors, IPAB has organized several public-private dialogues (on the role of DPDT, NBR and International Organizations), training, workshops, seminars and roundtable discussions (especially on the growing trend of counterfeiting in Bangladesh and its effects on the growth of the national economy and consumer rights). In 2009, the IPAB was recognized as an officially licensed "Trade Organization". Currently, IPAB is working on its signature project "IP Digitation" in Bangladesh.

2.4.4 Bangladesh IP Forum (BIPF)⁸

Bangladesh IP Forum (BIPF) is the only non-profit organization in Bangladesh that promotes creativity and innovation, and advocates IPR protection, awareness, and enforcement. Aiming to build an IP culture in Bangladesh, BIPF works as a catalyst to promote talent and encourage innovation. BIPF has been catering for applications for copyright, trademarks, and patent registration, conducting awareness programs, holding public discussion meetings, and offering capacity-building training to the necessary IP stakeholders since its founding in 2011. They successfully supported Bangladesh's music community in establishing the country's first collective management organization (CMO). BIPF provides complete IPR services to individuals and large corporations, starting with IPR consultation to legal protection and enforcement.

2.4.5 National Council on Innovation and IP, MoI⁹

A national and sectoral council on innovation and intellectual property is created to oversee the implementation of the National Innovation and Intellectual Property Policy 2018 at the national level as well as follow-up and monitoring. The council is chaired by the Minister of MoI and consists of members from MoI, MoC, NBR, MoFA, Finance Division, Security Service Division, Public Security Division, Ministry of Agriculture, Energy and Power Division, Ministry of Textile and Jute, Secondary and Higher Education Division, Technical and Madrasa Education Division, Posts and Telecommunication Division, Ministry of Science and Technology, Ministry of Cultural Affairs, Ministry of Fisheries and Livestock, Health Services Division, Health, Education and Family Welfare Division, DCCI, FBCCI, IPAB, BASIS, BCC, BARC, BCSIR, BUET, DU Faculty of Law, DPDT, Copyright Office, BAB, BSTI, BAEC, ICT Division, Bangladesh Trade and Tariff Commission, Legislative and Parliamentary Affairs Division etc.

The National Council on Innovation and Intellectual Property is responsible for facilitating Policy coherence between national and sectoral development policies, and the integration of IP. It is supposed to facilitate and coordinate national positions on IP issues for national as well as international purposes. The council have to monitor the impact of the Policy in various sectors of the economy and oversee the periodic review of the National Innovation and Intellectual Property Policy 2018 to keep it up to date with evolving national development

⁸<https://bcipf.org/>

⁹ National Innovation and Intellectual Property Policy 2018

priorities. The meeting of the council should be held at least twice a year according to the Policy.

2.4.6 Chambers of Commerce & Industries¹⁰

A chamber of commerce is an association or network of business people designed to promote and protect the interests of its members. The National Innovation and Intellectual Property Policy 2018 explicitly mentions the two chambers of commerce in Bangladesh- Federation of Bangladesh Chambers of Commerce & Industries (FBCCI) and Dhaka Chamber of Commerce & Industry (DCCI) as the two important stakeholders of the Policy. FBCCI is the apex trade organization of Bangladesh playing a pivotal role in a consultative and advisory capacity, safeguarding the interest of the private sector. It is established in 1973 under Trade Organization Ordinance, 1961 and the Companies Act, 1913. FBCCI is a member of different international bodies, such as the International Chamber of Commerce (ICC), Islamic Chamber of Commerce and Industry (ICCI), Confederation of Asia-Pacific Chambers of Commerce and Industry (CACCI), and the SAARC Chamber of Commerce and Industry (SAARC CCI). FBCCI also interacts with various international economic and trade promotion organizations including UNDP, ESCAP, UNIDO, ITC, and GATT-UNCTAD. To safeguard and protect the interest of the business community in the international arena. The key function of FBCCI is to aid and stimulate investment, and development of trade, commerce, industry, agriculture, tourism, human resources and communication sectors in Bangladesh.

DCCI, the voice of SMEs, serves as the initial point of contact for new market penetration and a lively forum putting forward facts-based opinions, proposals, and recommendations for a better tomorrow in trade, commerce, and the general economy. DCCI, the country's largest and most active Chamber, was created as a limited company on March 10, 1959, under the Companies Act, VII of 1913. It is a non-profit, service-oriented organization model. It has provided invaluable assistance to the growth of business and industry in Bangladesh for more than four decades.

2.4.7 WTO Cell, MoC¹¹

The WTO Cell, formed under the MoC, maintains regular negotiations and maintains liaison with the Bangladesh Mission in Geneva on all matters relating to the WTO. These activities include assisting in compliance with WTO rules and regulations in international trade, working to increase overall capacity in WTO matters, safeguarding the country's interests in the international trade system, gaining greater market access, participating in negotiations to determine the country's position on various issues, regular exchange of views with stakeholders on various issues, and study survey or Needs Assessment on various issues of international trade. Currently, the cell consists of a Director General, three Directors, three Deputy Directors and two Assistant Directors. A high-powered committee, headed by the MoC, has been constituted in this Cell to deal with WTO issues. The WTO Cell was the driving force behind the Priority Needs Assessment submitted by Bangladesh and some of their staff have comprehensive knowledge of international IP protection.

¹⁰<http://fbcci.org/> and <https://www.dhakachamber.com/>

¹¹<https://mincom.gov.bd/site/page/86684acc-f0ef-4783-a998-ff49094764d2/WTO-Cell>

2.4.8 National Institute of Intellectual Property (NIIP) for capacity building

The protection of IP has been ensured by multiple laws and regulations. For strict IP protection, cooperation across the laws is crucial. For this, the appropriate authorities must continue to expand their competence to manage IP laws. In this regard, it is essential to establish a training institute at both the national and local levels. The Institute enhances the skills of IP among employees while simultaneously providing a platform for a steady flow of IP professionals (educated youth, government and legal professionals, and executives from the corporate sector) to innovate, promote, and commercialize IP. The National Institute of Intellectual Property Policy allows for the establishment of both a National Institute of Intellectual Property (NIIP) and Regional Institutes of Intellectual Property (RIIP), although neither institution has yet been created. Due to the lack of a bridge between the academy, institute, and industry, Bangladesh's IP Jurisprudence has significantly suffered. As a result, there is a lack of knowledge about IP among government officials, judges, law enforcement agencies, researchers, industries, the media, and the public in general (Islam, 2021). India has established the "Rajiv Gandhi National Institute of Intellectual Property Management" (RGNIPM) as a central institution to promote research activities, provide training to government officials and IP users, provide IP education in universities and other educational institutions, and propose appropriate policies. The lack of a sole IP institute has prevented the capacity-building program from being guaranteed. To increase the abilities of its workforce, the government sends various officials abroad and some of these officials receive training at the Bangladesh Institute of Management (BIM). However, this is insufficient to meet the demand for officials with an in-depth understanding of several fields of IP (Khondoker et al., 2013).

Yet, in recent times, there are many IP-related experienced and foreign degree holders both in the government sector as well as the private sector including academia who are capable of contributing to the NIIP for capacity building, even if it is inadequate. In this context, an effective capacity-building strategy to form an 'IP expert pool' would be very beneficial.

2.5 Current state and bottlenecks in the intellectual property system

2.5.1 Innovation & intellectual property for economic development in Bangladesh

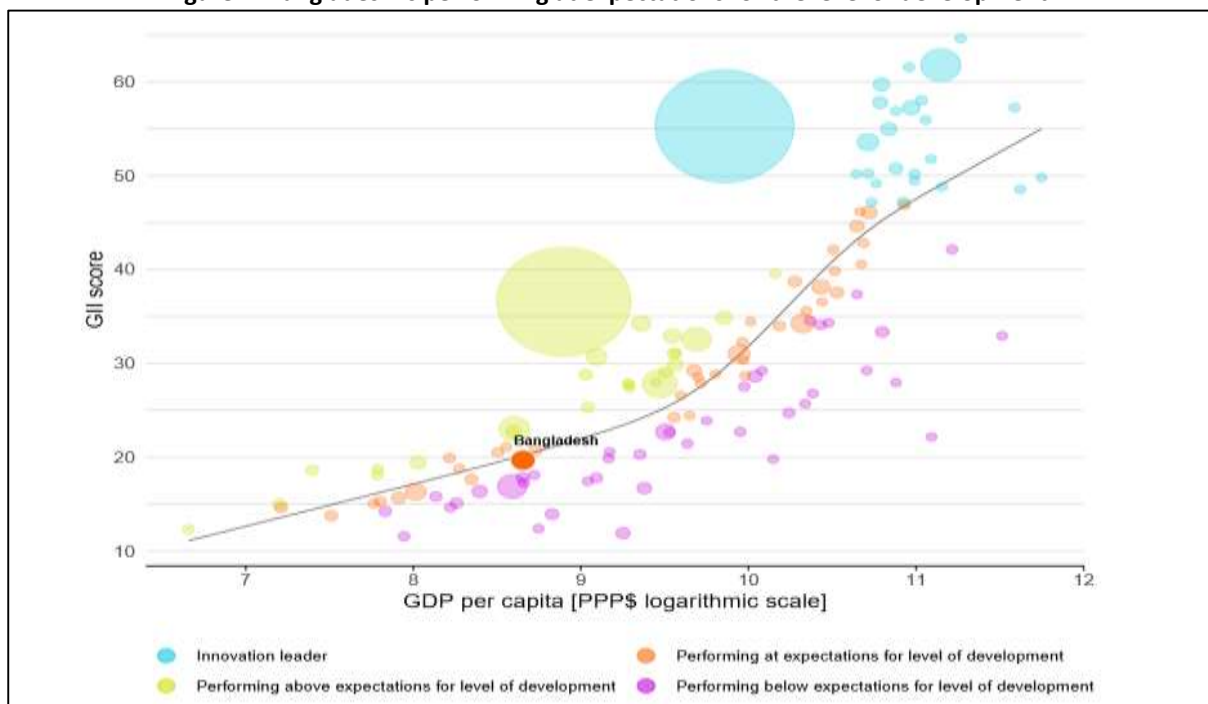
Schumpeter (1934) first raised the issue of the relationship between innovation and economic growth in his book "Theory of Economic Development: an inquiry into profits, capital, credit, interest rate, and the economic cycle", which contains one of the first definitions of innovation. According to Schumpeter, innovation is defined as "doing new things or doing things that have previously been done in a new way and realizing these new items into the market".

Many innovations can be protected through IPR. IPRs recognize and reward inventors for their commercially-successful inventions. As such they serve as an incentive for inventors to invent. With an IPR, an innovator or small firm knows there is a strong prospect of recouping the time, effort, and money involved in developing technology. When new technology enters the market, society as a whole stand to profit - both directly, since it may allow us to achieve something previously impossible, and indirectly, because of the economic opportunities

(commercial development and employment) that may result, according to WIPO. Revenues generated by commercially-successful IP-protected technologies can be used to fund more technical research and development (R&D), increasing the likelihood of even better technology becoming accessible in the future. IPR protection systems can spark new ideas and promote inventions from which we can all benefit.¹²

Figure 1 shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line indicates the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations. Relative to GDP, Bangladesh is performing at expectations for its level of development.

Figure 1: Bangladesh is performing at expectations for the level of development



Source: *Global Innovation Index 2022 (Country Profile: Bangladesh)*

IPR protection is a concern not just for the rights holder, but also for society and the country as a whole. It encourages inventors and enterprises to invest in better ideas and technology. IPR protection will aid corporate growth in the industrial sector. This, in turn, will aid the country's economic progress. Its appropriate protection encourages increased international investment since foreign investors will be confident of their protection. For SMEs, particularly those in the industrial sector, IP protection will ensure that giant firms do not unlawfully expropriate their IP. It also assures greater competitiveness by encouraging better ideas than currently available.¹³

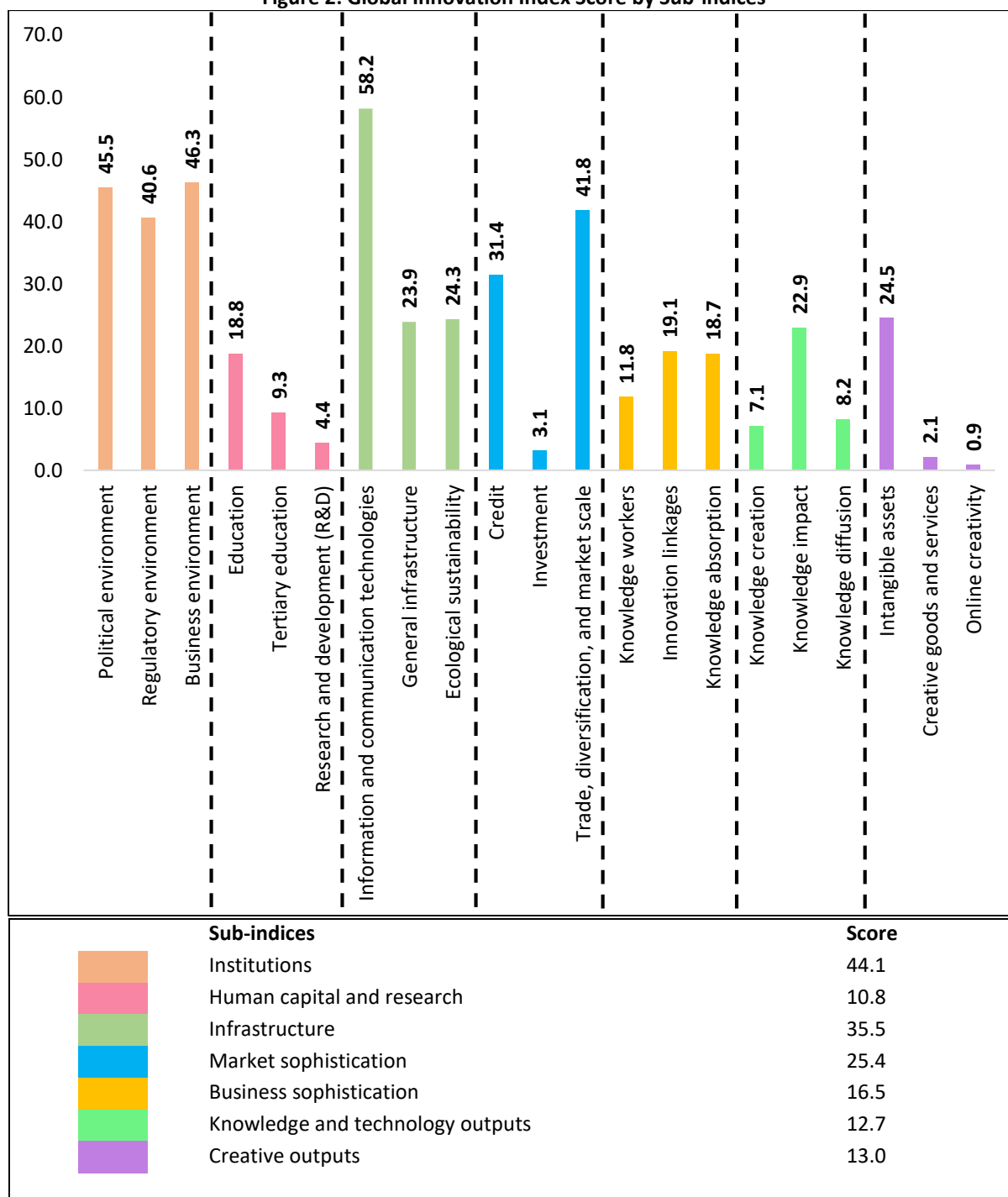
¹²https://www.wipo.int/ip-outreach/en/ipday/2017/innovation_and_intellectual_property.html

¹³<https://www.thedailystar.net/law-our-rights/news/protection-ip-rights-bangladesh-special-reference-smes-2082653>

2.5.2 Bangladesh in global innovation index

The World Intellectual Property Organization (WIPO) publishes the Global Innovation Index (GII), which rates world economies based on their ability to innovate. The GII, which comprises around 80 indicators divided into innovation inputs and outputs, tries to capture the multidimensional sides of innovation. It assesses innovation using factors such as institutions, human capital and research, infrastructure, market sophistication, business sophistication, knowledge and technology outputs, and creative outputs.

Figure 2: Global Innovation Index Score by Sub-indices

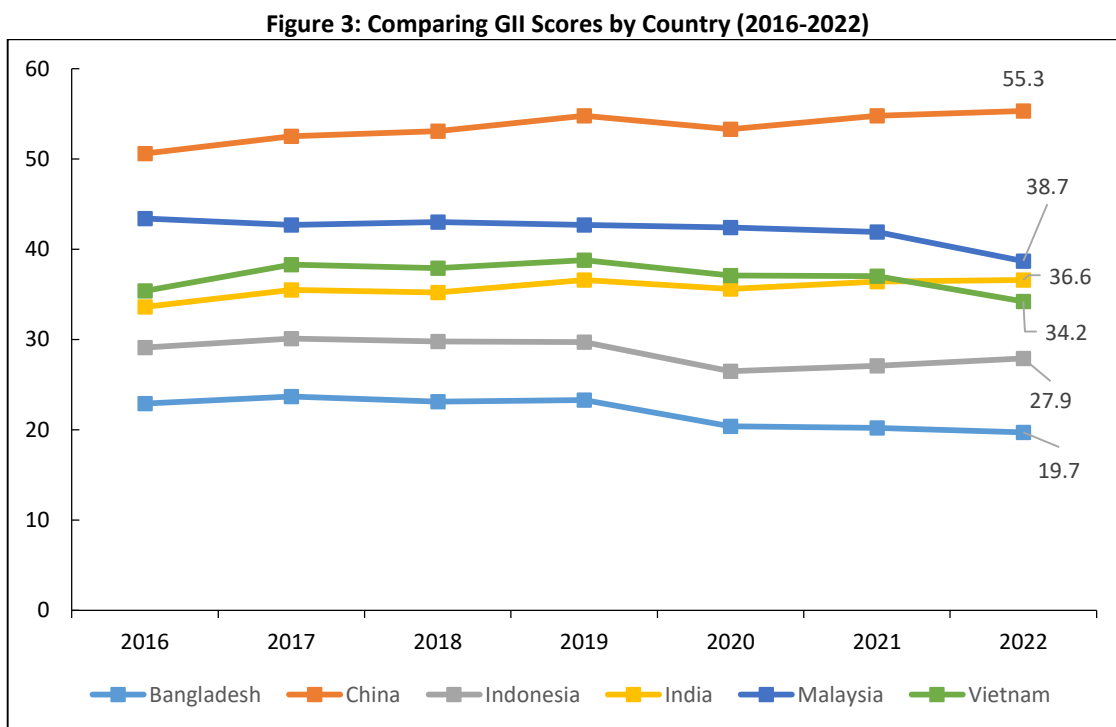


Source: Global Innovation Index Report, 2022

Bangladesh has been moved up 14 notches to rank 102nd in the GII in 2022 while it was ranked 116th position and stuck in the same position over the last four years. The country ranked 20th among the lower middle-income countries and 8th among the Central and Southern Asian countries. The position of Bangladesh is 112th in the input sub-index and 90th in the output sub-index. Among the seven sub-indices of GII, Bangladesh ranked 109th in Institutions, 127th in Human capital and research, 94th in Infrastructure, 92nd in Market sophistication, 125th in Business sophistication, 95th in Knowledge and technology outputs, and 87th in Creative outputs. As for innovation inputs, Bangladesh ranks 112th which is better than 2021 (121st) and 2020 (119th). The trend is similar for innovation outputs. The GII scores show that since 2021, Bangladesh's performance has improved in the areas of creative output, business sophistication, human capital and research, and infrastructure. However, compared to last year, the market sophistication, knowledge and technology outputs, as well as the performance of institutions, have deteriorated.

Among the seven sub-indices, Bangladesh scored the lowest in Human capital and research (10.8) second lowest in knowledge and technology outputs (12.7) and the third lowest score in creative outputs (13). The best score is in the Institutions (44.1) sub-index (Figure 2).

In comparison with Southeast Asian countries (Indonesia, Malaysia, Vietnam) and giant economies (China, India), Bangladesh is performing worst continuously from 2016 up to 2022 among China, Indonesia, India, Malaysia, and Vietnam (Figure 3).



Source: Global Innovation Index Database, WIPO

Even though Bangladesh has made significant progress in several areas, the standard of its ICT service imports, expenditure on education, environmental performance, new businesses, pupil-teacher ratios, and scientific and engineering graduates has not been satisfied. Therefore, for improving the rank in the GII and increasing the score, improvement of the above mention indicators is crucial for the future innovation of Bangladesh.

2.5.4 Bangladesh under WTO-TRIPS compliance

Bangladesh is a member of the TRIPS Agreement since 15th April 1994. The TRIPS Agreement is considered the most comprehensive international IP instrument concluded to date. Some vital notion has been inserted in Part-1 of the Agreement, for instance—the national treatment, most favoured nations principles, exhaustion of rights, etc. which made an embargo in discrimination in the enjoyment of the IPRs based on the country of origin. Table 4 represents the TRIPS-responsive IP regime in Bangladesh for the protection of IPs.

Table 4: IP regime in Bangladesh for protection

Legislation	Measure
Copyrights Act, 2000	The first and prime achievement of Bangladesh is the enactment of the Copyrights Act, 2000 which is considered one step ahead to complying with the obligation under the TRIPS agreement
Trademarks Act, 2009	The government of Bangladesh has enacted the Trademarks Act, 2009 in proportion to the obligation intended in the TRIPS Agreement referring to multiple remedies, penalties and compensations through civil and criminal proceedings for the intentional violation of the right of a trademark-holder.
Patents and Designs Act, 1911	The provision concerned “any manner of new manufacture including an improvement thereof” the present Patents and Designs Act, 1911 seems to be incorporated a liberal and wide slant of patentability criteria in Bangladesh
Competition Act, 2012 and the Contract Act, 1872	For the protection of trade secrets, the country has no specific law to date except the general provisions of the Competition Act, 2012 and the Contract Act, 1872
Geographical Indication of Goods Act, 2013	In respect of Geographical Indication (GI) Bangladesh government has enacted “the Geographical Indication of Goods (Registration and Protection) Act, 2013”.
National Innovation and Intellectual Property Policy 2018	The National Innovation and Intellectual Property Policy 2018 was developed with the guidance of WIPO and relevant stakeholders, taking into account the country's development aspirations and goals as reflected in various development plans and relevant international treaties
Patent Act, 2022	Bangladesh enacted a Patent Act in 2022 to bring the country's IPR protections into compliance with its obligations before the World Trade Organization (WTO) once it graduates from LDC status

Source: Authors' compilation from various sources

Despite the TRIPS' transition period, the government is considering enactments of its TRIPS obligations in stages to create a culture of IPR protection and enforcement because once the transition period is over, it will be impossible to comply with the TRIPS immediately.

However, the country should emphasise on IPR education to raise awareness among stakeholders for improved compliance. The creation and enforcement of IPRs would both benefit from this awareness-raising. Policy assistance should focus initially on framing or modifying such IP laws that will protect the national interest on the one hand and pave the way to exploit its potentialities on the other. Capacity building is needed to deal with the challenges and fight against infringements. The government institutions must be well-equipped with technical and financial assistance and transparency and accountability should be ensured (Chowdhury, 2018). Some of the essential measures, such as the establishment of IP courts all over the country, have been taken into account in the National Innovation and Intellectual Property Policy 2018. Bangladesh should make efforts to attain the maximum level of skill and knowledge to exploit the TRIPS flexibilities.

2.5.5 FTA compulsions and TRIPS-plus

Maintaining the minimum standard of TRIPS obligation is necessary for any country's IP system to comply with the TRIPS Agreement. However, Bangladesh, being an LDC country, gets an exemption from some provisions of the TRIPS Agreement. But after LDC graduation, Bangladesh will lose flexibility in the areas of some provisions of the TRIPS. Moreover, Bangladesh will also lose preferential market access from its main export markets, the majority of which are developed countries, after it graduates from the LDCs category. To keep the present export markets, Bangladesh needs to sign Free Trade Agreements (FTAs) with most of the developed countries. One of the many obligations of FTAs is giving protection to the IPs. FTAs typically adhere to the minimal requirements of the WTO TRIPS Agreement, but they often strengthen IP protection beyond what is required by the TRIPS Agreement. These provisions are known as "TRIPS-plus" provisions since they go above and beyond the TRIPS Agreement's minimal standards. TRIPS-plus provisions include (i) the implementation of stronger IP protection than that required by the TRIPS Agreement or (ii) an agreement to forgo transition periods and privileges that developing countries and countries in economic transition negotiated during and after the Uruguay Round of GATT (ADB, 2008)¹⁴. There are 26 WIPO-administered treaties for the protection of IPs¹⁵. The IP provisions of FTAs differ, depending on the level of development of the parties of an FTA. For instance, under the RCEP, it is required to maintain 12 WIPO-administered treaty obligations, of which 7 are mandatory, 4 are optional, and 1 is indifferent. Therefore, if Bangladesh engages the bilateral or multilateral FTAs with developed countries, the country has to follow the FTA compulsion regarding the IPs.

The challenge Bangladesh will face if it signs FTAs with developed nations like Japan, the European Union, Canada, and Australia in maintaining IP protection is that the country must strongly maintain the treaty obligations which might be stronger than the minimum standard of TRIPS (TRIPS-plus). For example, PCT is one of the compulsions of the FTAs. So, there is a concern raised if Bangladesh wants to be a member of the RCEP. The country needs to oblige the PCT because it is one of the mandatory WIPO treaties for the RCEP. Furthermore, Bangladesh needs to address some new provisions about the IPs with the existing ones, such as genetic resources, protection for the encrypted technological program, and hearing the satellite signals before going to the FTA signing. These new issues are not addressed in our legislation, as well as in the laws of many other countries although these issues are usually compulsory during the FTA signing. Some of these issues have been under copyright law such as technological protection measures, the right management and information, and government use of the software. For RCEP, it has been told that government-using software should not be non-infusing. These things have to be considered and can be integrated with the Policy.

For the protection of IPs, Bangladesh usually follows the WTO rules. For example, the WTO's suggestion is to give 15 years of protection to copyright registration while it is 17 years for FTAs. For the trademarks, the WTO suggestion is for 7 years, but in FTAs it is said that the protection should not be less than 10 years. Therefore, in the post-LDC era, Bangladesh may

¹⁴ https://aric.adb.org/pdf/fta_manual.pdf

¹⁵ <https://www.wipo.int/treaties/en/>

face difficulties in negotiating FTAs with developed countries for the WIPO treaty obligations and TRIPS-plus obligations. The more a country develops and trades, the more pressure the developed world will place on it so that it meets its IP commitments and accepts TRIPS-plus commitments.

2.5.6 IP infrastructure & enforcement

Although it was originally believed that the IP Acts were designed to provide protection and stringent enforcement procedures against its violation, actually the Acts were enacted to comply with international IP treaties, particularly the TRIPS Agreement. Compliance with treaties does not take into account whether Bangladesh has the administration, enforcement, and required infrastructure to protect IP owners' rights. DPDT and the Copyright Office have very poor administrative capabilities due to their manual processes, lack of officers and staff, and lack of IP expertise (Shafiuddin, 2019). Moreover, the judiciary is not well prepared and very elastic in dealing with IP infringement cases (Jahan et al., 2018). IP awareness among the people is very low. The rate of copyright piracy in this country is the highest in the world, and copying well-known marks is still not considered morally wrong (Hossain, 2012; Somrat, 2019). There are still no laws governing trade secrets, unfair competition, or the layout design of integrated circuits. Besides, when informed, the law enforcement agency (Police) is willing to investigate producers of counterfeit goods, but they are unlikely to initiate their independent investigations because of insufficient enforcement resources.¹⁶ As a result, IP protection according to the TRIPS Agreement is hampered by this lack of administrative and enforcement capacity. The enforcement cost shall be borne by private parties as IPR is a private right in nature, and enforcement activities ought to be planned on a cost-benefit basis from a socially optimal perspective.

2.5.7 NBR's IPR enforcement (Import and Export) Rules, 2019

To improve trade between nations, Bangladesh implemented many changes to the customs and port procedures as part of the Trade Facilitation Agreement (TFA) it signed in 2016. The volume of trade has increased as a result of this reform. However, as trade has grown, a more severe IP violation—the export and import of counterfeit goods and services—has become a problem. This trend of parallel and counterfeit importation and exportation of branded goods results in the infringement of the IPR of brand owners, who are mostly foreign investors or multinational companies operating in Bangladesh. This situation is having a negative and damaging impact on Bangladesh's economy and GDP growth by discouraging or reducing foreign investment and preventing the Bangladeshi government from collecting the necessary amount of duty or income (Mishbah, 2022). The Customs Act of 1969 provided the customs authority with the right to restrict the entry and exit of counterfeit goods during the customs clearance process, and the NBR recently passed the IPR Enforcement (Import and Export) Rules, 2019 to reinforce these measures. Under the rule, without the permission of the IP rights holders, products with IPRs, such as copyright, trademark, patent, design, and geographical indication, could not be exported from or imported into Bangladesh. If the owners of the IP see a breach, they can submit an application to the relevant customs authority to restrict the item if it is perceived to be infringing on the IP right. TRIPS benefits are not recognized in this rule. On the other hand, Bangladesh can produce patented pharmaceutical products without the license or permission of the patent owner and without

¹⁶<https://www.trade.gov/country-commercial-guides/bangladesh-protecting-intellectual-property>

giving royalties to the owner, according to WTO. Moreover, the NBR rule gives protection to both domestically and foreign-registered IPs. But IPRs are territorial rights, the law only gives protection if the IP is registered domestically, and it does not give protection if the IP is registered in a foreign country. Parallel import is allowed in patent law and trademark law, anybody - even if he is not the sole distributor - can import goods that are patented in other countries. However, the NBR rule does not allow this. Therefore, any customs rule should be aligned with the existing Acts/Policies of IP and Import-Export. Proper coordination among the NBR, Custom, DPDT and Copyright Office is needed.

2.6 Changing nature of world trade and implementing National Innovation and Intellectual Property Policy 2018

2.6.1 LDC graduation challenges

Bangladesh must aggressively include IPR concerns in its LDC transition plan. TRIPS Agreement should be effectively represented for the post-LDC period. Since 1995, Article 66.1 of the WTO TRIPS Agreement allows a transition time for LDCs to execute their commitments. The LDC graduation should be the subject of a multifaceted conversation. Bangladesh is pursuing a benign defensive strategy (requesting additional transition time), rather than a genuinely operational plan to prepare the country for the post-LDC phase. Bangladesh needs to lobby with developed countries to extend the period of TRIPS exemptions after graduation from the LDC category, a comprehensive report on this is needed on the validation of extension, action plan and way forward after LDC graduation. Currently, MoI is working on such a report. A specific focus on pharmaceuticals is needed in this regard.

The pharmaceutical industry needs to prepare for the post-LDC era. Under the TRIPS Agreement, drug producers in LDCs can produce any generic medicine without having to follow the patent guidelines until 1 January 2033. However, this benefit will not be applicable for graduating LDCs such as Bangladesh because Bangladesh will graduate from the LDC category to become a developing country after 2026. If medicines are produced in accordance with patent rights, drug prices in local marketplaces will rise. On the other hand, a TRIPS waiver is given for the production of emergency drugs, such as COVID-19 vaccines, for all countries. To overcome the effects, Bangladesh attempted to extend its TRIPS waiver for six to nine years, and then until 1 January 2033. However, during the WTO's 12th Ministerial Conference in June 2022 in Geneva, global leaders did not extend the TRIPS waiver deadline for graduating LDCs. Therefore, Bangladesh will lose its preferential trade benefits after graduating. The pharmaceutical sector may be affected by the loss of the TRIPS waiver, resulting in the decline of generic and patented drug production and export. Addressing the shortage of skilled manpower, encouraging contract manufacturing, bringing changes in local laws to take advantage of the TRIPS Agreement, and quickly opening Active Pharmaceutical Ingredient (API) parks in the country are important.

After graduation, Bangladesh would confront a higher tariff regime ranging from 8% to 15% in the export market, potentially reducing the country's export profits by 14.28%, or \$5.73 billion. Despite various hurdles, LDC graduation will provide an opportunity for the country. Annual pharmaceutical exports from Bangladesh will exceed US\$ 1 billion in the next two to three years, up from US\$ 160 million now, as the door to US markets opens for selected local drug companies due to their high level of compliance. If local medicine producers can

capitalize on market possibilities in the US, the value might exceed US\$5 billion during the next five to six years. As an opportunity has arisen, the country should begin negotiations with the US to export additional pharmaceuticals to US defence services. Bangladesh should undertake some research on how to capitalize on its potential to earn billions from the global drugs industry as soon as possible. Local medicine manufacturers, which meet 98% of domestic demand worth BDT 20 billion per year, must focus on growing R&D to enhance their manufacturing of new molecules.¹⁷

Aside from the Pharma exemptions, Bangladesh must apply all TRIPS IPRs after 2026. Bangladesh must safeguard all forms of patents, copyrights, trademarks, and trade secrets. Furthermore, Bangladesh will be unable to benefit from a 90% discount on international filing costs under the PCT system, as well as a comparable fee reduction for the Madrid System for international trademark protection. Bangladesh also lacks a robust infrastructure for enforcing measures to take action against acts of IP infringement, such as civil and administrative remedies, criminal proceedings, border checks, and so on to address the LDC graduation challenges.¹⁸ National Innovation and Intellectual Property Policy 2018 can be the most engaging mechanism in this scenario.

2.6.2 COVID-19 pandemic

The National Innovation and Intellectual Property Policy 2018 was adopted before the COVID-19 pandemic hit the world. Therefore, the Policy could not address the challenges that might arise due to the pandemic. The Action plan of the Policy, covering the years from 2018 to 2028, was prepared disregarding the detrimental impact of this unprecedented pandemic. COVID-19 was first detected in Bangladesh on March 2020 and it caused economic and social disruption all over the country since then. The implementation of the policies in a timely manner became almost impossible and National Innovation and Intellectual Property Policy 2018 is no exception. According to the implementing body DPDT, the impact of COVID-19 was the major reason for the improper implementation of the National Innovation and Intellectual Property Policy 2018.

2.6.3 4th Industrial Revolution

IPR has played a critical role in fostering technological innovation and economic competitiveness over the last decade. The worldwide regulations regulating technology ownership and dissemination have shifted dramatically from conventional goods and services to product-based intellectual property. Emerging technologies are significantly changing how we generate, manage, and control innovation. The 4th Industrial Revolution (4IR), often known as the Internet of Things (IoT), was a key theme at the World Economic Forum 2016.

Costs of managing IPs may increase due to the growth of inter-company collaboration in the era of IoT. Moreover, modern software development is increasingly collaborative, with companies and individuals working to rapidly create new software products and services. There will simply not be enough time to protect key technology iterations before they are out of date. Different industries and the public sector have to cooperate beyond the scope of their

¹⁷<https://www.thedailystar.net/business/economy/news/pharma-needs-prepare-post-ldc-era-3077786>

¹⁸<https://thefinancialexpress.com.bd/views/intellectual-property-rights-issues-must-be-embedded-in-bangladeshs-ldc-graduation-strategy-1627315096>

businesses, to quickly standardize. They can construct the IP portfolio, considering various business models that fully utilize new technologies. Therefore, today’s rules and policies regarding IP creation and protection may not be viable in the IoT age. The adaptation of new technologies must be smoothed out with a timely and effective new IP Policy.

2.6.4 8th Five-Year plan and the Perspective plan (2021-2041)

The 8th Five-Year Plan and Perspective Plan of Bangladesh are crucial for the development of a knowledge-based, creative country. A variety of initiatives and activities have been launched to connect industry, academics, and the government. Industries are being pushed to focus more on the innovation and redesign of current goods by incorporating digital technology-based elements into products and processes. Researchers and academicians, on the other hand, are recognized for their innovations and research initiatives.

As part of the 8FYP, Bangladesh will prioritize IPR enhancement. It is crucial to implement an industrial strategy that optimizes its ability to contribute to economic growth while limiting the hazards of waste and rent-seeking. To be WTO-compliant, Bangladesh's industrial strategy must be comprehensive rather than sector-specific; that is, there must be a determined attempt to shift toward more general policies to promote industrial growth. As IPR protection improves, businesses from developed nations should have more motivation to invest and operate in developing-country markets, as per the 8th Five-Year Plan (8FYP).

The promotion of innovation is one of the development goals of the Perspective Plan 2010-2021. Under this plan, 138 educational institutions in Bangladesh have been designated as “Innovation Hubs”. “The ‘Vision 2021’ aims to convert Bangladesh into a resourceful and modern economy by making efficient use of ICT, as well as to establish a Digital Bangladesh by 2021 through proper Policy implementation.

2.6.5 Implementing SDG 9: Industry, innovation and infrastructure

Sustainable Development Goal (SDG) 9 “To Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation” is one of the 17 SDGs adopted by the United Nations in 2015¹⁹. Table 5 shows the progress (baseline status vs current status and target) of SDG 9 in Bangladesh as of 2020.

Table 5: SDG 9 progress status of Bangladesh in 2020

Target	Indicator	Baseline Status	Current Status	Milestone by 2020	Target by 2030
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.2 Passenger and freight volumes, by mode of transport	Passenger: 7,938,000 Freight: 2,79,286 M. ton (CAAB, 2015)	Passenger: 12,398,000 Freight: 383,018 M. ton [CAAB, 2018]	-	Passenger: 15,000,000 Freight: 8,00,000 M. ton

¹⁹<https://www.undp.org/sustainable-development-goals>

Target	Indicator	Baseline Status	Current Status	Milestone by 2020	Target by 2030
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise the industry's share of employment and gross domestic product, in line with national circumstances, and double its share in the least developed countries	9.2.1 Manufacturing value added as a proportion of GDP and per capita	Proportion of GDP: 20.16% Per Capita: \$130 (NAW, FY 15, BBS)	Proportion of GDP: 24.21% Per Capita: \$184 (NAW, BBS 2018-19)	21.50%	35%
	9.2.2 Manufacturing employment as a proportion of total employment	14.4% (QLFS 2015-16)	14.4% (LFS 2016-17, BBS)	20%	25%
9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	9.5.2 Researchers (in full-time equivalent) per million inhabitants	855 (MoST, 2015)	-	-	1080
9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure	1247 US\$M (ERD, FY 15)	4041.90 MUS\$ (ERD, FY 2018-19)	2021 MUS\$	3500 MUS\$
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	9.b.1 Proportion of medium and high-tech industry value added in total value added	12.65 (NAW, 2015, BBS)	11.57 (NAW, BBS, 2018)	-	20
9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in the least developed countries by 2020	9.c.1 Proportion of the population covered by a mobile network, by technology	2G: 99.4% 3G: 71% (BTRC, 2015)	2G: 99.6% 3G: 95.23% 4G: 79% (BTRC, 2019)	2G: 100% 3G: 92%	2G: 100% 3G: 100%

Source: SDG Bangladesh Progress Report 2020 and Revised Monitoring and Evaluation Framework of the SDGs: Bangladesh Perspective 2020, Bangladesh Planning Commission, Ministry of Planning, GoB

Bangladesh is facing significant challenges in implementing SDG 9 and moderate improvements are noticed. Table 6 shows the performance of Bangladesh by the key indicators of SDG 9.

Table 6: SDG performance by indicator

Indicator	Value	Year	Rating	Trend
Population using the internet (%)	24.8	2020	Major challenges	Moderately improving
Mobile broadband subscriptions (per 100 population)	52.8	2019	Significant challenges	On track or maintaining SDG achievement
Logistics Performance Index: Quality of trade and transport-related infrastructure (worst 1–5 best)	2.4	2018	Significant challenges	On track or maintaining SDG achievement
The Times Higher Education Universities Ranking: Average score of top 3 universities (worst 0–100 best)	23.6	2022	Challenges remain	Information unavailable
Articles published in academic journals (per 1,000 population)	0.1	2020	Significant challenges	Stagnating

Source: Sustainable Development Report, 2022

Well-crafted policies and their execution will play a significant influence on Bangladesh's industrial growth and achievement of SDG 9. Bangladesh will be able to implement SDG 9 for industrial growth with efficient Policy coordination, government institutions, and the private sector.

2.6.6 WTO roadmap on IP

The Bangladesh IPR implementation plan was created in 2010 by the TRIPS Council. The National Innovation and Intellectual Property Policy 2018 includes the majority of the IPR Policy from the Roadmap, therefore the roadmap is called the previous version of the current Policy. The roadmap comprises a study of the IPR's current situation, the need for IP protection in Bangladesh, and the IP's infrastructure. The roadmap assesses the initiatives done to develop the IPR regime and suggests a strategy for creating an environment that is conducive to IPR. Although the roadmap was attractively presented and carefully thought out, it has taken over 8 years to turn it into Policy. The implementation of the IPR is frequently not taken into account by the roadmap recommendations. The roadmap stated that all IP legislation must be compliant with the TRIPS Agreement. The IP laws passed prior to 2010 have not, however, been examined since their initial enactment to ensure that they are compliant with the TRIPS Agreement. Additionally, the enforcement and regulatory regime of the IP system in the roadmap has not been implemented, so it still has a weak and poor structure.

The TRIPS Council placed special emphasis on technological innovation, invention, and transfer in Bangladesh. Bangladesh has the capacity to innovate and create, but there are not many efforts being made to tap into that capacity. The public sector predominates in the research program whereas the commercial sector makes use of these resources but does not actively participate in research programs. In addition, Public sector R&D is unable to keep up with the rising market demand (WTO, 2010). Even if the roadmap is clearly stated and addresses all pertinent elements to strengthen the IP regime, it must be reviewed in light of

current challenges such as LDC graduation and the 4th industrial revolution. Issues relating to IPR must be incorporated into Bangladesh's LDC graduation strategy (Bhattacharya, 2021). IP-intensive products and services are now a larger portion of global exports and imports as a result of the 4th industrial revolution. Nowadays, branding, technology, hardware, and software, as well as other manufacturing-related factors, make up twice as much of the overall value of manufactured goods as tangible capital (CPD, 2021).

With the rising trend of the challenges due to the LDC graduation and the 4th industrial revolution, there needs a revisit of the roadmap. To address the current challenges, a review of the roadmap is necessary, and it may include an action plan for reviewing the IP laws on a regular basis. The plan should include a direction for the introduction of other IP laws, such as trade secrets, traditional knowledge (TK) and folklore, and integrated circuit layout designs. The roadmap highlighted that technology used in Bangladesh is mostly imported and that the amount of technology being transferred is limited. The roadmap should outline how to integrate industry and academics to develop new technologies, strategy to transfer technologies from one industry to another, and technology transfer agreement with an international research institution. A robust IP regime must be in place before these events could take place, hence the existing WTO IP roadmap must be reviewed to make way for greater IP infrastructure, enforcement measures, and awareness campaigns.

2.6.7 FDI and its relationship with IP in Bangladesh

Foreign Direct Investment (FDI) is a purchase of an interest in a company by a company or an investor located outside its borders. When a business decides to acquire a substantial stake in a foreign business or to buy it outright to expand its operations to a new region, it is described as FDI. On the other hand, IPRs are the rights given to persons over the creations of their minds. They usually provide the creator with an exclusive right over the use of his/her creation for a certain period. There is growing evidence that IPRs have an impact on FDIs around the world. There are many channels through which IPRs can affect FDIs in a country. A country with a strong implementation of the IPR regime is likely to be in a higher position to attract knowledge-related FDI flows. Without strong protection of IP, firms may not be willing to invest in levels of the production process that involve a major transfer of proprietary knowledge, such as research and development and technology-intensive manufacturing process.

IPR and FDI have a positive relationship (Braga & Fink, 1998). Lee and Mansfield (1996) compiled an index of IPR protection for sixteen developing and newly industrialized countries, attempting to explain US FDI flows in these countries in a multivariate regression analysis. The estimation result concerning the Mansfield index indicates that countries with higher levels of protection attract significantly higher FDI flows. Tanaka and Iwaisako (2014) explained the relationship between IPR and FDI through a welfare analysis. They examined how IPR protection affects innovation and FDI using a North-South quality-ladder model and suggested that strengthening IPR protection promotes innovations, FDI, and welfare.

IPR protection is one of the many elements of the business climate affecting FDI inflows. IPRs should have different degrees of importance in different sectors in terms of encouraging FDI. Investment in lower-technology goods and services, such as textiles and apparel, electronic assembly, distribution, and hotels, depends far less on the strength of IPRs than on input costs

and market opportunities. Firms investing in a product or technology that is costly to imitate may also place little emphasis on local IPRs in location decisions, though falling imitation costs in many sectors raise the importance of IPRs. Firms with easy-to-copy products and technologies, such as pharmaceuticals, chemicals, food additives, and software, are more concerned with the ability of the local IPRs system to deter imitation. Firms considering where to invest in a local R&D facility would pay particular attention to the protection of patents and trade secrets (Maskus, 2000).

Although IPR and FDI are positively related, they depend on the type of industry. Stronger IPRs promotes foreign investments in most developing countries. Developing countries must recognise that only the changes in IPR laws will not promote FDIs unless there is proper implementation and regulation of the IPRs in a country. Setting up joint ventures in the country's economic zones may attract more FDIs.

2.6.8 IP in trade agreements

IP is one of the core issues that need to be included in the Bilateral, Regional and Free Trade Agreements. IP is different from other forms of property because it can be stolen easily unlike other properties and also its movement becomes very flexible. The piracy of IP became easier due to technological enhancement. Therefore, the international character of the IP has been recognized by several International Conventions (Rahl et al., 1969). Different international treaties have been formed and several international organisations have been working towards the preservation and advancement of IP around the world (Khidzir & Ahmed, 2018). Therefore, IPs need special attention and economic analysis while signing any BTA, RTA, or FTA.

2.7 Country comparison: Deviation from the international good practices

In this section, we examined the IP Policy of a few comparative countries that have had a lot of success in recent years. A timely IP Policy should be designed to contribute to the country's economic progress. Amending a Policy necessitates the completion of various legal procedures while also taking a significant amount of time. A well-crafted Policy, on the other hand, can have a significant impact on the regulatory process. It will be beneficial to do a critical examination of India and the Philippines' IP legislation to learn from them.

2.7.1 India²⁰

The main purpose of the IPR is to stimulate a dynamic, vibrant and balanced IPR system in India. The government of India aims to foster creativity and innovation and thereby, promote entrepreneurship and enhance socio-economic and cultural development. Table 7 shows the main highlights of the Policy and the takeaways for Bangladesh.

²⁰https://www.meity.gov.in/writereaddata/files/National_IPR_Policy.pdf

Table 7: Overview of Indian National Intellectual Property Rights Policy 2016

Topic	Highlights	Takeaways
IPR awareness: Outreach and promotion	<ul style="list-style-type: none"> -The idea is to create public awareness about the economic, social and cultural benefits of IPRs among all sections of society. -Adopt the national slogan “Creative India; Innovative India” and launch an associated campaign on electronic, print and social media, including by linking the campaign with other national initiatives such as “Make in India”, “Digital India”, “Skill India”, “Start-Up India”, “Smart Cities” and other new initiatives in the future. -Create a systematic campaign for the promotion of India’s IP strengths by conveying to all stakeholders the value and benefits of IP by various measures. -Create awareness programs specifically targeting industry and R&D entities, both private and public by various measures. -Create well-publicized events and ongoing programs to emphasize the importance of IP. <p>Create suitable course materials for educational institutions that promote the importance of the implementation of IPR.</p>	<p>The creation of public awareness on the benefits of IPRs. Undertaking appropriate measures like creating slogans, campaigns, programs, and suitable course materials and communicating them to the appropriate parties.</p>
Generation of IPRs	<ul style="list-style-type: none"> -Use the campaign “Creative India; Innovative India” to propagate the value of creativity and innovation and the resultant benefit to the public; to create a mindset and culture that encourages knowledge generation and its application through IP. -Undertake studies to assess the contribution of IP content in different industries on the economy, employment, exports and technology transfer. -Encourage researchers in publicly funded academic and R&D institutions in IPR creation by linking it with research funding & career progression. -Promote ‘infusion of funds to public R&D units’ as a part of Corporate Social Responsibility to foster a culture of open innovation. -Provide special incentives for the creation of IPRs in green technologies and the manufacture of energy-efficient equipment -Encourage innovations in the agriculture sector through the application of IP for higher sustainable agricultural production. -Promote India’s rich heritage of TK with the effective involvement and participation of the holders of such knowledge. TK holders will be provided necessary support and incentives for furthering the knowledge systems that they have nurtured from the dawn of our civilization. 	-
Legal and Legislative Framework	<ul style="list-style-type: none"> -The idea is to have strong and effective IPR laws, which balance the interests of rights owners with the larger public interest. 	

Topic	Highlights	Takeaways
	<ul style="list-style-type: none"> -Review existing IP laws, where necessary, to update and improve them or to remove anomalies and inconsistencies, if any, in consultation with stakeholders. -Review and update IP-related rules, guidelines, procedures and practices for clarity, simplification, streamlining, transparency and time-bound processes in the administration and enforcement of IP rights. -Examine the issues of technology transfer, know-how and licensing relating to SEPs on fair and reasonable terms and provide a suitable legal framework to address these issues, as may be required. 	
Administration and Management	<ul style="list-style-type: none"> -The idea is to modernize and strengthen service-oriented IPR administration -The administration of the Copyright Act, 1957 along with the office of the Registrar of Copyrights, under the Department of Higher Education, is being transferred to the Department of Industrial Policy and Promotion. -Establish close cooperation between IPOs and create a common web portal for ease of access to statutes, regulations, and guidelines and better coordination. -Create a Cell for IPR Promotion and Management (CIPAM) under the aegis of DIPP to facilitate the promotion, creation and commercialization of IP assets -Re-designate the institution of the Controller General of Patents, Designs and Trademarks as Controller General of IPRs to reflect its mandate given the proposed change in its scope of responsibilities. 	
Commercialization of IPRs	<ul style="list-style-type: none"> -The idea is to get value for IPRs through commercialization -Promote licensing and technology transfer for IPRs; devising suitable contractual and licensing guidelines to enable commercialization of IPRs; promote patent pooling and cross-licensing to create IPR-based products and services. -Provide support for MSMEs, Individual Inventors and Innovators from the informal sectors with enablers like facilitation centres for single window services to help them commercialize their IPRs. -Make efforts to reduce dependency on API imports, including incentivizing the manufacture of APIs in India and revitalizing public sector undertakings in the healthcare sector. -Promote the use of Free and Open-Source Software along with the adoption of open standards; the possibility of creating Indian standard operating environments will be examined. 	The measures should be taken for commercializing the IPRs.
Enforcement and Adjudication	<ul style="list-style-type: none"> -The idea is to strengthen the enforcement and adjudicatory mechanisms for combating IPR infringement. -Take strong measures against attempts to treat generic drugs as spurious or counterfeit. 	Undertaking strong measures for combating IPR violations. Undertaking Mechanisms like technology-based measures put in

Topic	Highlights	Takeaways
	<ul style="list-style-type: none"> -Public awareness as also legal and enforcement mechanisms, including technology-based measures, will be reinforced to combat offline and online piracy. -Assistance to smaller firms for the protection of their IPRs internationally will be enhanced, such as Support for International Patent Protection in Electronics and IT (SIPEIT). 	<p>action to stop piracy. Assistance to smaller firms for the protection of their IPRs is a good measure to promote IPR.</p>
Human Capital Development	<p>The government shall strengthen and expand human resources, institutions and capacities for teaching, training, research and skill-building in IPRs</p> <ul style="list-style-type: none"> -Strengthen and empower RGNIPM, Nagpur to conduct training for IPR administrators and managers in industry and business, academicians, R&D institutions; IP professionals; inventors and civil society; train the trainers and develop training modules; develop links with other similar entities at the international level; provide legal training for examiners. -Strengthen existing and create new IPR cells and technology development and management units in NIDs, NIFTs, Agricultural Universities, Technology and Management Institutes and centres of skill development. -Develop distance learning and online courses on IP for all categories of users; strengthen IP teaching in open universities and centres of skill development. -Encourage and support capacity building among Women Creators, Innovators, Entrepreneurs, Practitioners, Teachers and Trainers. 	<p>Develop human capital by strengthening the use and knowledge of IPR in different sectors like educational institutions, R&D institutions, inventors, development units, skill development centres, etc.</p>
Implementation	<p>The present IP Policy aims to integrate IP as a Policy and strategic tool in national development plans. It foresees a coordinated and integrated development of the IP system in India and the need for a holistic approach to be taken on IP legal, administrative, institutional and enforcement-related matters. Thus, the Department of Industrial Policy and Promotion shall be the nodal point to coordinate, guide and oversee the implementation and future development of IPRs in India. The responsibility for the actual implementation of the plans of action will remain with the Ministries/ Departments concerned in their assigned sphere of work. Public and private sector institutions and other stakeholders, including State governments, will also be involved in the implementation process</p>	

Source: Authors' assessment

2.7.2 The Philippines²¹

The main purpose of the National IP rights of the Philippines is to implement an effective IP system widely recognized and strategically utilized to benefit and uplift the lives of Filipinos. The government of the Philippines wants to establish a collaborative and whole-of-society approach using effective and efficient advanced tools, and best practices for the creation, utilization, protection, and respect of IP. Table 8 shows the important highlights of the Policy and the main takeaways for Bangladesh.

Table 8: Overview of the Philippines' National Intellectual Property Strategy (2020 – 2025)

Topic	Highlights	Takeaways
Overview of Intellectual Property and Intellectual Property-related Areas	<ul style="list-style-type: none"> -Intellectual Property for Social Welfare and Development -Intellectual Property in Preserving Culture and Heritage -Intellectual Property in Economic Development -Intellectual Property on International Indices -Intellectual Property for Inclusive Innovation 	
The current snapshot of IPR and Innovation in the Philippines	<ul style="list-style-type: none"> -International Intellectual Property Ecosystem -Philippine Innovation Ecosystem -Philippine Creativity Ecosystem -The Philippine Intellectual Property Ecosystem 	
Main objectives of the national Intellectual property Policy	<ul style="list-style-type: none"> -Ensure a robust, predictable, and efficient IP system and enforceable IPRs. -Improve knowledge production, innovation performance by ITSOs, universities and RDIs, and its productive links with industries. -Develop a culture of innovation, creativity, and respect for IP through mainstreaming IP in the educational system and key sectors. -Enhance the productivity of priority industries where IP plays a major role. -Consider improvements in certain areas of IPOPHL the operation, and other government agencies to support challenges in the 4IR environment. -Promote the effective use of the IP system as a tool for economic growth. 	

²¹https://drive.google.com/file/d/1R3zwex1ccuadq4YRYMCDV_xpBPXtAkZc/view

Topic	Highlights	Takeaways
List of Stakeholders and Key Industries that are Vital to the Intellectual Property System.	<ul style="list-style-type: none"> -Government: Executive Departments, Offices, and Agencies -Legislature: The Senate of the Philippines and the House of Representatives -Supreme Court/Judiciary -Industry Sectors 	
Support Sectoral Advancement through the use of an IP system.	<ul style="list-style-type: none"> -Enhance the legal and developmental aspects of the healthcare and pharmaceutical industry -Encourage productivity and technological systems in the agricultural, animal husbandry, and fisheries sectors. -Increase the use of IP systems by MSMEs as a tool for productivity, creativity, and innovativeness. -Institutionalize the different industries' use of patent documents and capture the protection of 4IR technologies in selected sectors. 	<p>-The development of productivity and technological systems of the agricultural and fisheries sector. This is an important sector in the context of Bangladesh.</p>
Promote Innovation and Utilization/Commercialization of IP Assets	<ul style="list-style-type: none"> -Improve the R&D/ innovation performance. -Enhance the funding rationalization and operations related to government-funded agencies (GFAs). -Attract smart and high-technology investors to set up business in the Philippines. 	<p>-The enhancement of funding and operations related to GFAs.</p> <p>-The strategy of attracting high technology investors to set up business in Bangladesh will also help to promote high tech Innovation and competition.</p>
Elevating the Creative and Cultural Industries	<ul style="list-style-type: none"> -Develop and nurture the growth and development of creative and cultural industries. -Strengthen the protection of TK, TCE, and genetic resources. -Enable access to information and knowledge on copyright and other related rights. 	
Enhance the Legal System, Institutions and Structures	<ul style="list-style-type: none"> -Amend the current IP laws. Regulations and issuances on IP. -Strengthen the organizational structures to support the IP systems. 	<p>-The strategy of improving the</p>

Topic	Highlights	Takeaways
Related to IP	<ul style="list-style-type: none"> -Conduct inter-agencies initiatives on IP and IP-related matters. -Enhance the enforcement of IP systems and procedures. -Capture international cooperation related to IP and increase roles in international IP systems. 	<p>current IP laws and regulations.</p> <p>-Attracting international organizations related to IP and working on increasing roles in international IP systems.</p>
Demystify, Mainstream and Professionalize Intellectual Property	<ul style="list-style-type: none"> -Develop a culture of innovation and creativity and respect for IP through the IP academy. -Integrate IP knowledge into the educational system. -Increase new knowledge on IP through academics. Scientific and advanced research and studies. 	-The integration and implementation of IP knowledge in the educational system of Bangladesh.
An Effective Philippine IP System for Innovation and Creativity.	<p>The Road to IP System Transformation-</p> <p>The envisioned IP system, under the NIPS, is demanded to be more systematic, comprehensive, and effective to deliver reliable service for Philippine creators and innovators. The NIPS sets out a realistic and positive strategic direction for the Philippine IP system.</p> <p>Call to Action-</p> <p>NIPS is enabled by a large pool of IP advocates committed to and united in protecting the IP environment and interests of the nation. Active participation from the highest level of all branches of government, including government agencies, academe, industry sectors, creators, and innovators, is of utmost importance to the realization of the NIPS ambition.</p>	

Source: Authors' assessment

2.7.3 Ireland²²

The main purpose of the IP Policy in Ireland is to provide an exemplary innovation ecosystem that creates economic and societal benefits. This includes the promotion of entrepreneurship, high-potential start-ups and job creation by new and established firms. An essential condition for this is a user-friendly system that enables industry and the public research sector to work well together. This encourages the commercialisation of all forms of IPs arising from publicly funded research. Table 9 shows the main highlights of the Policy and the takeaways for Bangladesh.

Table 9: Overview of Ireland’s National IP Protocol 2019

Topics	Highlights	Takeaways
Overview of Policy	<ul style="list-style-type: none"> -Intellectual property arises as a result of State funding for research and development. -Aim is to commercialise the IP in all possible fields, applications and territories where it is consistent with achieving Ireland’s objectives. -Aims to encourage industry and RPOs to work together. 	
Objectives for the commercialisation of IPs	<ul style="list-style-type: none"> -To maximise the economic and societal benefits and returns to Ireland from its public investment in research. -Creating sustainable jobs in Ireland, is the most important form of economic and societal benefit. -To make IP accessible to all enterprises, from start-ups and small and medium enterprises (SMEs) to multinational corporations. -Benefitting the Higher Education Institutions and State Funded Research Organisations -Providing incentives to the researchers involved in creating the IP -Building networks of long-term knowledge-sharing relationships, reflecting the ecosystem nature of innovation. 	The objective is to create sustainable jobs in Bangladesh through the commercialisation of IPs.

²²<https://www.knowledgetransferireland.com/Reports-Publications/Ireland-s-National-IP-Protocol-2019-.pdf>

Topics	Highlights	Takeaways
Role of RPOs	<ul style="list-style-type: none"> -Apply the IP Policy and the Frameworks to ensure consistency and predictability of the approach. -Within the requirements of this Policy and the frameworks, be flexible in negotiating individual commercialisation agreements, to obtain the best result for all parties. -Have procedures in place to ensure their staff, contractors, consultants and students understand the principles of this Policy, the options available for commercialising IP arising from their research, and the benefits of commercialisation. -Have arrangements in place to enable them to meet these requirements. 	<p>The collaboration of the research organisations in the commercialisation of IPs.</p> <p>The role of RPO's in applying the IP Policy of Bangladesh and implementing the frameworks to ensure consistency.</p>
Framework for Collaborative research	<ul style="list-style-type: none"> -Research funded 100% by the State -Research funded 100% by industry -Research funded partly by industry and partly by the State -Access to IP in wholly State-funded research -Access to IP in Collaborative Research wholly funded by the industry -Access to IP in Collaborative Research partially funded by industry: Intellectual property, programme plan, publication rights, governance arrangements, application to multi-party collaboration agreements -Further considerations in collaborative research: obligations of each RPO participating in Collaborative research, Obligations of an industry party participating in research, Costs and contributions towards research. 	<p>-The idea for collaborative research: access to IP in collaborative research partially funded by industry.</p>
Framework for IP Licensing	<ul style="list-style-type: none"> -General principles in IP licensing -Fee-bearing Exclusive or Non-exclusive Licences -Non-Exclusive Royalty: Free licences (NERFs) -Assignment -Retained rights 	
Framework for Spin-Out Company Formation	<ul style="list-style-type: none"> -Roles, responsibilities and rewards: Founders, investors, the RPO, other RPO contributors, Directors and observers to the board, determining equity and revenue. -Legal agreements: Term sheet for Shareholders agreement, shareholder's agreement, the option to IP, IP Licensing, other agreements -Other documents 	

Topics	Highlights	Takeaways
National IP management requirements	<ul style="list-style-type: none"> -Adopt and disseminate a Policy for IP commercialisation that includes the Minimum Requirements for an IP Commercialisation Policy. -Ensure early awareness amongst researchers of the importance of IP management. -Set obligations on individual researchers (supported by robust RPO procedures and internal IP management systems) to ensure IP is managed professionally. -Maintain confidentiality before the publication of research and confidentiality of IP provided by and to others. -Protect IP including IP arising from research projects and programmes. -Introduce existing background IP into a research programme diligently -Conduct appropriate due diligence before licensing IP. -Maintain appropriate records of IP and licences. -Manage actual and potential conflicts of interest -Implement systems for the sharing of income from the commercialisation of IP within the RPO. 	
Consideration of EU Regulations Relating to Research, Development and Innovation with RPOs	<ul style="list-style-type: none"> -State Aid considerations: State Aid legislation ensures that there is fair and open competition within the EU without the Member States subsidising businesses unfairly. -European Competition law: There are competition laws in both Ireland and the EU which prohibit agreements that affect trade between member states and competition within the EU to an appreciable extent if the agreement has the object or the effect of preventing, restricting or distorting competition in a relevant market. 	
The Irish knowledge transfer system	<ul style="list-style-type: none"> -The Irish knowledge transfer system involves many actors, including the State research funding organisations and innovation agencies, the RPOs, investors, industry, entrepreneurs and individual researchers. -They need to work together under the National Policy to ensure an effective system for industry-RPO engagement and commercialisation. -KTI is responsible for: <ul style="list-style-type: none"> -Ensuring the continuous improvement of the national IP Protocol -For publishing updated versions as required, including keeping these frameworks and resources up to date -Ensuring that the resources are deployed consistently across the RPOs. 	The implementation of a knowledge transfer system under the National Policy to ensure an effective system for industry-research organisations' engagement and commercialisation of IP.

Source: Authors' compilation from various sources

2.7.4 WIPO and Protection of IP in International Arena: International conventions and treaties

WIPO Convention

The WIPO Convention, the constituent instrument of the World Intellectual Property Organization (WIPO), was signed in Stockholm on July 14, 1967, entered into force in 1970 and was amended in 1979. WIPO is an intergovernmental organization (IGO) that became one of the specialized agencies of the United Nations (UN) system in 1974. The origins of WIPO go back to 1883 and 1886 when the Paris Convention for the Protection of Industrial Property and the Berne Convention for the Protection of Literary and Artistic Works provided for the establishment of an "International Bureau". Under the direction of the Swiss Federal Government in Berne, Switzerland, the Paris Convention was formed in 1883 and the Berne Convention was formed in 1886, to adopt two international secretariats (one for industrial property and one for copyright). During the early stages, only a few officials were needed to perform the activities of the conventions. The two bureaus were united in 1893 and, in 1970, were replaced by the WIPO, by the WIPO Convention. Before the name was set to be WIPO, it was known as BIRPI (in French) and United International Bureaux for the protection of IP (in English). An agreement was signed between WIPO and the UN on December 17, 1974, and WIPO became a specialized agency of the UN. Even though a specialized agency belongs to the family of the UN, it also holds its independence. WIPO has its membership, similarly. The mandated, functions, finances and procedures are stated in the WIPO Convention.

WIPO's two main objectives are (i) to promote the protection of IP worldwide; and (ii) to ensure administrative cooperation among the IP Unions established by the treaties that WIPO administers. To attain these objectives, WIPO, in addition to performing the administrative tasks of the Unions, undertakes several activities, including normative activities, program activities, international classification, standardization activities, and registration and filling activities. The WIPO Convention establishes three main organs: the WIPO General Assembly, the WIPO Conference and the WIPO Coordination Committee. The WIPO General Assembly is composed of the Member States of WIPO which are also members of any of the Unions. The WIPO Conference is composed of the States party to the WIPO Convention. The WIPO Coordination Committee is composed of members elected from among the members of the Executive Committee of the Paris Union and the Executive Committee of the Berne Union.

WIPO convention says that IP should incorporate rights associated with literary, artistic and scientific work, phonograms and broadcasts, inventions in all fields of human endeavour, scientific discoveries, industrial designs, trademarks, service marks, commercial names and designations, protection against unfair competition and all other (Ahmed & Khidzir, 2018). A scientific finding does not receive any property rights by national law or international treaties as it is different from the concept of the invention (Singh, 2004). There are two branches of IP: a) Industrial property and b) Copyrights. The members of WIPO and WTO are directed by the organisations themselves to protect these creations of human intellect. All these IPs however are not protected in all countries (Ulmer et al., 2003).

WIPO works with a broad range of stakeholders, including NGOs, IGOs, representatives of civil society and industry groups. Currently, around 250 IGOs and NGOs have official observer status at WIPO meetings. The Secretariat of the Organization is called the International

Bureau. The executive head of the International Bureau is the Director General who is appointed by the WIPO General Assembly and is assisted by two or more Deputy Directors General. The headquarter of the Organization is in Geneva, Switzerland. The Organization has Liaison Offices in Brazil (Rio de Janeiro), Japan (Tokyo), Singapore (Singapore) and the United States of America (at the United Nations in New York). The Organization benefits from the privileges and immunities granted to international organizations and their officials in the fulfilment of its objectives and exercise of its functions and has concluded a headquarters agreement with the Swiss Confederation to that effect.

WIPO's Director General arranges a program and budget document for member states for approval every two years. This includes performance measures, objectives and budgetary planning for all future program activities. WIPO is largely self-financed which makes it unusual among the family of UN organisations. The principal sources of income for WIPO's regular budget are the fees paid by the users of the international registration and filing services, and the contributions paid by the governments of member states.

Currently, WIPO conducts four different ways of protection for specific industrial property rights: The Patent Cooperation Treaty (PCT) for filing patent applications in many countries, The Madrid System for the international recognition of marks for trade and service marks, The system for the international deposit for industrial design, the Lisbon system for the international recognition of appellations of origin. All these treaties each created a Union which has an Assembly. Every state member of the Union that has adhered to at least the administrative and final clauses of the Stockholm Act is a member of the Assembly. Instruments of ratification or accession of each of these agreements must be deposited with the Director General of WIPO. Bangladesh joined the WIPO on 11th May 1985.

Patent Cooperation Treaty

PCT makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by filing an "international" patent application. Such an application may be filed by anyone who is a national or resident of a PCT contracting state. It may generally be filed with the national patent office of the contracting state of which the applicant is a national or resident or, at the applicant's option, with the International Bureau of WIPO in Geneva. The Treaty regulates in detail the formal requirements with which international applications must comply. Filing a PCT application has the effect of automatically designating all contracting states bound by the PCT on the international filing date. The international application is subjected to an international search. That search is carried out by one of the competent International Searching Authorities (ISA) under the PCT and results in an international search report, that is, a listing of the citations of published documents that might affect the patentability of the invention claimed in the international application. If the international application is not withdrawn, it is published by the International Bureau, together with the international search report.

The PCT ultimately brings the world within reach; streamlines the process of fulfilling diverse formality requirements; postpones the major costs associated with international patent protection; provides a strong basis for patenting decisions; and is used by the world's major corporations, research institutions and universities in seeking international patent protection. The PCT was concluded in 1970, amended in 1979 and modified in 1984 and 2001. It is open

to states party to the Paris Convention for the protection of industrial property (1883). Bangladesh is still not a contracting party to the PCT. Under Section 39 of the Patent Act 2022, international patent applications shall be processed under the provisions of the PCT and the accompanying guidelines as Bangladesh is going to be a party of PCT and the provisions of PCT shall apply in relation to this Act thereafter. Without any doubt, this clause should be removed from the Patent Act according to the private sector stakeholders because this matter should be resolved outside the jurisdiction of the Act. However, PCT is one of the compulsions of the FTA. So, there is a concern raised if Bangladesh wants to be a member of the (Regional Comprehensive Economic Partnership) RCEP. The country needs to oblige the PCT eventually because PCT is one of the mandatory WIPO treaties for the RCEP.

Madrid Agreement

The Madrid Agreement for the international registration of marks was concluded in 1891, and the Protocol relating to that Agreement was concluded in 1989. The Madrid Agreement was revised in Brussels (1900), Washington (1911), The Hague (1925), London (1934), Nice (1957) and Stockholm (1967), and amended in 1979. The Madrid Protocol of 1989, aims to make the Madrid system more flexible and more compatible with the domestic legislation of certain countries or IGOs that had not been able to accede to the Agreement.

The system makes it possible to protect a mark in a large number of countries by obtaining an international registration that affects each of the designated contracting parties. An application for international registration (international application) may be filed only by a natural person or legal entity having a connection – through establishment, domicile or nationality – with a contracting party to the Agreement or the Protocol. The application for international registration must designate one or more contracting parties in which protection is sought. A contracting party may be designated only if it is a party to the same treaty as the contracting party whose office is the office of origin. Once the International Bureau receives an international application, it examines compliance with the requirements of the Protocol and its regulations. The office of each designated contracting party shall issue a statement of grant of protection. The effects of an international registration in each designated contracting party are, from the date of the international registration, the same as if the mark had been deposited directly with the office of that contracting party.

The Madrid system offers several advantages for trademark owners. Instead of filing a separate national application in each country of interest, in several different languages, under different national or regional procedural rules and regulations and paying several different (and often higher) fees, an international registration may be obtained by simply filing one application with the International Bureau (through the office of the home country), in one language (English, French or Spanish) and paying one set of fees. Similar advantages exist for maintaining and renewing a registration. The Madrid Agreement and Protocol are open to any state party to the Paris Convention for the protection of industrial property (1883). The two treaties are parallel and independent and states may adhere to either or both of them. In addition, an IGO that maintains its own office for the registration of marks may become a party to the Protocol. Bangladesh is not yet a member of this international trademark protection system but it will soon follow the Madrid Protocol according to the upcoming Trademark law.

Hague Agreement

The Hague Agreement governs the international registration of industrial designs. First adopted in 1925, the Agreement effectively establishes an international system –The Hague system – that allows industrial designs to be protected in multiple countries or regions with minimal formalities. Two Acts of Hague Agreement are currently in operation – the 1999 Act and the 1960 Act. In September 2009, it was decided to freeze the application of the 1934 Act of Hague Agreement, thus simplifying and streamlining the overall administration of the international design registration system.

An international design registration may be obtained only by a natural person or legal entity having a connection – through the establishment, domicile, nationality or, under the 1999 Act, habitual residence – with a contracting party to either of the two Acts. The Hague Agreement allows applicants to register an industrial design by filing a single application with the International Bureau of WIPO, enabling design owners to protect their designs with minimum formalities in multiple countries or regions. An international application may be governed by the 1999 Act, the 1960 Act or both, depending on the contracting party with which the applicant has the connection described above (hereafter referred to as "contracting party of origin"). International design applications may be filed with the International Bureau of WIPO, either directly or through the industrial property office of the contracting party of origin if the law of that contracting party so permits or requires. In practice, however, virtually all international applications are filed directly with the International Bureau, and the majority are filed using the electronic filing interface on WIPO's website.

The Hague Agreement, concluded in 1925, was revised in London in 1934 and Hague in 1960. It was completed by an additional Act signed in Monaco in 1961 and by a complementary Act signed in Stockholm in 1967, which was amended in 1979. As noted above, a further Act was adopted in Geneva in 1999. The 1999 Act of the Agreement is open to any WIPO member state and certain IGOs. Bangladesh is still not a contracting party of Hague System, although several LDCs and South Asian nations are. Being a signatory of Hague System should be considered, according to key informants from the private sector. This provides a practical business solution for registering up to 100 designs in over 62 territories through filing one single international application.

Lisbon Agreement

The Lisbon Agreement, and its latest revision, the Geneva Act of 2015, provide for the international protection of appellations of origin (AO) and geographical indications (GI) through a single procedure with WIPO. AOs and GIs are distinctive product designations which require a qualitative link between the product to which they refer and its place of origin. The Lisbon Agreement and the Geneva Act of the Lisbon Agreement together form the Lisbon system. Since January 2010, contracting states have had the option to issue a statement of grant of protection, thus improving communication regarding the status of international registrations in member countries. The Lisbon Agreement, concluded in 1958, was revised in Stockholm in 1967, and amended in 1979. The Agreement is open to states party to the Paris Convention for the protection of industrial property (1883). Bangladesh is still not a signatory of the Lisbon Agreement but is suggested to be one to protect AOs. Lisbon Agreement will also pave the way for the joint registration of cross-border GIs in Bangladesh.

WIPO administers its functions related to international cooperation through several treaties. These treaties have established international protection meaning these are the source of legal protection agreed upon between countries at international levels. Paris Convention for the protection of industrial property, the Berne Convention for the protection of literary artistic works and the WIPO Copyright Treaty are some of such treaties.

Paris Convention

The Paris Convention applies to industrial property in the widest sense, including patents, trademarks, industrial designs, utility models (a kind of "small-scale patent" provided for by the laws of some countries), service marks, trade names (designations under which industrial or commercial activity is carried out), GIs (indications of source and appellations of origin) and the repression of unfair competition. The substantive provisions of the Convention fall into three main categories: national treatment, right of priority, and common rules.

Under the provisions on national treatment, the Convention provides that, as regards the protection of industrial property, each contracting state must grant the same protection to nationals of other contracting states that it grants to its nationals. Nationals of non-contracting states are also entitled to national treatment under the Convention if they are domiciled or have a real and effective industrial or commercial establishment in a contracting state. The Convention provides for the right of priority in the case of patents (and utility models where they exist), marks and industrial designs. This right means that, based on a regular first application filed in one of the contracting states, the applicant may, within a certain period (12 months for patents and utility models; 6 months for industrial designs and marks), apply for protection in any of the other contracting states.

The Convention lays down a few common rules that all contracting states must follow. The Paris Convention, concluded in 1883, was revised in Brussels in 1900, in Washington in 1911, in Hague in 1925, in London in 1934, in Lisbon in 1958 and in Stockholm in 1967, and was amended in 1979. The Paris Union, established by the Convention, has an Assembly and an Executive Committee. Every state that is a member of the Union and has adhered to at least the administrative and final provisions of the Stockholm Act (1967) is a member of the Assembly. The Convention is open to all states. Instruments of ratification or accession must be deposited with the Director General of WIPO. Bangladesh has been a Contracting Party to the Paris Convention for the protection of industrial property since March 3, 1991.

Berne Convention

The Berne Convention, adopted in 1886, deals with the protection of works and the rights of their authors. It provides creators such as authors, musicians, poets, painters etc. with the means to control how their works are used, by whom, and on what terms. A large number of countries joined the Berne Convention as the WTO made the Agreement to the Berne Convention compulsory for copyright protection under TRIPS in 1995. It is based on three basic principles and contains a series of provisions determining the minimum protection to be granted, as well as special provisions available to developing countries that want to make use of them. The three basic principles are: Works originating in one of the contracting states (that is, works the author of which is a national of such a state or works first published in such a state) must be given the same protection in each of the other contracting states as the latter grants to the works of its national protection must not be conditional upon compliance with

any formality (principle of "automatic" protection). Protection is independent of the existence of protection in the country of origin of the work (principle of "independence" of protection).

The Berne Union has an Assembly and an Executive Committee. Every country that is a member of the Union and has adhered to at least the administrative and final provisions of the Stockholm Act is a member of the Assembly. The Berne Convention, concluded in 1886, was revised in Paris in 1896 and Berlin in 1908, completed at Berne in 1914, revised in Rome in 1928, in Brussels in 1948, in Stockholm in 1967 and Paris in 1971, and was amended in 1979. Instruments of ratification or accession must be deposited with the Director General of WIPO. On May 4, 1999, Bangladesh became a member of the International Union for the Protection of Literary and Artistic Works (Berne Union), founded by the Berne Convention, and is complying with the Convention.

WIPO Copyright Treaty

The WIPO Copyright Treaty (WCT) is a special Agreement under the Berne Convention that deals with the protection of works and the rights of their authors in the digital environment. Any contracting party (even if it is not bound by the Berne Convention) must comply with the substantive provisions of the 1971 Paris Act of the Berne Convention for the protection of literary and artistic Works. Furthermore, the WCT mentions two subject matters to be protected by copyright: (i) Computer programs, whatever the mode or form of their expression; and (ii) Compilations of data or other material (databases), in any form, which, because of the selection or arrangement of their contents, constitute intellectual creations. As to the rights granted to authors, apart from the rights recognized by the Berne Convention. The Treaty also grants: (i) The right of distribution (right to authorize the making available to the public of the original and copies of work through sale or other transfer of ownership); (ii) The right of rental (right to authorize commercial rental to the public of the original and copies of three kinds of works such as computer programs, cinematographic works, works embodied in phonograms as determined in the national law of contracting parties); and (iii) A broader right of communication to the public (right to authorize any communication to the public, by wire or wireless means, including "the making available to the public of works in a way that the members of the public may access the work from a place and at a time individually chosen by them"). As to limitations and exceptions, Article 10 of the WCT incorporates the so-called "three-step" test to determine limitations and exceptions, as provided for in Article 9(2) of the Berne Convention, extending its application to all rights. As to duration, the term of protection must be at least 50 years for any kind of work.

The Treaty establishes an Assembly of the contracting parties whose main task is to address matters concerning the maintenance and development of the Treaty. It entrusts to the Secretariat of WIPO the administrative tasks concerning the Treaty. The Treaty was concluded in 1996 and entered into force in 2002. The Treaty is open to state members of WIPO and the European community. The Assembly constituted by the Treaty may decide to admit other IGOs to become parties to the Treaty. Instruments of ratification or accession must be deposited with the Director General of WIPO.

UPOV Convention

The International Union for the Protection of New Varieties of Plants (UPOV) was established by the International Convention for the Protection of New Varieties of Plants (UPOV Convention). The UPOV Convention was adopted on December 2, 1961, by a diplomatic conference held in Paris. The UPOV Convention came into force on August 10, 1968, having been ratified by the United Kingdom, the Netherlands and Germany. The UPOV Convention often referred to as the "1991 Act" has been revised on November 10, 1972, on October 23, 1978, and on March 19, 1991, to reflect technological developments in plant breeding and experience acquired with the application of the UPOV Convention. States and certain IGOs wanting to accede to the UPOV Convention have laws on plant variety protection in line with the 1991 Act of the Convention. Plant Varieties Protection Act 2019 of Bangladesh relies largely on the model provided under the UPOV.

Extending IP protection to plant varieties is controversial in the context of a developing and agriculture-based economy like Bangladesh. The issue raises a seemingly growing concern that there is a need to ensure a proper balance between the proprietary rights of breeders and the rights of farmers who make their living from agricultural production. Although the economy is rapidly becoming more industrialized, agriculture still employs a sizable section of the people in Bangladesh. Agricultural workers account for around 38% of the country's labour force (ILO, 2021). Food security is also a major concern for the country's population. Bangladesh ranks 84th out of 113 countries in the Global Food Security Index (GFSI) 2021 and the last among South Asian countries²³. Due to being a signatory of UPOV, farmers will be under pressure as their rights will be hampered. Therefore, a major recommendation should be to establish the rights of the farmers to breed their seeds and share them with the community. The country can enact separate law to give protection to its farmers, as per the provision of UPOV.

Given the socioeconomic situations of farmers and the widespread lack of knowledge about the need for registration, it is doubtful that farmers will receive the protection to which they are entitled. As a result, requiring farmers and commercial breeders to apply for registration on an equal basis is likely to bring more harm than good to farmers. Farmers are permitted to reproduce and sell seeds for non-commercial reasons under Section 23(2) of the 2019 Act. This is consistent with the larger concept of IPRs and the plant variety protection regime, as well as the breeders' right exception under UPOV 1991 Article 15. However, when foreign firms choose to broaden their IP rights regime through a broader definition of "commercial marketing", this opens the door to potential restrictions on traditional and informal seed trade within agricultural communities. The 2019 Act's implications for farmers' rights are unclear. It is required to establish a well-equipped plant variety protection authority, perform appropriate research to determine the particular requirements for farmers, and apply the legislation properly.²⁴

WIPO-WTO Agreement

The World Trade Organisation (WTO) is an organisation that aims to monitor and ease international trade. On January 1, 1995, the organisation officially began under the

²³<https://impact.economist.com/sustainability/project/food-security-index/Index>

²⁴<https://www.thedailystar.net/law-our-rights/news/farmers-rights-under-the-plant-varieties-protection-act-2019-3055126>

Marrakech Agreement, replacing the General Agreement on Tariffs and Trade (GATT), which started in 1948. Currently, there are 164 members at the WTO, representing more than 98% of the total world trade. Although the sole purpose of the WTO is to marshal international trade it has an important role in the international protection of IP. On 15 April 1994, TRIPS Agreement commenced in Marrakesh, Morocco to protect a broad spectrum of IP.

To facilitate the implementation of the TRIPS Agreement, the Council for TRIPS concluded an Agreement with WIPO on cooperation between WIPO and the WTO, which came into force on 1 January 1996. WIPO and WTO had been undertaken to maintain a mutually concerned relationship between them by undertaking appropriate arrangements for coordination between them to facilitate the promotion and protection of IP. As explicitly set out in the Preamble to the TRIPS Agreement, the WTO desires a mutually supportive relationship with WIPO. The Agreement provides cooperation in three main areas, namely notification of, access to and translation of national laws and regulations; implementation of procedures for the protection of national emblems; and technical cooperation. WIPO and WTO desired to establish a mutually supportive relationship between them, to establish appropriate arrangements for cooperation between them. The International Bureau shall, on request, furnish to WTO members and nationals of WTO members copies of laws and regulations, and copies of translations thereof, that exist in its collection, on the same terms as apply to the member states of WIPO and nationals of the member states of WIPO, respectively. WTO members and nationals of WTO members shall have access, on the same terms as apply to the member states of WIPO and nationals of the member States of WIPO, respectively, to any computerized database of the International Bureau containing laws and regulations. The WTO Secretariat shall have access, free of any charge by WIPO, to any such database. Where, on the date of its initial notification of a law or regulation under Article 63.2 of the TRIPS Agreement, a WTO Member has already communicated that law or regulation, or a translation thereof, to the International Bureau and that WTO member has sent it to the WTO Secretariat a statement to that effect, and that law, regulation or translation exists in the collection of the International Bureau, the International Bureau shall, on request of the WTO Secretariat, give, free of charge, a copy of the said law, regulation or translation to the WTO Secretariat. The International Bureau shall, on request, furnish to the WTO Secretariat on the same terms as apply to Member States of WIPO any additional copies of the laws, regulations and translations given under subparagraph (a) or (b), as well as copies of any other laws and regulations, and copies of translations thereof, which exist in the collection of the International Bureau. The International Bureau shall not put any restriction on the use that the WTO Secretariat may make of the copies of laws, regulations and translations transmitted. The WTO Secretariat shall transmit to the International Bureau, free of charge, a copy of the laws and regulations received by the WTO Secretariat from WTO members under Article 63.2 of the TRIPS Agreement in the language or languages and in the form or forms in which they were received, and the International Bureau shall place such copies in its collection. The WTO Secretariat shall not put any restriction on the further use that the International Bureau may make of the copies of the laws and regulations transmitted under subparagraph (a). The International Bureau shall make available to developing country WTO members which are not member states of WIPO the same assistance for translation of laws and regulations for Article 63.2 of the TRIPS Agreement as it makes available to members of WIPO which are developing countries.

3. The National Innovation and Intellectual Property Policy 2018 and relevance to SHE trade

3.1 Gender inequality in innovation

For a long time, the contributions of female innovators and designers have benefited countries all over the world. Female innovators and creators have revolutionized the world through the strength of their ideas from the beginning of time. However, facts show that fewer women than men use the IP system, and this gender gap persists for a variety of reasons, the most important of which is that gender equality is a basic right.

Bangladeshi women are not lagging in terms of innovation. Their presence is visible in laboratories, businesses, small and medium enterprises, weaving, manufacturing, fashion design, sculpture, dance, music, art, films, and in other literary and artistic works, as well as in TK and cultural expressions, folklores, etc. However, their unique contributions have not been adequately recognised in Bangladesh.

3.2 Gender gap in the IP field²⁵

Although women traditionally have less significance in the IP sector, which was once viewed as a "male" endeavour, this has sometimes been due to misconception more than actuality. Furthermore, in recent years, women have made considerable progress toward reaching equality, both in terms of opportunities and recognition, in the IP area, as in every other facet of human effort. The rising number of women in high-level roles in IP administrations, in both the public and commercial sectors, and at the national, regional, and worldwide levels, is one highly obvious evidence of progress. This trend is evident in the increasing number of female representatives who attend WIPO meetings and other events, as well as the large proportion of women who benefit from WIPO training and other educational initiatives.

Women have increasingly been known for making significant contributions to the visual and performing arts, music, and literature, as well as to the preservation of TK across the world, even if they have not always received the recognition they deserved. Their contributions must be acknowledged and preserved as appropriate. Women equally deserve the ability to use IP as an instrument for economic and social advancement, therefore, equitable benefit sharing must be ensured.

3.3 Women with IP in Bangladesh²⁶

Women make significant contributions to IP in Bangladesh, particularly in TK-based products. Bangladeshi women are entrepreneurs in several industries, including fashion design (Bibi Russel), fashion houses and boutique stores, and social media-based e-commerce. All of their creations can be protected by IPRs, including design, trademark, and copyright. Women are

²⁵https://dpdt.portal.gov.bd/sites/default/files/files/dpdt.portal.gov.bd/notices/ae07f046_c5ad_497b_9ef8_d60ce413f76c/IP%20Policy.MKU.pdf

²⁶<https://www.thedailystar.net/opinion/perspective/how-bangladeshi-women-can-power-change-through-innovation-1567639>

increasingly taking on leadership roles in business. **Trademarks** can protect the value of their reputation and goodwill. **Trade secrets** can also safeguard the distinctive qualities of their enterprises and business strategies (for example, the success plan of Sonia Bashir Kabir, CEO of Microsoft Bangladesh). Similarly, in addition to patents, Bangladeshi women's creativity in food recipes (for example, Siddika Kabir) can be protected under the trade secret regime. Bangladeshi women have also advanced in science and technology. Professor Haseena Khan, who is well-known for her work in jute genome decoding, is one such lady. Then there is Professor Zeba Islam Seraj, who is well-known for her work on producing salt-tolerant rice types ideal for growing in Bangladesh's coastal districts. **Patents** can be used to protect their contributions. This, however, is not without complications- patent ownership, due to the lack of contracts/ mandatory legal arrangements for shared ownership, the appointing institution might claim patents as payment for the innovator's efforts. Many female singers (for example, Runa Laila) have earned a reputation for themselves in the music industry. Their contributions are entitled to **copyright** and royalties. However, there is a royalty issue in the absence of CMOs or contracts/ mandatory legislative clauses. For example, when a vocalist receives a lump sum payment for covering a certain song, she is normally denied all additional advantages for continued usage of the music, such as ringtones or resale. Bangladeshi women have made significant advances in literature. Selina Hossain and Tahmima Anam are well-known across the world for their contributions to literature. Their writings are copyrighted, and they continue to get paid for their creative endeavours. A comprehensive list of all women entrepreneurs with IP is needed.

In a free-market economy, the resourcefulness of Bangladeshi women in manufacturing a variety of handicrafts has attracted significant recognition. Businesses such as BRAC Aarong are using them commercially within the fair-trade system. Women who weave Nakshikantha, for example, might get their products registered under the **geographical indication (GI)** system. Due to their relationship with the environment and community, women have historically played a vital role in carrying culture and TK. However, the era of the free market has created additional problems for women's TK, since the specific demand for women's TK-based items in the global market leads to their misuse. To prevent such misuse of TK-based products, recognizing and rewarding women's TK as IPR is a viable solution for the economic incentives of TK-based niche products while simultaneously assuring more freedom for women (Islam & Habib, 2016). Women are the ones who know how to make ghee from cow milk. The **traditional knowledge (TK)** regime can safeguard this. Women in coastal communities use TK to dry fish, shrimp, and other fisheries goods that are sold both domestically and internationally. Women can also profit from **traditional cultural expressions (TCE)** such as Bhatiali, Baul, Marfati, Murshidi, and so on. Women's contributions in other areas, such as SMEs, ceramics, handicrafts, and the food industry, can also be recognized and protected by IPRs. Therefore, women's IPs can be protected by patents, trademarks, trade secrets, copyrights, designs, GIs, and other IP systems.

3.4 Addressing SHE trade in National Innovation and Intellectual Property Policy 2018

The National Innovation and Intellectual Property Policy 2018 of Bangladesh is considered to be free from gender bias. Neither any discriminatory provisions are included nor any women-friendly ones. To enhance the participation of women inventors and designers, the social

stigma, cultural barriers, and community barriers must be eliminated. A separate provision should be added in the National Innovation and Intellectual Property Policy 2018 to mainstream women in the field of IP.

4. Findings from KIIs and FGDs

The finding from the secondary analysis is mentioned in section 2.6, while this chapter is fully analysed the data and information gathered from the KIIs, FGD and public consultation. The information from the primary sources has been cross-matched with various stakeholders and taken suggestions from the expert for thoroughly presenting the finding.

4.1 Insufficient activities for promoting innovation

Promoting and encouraging innovation and the creation of new ideas is one of the Policy's primary goals. Giving suitable education and placing a priority on R&D are required for such promotion and encouragement. The qualitative statistics indicate that there is a shortage of progression to innovate in every area, from industries to academics. Insufficient funding from the public and private sectors makes it even harder to conduct R&D. For instance, while Bangladesh is one of the top exporters of pharmaceutical products to developing countries, the profit made by the country's pharmaceutical companies is not used to create brand-new or original medicine. Bangladesh favours replicating western medicines using inexpensive ingredients to make them more accessible for importing nations. However, a typical global pharmaceutical firm invests its profit in developing new medicines, which leads them to access the monopoly power for a range of medicines and helps the business grow. In Bangladesh, there is no such inducement to create innovation according to this way.

4.2 Weak registration and enforcement procedure

Between the Policy's guidelines and its actual application, there is a gap. The National Innovation and Intellectual Property Policy 2018 recommends a strict enforcement process for both protection (registration) and enforcing laws when violations occur. At the designated authority, the registration process for IP is complicated and time-consuming. Taking the registration process for trademarks as an example, it typically takes between 24 and 36 months to complete. Foreign and domestic investors are discouraged from entering the market due to this lengthy registration process. In Bangladesh, stealing IP is also still not morally wrong. Due to the absence of an enforcement process when an infringement occurs, people tend to believe that copying anything is morally permissible. The qualitative data suggest that the entity responsible for registration and enforcement is ill-equipped to carry out the Policy in practice.

Counterfeiting and piracy happen in the country. Such item selling in the market is a serious violation of IP rights. Though sometimes people use IPR-violated items not just because they are willing to use them, but also because they are cheaper than the originals. Due to high pricing, many cannot afford to buy items at their actual prices. Thus, the law has been somewhat relaxed in case of IP violations. However, in the case of handling infringement cases, the IP rights holders face serious trouble, according to the qualitative data responses.

Such trouble occurs due to the lengthy procedure and lack of judicial weak infrastructure. Taking prompt action in the case of a violation is rare under the Acts. A special tribunal is yet to be established even though there was a strategy to establish a tribunal in the National Innovation and Intellectual Property Policy 2018. Courts treat IP infringement cases in the same way they do in other cases. To emphasize paying special attention to the preservation of IPRs, there is a need for a special tribunal that can solely deal with the cases involving IP rights.

4.3 Too far from the implementation plan

The Policy was formulated to carry out the plan on a two-way basis. The Policy will **first** be put into effect over 10 years beginning on the day it was approved. The time-bound action plan is meant to be put into action while with the assistance of the designated ministries, divisions, and agencies, who will carry out the tasks that have been delegated to them in accordance with the Policy's strategy and goal. The time frame of implementation is targeted in the medium to long run. According to the qualitative data, the Policy has 22 time-bound action plans, the majority of which are not implemented, some of which are partially implemented, and some of which have not yet begun. The majority of action plans have a 2023 completion date, while qualitative data indicate that many of them are currently in the initial implementation phase. Such delays in completing the time-bound action plan impede the intended outcome that was sought while creating the Policy in 2018.

4.4 Sluggishness of the institutional arrangement

The institutional arrangement is the **second way** for implementing the National Innovation and Intellectual Property Policy 2018. A National and Sectoral Council on Innovation and Intellectual Property (NSCIIP) must be established under the leadership of the Minister of MoI to place more emphasis on the implementation of the Policy. The Policy includes a list of the members who will make up the Council. This Council's duty is to decide how to implement the Policy in a manner that is consistent with national and sectoral development policies. There is a sluggishness in the Council's activities in execution, nevertheless. Although the Policy states that the Council would monitor the Policy's periodic assessment and meet at least twice a year. However, the qualitative data indicates that neither a periodic review nor a meeting of the Council has been reported yet. The evaluation and assessment of the Policy have not been done effectively because meetings have not been held regularly. As a result, the Policy objective and various goals established to address identified Policy challenges are not met.

4.5 Fall short of establishing an IP institute as stated in the Policy

The Policy emphasizes the creation of multiple institutes to execute the Policy, under the supervision of a single central institute. India has established the "Rajiv Gandhi National Institute of Intellectual Property Management" (RGNIIIPM) as a central institution to promote research activities, offer training to government officials and users of the IP system, including universities and other educational institutions, and suggest appropriate policy suggestions. However, Bangladesh has not yet established a central institute. The "Sheikh Russel

Institution of Intellectual Property" is planned to be established, but it has not yet been put into effect. Recently, it got the trustee board's permission. Additionally, many of the institutions that are planned to be established, such as Technology Transfer Organizations (TTOs), Technology and Innovation Support Centres (TISCs), and Research & Innovation Wings, have not yet been established and may not operate at full capacity. Therefore, the absence of a central institute and other required institutes prevents the integration of IP-related issues and limits the implementation of the Policy. Although the National Innovation and Intellectual Property action plan encourage the establishment of the training centre, the establishment is hardly ever witnessed in the country.

4.6 Lack of innovation funding and R&D

It requires time and money to innovate and create new ideas. Developed nations place a high priority on R&D and allocate a specific sum of money as a fund for properly financing innovation and promoting ideas. The establishment of a National Innovation Fund (NIF) is envisaged in the National Innovation and Intellectual Property Policy 2018 in Bangladesh for the promotion, protection, preservation, and commercialization of innovation and creativity. Moreover, the Policy is designed to prioritize the establishment of a fund at both the industrial and academic institute levels. However, there is no such funding available at the industrial level, and academic institutions only allocated a little amount of money for R&D in their annual budget. Though there is some financing available for innovation through the Access to Information (a2i) Innovation Fund, it is not integrated with the NIF, and there is no central funding structure that focuses only on funding innovation and IP protection. Additionally, businesses just copy the novel ideas created by the developed nations rather than reinvesting a portion of their profits in innovation and R&D. The qualitative results indicate that such a lack of demotivation to maintain funding for creativity may eventually obstruct the nation's route of growth.

Bangladesh has more than 60 R&D institutions and supporting facilities administered by research councils, development agencies, government departments, non-governmental organizations, and educational institutions. However, coordination among them is inadequate. Often no specific targets are set, no monitoring and control measures exist, and not enough consideration is given to the development of innovative marketable products from these endeavours, as reported by the Chamber of Commerce.

4.7 No integrated database

Each IP office keeps records of the works they have registered as IP and other IP-related activities. However, the IP requires to have an integrated system to facilitate the services among the IP holders. The information-sharing often among the IP office is required when IP registration and enforcement procedure is carried out. The National Innovation and Intellectual Property Policy 2018 has a strategy to encourage and support access and use of the digital information database of all IP-related issues from WIPO and other international organizations. Although their own data set is available at each office, the qualitative replies indicate that business firms are unlikely to use them. Thus, the qualitative data suggest that all data sets be combined into a single, integrated data management system to promote and facilitate the IP's services.

4.8 Need for integrated IP office

Since the Copyright Office falls under the MoCA and DPDT is under the MoI, there is no office in a place that would combine the two IP offices. The Policy planned to establish Bangladesh Intellectual Property Organization (BIPO), bringing all IP-related offices under one umbrella organization. Given the fact that too much time has passed, the procedure is still going. The qualitative findings indicate that integrating all IP offices into a single National IP office would improve IP services. For integrating two IP offices, steps were taken but it will take time to implement. However, data sharing is already happening between the two IP offices, according to MoI officials.

4.9 Lack of resources inside the administrative authority

The study analyses the present condition of administrative authority (DPDT and Copyright Office) based on qualitative comments. The inquiry found that there is not enough staff or adequate equipment to facilitate patent, trademark and copyright registration by the designated office or department. The data also shows that, among the IP registration departments, the DPDT is the busiest department. According to the respondents, the trademarks wing only has 6 examiners, which is less than half of the required 12 examiners. Additionally, there is less incentive for the examiner and registrar to work in the departments for a long period. This descriptive study also found that it is difficult for someone to receive the necessary training and education to deal with IP when there are no incentives to stay in the department for a long period.

A team of Assistant Registrar(s), Examiners, and Staff is formed under the leadership of each Registrar. The general rule is Public Service Commission (PSC) will employ the Examiners at the initial level in the department and gradually those Examiners will be promoted to higher-ranked posts and consequently one of them will occupy the post of the Registrar. But at present, the head of the department and other senior employees are appointed by the Ministry of Public Administration.

DPDT office is about to sign an MoU with WIPO for full automation. For capacity building in innovation, DPDT is going to have an MoU with Japan Patent Office too. DPDT and copyright office's organogram will be updated and it is currently under process, according to their officials.

4.10 Lack of coordination among the ministries

To carry out the strategy created in 2018, a time-bound action plan and national Council made up of representatives from several ministries and private businesses were put into place. The National Innovation and Intellectual Property Policy 2018 is being implemented on a large scale, making it impossible for the MoI to implement the programs alone. For this, the various ministries and departments must coordinate. IP has a connection to agriculture, industry, culture, and education. Therefore, industry coordination is required to promote, protect, and commercialize IP. However, the qualitative findings reveal that there is a lack of coordination

and adequate complementarity in the IP-related tasks among the ministries. The qualitative data indicate that completing the specified task on a complimentary basis is necessary for comprehensive IP Policy implementation. One department's unwillingness to carry out the duty specified in the Policy may put another department in a backward position in implementing the National Innovation and Intellectual Property Policy 2018 comprehensively.

4.11 No provision for women

Chapter 5 of the Policy establishes the guidelines for the composition of the National Council on Innovation and IP. The Council include representatives from MoI, MoC, NBR, MoFA, MoCA, MoST, BTTC, ICT Division, DPDT, Copyright Office, BUET, BCSIR, DU, BAEC, BARC, BCC, BASIS, FBCCI, IPAB etc. However, no provision is made for the involvement of women in the Council. This clause contradicts the government's tremendous efforts to ensure women's participation in all fields. Such provision for women is critical to achieving the 2030 SDG of gender equality and reducing inequities. We need to recognise the intellectual contribution of women and use it as a means to develop. These measures should be reflected in the Policy itself.

5. Recommendations/ Action plan/ Way forward

In this chapter, the study includes the recommendations gathered from the primary and secondary analysis and discussion of the relevant stakeholders. The general recommendation is provided in the first section, and the second section discusses the relevant extension/inclusion, exclusion or alteration needed in the current National Innovation and Intellectual Property Policy, which is presented using a matrix.

5.1 Revisit the action plan interrupted due the COVID-19

The Policy was adopted for implementation in 2018, and a time-bound action plan was adopted for the following 10 years (through 2018-28), with many of the plans' execution deadlines set for 2021 or 2023. The implementation of the time-bound action plan, however, has been halted and is still delayed because of the global COVID-19 pandemic. The time-bound action plan for 2018–2021 is hardly ever put into practice because of COVID-19. However, each action plan is urgently required and needs to be put into implementation to integrate IP with the growth of the economy. The qualitative respondents recommended revisiting the time-bound action plan, evaluating how the plan will be implemented, and prioritizing the plan by extending the time range.

5.2 Capacity building program and initiatives

Government, business, academia, and international trade are all interconnected with IP. Each industry, especially the one tied to IP, needs to increase its capability. For instance, the customs office is aware of the import and export clearance process and tax receiving process. As a rule, customs officers are unable to seize products because they lack adequate knowledge of trademarks or other relevant information in the case of the trade of pirated or counterfeit goods. They do not have much to do with the matter of whether the goods are

real or pirated. In terms of dealing with IP registration and protection, the administration authority staff members' IP education needs to be increased. A training program to learn about IP-related activities may be initiated for this under the direction of the WIPO. Particularly, Examiners must be trained regularly under WIPO supervision and support. Furthermore, the DPDT must recruit adequate manpower as a requisite of its activities. Overall, capacity building for IP agencies like Judiciary, NBR, Police and others needs to be ensured to deal with IP issues efficiently. For example, all these relevant IP agencies need to work together to keep the national priorities of IP protection upheld. For these, a proper coordination among them is needed. Each agency can create their own capacity building mechanism of IP and also find a best way together to function as a whole to create a IP environment in the country. Customs will take care of the cross-border issues of IPs, NBR will facilitate the domestic IP holders, Judiciary will manage the legal issues of IP raised in the court, Police can operate mobile courts to maintain quality and originality of IPs. In this way, Government can foster IP and innovation in every possible way. Capacity building of all the stakeholders is a must to achieve this goal.

5.3 Implementing awareness programs: IP promotion and protection

People in general hardly understand IP. The greatest benefit of IP protection, according to the general public, is that it protects the rights of creative people. On the other side, the main disadvantage is that it causes consumers to pay more for original items. The average person, however, is not aware of how innovation and promotion of IP may provide value to businesses and enterprises. Due to a lack of IP knowledge, the industry does not continue to support R&D to develop new products and items. Therefore, it is necessary to implement an awareness program that involves students, government officials, researchers, think tanks, and scientists to raise general public awareness of IP and to prioritize allocating resources to innovation and the creation of new ideas. Probable gains of becoming aware of IP and the targets of SDGs to be achieved through IPRs should be emphasized while designing awareness-raising programs.

Moreover, the issue of the awareness program is wide, and DPDT and the copyright office cannot ensure the awareness solely. Given that there are two issues with IP—one is registration, the other is FTAs—the MoC can be of support in the second case. MoC might be a part of the IP-related FTAs awareness effort, and the BTTC could help in this situation too. Since developing countries have historically been hesitant to tighten IP protection, both in line with the obligations of WTO and in FTAs, the awareness program for IP protection, especially for FTA obligations, is very important. Otherwise, it will be difficult for Bangladesh to negotiate with the developed countries if the awareness program is not ensured at the relevant stockholders' level, the qualitative data suggest.

5.4 Commercialization and valuation of IP for IP based industrialization

The Policy showed a detailed plan to protect, innovate and promote the IP. However, there is an absence of a well-designed strategy for the commercialization of the IP. Moreover, the innovation sector of Bangladesh is not comparable to Japan or America, the country doesn't have that many funds or research labs and tools. However, there still is some level of innovation happening frequently that we read in newspapers although these innovations do

not get recognized under the IP system because of the sophistication of the IP regime. If we can commercialize these sorts of innovations, innovation will rise. For the commercialization of the IPs, regular valuation of the IPs is required and the use of the IP as an asset should be promoted for bank financing and financial collateral. SMEs and Rural entrepreneurs must be exposed to IPR-related issues and its prospect and potential should be recognized through public and private institutions on regular basis. Institutions promoting innovation must work on innovation mapping in their areas of activities; identify, locate and pick up prospective innovators from SME and rural entrepreneurs; and support them with financial and technical assistance. Proposed innovation support strategies are: to encourage and facilitate creation and innovation; protect creation and innovation; commercialize creation and innovation, and establish a linkage between domestic innovation and the market.

5.5 Developing educational curriculum for IP

The Policy addressed training and education, but it made no mention of how to create a specific learning program for IP that can be studied from a multidisciplinary perspective. This is significant since the effectiveness of Policy greatly depends on a well-designed academic curriculum. Other than law schools, none of the stakeholders receives a structured curriculum that would provide them with the knowledge required for policy implementation. A pharmacist, chemist, business student, architect, or computer software engineer's IP-related curriculum, for instance, is not well developed yet. As a result, a curriculum must be created, and a certified course or diploma program can be designed for the multidisciplinary background. IPR curriculum should be introduced from the secondary level, according to the private sector.

5.6 Coordination among the Ministries

The recommendation for coordination across the Ministries is a crucial element in putting the Policy into action. The IP is integrated into multiple industries and is not specific to any one of them. The stakeholders of these range from businesses to academia, from individual researchers to scientists, and they are all integrated within many Ministries. Therefore, coordination between the Ministries is essential, especially for the development of IP and the implementation of IP protection.

5.7 Special arrangement of IP for women

Around the world, women are lagging behind men in developing and creating new ideas and innovations as well as initiating new businesses. The enrolment of women in the STEM fields (Science, Technology, Engineering and Mathematics) is lower compared to that of men, as a result, the patent application for women is very negligent around the world. Moreover, in the framework of Bangladesh's socio-economic system, female entrepreneurship and brand creation are still not appreciated. Women must therefore need special consideration in all policies. For this, women have been given special attention in the 2019 SME Policy. The National Innovation and Intellectual Property Policy 2018 is required to develop a unique strategic plan for women so that they can receive special treatment, such as an implementation strategy to enrol women in the STEM fields, managing funding for them to

support research and start new businesses, and promoting female innovation and entrepreneurs through awards and scholarships.

5.8 Copyright law to provide exemptions

To maintain an appropriate balance between the interests of right holders and users of protected works, copyright laws allow certain limitations on economic rights, that is, cases in which protected works may be used without the authorization of the right holder and with or without payment of compensation. Limitations and exceptions considered in the agenda of the WIPO Standing Committee for Copyright and Related Rights (SCCR)²⁷ focused mainly on educational activities, libraries and archives and disabled persons, particularly visually impaired persons. According to the private sector, Copyright Act should also specify the exceptions for the benefit of educational activities, teaching, and research.

Countries adopting such “Limitations and exceptions” are, among others, Australia, Brunei, Cambodia, Cook Islands, India, Indonesia, Iran, Japan, New Zealand, Pakistan, Singapore, and the Solomon Islands. Others have implemented statutory, voluntary or compulsory licensing arrangements to enable the use of multiple reproductions of works in educational institutions. Bangladesh Copyright Act should prefer the option of registration to ensure IP rights.

5.9 Integrated National IP Office and database

The organizational capacity and efficiency of the concerned IPR administrative agencies should be strengthened and upgraded qualitatively and quantitatively with IPR-trained permanent and specialised manpower along with befitting infrastructure so that they can function with incremental efficiency and institutional memory. Technical, procedural and management shortcomings should be identified and resolved to ensure completion of IPR registration within the gradually shortened possible time from the date of filing the application. Fragmented IP offices make it difficult for the overall regulatory function. The government and private sector suggested one unified regulatory authority or administrative body work as a National IP Office dealing with the registration and protection of all kinds of IPRs. The integration will also facilitate all data sets to be combined into a single, integrated data management system to promote and facilitate the IP's services.

5.10 Reform and automation of DPDT

Officials from DPDT were hesitant to automate the manual procedures already in place although they were eager to automate these operations²⁸. IFC made evident the structural limits resulting from a lack of human resources with the necessary skill set and a lackluster infrastructure, including LAN, software, power backup, etc. Despite these restrictions, the department was keen to automate its procedures in order to match its overall strategy with

²⁷<https://www.wipo.int/policy/en/sccr/>

²⁸<https://documents1.worldbank.org/curated/en/402981468206339709/pdf/939720BRI0IFC00mat0Ali000Bangladesh.pdf>

the government's goal of developing a "Digital Bangladesh". This transition needs to speed up to meet the current need, according to the industry insiders.

5.11 International registration systems

Global IPR protection systems can facilitate global IPR registration of Bangladeshi IPs by filing a single application in Bangladesh with only 10% of fees and enhance its value-added global trade without having to undertake any additional international obligations other than what it has already undertaken. Three such international registration systems are 1) Madrid Agreement on Trademarks; 2) The Hague Agreement on Industrial Designs; 3) The Patent Cooperation Treaty (PCT). Sri Lanka, Vietnam and 30 LDCs are already parties to PCT. Sri Lanka, Vietnam and 12 LDCs including Bhutan are already parties to Madrid Agreement on Trademarks. Sri Lanka, Vietnam and 4 LDCs are already parties to Hague Agreement on Industrial Designs. Agro & food products, articles of apparel and clothing, home textiles, leather products, footwear, pharmaceutical products, plastic and plastic goods, ceramics and table wear, electric & electronic goods, fish and frozen fish, furniture, jute products, jewellery, IT and software are among the most promising and priority products of Bangladesh for global IPR registration. Other benefits of a single application for international registration are: saving time and money and relief national IP offices in terms of workload.

There should be a detailed study with the concerned Ministries on the place of reservation for these international registration systems. Bangladesh, for as long as it remains LDC, has the option not to provide patent protection for pharmaceutical and agricultural chemical products irrespective of whether it is a party or not to the WIPO International IPR Registration Systems like PCT, Madrid or Hague Agreements. However, a country-specific cost-benefit analysis should be done to see what Bangladesh needs to do if it wants to comply with PCT, Hague agreement, and Madrid protocol.

5.12 Ensuring funds and attracting FDI

The government should allocate sufficient funds in the annual budget for the funding of such initiatives for backing up commercialization support programs and innovation funds for the commercial application of research results and innovation, e.g. Pre-Seed Fund, Innovation Investment Fund, Renewable Energy Equity Fund, Biotechnology Innovation Fund, etc. We need to have Technology Innovation Support Centres in all private and public institutions. Each innovator must be assured that there is a supporting institution and innovation funding for his/her innovative pursuits. Developing countries must recognise that only the changes in IPR laws will not promote FDIs unless there is proper implementation and regulation of the IPRs in a country. Setting up joint ventures in the country's economic zones may attract more FDIs.

5.13 Amendment of patent law

The Patent Act 2022 should be amended in line with the changing scenario for the local pharmaceutical industry after the country's LDC graduation²⁹. It will be amended based on the recommendation from pharmaceutical manufacturers about their reservation on compulsory licenses. Affordability and public health should be taken into consideration while granting a patent under the patent law of Bangladesh. A close collaboration between the concerned government agencies and the private sector is needed in the amendment process. Immediate closure of the mailbox system created back in 2008 for submitting patent applications is ensured recently as the mailbox system has lost its relevance in the present context.

5.14 Modification in the activities of the Council

The activities and responsibilities of the National Council on Innovation and IP should be more specific. The council should review each of the objectives, one by one to show which objectives are left behind and which ones require more work. Sectoral Councils can also be developed under the National Council. The Council is supposed to have a meeting twice a year and a transparency mechanism should be developed for these meetings. The Council may consider producing a report consisting of the update of the meeting and the report should be disseminated among all the stakeholders and published on the website of the relevant organization. These activities should be listed in the Policy as the responsibility of the Council.

This paper identified the loopholes of the National Innovation and Intellectual Property Policy 2018 and the necessity of further alteration, extension, inclusion and exclusion of the current Policy. Table 10 tabulates the key recommendations for the future National Innovation and Intellectual Property Policy in a matrix format.

²⁹<https://www.newagebd.net/article/178091/amend-patent-law-for-smooth-ldc-transition-in-pharma-sector-experts>

Table 10: Recommendations for future National Innovation and Intellectual Property Policy 2018

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion					
Chapter 1: Introduction & Priority	Brief introduction: Protection and promotion of Innovation and Intellectual property (IP) rights is an effective Policy tool for unlocking and fostering creativity as well as innovative potentials in order to attract and stimulate ingenious works.	NA	NA	<ul style="list-style-type: none"> Design the new Policy taking COVID-19 into account and placing emphasis on action plans that were interrupted as a result of COVID-19 	NA					
	Priority of the Policy: This Policy shall remain valid until the new Policy on national innovation and intellectual property is approved by the government. But the time-bound action plan of this Policy will be subject to amendment, modification and change from time to time.	NA	NA	NA	NA					
Chapter 2: Vision, Mission, Objectives	I. Vision: To transform Bangladesh into a knowledge and technology-based innovative country and to use IP as a tool for the social, cultural and economic development of Bangladesh in line with the Visions 2021 and 2041.	NA	NA	<ul style="list-style-type: none"> Internalization of the IP with access to health care, food security and human development 	NA					
	II. Mission: To establish development-oriented pro stakeholders and balanced IP infrastructure in the country and to make IP an integral part of the national development plans and strategy by declaring 2018-2028 as an Innovative Decade.	NA	<ul style="list-style-type: none"> Extend the mission of developing IP for environmental protection 	NA	NA					
	<table border="1"> <tr> <td rowspan="3" style="writing-mode: vertical-rl; transform: rotate(180deg);">III. Objectives</td> <td>a. Develop a clear vision on the part of the government on the promotion and protection of IP issues, such as patent, design, trademark, copyrights, trade secret, geographical indications, layout designs, utility model, plant varieties etc and integrate those issues in relevant policies and strategies.</td> <td rowspan="3">Without specifically mentioning about TRIPS, the Policy can mention that the Policy will try to comply with the</td> <td rowspan="3"> <ul style="list-style-type: none"> Integrated IP with the long-term plan-promoting human capital development and improving the services of the quality of health </td> <td rowspan="3"> <ul style="list-style-type: none"> Create a necessary arrangement to engage women in innovation and women entrepreneurship Promoting the Pharmaceuticals industry to reduce the use of pharmaceutical </td> <td rowspan="3">NA</td> </tr> <tr> <td>b. Encourage and foster creativity and innovation for the generation, management and use of IP assets, by including through a market-based system, for the benefit of economic growth and development.</td> </tr> <tr> <td>c. Recognise and strengthen IP offices and institutes in both public and private sectors, in terms of capacity building, transparency, and services for promotion, protection,</td> </tr> </table>	III. Objectives	a. Develop a clear vision on the part of the government on the promotion and protection of IP issues, such as patent, design, trademark, copyrights, trade secret, geographical indications, layout designs, utility model, plant varieties etc and integrate those issues in relevant policies and strategies.	Without specifically mentioning about TRIPS, the Policy can mention that the Policy will try to comply with the	<ul style="list-style-type: none"> Integrated IP with the long-term plan-promoting human capital development and improving the services of the quality of health 	<ul style="list-style-type: none"> Create a necessary arrangement to engage women in innovation and women entrepreneurship Promoting the Pharmaceuticals industry to reduce the use of pharmaceutical 	NA	b. Encourage and foster creativity and innovation for the generation, management and use of IP assets, by including through a market-based system, for the benefit of economic growth and development.	c. Recognise and strengthen IP offices and institutes in both public and private sectors, in terms of capacity building, transparency, and services for promotion, protection,	
III. Objectives	a. Develop a clear vision on the part of the government on the promotion and protection of IP issues, such as patent, design, trademark, copyrights, trade secret, geographical indications, layout designs, utility model, plant varieties etc and integrate those issues in relevant policies and strategies.		Without specifically mentioning about TRIPS, the Policy can mention that the Policy will try to comply with the					<ul style="list-style-type: none"> Integrated IP with the long-term plan-promoting human capital development and improving the services of the quality of health 	<ul style="list-style-type: none"> Create a necessary arrangement to engage women in innovation and women entrepreneurship Promoting the Pharmaceuticals industry to reduce the use of pharmaceutical 	NA
	b. Encourage and foster creativity and innovation for the generation, management and use of IP assets, by including through a market-based system, for the benefit of economic growth and development.									
	c. Recognise and strengthen IP offices and institutes in both public and private sectors, in terms of capacity building, transparency, and services for promotion, protection,									

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	administration and enforcement of intellectual property rights (IPR)	International rule-based system as much as possible.		ingredients (API) imports rather to innovate own ingredients	
	d. Support implementation of the Innovation related targets of SDGs enriched for fostering innovation for growth and development through foreign investment, technology transfer, and export growth.				
	e. Promote increased awareness, skills and knowledge about IP among the people of the country.				
	f. Establish an appropriate, adequate, pro-stakeholder oriented, balanced and inclusive IP infrastructure in order to make Bangladesh resilient towards Trade-Related Aspects of Intellectual Property Rights (TRIPS), innovation and technology transfer related compliances while it has been graduating as a developing country.				
	g. Integrate all stakeholders e.g.: business chambers, trade bodies, associations, organisations, entrepreneurs, innovators, professional bodies, research and development centres, technology and innovation establishments in an inclusive manner to create an understanding on the importance and benefits in the process of promotion and protection of IP issues for all and development of the country.				
	h. Support generation of revenue through reform and rejuvenation of the IP regime and infrastructures.				
	i. Establish and strengthen appropriate, balanced and meaningful linkages between the national innovation ecosystem and market.				
	j. Build national capacity to facilitate meaningful integration of the national IP system with global IP processes.				
	k. Establish a regime for cooperation and support mechanism among the national IP institutions and the IP offices of partner countries, international organisations, and development partners for skill development, capacity building and required services to the stakeholders.				
	l. Create awareness and promote the interests of professionals, researchers and innovators and facilitate their access to the				

Chapter	Stated provisions in the NIIP Policy 2018		Alteration	Extension	Inclusion	Exclusion
		global database and strategic information wherever available, particularly from WIPO.				
Chapter 3: Policy Guiding Principles	Strategies	a. Promotion of a culture of better understanding of innovation and creativity and use of IP system and commitment, promotion and respect for IPR.	NA	NA	<ul style="list-style-type: none"> Identify and prioritize target inventor and creator groups, develop specialized programs to meet their needs, and provide resources to enable them to create IP assets and use them for their own and social good. Conduct a thorough IP audit or baseline survey in various sectors in collaboration with stakeholders. 	NA
		b. Integration of Innovation and IP Policy 2018 into national development plans and strategies				
		c. Development of stakeholders-friendly, balanced and inclusive administrative, regulatory, and legal IP regime responsive to national aspirations and developmental need and priorities				
		d. Ensuring better access and integration to the IP system to empower all stakeholders to develop, protect, enforce, manage and commercially exploit IPR for the use of economic growth and development.				
		e. Promote within the existing government organisations, the need for institutional and social innovation ensuring the diffusion of innovation and IPR in economic development.				
		f. Establish linkage between IP implementation along with implementation of SDGs and internalizing all elements in the national planning process.				
Chapter 4: Goals and Strategies	Goal 1: Enhance IP awareness and encourage creativity and innovation					
		<p>Strategies</p> <p>a. Undertake a target-based comprehensive Innovation and IP outreach programme for raising awareness about the importance and appreciation of IPRs and benefits, particularly among all relevant stakeholders and the people in general.</p> <p>b. Involve FBCCI, trade bodies, associations, organisations, professional bodies, research and development organisations, inventors forums, innovation hubs, labs, software developers, writers and publishers guilds, professional associations of artists, musicians, composers, film producers, Technology Transfer Organisations (TTO)/Technology and Innovation Support Centres (TISCs) and other relevant stakeholders in government as well as private sectors in IPRs awareness-raising programmes to ensure diffusion of innovation, creativity and entrepreneurial competence and competitiveness</p>	NA	<ul style="list-style-type: none"> Encourage every industry to build research departments and maintain financing for R&D for industrial development. Probable gains of becoming aware of IP and the targets of SDGs to be 	<ul style="list-style-type: none"> Launch an associated campaign on electronic, print and social media, including by linking the campaign with other national initiatives Reaching out to IP creators and holders who are less visible and silent, particularly in rural and distant areas 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>geared towards their own benefits and economic growth and development of the country.</p> <p>c. Introduce Innovation and IP education in all public and private schools, colleges and universities and relevant training institutions, Promote IPR education and knowledge through National Curriculum Textbook Board as part of the national education Policy.</p> <p>d. Activate the TISCs (Technology and Innovation Support Centres established (one with Ministry of Industries and other with DCCI) with the support of WIPO for creating awareness and understanding of the importance of promotion, development, commercialization and protection of innovation and creativity for economic development.</p> <p>e. Take full advantage of the WIPO data base of strategic information useful for the inventors, researchers and professionals of all streams without least financial involvement.</p> <p>f. Prepare effective communication materials based on existing IP laws/instruments for IP advocacy for facilitating and disseminating information about IP.</p> <p>g. Encourage establishment of more TISCs, TTOs, R&D centres in the private sector as well as innovative centres at all government and private educational institutions.</p> <p>h. Promote IP knowledge among all press and electronic media for IP awareness and through them to wider communities across the country.</p> <p>i. Encourage preparation of IP promotional materials in Bangla and distribute those to the relevant stakeholders, organisations/institutions.</p> <p>j. Enhance IP awareness and create IP outreach programmes and promote recognition of IP as a tool for inclusive economic growth.</p>		<p>achieved through IPRs should be emphasized while designing awareness-raising programs.</p>	<ul style="list-style-type: none"> Including case studies of the successful use of IPRs in campaigns and encouraging multinational corporations and other large corporations to create IP programs for their staff member 	
	<p>Goal 2: Modernize IPR administration</p> <p style="text-align: center;">Strategies</p> <p>a. Develop and strengthen through an appropriate and effective reforms, reorganizations, skill development, capacity building, and support mechanism for human resources of IP offices ((Department of Patent, Design and Trade Marks-DPDT and Bangladesh Copyright</p>	NA	<ul style="list-style-type: none"> Set up multiple IP offices across the country Increase manpower and skilled labour 	<ul style="list-style-type: none"> Establish a central IP office bringing all IP offices under one umbrella Data exchange between the IP office 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>Office) involved in the promotion, protection, commercialization, IP valuation and enforcement of IPRs.</p> <p>b. Improve efficiency and transparency, accountability and services of the existing IP offices (for DPDT and Bangladesh Copyright Office) through automation and e-service of the existing IP offices.</p> <p>c. Establish National Institute of Intellectual Property (NIIP) to create a platform for permanent flow of IP professionals from all relevant streams, including educated youths, legal professionals, government officials and executives of the private sectors for exchange of IPR related knowledge and skills, research and studies and thus strengthen the overall IP administration and services. Establishment of regional Institutes of Intellectual property (RIIP) can also be considered at appropriate time and locations.</p> <p>d. Initiate and strengthen partnerships with relevant public and private sectors/bodies locally as well as with regional and international organizations and promote the use of IP as a tool for promoting innovation and creativity.</p>			<p>and the development of a single database system</p> <ul style="list-style-type: none"> • Augment manpower, initiate capacity building program, Modernize further the physical and ICT infrastructure 	
	<p>Goal 3: Create IP and derive economic and commercial benefits.</p> <p style="text-align: center;">Strategies</p> <p>a. Strengthen the institutional framework and major entities involved in the creation, protection, commercialization and valuation of IP;</p> <p>b. Promote IP education through educational institutions, such as colleges, universities, and other public and private R&D and innovation centers/labs;</p> <p>c. (c) Facilitate college, institute and university-industry linkages towards innovation and its commercialization;</p> <p>d. Aware, encourage and support access to and use of international technical scientific strategic and digital information databases of all IP related issues including patent, design, copy rights, trademarks, innovation research findings, scientific development, environment, IP commercialization etc. from WIPO and other international organizations and institutions for building capacity and knowledge base for the purposes of innovations and creativity;</p> <p>e. Promote and facilitate the establishment, development and strengthening of TISC, TTOs, innovation hubs, labs in the country,</p>	NA	<ul style="list-style-type: none"> • Encourage entrepreneurs, MSMEs, and start-ups to acquire and exploit IPRs abroad • Develop an appropriate methodology for the valuation of IP • Providing financial assistance to less power IP owner or creator 	<ul style="list-style-type: none"> • Mechanism to connect the academic institution and innovators- this would be by synergizing the actives of IP facilitation centres with the industry, especially industrial clusters • Creating a public platform to function as a common database of IPRs. This platform can help 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>particularly through colleges, universities, research and development organizations, professional association/bodies, chambers of commerce and industries and industry-based R&D facilities;</p> <p>f. Design and implement national programs for the promotion of innovation culture with young people and women; through IP offices and all educational institutions, R&D establishments, innovation hubs, labs and centers, both in government and private sectors;</p> <p>g. Support start-ups, branding and individual innovators to enable them to leverage IPR to create a niche and gain a competitive edge in the market;</p> <p>h. Provide financial assistance to or facilitate access to finance by start-ups to leverage IPR;</p> <p>i. Establish a National Innovation Fund (NIF) for promotion, protection, preservation and commercialization of home-grown innovations, and creativity;</p> <p>j. Set up IP facilitation centers in Chambers of Commerce and Industry and IP associations of professions in the areas of art, culture, literature, music, film and traditional knowledge etc. to create IP awareness among their members where government and the professional bodies will take the lead role;</p> <p>k. Allocate adequate funds in the national budget to promote science and technology, innovation, creativity and overall development of a national innovation ecosystem in the country;</p> <p>l. Provide exclusive IP support to micro, small and medium-sized enterprises and individuals by the government through budgetary, skill development and capacity building and support mechanisms;</p> <p>m. Promote the use of IPR tools for business development through a time and target based national campaign initiative by the IP offices, institutions, associations, and other relevant platforms. Sectors, such as music, movies, graphics, information technology-enabled services, software, Apps, and financial services considered IPRS tools very important for business development;</p> <p>n. Provide IP support in terms of administrative, legal, and protection and enforcement particularly against piracy and abuse of creative</p>		<p>groups, such as farmers, weavers, artists, craftsmen, and artists, etc</p>	<p>creators and innovators</p> <ul style="list-style-type: none"> • Connect to potential users, buyers and funding institutions • Launch a feasibility study for an IPR exchange • Promote cross-sector partnerships between the public, business, academic, and non-governmental sectors to provide access to affordable medications and other healthcare solutions • Make an effort to lessen your reliance on pharmaceutical ingredients (API) imports by encouraging the production of APIs in India and revitalizing public sector business in the healthcare sector. 	

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>industries (e.g. film, music, media houses, artists and photographers etc.);</p> <p>o. Provide support to establish Collective Management Organizations (CMOs) and Technology Transfer Office (TTO) to facilitate and manage the rights of creative and innovative individuals/entities;</p> <p>p. Establish linkages among government, academia, scientific research and technology institutions, and industry associations for IP promotion and protection;</p> <p>q. Ensure the necessary institutional/governmental support particularly budgetary support to universities and research organizations to encourage innovation, creativity and R&D.</p> <p>r. Educate local scientists on technology transfer issues, including IPR protection, mechanisms for commercializing research results, means of attracting financing for research and effective linkage with partners abroad;</p> <p>s. Assist local scientists and research entities through IP offices and institutions for commercialization of their technological innovations and utilization of local research capacities by industry through a matchmaking of local scientists with foreign and local industries;</p> <p>t. Establish a mechanism through IP offices and institutions to coordinate innovation, creativity, commercialization and valuation of IP in different public sector research facilities under Agriculture, Health, Fisheries & Livestock, Information, ICT, Telecommunications, Jute and Textile. Education, Environment, Forest and Climate Change, Science and Technology related Ministries/Departments/Offices. Also, allocate adequate funds for the promotion of technology development in those organizations.</p>				
	Goal 4: Strengthen the legal framework				

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>Strategies</p> <p>a. Undertake a comprehensive review of the national IP legal regime and enact or revise appropriate IP laws which will encourage creativity and innovative activities, attract and stimulate the transfer of technology, enhance fair competition, maintain a balance between the interests of all relevant IP stakeholders and ensure that such laws comply with the requirements of relevant international IP treaties.</p> <p>b. Establish an effective collaborative mechanism among the administrative ministries of the respective IP offices, Ministry of Law, justice and Parliamentary Affairs and the Law Commission to expedite IP-related law reform process and complete the same within the stipulated time frame.</p> <p>c. Establish a national multi-stakeholder consultation process to be followed by the administrative ministries of the respective IP offices for all issues related to review and modernization of IP laws.</p> <p>d. Establish a permanent mechanism for mapping the gaps in the existing IP related legal issues, and emerging challenges which require immediate corrective measures, reviewing of IP-related international treaties and recommending accession in the greater interest of the country.</p> <p>e. Periodically review the impact of IP laws and their contribution to the socio-economic development of the country.</p>	NA	<ul style="list-style-type: none"> Engage constructively in the negotiation of international treaties along with the multi-stakeholders consultation Promote IP enforcement to protect the bio-diversity and environmental degradation 	<ul style="list-style-type: none"> Review and update IP-related rules, guidelines, procedures and practices for clarity, simplification, streamlining, transparency and time-bound processes in the administration and enforcement of IP rights The interplay between IP laws; and between IP laws and other laws to remove ambiguities and inconsistencies 	NA
	Goal 5: Foster respect for IPR				
	<p>Strategies</p> <p>a. Launch a comprehensive IPR awareness and business strategy for all relevant stakeholders including police, judiciary, custom officials, agriculturists and academicians;</p> <p>b. Provide specialized training programs for officials of police, judiciary, customs, trade bodies, CMOS, TISCs/TTOs and law firms, IP associations and other stakeholders for raising awareness about the respective rights and responsibilities for management, protection and enforcement of IPR related issues for the benefit of Administration;</p> <p>c. Ensure better enforcement of IPR through appropriate legal, institutional and administrative support;</p>	NA	<ul style="list-style-type: none"> Strengthen the task force by bringing many issues-strong measures against attempts to treat generic drugs as spurious or counterfeit and stringent measures to 	<ul style="list-style-type: none"> Establishing IP cells in close cooperation with state governments to curb IP offences Transferring balance legal power to the DPDT and copyright office to take measures against the offence 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>d. Establish linkages between IP and law enforcement agencies to ensure a permanent enforcement mechanism.</p> <p>e. Induct IP related matters in the curriculum of the training institutes of administrative, judicial, police and customs officials at all levels.</p> <p>f. Set up dedicated IPR courts all over the country.</p> <p>g. Mechanism has to be developed to establish effective linkage of the Bar with IP offices and the courts. Bar and court should be equally aware and equipped with the technology, knowledge, and skill to address the legal issues pertaining to IP-related dispute settlement.</p> <p>h. Revitalize and strengthen the Anti-Piracy Task Force of the Ministry of Cultural Affairs. Ministry of Industries will have "Task Force" to address the violation of patent, design and trademarks related to IPRs other than Copy Rights.</p>		<p>curb the manufacture and sale of misbranded, adulterated and spurious drugs</p>	<ul style="list-style-type: none"> Building infrastructure and capacity building to check the proliferation of the digital crimes IP practices that may have an adverse effect on competition will be considered, making coordination with the completion Commission of Bangladesh 	
	<p>Goal 6: Protect, promote and manage Traditional Knowledge and Traditional Cultural Expressions (TK & TCEs) and genetic Resources</p>				
	<p style="text-align: center;">Strategies</p> <p>a. Enact new laws to protect Traditional Knowledge (TK) and Traditional Cultural Expressions (TCE) and protect rights and facilitate equitable sharing of benefits arising from the use of TK and TCEs;</p> <p>b. Review existing IP laws to complement the laws that will be enacted to protect TK and TCE;</p> <p>c. Set up databases of TK & TCEs and genetic resources; initiate and implement a data collection program focusing on identification, collection, authentication, preservation and commercialization of TCEs.</p> <p>d. Establish the necessary mechanisms regulating access to and use of the TK & TCEs and genetic resources database under folklore institutes/museums;</p> <p>e. Extend administrative, financial and technical support to folklore institutes for collection, preservation and publicity of the folk tradition and folk literature, culture, traditions and heritage;</p> <p>f. Undertake programs to identify, collect and preserve TCEs and genetic resources related literature, documents, and</p>	<p>NA</p>	<ul style="list-style-type: none"> Give researchers and innovators advice on the national priority areas to focus on, such as energy and food security, healthcare and agriculture, as well as on specific industries like biotechnology, data analytics, nanotechnology, new materials, and ICT 	<ul style="list-style-type: none"> Bringing the handmade and informal sector manufacturing items into the protection Direct and indirect tax benefits for the promoting innovation and R&D Traditional Knowledge Digital Library (TKDL) is required to establish Promote innovation in the agriculture and fishing industries by using IP to produce more sustainable agricultural products 	<p>NA</p>

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>evidences/exhibits and establish necessary mechanisms for commercialization through establishment of IP associations;</p> <p>g. Establish an institutional mechanism to build effective cultural relations with other countries, to uphold the cultural image of Bangladesh before the world community;</p> <p>h. Support capacity-building of TK, TCEs and genetic resources holders through IP associations and CMOs to enable the communities (ethnic minorities, traditional and marginalized communities) to aware, identity, collect, manage, protect, preserve and commercialization of their TK & TCEs and genetic resources through dedicated but inclusive campaign and support mechanism with financial assistance and skill development;</p> <p>i. Establish folklore institute for the collection, preservation and publicity of the folk tradition and folk literature. This Institute shall give financial and technical support to different organizations and individuals apart from performing its normal and prescribed functions.</p> <p>j. IP office will establish an effective mechanism in collaboration with departments under the Ministries of Environment, Forest and Climate C Agriculture, Textile and Jute, Fisheries and Livestock, Commerce, Post and Tele Communications, ICT, Science and Technology, and others to ensure access, identification, protection, enforcement and use of IPR benefits through copyrights of utility models, software, apps, research outcomes, genetic resources, and indigenous plant varieties etc.</p>			<ul style="list-style-type: none"> Encourage the registration of Geographic indications (GIs) by providing financial support to institutions; help GI producers develop and maintain acceptable quality standards; and improve marketability. 	
Chapter 5: Implementation of National Innovation and Intellectual Property Policy 2018	<p>A. Time frame for implementation: The National Innovation and Intellectual Property Policy 2018 will be implemented over a 10-year period, beginning from the date of its approval. As with Policy, it will be forceful until the new Policy is adopted and will be revised from time to time, taking into account new needs and developments, based on findings of impact evaluation and monitoring activities.</p>	NA	<ul style="list-style-type: none"> A central monitoring cell is required to assess the activities designed within the time frame 	<ul style="list-style-type: none"> Review the time frame, extend or develop the new time frame, and carry out the tasks in priority order A well-planned guideline is required to design to 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
				implement the plan on time	
	<p>B. Institutional arrangements:</p> <p>1. A national and sectoral council on innovation and intellectual property will be created for the purpose of overseeing implementation at the national level as well as follow-up and monitoring.</p> <p>1.1. A national council on Innovation and Intellectual Property.</p> <p>1.2. A sectoral Committee on Innovation and Intellectual Property for each identified thrust sector.</p> <p>1.3. The National Council of Innovation and IP will be established under the Minister, Ministry of Industries and it will consist of members.</p> <p>1.4. The responsibility of the National Council on Innovation and Intellectual Property</p> <p>1.4.1. The National Council on Innovation and Intellectual property will be responsible for facilitating Policy coherence between national and sectoral development policies, and the integration of IP. It will facilitate and coordinate national positions on IP issues for national as well as international purposes.</p> <p>1.4.2. the council will monitor the impact of the Policy in various sectors of the economy</p> <p>1.4.3. The council will oversee the periodic review of the National Innovation and IP Policy 2018 to keep it up to date with evolving national development priorities.</p> <p>1.4.4. The council will sit at least twice a year.</p> <p>1.4.5. Sectoral Committee on Innovation and Intellectual Property.</p>	NA	<ul style="list-style-type: none"> Enforcement to implement the meeting twice a year and publishing the periodic review of the Policy works of implementation and taking the decision based on the assessment of the periodic review The council should review each of the objectives, one by one to show which objectives are left behind and which ones require more work. 	<ul style="list-style-type: none"> A separate sectoral innovation development implementation committee with members from the public and private sectors A transparency mechanism should be developed for these meetings. The council may consider producing a report consisting of the update of the meeting and the report should be disseminated among all the stakeholders and published on the website of relevant organizations. Provision for the involvement of women in the council. 	NA
	<p>C. Popularization of the Policy:</p> <p>i) In order to generate momentum and popularize IP and in the context of implementing the National Innovation and Intellectual Property Policy 2018, the government may consider declaring 2018-2028 as the Decade of Innovation</p>			<ul style="list-style-type: none"> Create online and distant learning courses on intellectual property for all user groups, and improve IP 	NA

Chapter	Stated provisions in the NIIP Policy 2018	Alteration	Extension	Inclusion	Exclusion
	<p>ii) Government will undertake a comprehensive national mapping exercise, and identify areas in various sectoral development policies, plans and strategies where IP interfaces exist and where IP can play a contributory role.</p> <p>iii) Government will promote within its organizations the need for institutional and social innovation and ensure the diffusion of innovation and IPR in economic development.</p> <p>iv) Popularization of the Policy and strategy will be part of the popularization initiatives of IP offices. Dissemination of the Policy and strategy is not a one-time activity but part of a continuing activity that aims to raise the significance of IP and promote its use as a tool for development.</p> <p>v) The IP offices in cooperation with public and private print and electronic media and relevant public and private bodies may undertake a campaign to sensitize all relevant stakeholders, including potential users, IPR holders, government officials, the business community and the general people about the Policy following its adoption.</p>			<p>instruction in public universities and skill-development centres</p> <ul style="list-style-type: none"> Encourage and support female creators, innovators, entrepreneurs, practitioners, teachers, and trainers in building their capacities 	
	<p>D. Mobilization of resources:</p> <p>i) Implementation of the Policy will need adequate financing</p> <p>ii) The national road map for implementation, therefore, needs to identify the strategies to mobilize necessary funding sources for the successful implementation of this Policy</p> <p>iii) The possible sources, in addition to the government may include development partner countries, international donor agencies, regional international and intellectual property organisations and private sector organisations.</p>	NA	NA	NA	NA
	<p>E. Monitoring, Evaluation and review of the National Innovation and Intellectual Property Policy 2018:</p> <p>i) The implementation and impact of the National Innovation and Intellectual Property Policy 2018 will be monitored and assessed to determine whether the Policy objectives and the various goals set to address identified Policy issues are met.</p>	NA		<ul style="list-style-type: none"> Increase the activities of the national IP council Regular consultancy with the IP expert and autonomous think tank 	NA

Chapter	Stated provisions in the NIIP Policy 2018			Alteration	Extension	Inclusion	Exclusion
	<p>ii) The national IP Council will be the main body responsible for monitoring and evaluating authority to oversee and assess the implementation and impact of this Policy.</p> <p>iii) The council will devise mechanisms for monitoring the implementation and impact of this Policy. The mechanisms will include reviews of the Policy implementation reports of the IP offices.</p> <p>iv) The IP offices will be responsible for organising an IP database, analysing data, undertaking study on the implementation and impact of the Policy, and reporting to the council on a periodic basis.</p> <p>v) The implementation and impact of the Innovation and the IP Policy will be evaluated and reviewed by independent consultants after five years or at any other time as the need arises to evaluate the progress and impact of the implementation of the Policy.</p>						
Time Bound Action Plan for implementing National Innovation and Intellectual Property Policy 2018	Activity 1: Comprehensive awareness program for Innovation and IP	Implementing body: DPDT/ Bangladesh Copyright office	Term: 2018-2023	Revisiting the time-bound action plan, evaluating how the plan will be implemented, and prioritizing the plan by extending the time range.	<ul style="list-style-type: none"> A central monitoring cell is required to assess and monitor the activities of the implementation body 	<ul style="list-style-type: none"> A new activity is required to design within the 5 years time frame (2023-2028) for the women - <p>Activities: Promote women innovators, prioritize women in the stem field and manage funds for women creators and entrepreneurship.</p> <p>Implementation Body- Bangladesh Women Chamber of Commerce and Industry (BWCCI), Women Entrepreneurs Association of</p>	
	Activity 2: Automations of IP offices	Implementing body: DPDT/ Bangladesh Copyright Office	Term: 2019-2023				
	Activity 3: Introducing course on Innovation and IP	Implementing body: Secondary and Higher education Division/ Technical and Madrasah Education Division.	Term: 2019-2023				
	Activity 4: Reactivating existing TISCs	Implementing body: DPDT/Chambers/universities/Ministry of Commerce	Term: 2018-2020				
	Activity 5: IP outreach program for inclusive economic growth	Implementing body: DPDT/Bangladesh Copyright Office/Chambers/Associations	Term: 2018-2023				

Chapter	Stated provisions in the NIIP Policy 2018			Alteration	Extension	Inclusion	Exclusion
	Activity 6: Establishing Innovation centre in all public and private educational institutes	Implementing body: Ministry of Education/Ministry of Science and Technology	Term: 2018-2021			Bangladesh (WEAB), Ministry of Women and Children Affairs	
	Activity 7: Reforms, reorganization, skill development, and capacity building of IP offices.	Implementing body: DPDT/Bangladesh Copyright Office	Term: 2018-2023				
	Activity 8: Improve Efficiency and transparency through introducing e-service of the existing IP offices	Implementing body: DPDT/Bangladesh Copyright Office	Term: 2019-2023				
	Activity 9: Establish a national training Institute for Intellectual property and Innovation	Implementing body: Ministry of Industries/Ministry of public Administration/Finance Division/Ministry of Cultural Affairs	Term: 2019-2021				
	Activity 10: Setting up education institute-industry linkages for commercialization	Implementing body: Ministry of industries/ministry of Commerce	Term: 2018-2021				

Chapter	Stated provisions in the NIIP Policy 2018			Alteration	Extension	Inclusion	Exclusion
	Activity 11: Programmes for the promotion of Innovation culture	Implementing body: Ministry of Industries/Ministry of Cultural Affairs	Term: 2019-2021				
	Activity 12: Establish a national Innovation Fund	Implementing body: Ministry of Industries/ Finance Division/Ministry of Cultural Affairs	Term: 2019-2028				
	Activity 13: setting up IP facilitation Centres	Implementing body: DPDT/Chambers/associations	Term: 2018-2028				
	Activity 14: Establish CMO and TTO for protecting Innovation and IP	Implementing body: Ministry of Industries/ministry of Cultural Affairs	Term: 2019-2023				
	Activity 15: Facilitating programme for commercialization of technological innovations	Implementing body: DPDT/chambers/associations/relevant organizations	Term: 2019-2022				
	Activity 16: Holding consultation workshop for reviewing IP laws	Implementing body: Ministry of industries/DPDT/Bangladesh copyright office	Term: 2019-2023				
	Activity 17: IP awareness and business strategy programme for IP officials	Implementing body: Ministry of industries/DPDT/Bangladesh copyright office	Term: 2018-2023				

Chapter	Stated provisions in the NIIP Policy 2018			Alteration	Extension	Inclusion	Exclusion
	Activity 18: Introduction of dedicated IP courts throughout the country	Implementing body: legislative and parliamentary affairs division	Term: 2019-2021				
	Activity 19: Activate task force to address the violation of IP rights	Implementing body: Ministry of industries/ministry of cultural affairs	Term: 2019-2023				
	Activity 20: Setting up database of TK and TCEs and genetic resources	Implementing body: DPDT/Bangladesh copyright office/Ministry of agriculture/ Ministry of Cultural Affairs	Term: 2019-2028				
	Activity 21: Pilot programme to preserve TK and TCEs and Genetic resources related documents	Implementing body: DPDT/Bangladesh copyright office/Ministry of Agriculture	Term: 2018-2028				
	Activity 22: Planning and undertaking national programmes for the promotion of innovation culture and innovation hubs	Implementing body: Ministry of Industries/ Ministry of Cultural Affairs/Planning Division	Term: 2018-2021				

Source: Authors' compilation from various sources

In addition to the above-mentioned recommendations, the study's general pieces of advice that should be taken together are given following:

- Bangladesh Intellectual Property Organization (BIPO) is required to be established as early as possible to bring all IP offices into a single umbrella.
- The National Institute of Intellectual Property (NIIP) is required to be established to promote and manage the resources used in developing new ideas and creative items.
- Highlight the need for the National and Sectoral Council on Innovation and IP to be active; at least two meetings must be held each year, and these meetings must include an accurate assessment of the periodic review of the Policy's implementation.
- Encourages every industry to reinvest a percentage of its profits into innovation and R&D.
- Establishment of the National Innovation Fund (NIF), and increase the allocation of the annual national budget to R&D.
- Establishment of the Technology transfer organization (TTO) and Technology and Innovation support centres (TISCs).
- Establishing an integrated database by combining the data available in the current IP office and facilitating the dissemination of IP information among stakeholders by utilizing the entire collection of the WIPO database.
- Timely adaptation of the 4th industrial revolution.
- A detailed study with the concerned Ministries on the place of reservation for the international registration systems.

6. Conclusion

Article 23 of the Constitution of Bangladesh stated that the state shall undertake measures to preserve the cultural traditions and heritage of the people and hence to develop the national language, literature and arts that all sections of the opportunity to contribute towards and participate in the enhancement of the national culture. Various fold resources of our country can play an important role in economic growth in many ways. The country's social and ethnic background can be discovered and enhanced which could improve the tourism sector of Bangladesh. There are traditional medicines which are justified and scientifically utilized and can make an important contribution to the future medical science of the world. The existing cultivation system and other direct production methods can be enhanced by the scientific use of traditional knowledge. Some aesthetic products and showpieces which have a high demand in the foreign market can be made using artistic heritage. Modern literary works can also be enhanced by the proper usage of fold literature. However, there are no specific or effective laws for the preference and the illicit exploitation of this folklore. Due to the modern approach of the present generation, the absence of proper protection, and the lack of preservation and transmission, most folklore are becoming extinct. The once popular resources to people are going to be lost with time. The WIPO and UNESCO provide the Model Law for the protection and illicit exploitation of the folklore, however, our legislature has not taken any steps to undertake such a law. Bangladesh still has a lot to work on for the protection of these traditional resources. Even though the current law can be implemented to protect these estates but there are also some limitations. TK and traditional medicine could be included in the subject matter of protection under the current Patent Act,

2022. The traditional artistic heritage and the folk literature can be protected under the Copyright Act, 2000 as these are worthy of copying.

Enhancing the country's legal expertise is needed for the effective formulation and implementation of the IPR-related provisions. Bangladesh lacks competency in drafting this kind of law. The country may undertake consultation workshops with WTO, UNESCAP or UNCTAD while drafting these legislations. Bangladesh should focus on creating legal experts or even hiring legal experts from abroad in drafting and amending IP laws. The Policy is only a wish-list unless it is enacted under a specific Act. Therefore, we should consider enacting policies under respective Acts to make them legally binding.

In Bangladesh, there are numerous laws, rules, and regulations governing IPs, all of which fall under the scope of various Ministries or Departments. The laws are administered by numerous authorities and agencies. The application of the laws must be done in a way that avoids conflict, duplication, or inconsistencies. To ensure efficient administration and user satisfaction, the relevant authorities must coordinate how they each apply the laws. In different fields of IP, there are legal, technological, economic, and sociocultural challenges that cross over and need to be addressed and resolved by consensus for the best benefit of the general public. However, this analysis discovered that the implementation of the current Policy is much behind schedule compared to the initial expectation of the Policy set to implement in 2018. For this, a review of the current Policy is required, and the integration of the IP as a Policy and strategic tool in national development plans is needed. The Ministries/Departments concerned in their designated field of work will continue to be responsible for actually implementing the plans of action. Government and other stakeholders, including institutions from the public and commercial sectors, will also be involved in the implementation process. Thus, the implementation of the National Innovation and Intellectual Property Policy 2018 will bring the expected result in terms of ensuring the protection and promotion of IP.

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Annexure

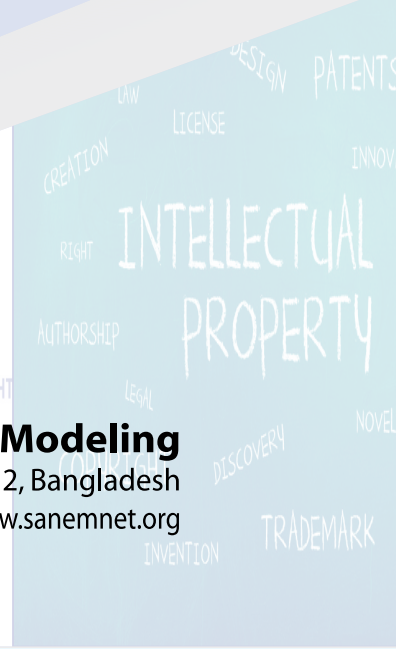
List of KIIs

Organization/Association	Key Informant
Ministry of Industry	<ul style="list-style-type: none"> • Md. Salim Ullah, Senior Assistant Secretary, Mol
Department of Patents, Designs and Trademarks	<ul style="list-style-type: none"> • Kongkan Chakma, Deputy Registrar- Trademarks (Deputy Secretary), DPDT • Md. Habibur Rahman, Assistant Registrar (Patent), DPDT • Mirza Golam Sarwar, Assistant Registrar (Patent), DPDT • Md. Belal Hossen, Examiner (Trademarks), DPDT
Legal Expert and Researcher	<ul style="list-style-type: none"> • Mahua Zahur, Chief Researcher and Consultant, IP Chronicles
Chambers of Commerce and Industries	<ul style="list-style-type: none"> • Manzur Ahmed, Adviser, FBCCI • Mohammad Mahfuzul Hoque, Secretary-General, FBCCI • Md. Saidul Islam, Additional Secretary-General, MCCI • M. Abdur Rahman, Deputy Chief, MCCI
Bangladesh Trade and Tariff Commission	<ul style="list-style-type: none"> • Md. Mamun-Ur-Rashid Askari, Deputy Chief, BTTC • S.M Sumaiya Zabeen, Assistant Chief, BTTC

Team Composition

Name of staff	Area of expertise relevant to the assignment	Designation for this assignment	Assigned tasks or deliverables
Dr. Bazlul Haque Khondker	Economist, Institutional analysis expert, Survey expert, FGD and KII expert	Team Leader	Finalise questionnaire, FGD, and KII checklists, Evaluation, and analysis, Draft synthesizing summary, Draft short summaries Finalizing reports
Dr. Selim Raihan	Economist, Political economy and institutional analysis expert, Survey expert, FGD and KII expert	Co-Team Leader, Trade Expert	Coordinating and monitoring the team, monitoring all the activities performed by the team members, finalizing questionnaire, FGD, and KII checklists, evaluation, and analysis draft synthesizing summary and finalizing reports.
Mahtab Uddin	Policy analysis and evaluation, Survey expert, FGD and KII expert	Policy Analyst	Monitoring all the activities performed by the team members, finalizing questionnaire, FGD and KII checklists, evaluation, and analysis, draft synthesizing summary, and finalizing reports.
Mohammad Golam Sarwar	Legislative consultant, development law practitioner	Legal Expert	Analysing the legal terms and provisions of the study, identifying the possible grounds for alterations, extensions, and exclusion of current legal provisions, and providing legal recommendations.
Mir Ashrafun Nahar	Data analyst, Survey Experts	Senior Research Associate	Desk review, analysing secondary data, designing questionnaires for KIIs, supervising and conducting FGDs, analysing primary data, and drafting the reports.

Name of staff	Area of expertise relevant to the assignment	Designation for this assignment	Assigned tasks or deliverables
Farhin Islam	Data analyst, Survey Experts	Research Associate	Desk review, analysing secondary data, designing survey questionnaires for KIIs, supervising the survey, conducting FGDs, analysing primary data, and drafting the reports.
Md. Nadim Uddin	Data analyst, Survey Experts	Research Associate	Research and analysis of relevant literature, primary and secondary data, supervising and conducting KIIs and FGDs.
Afia Mubasshira Tiasha	Data collection and Supervision	Research Associate	Desk Review, developing KII questionnaire, assisting in conducting the KIIs, conducting FGDs.
Samantha Rahman	Data collection and Supervision	Research Associate	Desk Review, developing KII questionnaire, assisting in conducting the KIIs, conducting FGDs.
Sanjana Islam	Data collection	Research Intern	Assisting in desk Review, assisting in conducting the KIIs and FGDs.



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