

Bangladesh Sectoral Growth Diagnostic



A research paper on
Economic Dialogue on Inclusive Growth in Bangladesh

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Cover Image

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List of acronyms

7FYP	Seventh Five Year Plan
ADB	Asian Development Bank
BASIS	Bangladesh Association of Software and Information Services
BBS	Bangladesh Bureau of Statistics
BPO	Business Process Outsourcing
BSCIC	Bangladesh Small and Cottage Industries Corporation
BSTI	Bangladesh Standards and Testing Institution
BTA	Bangladesh Tanners Association
CEAFS	Centre of Excellence Agro Food Skills Foundation
CEO	Chief Executive Officer
CETP	Common Effluent Treatment Plant
DFID	Department for International Development
EDIG	Economic Dialogue on Inclusive Growth
EEF	Entrepreneurs' Equity Fund
EPB	Export Promotion Bureau
EU	European Union
FAO	Food and Agricultural Organization
FDI	Foreign Direct Investment
HIES	Household Income and Expenditure Survey
ICT	Information and Communication Technology
ILO	International Labour Organization
IMF	International Monetary Fund
ISC	Industry Skills Council
IT	Information Technology
ITES	IT-Enabled Services
ITC	International Trade Centre
GDP	Gross Domestic Product
GoB	Government of Bangladesh
LMFEAB	Leather Goods and Footwear Manufacturers & Exporters Association of Bangladesh
MD	Managing Director
ODI	Overseas Development Institute
PPP	Public-Private Partnership
PPP	Purchasing Power Parity
RCA	Revealed Comparative Advantage
RMG	Ready-Made Garments
RoO	Rules of Origin
SANEM	South Asian Network on Economic Modeling
SMEs	Small and Medium-Sized Enterprises
SPS	Sanitary and Phyto-Sanitary
TVET	Technical and Vocational Education Training
UN	United Nations
UNIDO	UN Industrial Development Organization
US	United States
USAID	US Agency for International Development
VAT	Value Added Tax
WDI	World Development Indicators
WESO	World Employment and Social Outlook

Executive summary

Despite Bangladesh's transition from low- to lower-middle-income country status in July 2015, over 40 million Bangladeshis are still living below the poverty line. This has fuelled a debate on whether the consistent 6% or above growth rate in Bangladesh has been 'inclusive' or has led to the generation of enough stable jobs for the growing number of citizens entering the labour force each year.

The research paper identifies three sectors that could potentially stimulate inclusive growth in Bangladesh. Their selection is based on their capacity to meet three principle criteria: growth drivers, diversification and government buy-in. Agro-processing, leather and leather goods and information and communication technology (ICT) are the three sectors selected.

Three major reasons can be highlighted for the bright prospects of the agro-processing sector in Bangladesh. These are related to large domestic value addition, large-scale employment generation and high backward and forward linkages. This paper identifies six major constraints to the sector's development. These are related to problems in market access, inadequate infrastructure, problems at processing stages, lack of access to finance, lack of skilled labour and institutional inefficiency. The paper suggests to:

1. Enhance the domestic capacity of Bangladeshi exporters in meeting sanitary and phyto-sanitary standards in export destinations;
2. Manage road traffic conditions and improve trucking fleets to reduce transport delays and their associated costs;
3. Ensure the growing agro-processing sector has access to new and quality electricity connections;
4. Provide financial incentives to investors to set up cold storage facilities;
5. Ensure better access to financial services – that is, an easier payment system (electronic, e-cash etc.) and take necessary steps to make the Entrepreneurs' Equity Fund effective;
6. Provide larger training facilities to generate a skilled and semi-skilled workforce;
7. Provide much more supportive tax and tariff policies; and
8. Improve the capacity of Bangladesh Standards and Testing Institution by increasing staffing levels, training and retention, increasing investment in equipment and facilities, introducing a single-window depository and dissemination of all required documentation and setting up more testing labs and building required infrastructure.

There are five major reasons for the bright prospects of the leather sector in Bangladesh. These are related to high domestic value addition, large-scale employment generation, high backward and forward linkages, high quality of domestic raw hide and bright investment opportunities.

The paper mentions five major challenges in the sector, related to sluggish progress of relocation of the tanneries, lack of skilled labour, health and environmental hazards, lack of

access to duty-free import of raw materials and machinery and the high cost of doing business. The paper suggests to:

1. Quickly and effectively operationalise the tannery estate in Savar;
2. Enhance technical education and training opportunities to generate a large skilled workforce;
3. Provide incentives, in terms of duty-free imports of eco-friendly machineries and raw materials, and different tax incentives for factories that comply with health and environmental standards;
4. Extend the bonded warehouse facilities to all export-oriented firms;
5. Introduce a more flexible loan processing system and provide subsidised loans to entrepreneurs; and
6. Prioritise electricity and gas connections for new investors.

There are five major reasons for the bright prospects of the ICT sector in Bangladesh. These reasons are lower costs and greater investment opportunities, availability of English-speaking employees, rising worker productivity, significant employment opportunities and supportive government initiatives. The paper identifies six major constraints in the sector, related to labour and skills mismatch, inadequate infrastructure, lack of access to finance, an inadequate financial system, weak governance and institutional issues and lack of supportive government policies. The paper suggests to:

1. Expand the scale and scope of ICT training programmes;
2. Upgrade the curricula in universities in line with needs in the market and introduce e-commerce in the curriculum;
3. Ensure uninterrupted and quality electricity and low-cost broadband connectivity;
4. Make the special economic zones instrumental in attracting FDI;
5. Ensure better access to financial services and subsidised loans and make the Entrepreneurs' Equity Fund effective;
6. Establish ICT export desks at Bangladesh's embassies overseas;
7. Ensure provisions for export subsidy for ICT firms;
8. Generate political capital for the ICT sector through agreements among the political elites; and
9. Lower the VAT and tax on ICT services (which is now about 25%) to 0%.

The analysis of constraints in the selected sectors suggests there are three leading common constraints that affect all three sectors. These are related to weak infrastructure (both general and sector-specific), lack of access to finance and subsidised bank loans and unskilled labour with insufficient effective training in line with the needs of the industries.

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1. Introduction

1.1. Economic Dialogue on Inclusive Growth in Bangladesh

Despite Bangladesh's transition from low- to lower-middle-income country status in July 2015, over 40 million Bangladeshis are still living below the poverty line. This has fuelled a debate on whether the consistent 6% or above growth rate in Bangladesh has been 'inclusive' or has led to the generation of enough stable jobs for the growing number of citizens entering the labour force each year. Sustaining this track record and ensuring the impact of growth is more broad-based, so that it provides a meaningful contribution to poverty alleviation, requires urgent attention to key policy reforms.

Bangladesh's Seventh Five Year Plan (7FYP) is built around three pillars: 1) gross domestic product (GDP) growth acceleration, employment generation and rapid poverty reduction; 2) a broad-based strategy of inclusiveness with a view to empowering every citizen to participate in and benefit from the development process; and 3) a sustainable development pathway that is resilient to disaster and climate change.

The Economic Dialogue on Inclusive Growth (EDIG) project is supporting the Department for International Development (DFID) Bangladesh's Strengthening Economic Systems programme, whose objectives are to provide:

1. A knowledge and information resource for the Government of Bangladesh (GoB), allowing officials to raise questions, the answers to which will help better inform decision-making to facilitate sustainable development; and
2. A resource to help build capacity among local centres of expertise to research, outreach and disseminate information to GoB to help inform and influence effective policy-making on sustainable development.

Until recently, national policy discussion has paid relatively little attention to making growth inclusive. There are two key issues in this. The first is the contextualised knowledge that is required to provide evidence on what the constraints to inclusivity are in Bangladesh and policy options to address these. The second relates to the profile of issues surrounding inclusivity in economic development policy debates and decisions.

Furthermore, there is a disjoint between knowledge/evidence and policy discussions. In combination, these issues mean knowledge is not sufficiently reflected in policy discussion and decisions, and policy needs are not effectively responded to with evidence and implementation options.

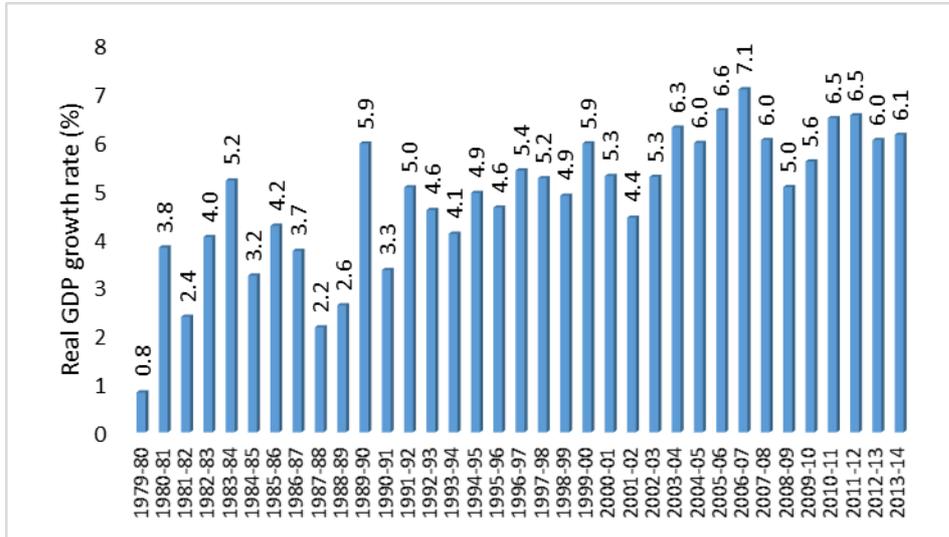
1.2. Background to Bangladesh's economy

1.2.1. Structural transformation

Over the past four decades, notwithstanding many external and internal shocks, Bangladesh has increased its per capita income four-fold. As Figure 1 shows, the country has been able to maintain healthy rates of growth in real GDP during the 2000s and the first half of 2010s.

Bangladesh’s economic growth rates in recent years (more than 6%) have been higher than those of most South Asian countries and many Sub-Saharan African countries.

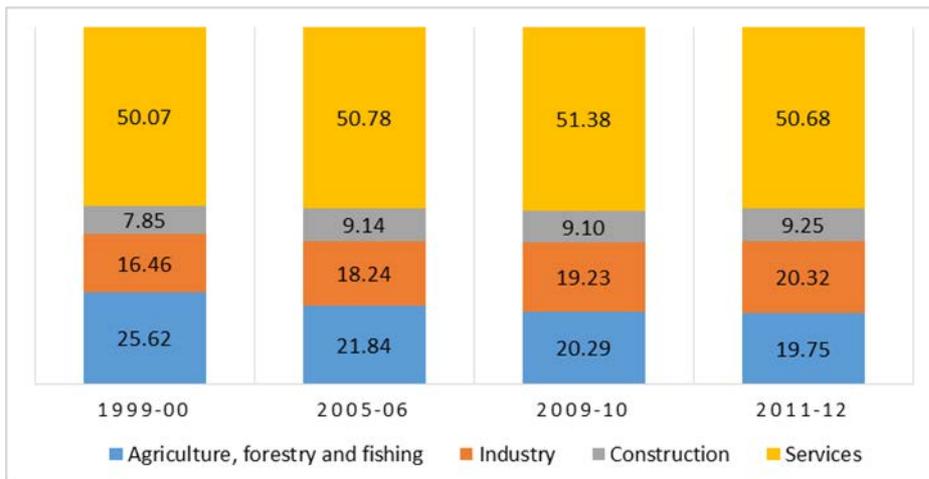
Figure 1: Real GDP growth rate (%)



Source: World Bank, WDI (2016)

The aforementioned growth in Bangladesh has been associated with some important structural changes in the economy. Figure 2 shows that the share of agriculture, forestry and fishing in GDP declined from 25.6% in 1999–2000 to 19.75% in 2011–12. The share of industry increased from 16.5% to 20.3% during the same period. While the share of construction increased from 7.9% to 9.3%, that of the services sector remained a little over 50% during this period.

Figure 2: Broad sectoral shares of GDP at constant (1995–96) prices (%)

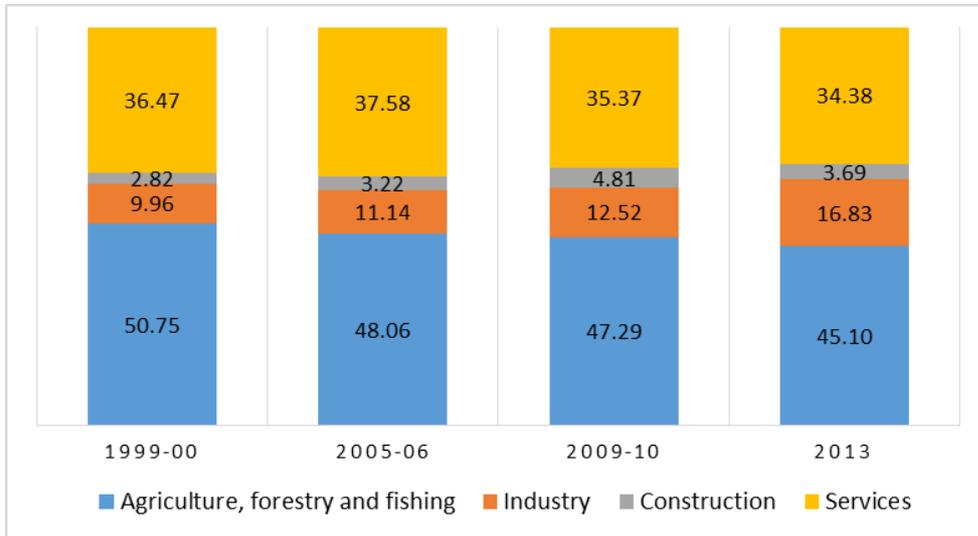


Source: BBS (2016)

In terms of share in employment, quite a reverse picture emerges. Figure 3 shows that the combined share of agriculture, forestry and fishing in 2013 was still quite high (45.1%), although this had declined from more than 50% in 1999–2000. Industry’s share in total employment increased from around 10% in 1999–2000 to 16.8% in 2013. The share of

construction also increased quite significantly between 1999–2000 and 2009–10 (from 2.8% to 4.8%), but had declined to 3.7% by 2013. The share of services, however, declined from 36.5% to 34.4% between 1999–2000 and 2013.

Figure 3: Broad sectoral shares of employment (%)



Source: Bangladesh Labour Force Survey (2013)¹

1.2.2. Inclusive growth

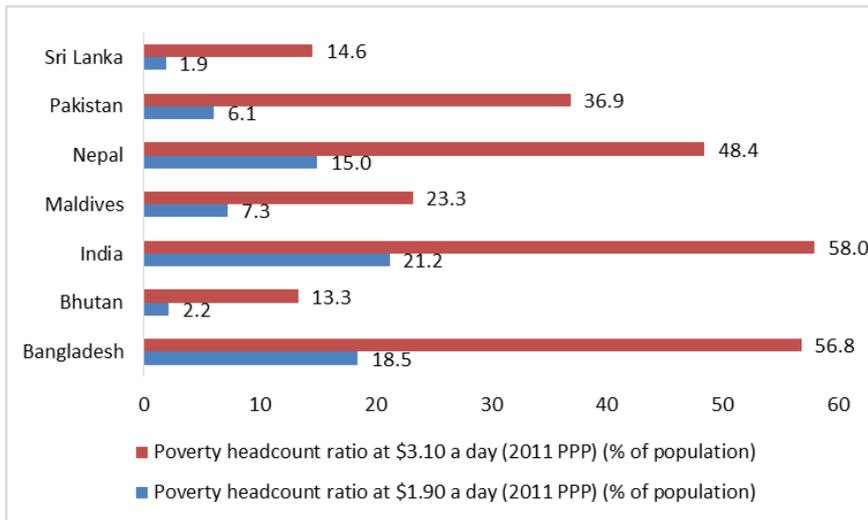
The latest official data show a headcount poverty rate in Bangladesh at 31.5% in relation to the national poverty line,² and 18.5% if measured against the \$1.90 a day metric.³ It becomes as high as 56.8% if measured against the \$3.10 a day metric (WDI 2017). Poverty levels in Bangladesh are still much higher than in all countries, except India, in the South Asian region, in relation to both the lower and the upper poverty lines (Figure 4). Such high rates of poverty essentially show that inclusive growth must become a fundamental outcome of the country’s long-term growth process.

¹ http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=BD

² Household Income and Expenditure Survey (IES) 2010.

³ Using 2011 purchasing power parity (PPP).

Figure 4: Poverty in South Asia (%)



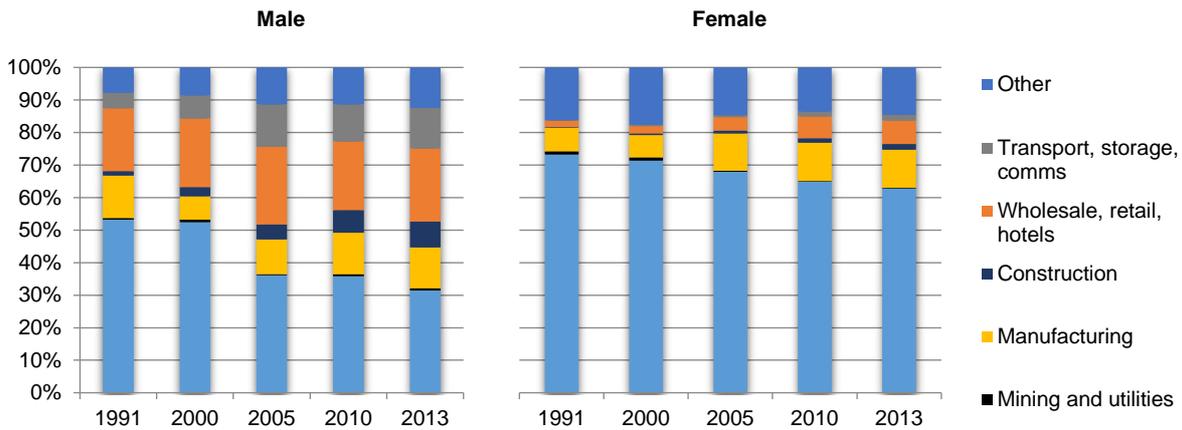
Note: Latest available data for each country

Source: World Bank, WDI (2016)

Raihan and Tilakaratna (2017) suggest progress on reducing headcount poverty in Bangladesh remains fragile, since many households remain clustered near the poverty line. Therefore, a large portion of the population remains vulnerable to falling back into poverty. In addition, poverty is multifaceted. Though growth has a positive impact in terms of reducing income poverty, other aspects of poverty, such as lack of access to health, education and basic infrastructure, are still serious issues for most people, and these sectors demand considerable attention. There are issues related to disparities among different regions within the country, and gender disparity has remained a matter of grave concern. These indicators suggest the current growth process in Bangladesh is still far from inclusive and, though the 7FYP emphasises education and health, the major focus has so far been on headcount poverty rates.

Government statistics show that, although population growth rates in the country are falling (GoB, 2015), the working-age population is increasing as younger citizens age into the national workforce. The current employment situation shows a distinct (and pervasive) gender divide in terms of agricultural employment rates, whereby female participation has remained significant throughout the past two decades whereas male participation has declined by approximately 20% (Figure 5). Of note is the fact that manufacturing employment rates by gender are broadly similar. This provides an interesting discussion point in the context of inclusive growth, as the promotion of manufacturing could be one way to increase female participation in 'modern' economic sectors, with associated positive income and livelihood benefits.

Figure 5: Sectoral employment by sex (%)



Source: ILO WESO (2015)⁴ – Trends 2015 supporting dataset ‘employment by sector and sex’

The national workforce is expected to expand by 2 million per year, though the 7FYP assumes migration trends will remain broadly similar to those of the past decade, reducing entrants to the local labour market to approximately 1.6 million a year. Nevertheless, this is a significant increase that will require large-scale employment creation interventions. GoB assumes that, should employment elasticity rates remain the same, projected annual growth rates of 7.4% (average) will lead to an estimated creation of between 2.3 million (in 2016) and 2.9 million (by 2020) new jobs per year, potentially exceeding the new influx of labour.

However, formal employment creation has not kept pace with new market entrants over the past decade or so, and high levels of underemployment remain. Concerns also remain in relation to employment conditions in the country, especially within the garments sector, where, in spite of sectoral growth, ‘harsh work conditions and low pay’ are still prevalent. Incomes in the sector remain some of the lowest in the world (ILO, 2013).

Even though education has been found not to be a major (current) binding constraint to growth (USAID, 2014), increasing labour skills, especially through education, can have positive welfare impacts. Studies looking at the of women of employment have found that higher levels of education have positive impacts on fertility decisions, health care and children’s education as well as on women’s capacity to control economic resources (Hossain et al., 2012). Similarly, improving educational levels can have important inequality-reducing effects; it has been shown that urban inequality in Bangladesh increases when there are disparities in educational levels (Zaman and Akita, 2012). The positive impacts that improvements in education would facilitate could be important components of inclusive growth in the long term.

1.3. Methodology and paper description

This paper uses data and information from both primary and secondary sources. We reviewed different research papers, reports and sectoral studies and data from different secondary sources. We carried out extensive analysis of the existing literature on the opportunities and constraints in the three selected sectors. Furthermore, we conducted interviews with the chief

⁴ http://www.ilo.org/global/research/global-reports/weso/2015-changing-nature-of-jobs/WCMS_368626/lang--en/index.htm

executive officers (CEOs) or managing directors (MDs) of a number of firms from the three selected sectors. In addition, we interviewed experts, policy-makers and influential researchers as well as development practitioners. The methodology of the selection of the sectors is provided in Section 2.

The overview of the paper is as follows: Section 2 presents the analysis related to sectoral selection; Section 3 presents structure, prospects, constraints and policy suggestions for the agro-processing sector; Section 4 looks at structure, prospects, constraints and policy suggestions for the leather sector; Section 5 analyses structure, prospects, constraints and policy suggestions for the information and communication technology (ICT) sector; and finally Section 6 concludes.

2. Sectoral selection

The research paper identifies three sectors that could potentially stimulate inclusive growth in Bangladesh. The selection of the three sectors is based on their capacity to meet three principle criteria:

1. **Growth drivers:** The chosen sectors should help create (higher-paying) inclusive jobs as well as move productive resources to higher-value and higher-productivity activities (i.e. structural transformation), helping increase national growth rates.
2. **Diversification:** The sectors should help diversify the Bangladesh economy, in terms of both production structures and export diversification. In practical terms, this means diversification away from two sectors that currently dominate the Bangladesh economy – that is, agriculture and the ready-made garments (RMG) sectors.
3. **Government buy-in:** Selected study sectors need also to be in alignment with Bangladesh’s government development plans, so there is a solid basis for support for potential sectoral implementation policies.

Given these three criteria, we divide the sectoral selection process into three sub-sections. The first identifies potential growth sectors in Bangladesh, looking at productivity levels and the theoretical underpinnings of different sectors as drivers of growth. The second identifies sectors that can contribute to economic diversification by looking at the country’s product space map and product diversification scores. The third highlights the sectors that GoB has earmarked for support as well as providing an overview of previous growth diagnostic studies carried out in Bangladesh. The section ends with a short cross-reference of these three criteria to highlight the three sectors chosen for the research paper.

2.1. Growth sectors

The first step in the sectoral identification process involves comparing the productivity gaps across different sectors in the economy. The reason for doing so is to identify sectors with higher productivity levels where there is potential for employment generation, as these are likely to provide higher remunerations for the workers, which can help promote inclusive growth through increased income generation. From a theoretical perspective, McMillan and Rodrik (2011) argue that productivity gaps between sectors, when filled, can be substantial growth drivers.

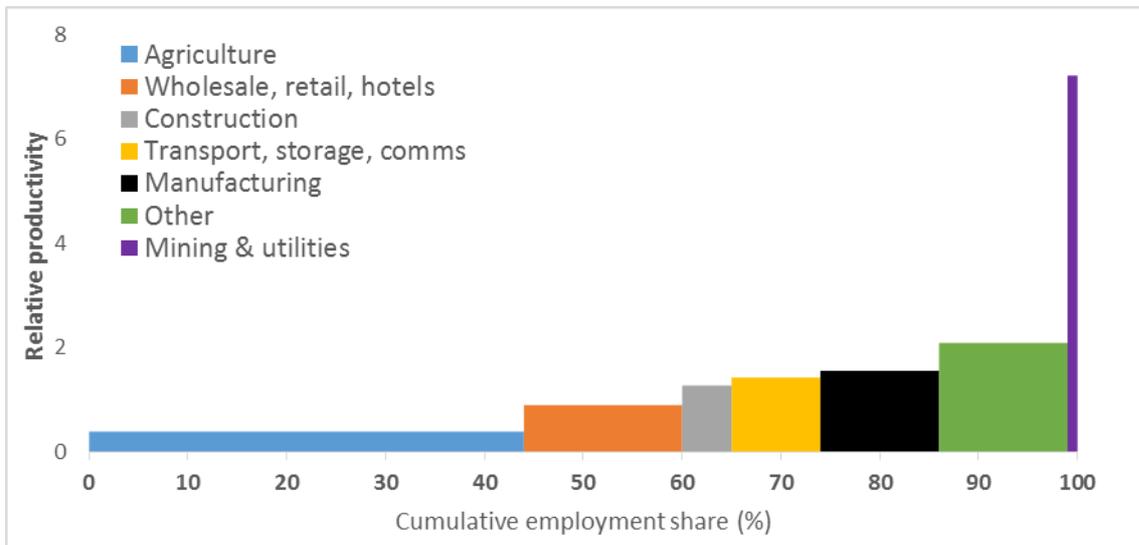
The productivity gap analysis for Bangladesh in Figure 6 (below) shows the relatively high level of employment in agriculture, vis-à-vis its lower level of relative labour productivity. The manufacturing sector fares relatively well but still does not employ as large a share of people as agriculture or basic services such as retail. Rodrik (2013) highlights the advantage of moving away from traditional agriculture to manufacturing, arguing that there is unconditional convergence in productivity levels in the manufacturing sector, whereas in agriculture and services productivity levels can vary significantly between countries.

From a growth perspective, concentrating efforts on the promotion of productivity-enhancing sectors has positive consequences for growth rates, assuming movement in resources goes from less to more productive areas (McMillan and Rodrik, 2011). The causal link between

increased productivity and higher growth levels is through greater employment in higher-value sectors (Nordhaus, 2005) and associated increases in incomes and demand at the economy-wide level (ILO, 2013).

To this end, Figure 6 highlights that there are higher levels of productivity in the manufacturing sector, the transport, storage and communications sector and the mining sector.⁵ This enables the first potential identification of sectors – that is, manufacturing and transport, storage and communications. Mining, although a very high-productivity sector, can be excluded *ex-ante*, as its capacity to absorb and generate higher levels of employment is limited compared with the other two sectors.

Figure 6: Bangladesh productivity gap in 2013



Note: Latest data available

Source: UNData (2016)⁶ and ILO WESO (2015)

The economic literature firmly establishes manufacturing as a driver of growth. Higher growth rates can be sustained through rapid economic transformation by means of movement into industry, specifically in the manufacturing sector, which has shown unconditional convergence in productivity rates, independent of country and regional factors, across 118 countries (Rodrik, 2013). This means that productivity in developing country manufacturing is expected to reach similar levels to those in developed countries. The added ‘bonus’ – that such rates can be achieved even in countries with low levels of labour skills and weak institutions (Rodrik, 2013) – means that there is strong potential to boost inclusive growth in Bangladesh. However, such a process is not ‘automatic’, and there is a need for supportive economic and trade policies.

In terms of the tangible benefits of manufacturing as a growth driver, the productivity gap analysis, as presented above, can also be linked with a wage gap analysis. Figure 7 shows the

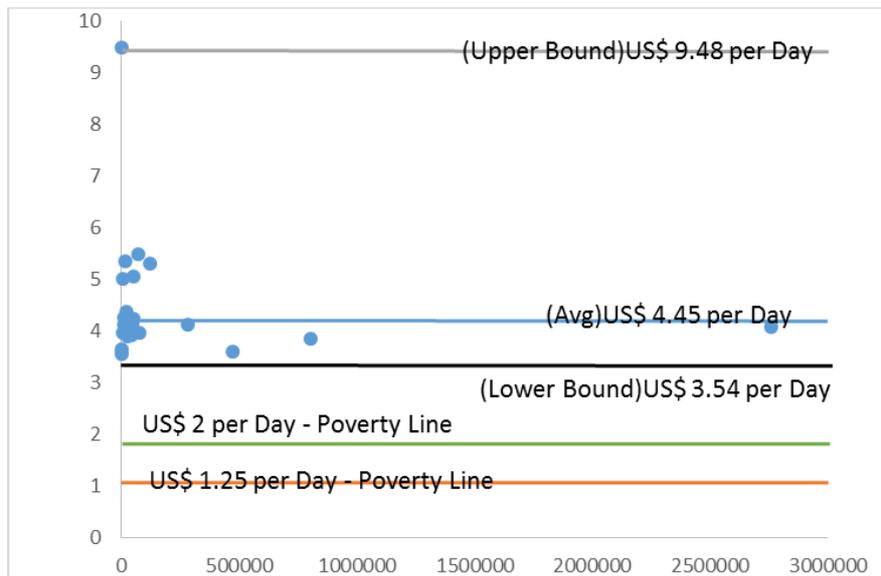
⁵ In addition to ‘other activities’, which includes a number of aggregated activities not highlighted in detail given the data limitations of the World Employment and Social Outlook (WESO) and UNData data.

⁶ <http://data.un.org/>

upper and lower bounds of daily wages (in US\$) within manufacturing sub-sectors, the amount of people employed and a comparison against two poverty line measures in 2010-11.

From the data, it appears that wages for all manufacturing employment were well above the \$2 per day poverty line income threshold, and the average wage was \$4.45 per day. This suggests that a (theoretical) shift of labour away from agriculture and into manufacturing would be instrumental in uplifting poor people over the poverty line income threshold through the provision of higher wages for workers within the sector.

Figure 7: Wages in manufacturing vis-à-vis employment level, 2010–11

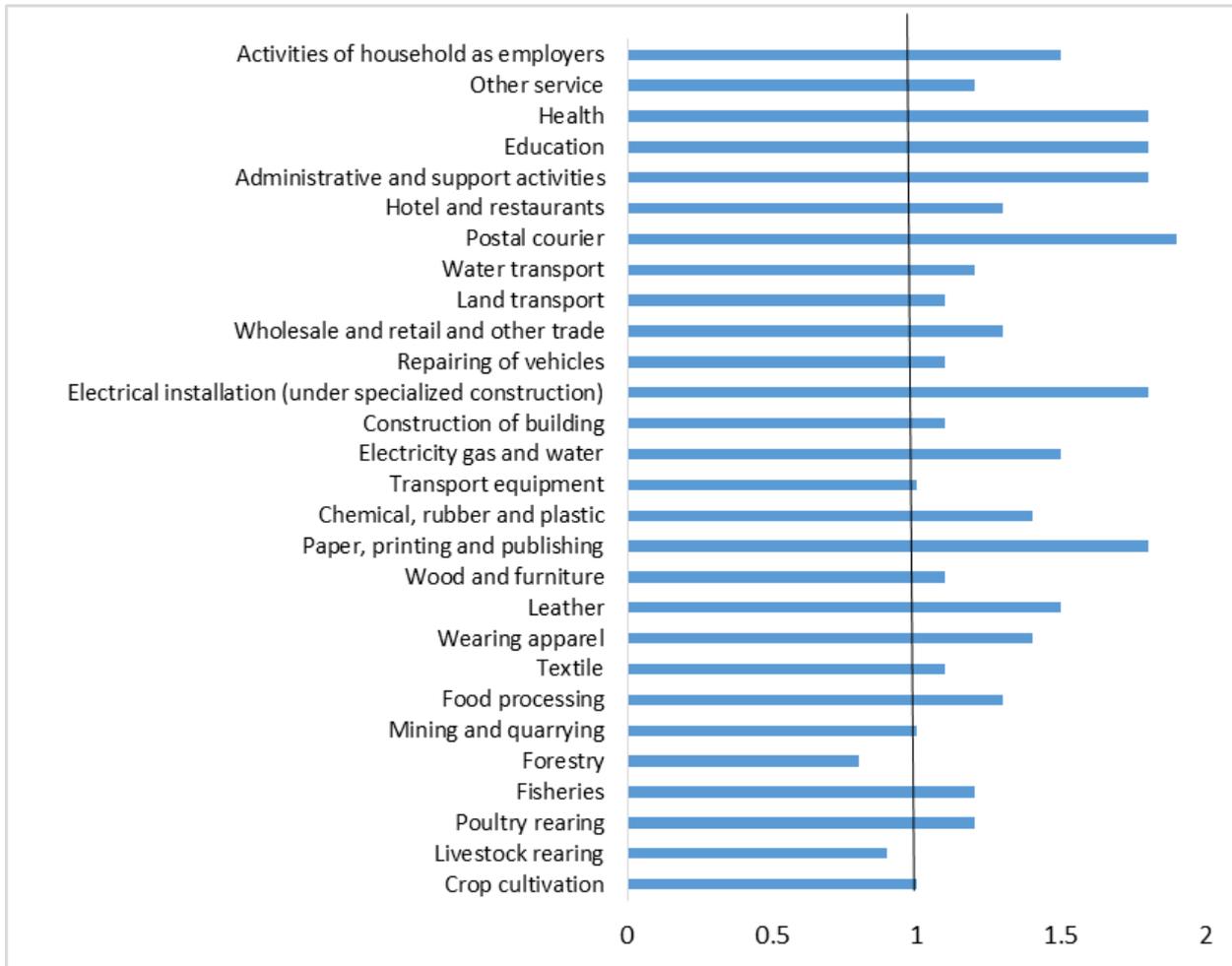


Source: BBS (2012)

The analysis on wages in manufacturing employment in Bangladesh (Figure 7) is reinforced by findings on relative sectoral wages with respect to crop cultivation (Figure 8): it seems that wages in all nonfarm activities are considerably higher than those in crop cultivation.⁷

⁷ This is a comparison of average wage rates. The seasonality element (in agriculture) has not been factored into the analysis.

Figure 8: Daily relative sectoral wages with respect to wages in crop cultivation, 2013



Source: Raihan and Haque (2016).

The identification of the transport, storage and communications services sector as a potential growth area brings the discussion onto the role of services as a growth driver. The services sector has been established as playing an increasingly important part in economic activities in both developed and developing countries (Balchin et al., 2016).

The structural transformation narrative around services is typically one of unidirectional movement into the sector from industry, but there is also an understanding that a strong services sector has positive growth effects on both industry and agriculture (Balchin et al., forthcoming). From a systemic point of view, an increase in the importance of services⁸ in an economy can contribute to higher productivity levels as well as reducing volatility in wages, as has occurred in the US (Moro, 2011). This can help ‘stabilise’ poverty levels in developing countries by reducing unexpected wage reductions.

From a poverty perspective, growth in the services sector leads to greater levels of poverty reduction than in agriculture – that is, a 0.47% reduction in poverty from a 1% GDP growth in services, vis-à-vis 0.12% for agriculture (World Bank, 2014). Evidence from the US suggests there is also a unidirectional strengthening effect running from growth in manufacturing to growth in services, whereby increases in manufacturing activity (with associated increases in

⁸ Understood as higher-value non-informal services.

employment and incomes) can have a positive effect on growth in the services sector (Galesi and Michelacci, 2014).

From a developing country perspective, the Indian services sector case may hold an important lesson for Bangladesh. In India, transformation occurred within the services sector between the 1990s and the 2000s, when the sector grew as a result of labour moving away from a stagnant agriculture sector and a declining manufacturing sector and moving into low-value services. Since the 2000s, though, the sector has inherently grown through growth in higher-value activities driven by the IT sector and business outsourcing activities (Unni and Naik, 2013).

Furthermore, as Raihan (2015) argues, depending on the linkages of the services sectors with the rest of the economy, especially with the manufacturing sector, the 'manufacturing content' of services, which is defined as the share of domestic manufacturing value-added in services, should be a priority area for policy interventions. Two major such policies include expanding the manufacturing base in the economy and promoting larger services exports (Raihan, 2017a).

As part of the sectoral identification process, we need to look at sectoral shares in GDP, employment and employment elasticities. The sub-sectoral shares of GDP and employment are presented in Table 1. Despite the fact that agriculture's share in GDP has gone down below 20%, agriculture still holds the largest share of employment (45.1%). Among the manufacturing sub-sectors, textiles and garments has the highest share (8.3%). While growth of employment, especially in relation to the growth of labour force, is important, from the point of view of examining how employment-intensive output growth has been it is necessary to look at employment growth in relation to output growth.

Elasticity of employment growth with respect to output growth is a summary measure of the latter, and can be estimated from the available data. Table 1 also presents the calculated sub-sectoral employment elasticity of GDP. Among the manufacturing sub-sectors, food and beverages, wood and wood products, leather and footwear, chemicals, rubber and plastic, metal and mineral products, electrical machinery and other manufacturing have employment elasticities greater than one. From the data it appears that, apart from in textiles and garments, the manufacturing sub-sectors with the potential for both export diversification and employment generation are food and beverages (agro-processing) and leather and footwear.

Table 1: Sub-sectoral shares of GDP and employment and employment elasticity, 2013

Sector	Share in GDP in 2013 (%)	Share in total employment in 2013 (%)	Employment elasticity with respect to sectoral GDP (2009–10 to 2012–13)
Agriculture, forestry & fishing	19.75	45.10	0.11
Mining & quarrying	1.26	0.40	6.34
Food & beverage	1.64	2.19	4.03
Tobacco	0.85	0.32	-65.15
Textiles & garments	7.20	8.35	0.27
Leather & footwear	0.34	0.16	3.66
Wood & wood products	0.33	2.27	1.39
Printing & publishing	0.35	0.28	-23.38
Chemicals, rubber & plastic	1.34	0.39	12.76
Petroleum & petroleum products	0.00	0.01	0.0
Metal & mineral products	1.32	1.20	3.82
Electrical machinery	0.12	0.17	20.97
Other manufacturing	5.57	1.08	2.46
Construction	9.25	3.69	-0.74
Electricity, gas, water & waste management	1.72	0.34	1.78
Trade, hotel & restaurants	14.96	14.45	0.00
Transportation, storage & communications	10.70	6.45	-0.37
Financial intermediation, real estate & other business activities	8.90	0.77	-2.59
Public administration & defence	2.91	1.32	1.62
Education	2.83	3.23	1.53
Human health & social work activities	2.45	1.20	2.32
Other service activities	6.21	6.62	-0.09
Total	100.00	100.00	

Source: Raihan (2016a). Calculated using data from different labour force survey and national accounts data.

In terms of inclusive growth, it is also important to understand which sectors have a high concentration of poor people, and, therefore, whose development can have important implications for poverty alleviation. In the absence of any information regarding the concentration of poverty at the sectoral level, we consider the presence of a high proportion of unskilled workers at the sectoral level as an indication of the concentration of poverty in that sector. Table 2 shows that most of the labour-intensive sectors, such as leather products and footwear and wood products and cork (including jute) fall into this category.

Table 2: Share of unskilled workers at the sectoral level, 2015

Rank	Sector	Share of unskilled workers (% of sectoral employment)
1	Agriculture	99.9
2	Mining & quarrying	94.3
3	Food, beverages & tobacco (including food processing)	66.7
4	Textiles & RMG	96.8
5	Leather products & footwear	99.5
6	Wood products & cork (including jute)	96.2
7	Pulp, paper & services	99.7
8	Fuel products	98.8
9	Chemical products (includes pharmaceuticals)	97.4
10	Rubber & plastics	84.7
11	Other non-metallic mineral	96.4
12	Metal products	51.5
13	Non-electrical machinery	86.7
14	Electrical specialised equipment	89.5
15	Transport equipment	65.4
16	Other manufacturing	84.7
17	Electricity, gas & water	73.8
18	Construction	99.5
19	Motor vehicles trade & services	94.5
20	Wholesale trade	58.1
21	Retail trade	81.9
22	Hotels & restaurants (including tourism)	92.8
23	Inland transport	96.7
24	Water transport	93.8
25	Air transport	98.1
26	Auxiliary transport services	95
27	ICT & telecommunications	92.5
28	Financial intermediation	41.1
29	Real estate activities	34.9
30	Business-related services & activities	64.7
31	Public administration	58.4
32	Education	5.9
33	Health & social work	33.3
34	Social & personal services	80.4
35	Households with employed persons	100

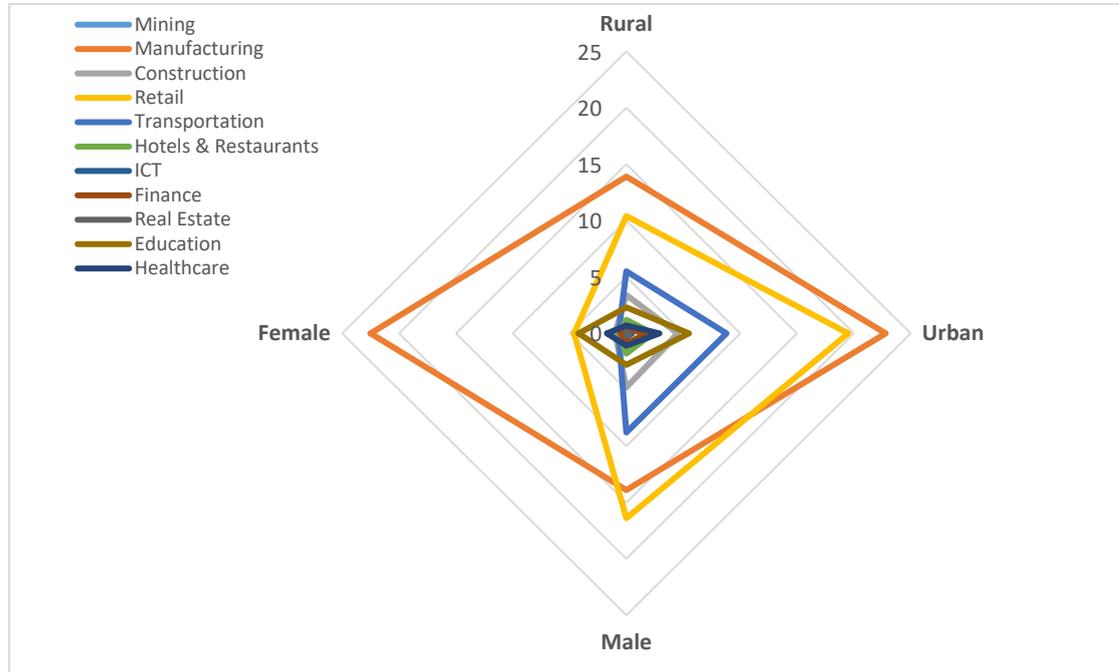
Source: Calculated from ADB and ILO (2016)

Data from the Bangladesh Bureau of Statistics (BBS, 2015) highlight (Figure 9) that non-agricultural sectoral participation, divided by rural and urban inhabitants as well as into males and females, shows that the manufacturing sector seems to be divided equally both between males and females as well as between urban and rural areas.

All other sectors tend to have greater urban male participation. From an inclusive growth perspective, there is a scope to increase their share of employment in manufacturing, with the dual advantage of moving employment into more productive sectors. This facilitates equal

participation of female and male labour, away from lower-income employment in basic agricultural production.

Figure 9: Non-agricultural sectoral participation by gender and urban/rural location (% total)



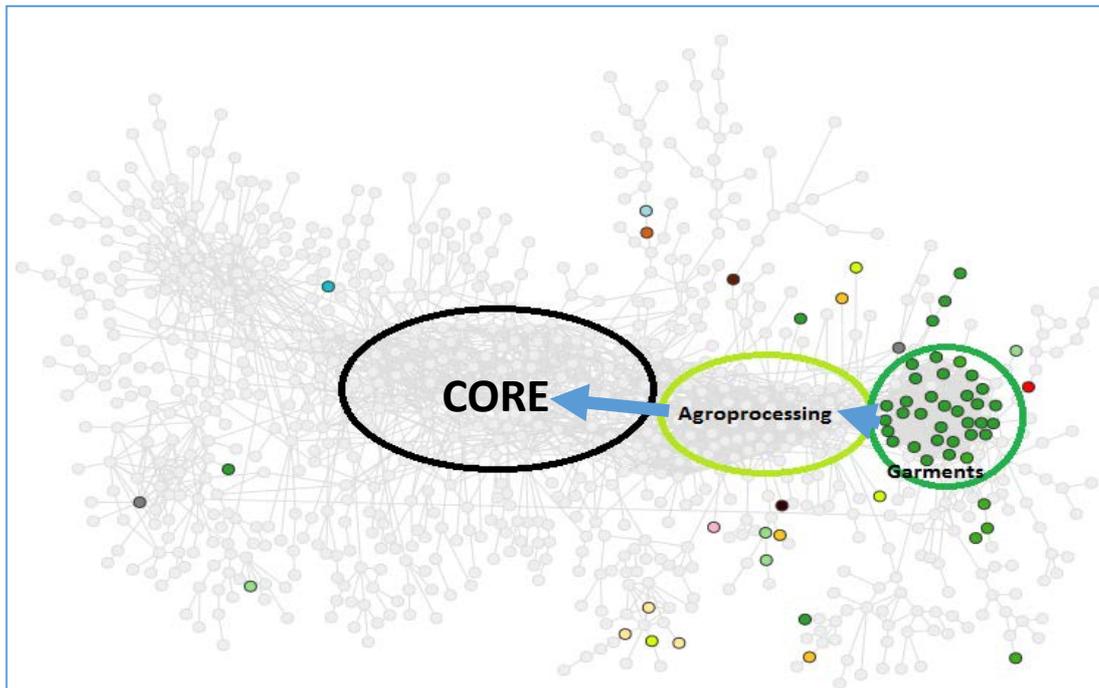
Source: BBS (2016)

2.2. Diversification

This sub-section looks at the economic diversification potential of sectors in the Bangladeshi economy. It uses a number of measures to assess where there is potential to diversify production structures using tools such as revealed comparative advantage (RCA), the Hausmann-Hidalgo product space and the International Monetary Fund (IMF) Diversification Index. From a methodological point of view, it is important to note that such data are based on current exports from Bangladesh; however, in the absence of stronger internal production data, the use of these tools gives a comparably strong quantitative slant to the sectoral selection analysis process.

In order to examine promising sectors that can contribute to economic diversification and help shift the country's existing production structure towards the production of more complex products with higher productivity and employment opportunities, we can use the Hausmann-Hidalgo product space analysis (the analysis is based on trade data) (Hidalgo et al., 2007). Bangladesh's Economic Complexity map for 2014 (Figure 10) highlights current production structures in the economy. Unsurprisingly, the map shows that concentration of products falls under the textiles and garments sector. Such clustering of production provides a launch point for the production of goods that are connected to the textiles and garments sector as well as a comparative advantage in their production.

Figure 10: Bangladesh's product space, 2014



Source: AoEC (2016)

Analysis based on Bangladesh's product space mapping (Figure 10) provides a pathway for production diversification, starting from its current specialisation in garments. It shows that there may be ulterior export (and growth) opportunities through supporting light manufacturing through agro-processing. Such investments, from a structural transformation perspective, would allow Bangladesh to move into what are described as 'core' products. Core products are those with the most links, allowing increased levels of diversification or specialisation into more niche goods. The theory is that it is possible to shift production towards sectors where capabilities are similar – hence diversification (especially in the manufacturing sector) in Bangladesh would involve moving towards the production of goods that are close to garments, with agro-processing products the closest.

The previously identified concentration of products around textiles and garments is also reflected in the IMF's export diversification measures, which include an extensive and intensive margin. Extensive export diversification reflects an increase in the number of export products or trading partners; intensive export diversification considers the shares of export volumes across active products or trading partners.⁹ Mirroring the country's export basket, data for the 2000–10 period (Table 3) show that export diversification has been negligible in the country and, over the 2000s, exports became more concentrated. The degree of concentration has resulted in Bangladesh ranking 155th out of 182 countries in terms of export diversification in 2010 (Raihan and Uddin, 2015). Also, it was more intensive margin than extensive margin diversification.

⁹ <https://www.imf.org/external/np/res/dfidimf/diversification.htm>

Table 3: IMF Bangladesh Export Diversification Index 2000–10

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Export diversification	4.53	4.56	4.57	4.62	4.63	4.64	4.68	4.65	4.72	4.82	4.81
Extensive margin	0.08	0.08	0.08	0.09	0.08	0.09	0.08	0.08	0.08	0.06	0.06
Intensive margin	4.44	4.47	4.48	4.52	4.54	4.54	4.59	4.56	4.64	4.75	4.74

Source: IMF (2014)¹⁰

The product space and export diversification analysis, presented above, also can be linked to analysis of the RCA of goods exports from Bangladesh, as RCA shows the level of specialisation of a country in certain exports compared with the world average. An RCA analysis of Bangladesh at the 2-digit HS code level, using the latest available data for 2015, indicates that textiles and garments products are the area within which the country has the highest comparative advantage (Table 4).

Given that the sector already dominates production, diversification into other sectors with relatively 'high' RCA scores would help improve diversification. The RCA list highlights that production of leather, leather goods, footwear, jute and jute goods and fish and fish products (agro-processing) seems to have the highest potential.

Table 4: Products with highest RCAs at the 2-digit HS code, 2015

HS code	Product label	RCA score	Export (\$ '000s)	% share in total exports
53	Vegetable textile fibres nes, paper yarn, woven fabric (jute)	58.21	567,460	1.61
62	Articles of apparel, accessories, not knit or crochet	30.78	1,512,8923	43.02
61	Articles of apparel, accessories, knit or crochet	30.22	14,991,125	42.63
65	Headgear and parts thereof	12.20	239,689	0.68
63	Other made textile articles, sets, worn clothing etc.	7.45	976,257	2.78
41	Raw hides and skins (other than furskins) and leather	4.63	300,776	0.86
67	Bird skin, feathers, artificial flowers, human hair	2.72	52,300	0.15
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	2.68	584,387	1.66
64	Footwear, gaiters and the like, parts thereof	2.58	772,732	2.20
46	Manufactures of plaiting material, basketwork, etc.	1.64	8,406	0.02
24	Tobacco and manufactured tobacco substitutes	1.35	114,762	0.33
42	Articles of leather, animal gut, harness, travel goods	1.14	185,468	0.53
57	Carpets and other textile floor coverings	0.98	31,201	0.09
78	Lead and articles thereof	0.92	13,415	0.04
56	Wadding, felt, nonwovens, yarns, twine, cordage, etc.	0.62	31,492	0.09
69	Ceramic products	0.42	51,194	0.15
66	Umbrellas, walking-sticks, seat-sticks, whips, etc.	0.39	3,275	0.01

Source: Raihan and Rahman (2016)

2.3. Government buy-in

It is also important to understand how the policy documents of the Bangladeshi government identify the different sectors. An *a priori* selection of sectors whose development does not have

¹⁰ <https://www.imf.org/external/np/res/dfidimf/diversification.htm>

existing government support would provide an interesting theoretical exercise but no real practical value. To this end, this section provides a summary of what sectors GoB has identified as growth sectors and the policies it aims to use to foster their growth, acting as a cross-reference criterion to the sectors highlighted in the sections above (see Table 5).

The Industrial Policy 2016 has identified seven sectors as high priority. These are agro-/food processing, RMG, ICT/software, pharmaceuticals, leather and leather goods, light engineering and jute and jute goods. The 7FYP also considers labour intensity of production across the spectrum of targeted sectors. Growth in manufacturing will be based on diversified, export-oriented, labour-intensive production. The identification of growth export sectors is expected to be a market-led process focused on labour-intensive manufacturing exports that can benefit from Bangladesh’s abundant unskilled labour force, and move the manufacturing sector away from garments, whose dominance currently presents a significant national economic risk in the event of shocks to the sector. The 7FYP emphasises investments in agro-processing to increase the rate of commercialisation, help diversify production and provide the basis for further growth in the country’s manufacturing sector (Miah et al., 2015).

Table 5: Government sectoral policy support summary

Policy document	Identified growth sectors	Policy support	Identified inclusive growth impacts
Industrial Policy 2016	Agro-/food processing, RMG, ICT/software, pharmaceuticals, leather and leather goods, light engineering, jute and jute goods	Productive and export-oriented industrialisation, ensure effluent treatment system and workplace safety in the industries, develop industrial clusters, export diversification through product and market diversification, development of the accreditation of testing labs, use of ICT, removing bureaucratic hassles to encourage domestic and foreign investment, etc.	Infrastructural transformation, diversification of the economic base, accelerated economic growth, employment generation, increase of income and development of livelihood of the people. The underlying objective is to reach to upper middle-income country status by 2021.
Export Policy 2012–16	10 highest priority sectors: agro-products and agro-processed products; plastic products; footwear and leather products; pharmaceutical products; software and ICT products; home textiles; ocean-going ship-building industries; furniture industries; terry towelling; and tourism industries.	Project loans at reduced interest rates on a priority basis; income tax rebate; possible financial benefits or subsidies consistent with World Trade Organization Agreement on Agriculture and Agreement on Subsidies and Countervailing Measures, including concessionary rates for utility services such as electricity, water and gas; providing export loans at lower interest rates and on soft terms; air transport facilities at concessionary rates; duty draw-back/ bond facilities; facilities for setting up backward linkage industries including infrastructural development for reducing cost of production; expansion of institutional and technical facilities to improve and control quality of products; assistance in production and marketing; assistance in exploring foreign market; and necessary initiatives to attract foreign investments.	The key objectives include encouraging labour-intensive (especially female labour) export-oriented production, augmenting productivity and diversification of products and assisting the development of a skilled labour force through proper training for managing international trade.

Source: Ministry of Industry and Ministry of Commerce

There is thus government support for a number of sectors, which include agro-processed products, leather and leather products, pharmaceutical products, ICT, light engineering, jute and jute goods, home textiles, ship-building industries, furniture industries, terry towelling, plastic products and tourism industries. GoB support is in the form of both fiscal (e.g. tax concessions) and monetary (concessional loans) incentives.

In addition to GoB’s identification of potential growth sectors, our identification process includes a summary of existing empirical studies that have also looked at the prospects of different sectors in promoting economic and export diversification and inclusive growth. Table 6 provides a synthesis of previously carried out growth studies in Bangladesh. Sectors such as agro-processing, leather products and ICT appear to be repeatedly highlighted as potential growth sectors in a number of studies.

Table 6: Growth diagnostic sectoral summary

Study	Identified constraints	Identified growth sectors	Inclusive growth relevance
ADB (2013)	Lack of social services and weak infrastructure in terms of water and sanitation, energy and transport.	Fisheries/aquaculture Food processing Industrial livestock	Female participation within the identified sectors is significant.
ADB (2015)	Energy supply gap remains largest.	Energy ICT Pharmaceuticals Leather products Ship-building	Export diversification to promote large number of good jobs.
ADB (2016)	Gender-based constraints for inclusive business that include absence of gender-inclusive value chain and deeply rooted gender norms and practices.	Education Energy Health businesses ICT Retail services	Sectors identified through a women’s economic empowerment lens, whereby female employment is concentrated in services.
ADB and ILO (2016)	A number of supply-side and policy-induced constraints at both sectoral and national level that include shortage of skilled workers, technological bottlenecks, lack of entrepreneurship and management skills and weak infrastructure.	Jute and jute diversified products Leather and leather goods Pharmaceuticals Electronics Tourism Construction IT	Export diversification to promote large number of good jobs.
Fernandes (2008)	Weak electricity infrastructure affects total factor productivity.	Pharmaceuticals Food Leather/footwear Textiles	Promotion of labour-intensive sectors.
GHK (2010)	Lack of enforcement of legislation and policies making them ineffective.	Environmental technologies Waste management Water supply and waste, water treatment Forestry Energy Construction Sustainable transport Climate change adaptation	Promotion of sectors and jobs that are environment-friendly.

Rahman and Islam (2013)	Access to productive inputs/assets, demands on women's time arising from sources other than income generating activities, failure of markets and institutions, social norms and environment.	Agriculture Livestock Poultry Handicrafts Garments ICT	Promotion of female labour market participation
USAID (2014)	Electricity is the most binding constraint to economic growth in Bangladesh.	Garments Textiles Fish products Miscellaneous manufactured articles Vegetables and fruits Footwear	Export diversification and moving up in the economic complexity can promote growth and structural transformation

Source: Authors' compilation

2.4. Sectoral selection

The cross-reference matrix presented in Table 7 below aggregates the sectoral data highlighted in the sections above in order to provide an overview of the inclusive growth potential of the different potential sectors identified above. It allows for a comparison between them and provides a narrative for the three-sector focus choice.

From the matrix results below, it appears four manufacturing sub-sectors and one services sub-sector can be further investigated. Of the four manufacturing sub-sectors, we select leather and leather goods and agro-processing; as the third sector we select ICT. The selection of these three sectors ensures they satisfy all three criteria: growth driver, diversification and government buy-in.

Table 7: Sectoral selection cross-reference matrix

Sub-sector	RCA	Share in GDP (%)	Share in export (%)	Share in total employment (%)	Share in unskilled labour (%)	Employment elasticity	Priority in GoB's policy documents	Priority in other empirical studies
Leather & leather goods	4.63 and 1.13	0.34	1.38	0.16	99.5	3.66	Yes	Yes
Agro-processing (including food & beverages, fish & processed fish)	2.68	1.64	1.66	2.19	66.7	4.03	Yes	Yes
ICT*		0.07	0.26	0.2	92.5		Yes	Yes
Jute & jute goods	58.2	0.47	1.61		96.2**		Yes	Yes
Other manufacturing (light engineering)		5.57		1.08	84.7		yes	yes

Source: * ICT & telecommunications from ADB and ILO (2016); ** wood products & cork (including jute) from ADB and ILO (2016).

3. Agro-processing in Bangladesh

Introduction

Bangladesh's economy has undergone significant structural changes over the past four decades. The share of agriculture in GDP has declined from over 60% to less than 20%, while the relative significance of industry (including manufacturing), currently estimated to be 28% of GDP, and services has increased substantially. While the significance of agriculture in food production and food security cannot be ignored, the importance of industrialisation in structural transformation of the economy is huge. Agro-processing can play an important role in the industrialisation process while maintaining the vital linkages between agriculture and industry.

There are some definitional issues with respect to the agro-processing sector. In general, agro-industry undertakings include post-harvest activities involved in the transformation, preservation and preparation of agricultural production for intermediary or final consumption (Wilkinson and Rocha, 2009). It is hard to formalise a list of sub-sectors under the agro-processing industry, which covers domains that range from crops, vegetables and fruit to poultry, livestock, fisheries and forestry. We can narrow down the list considering the export diversification potential for Bangladesh to include frozen fish, shrimps, processed meat, tea, vegetables, tobacco, cut flower, fruit, spices, dry food and other processed agricultural products.

Wilkinson and Rocha (2009) argue that all developing countries are experiencing rising sales of ready-to-eat meals, increasing participation of women in the labour market, ageing of the population, rising importance of single-person households, changes in food tastes and higher demand for ethnic products. Rao (2006) argues that, as people's integration into an urban way of life leads to less time available to prepare traditional foods at home, urban people benefit from the availability of stored, processed, easy-to-prepare or convenience foods in some form or other. In these contexts, the agro-processing sector of Bangladesh has prospects in relation to both the domestic and the international markets.

Sustained income growth and rapid urbanisation have influenced the transformation of domestic consumption to high-value non-cereal products (vegetables and fruits) and animal products (fish, poultry, egg, milk and meat) in Bangladesh. The share of cereals in per capita calorie consumption declined from 84% in 1990 to 80% in 2010, and it is expected to decline further to 78% by 2020 (Amarasinghe et al., 2014). A study by the World Bank (2016) also shows that consumers in Bangladesh are turning more to vegetables, fruits and other non-cereal products, which increased their share in per capita calorie consumption from 12.6% in 1990 to 15.8% in 2010; however, per capita consumption of meat and other animal products is still low in Bangladesh (less than 5% of calorie consumption).

Interviews with stakeholders indicated that so far the most popular export destinations for Bangladesh's agro-processing products are the EU, the US, the Middle East and the Gulf, because of the higher prices received and the prospects of larger quantities of sales. Bangladeshi exports are also expected to increase in the near future to emerging markets like

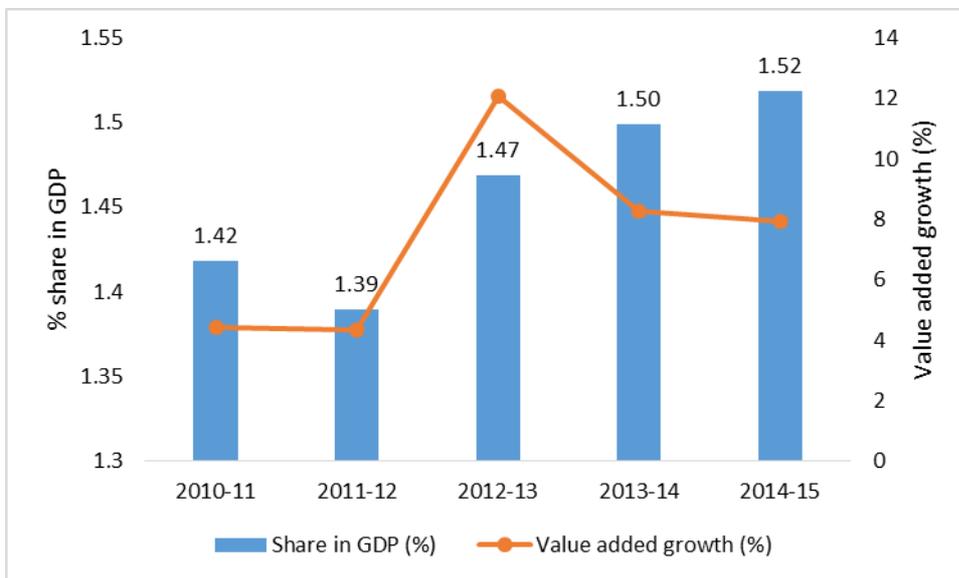
the Russian Federation, Japan, China, Australia, Malaysia and Singapore. It is also important to mention that, until now, except for frozen shrimp, most items have been sold through ethnic channels in foreign markets. However, there is a huge global market for agro-processing products, with a rising trend in global trade.¹¹

The World Bank (2016) also emphasises that, in the context of increasing demand for agro-processing products, both at home and in external markets, there are enormous opportunities for farmers in Bangladesh to engage in higher-value agro-production and increase their incomes. Furthermore, producing, trading and involving in the value chain opens doors to increase and diversify rural nonfarm employment and income growth. All this can contribute to strengthening the value chains of agricultural raw materials, and firms involved in processing and packaging can link smallholder farmers to higher-value markets. These channels have important implications for inclusive growth in Bangladesh.

3.2. Structure of the agro-processing sector

The agro-processing sector in Bangladesh has been able to increase its share in GDP in recent years (Figure 11). In 2014–15, the sector’s contribution to GDP stood at 1.52%. The sector has also experienced some sizeable growth rates in recent years. In 2014–15, the sector’s value-added growth rate was around 8%, which was much higher than the growth rate of the country’s overall GDP.

Figure 11: Share of food, beverages and tobacco in GDP (%)



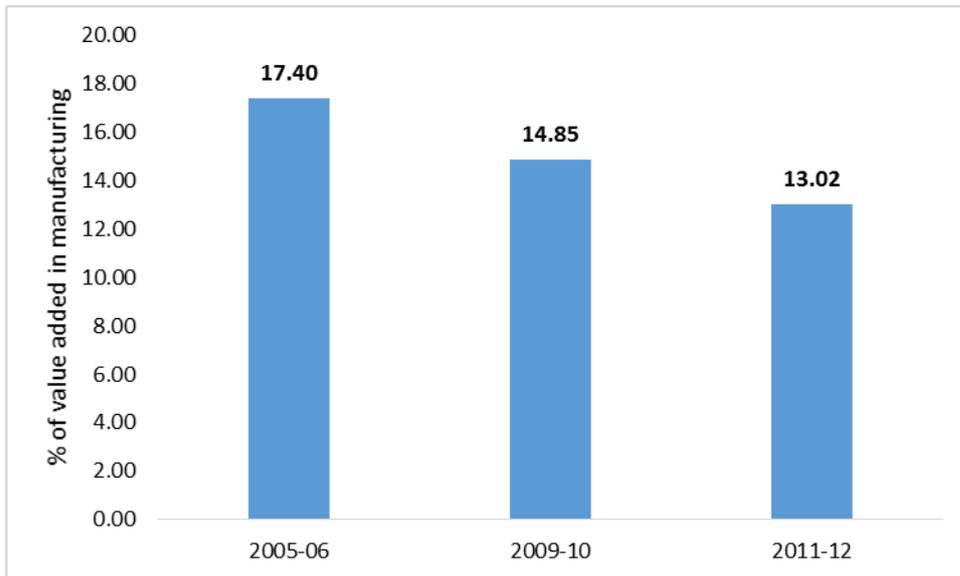
Source: BBS (2016)

Despite this sizeable growth, the agro-processing sector’s contribution to manufacturing value-added has been on a declining trend in recent years (Figure 12). The main reason for this

¹¹ During 2005 and 2010, agricultural products increased from around \$700 billion to \$1,100 billion ([http://www.hungerexplained.org/Hungerexplained/International trade.html](http://www.hungerexplained.org/Hungerexplained/International%20trade.html)).

is that, in recent years, manufacturing in Bangladesh has been increasingly concentrated around RMG.¹²

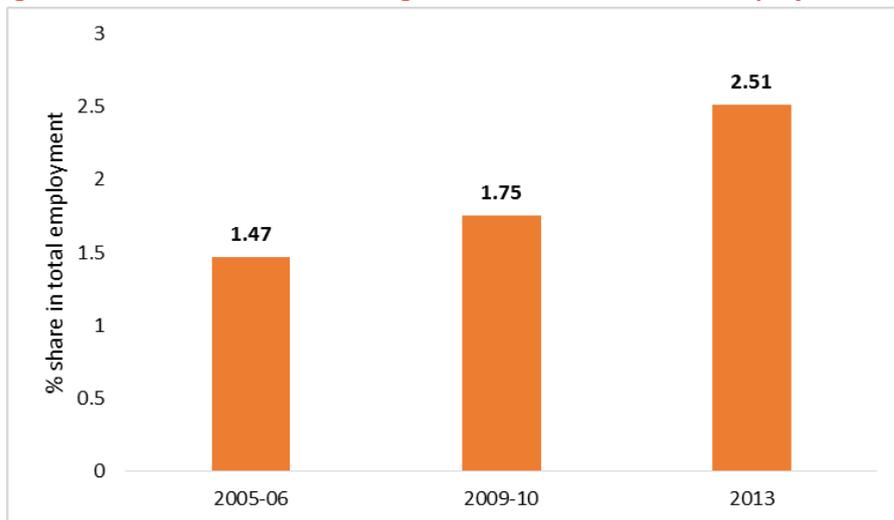
Figure 12: Share of value-added of food, beverages and tobacco in manufacturing (%)



Source: BBS (2016)

The sector has huge potential in terms of generating employment. This is reflected in Figure 13, which suggests that the share of agro-processing in total employment in the country has been on the rise. In 2005–06, the share was 1.5%; this had increased to 2.5% in 2013.

Figure 13: Share of food, beverages and tobacco in total employment (%)

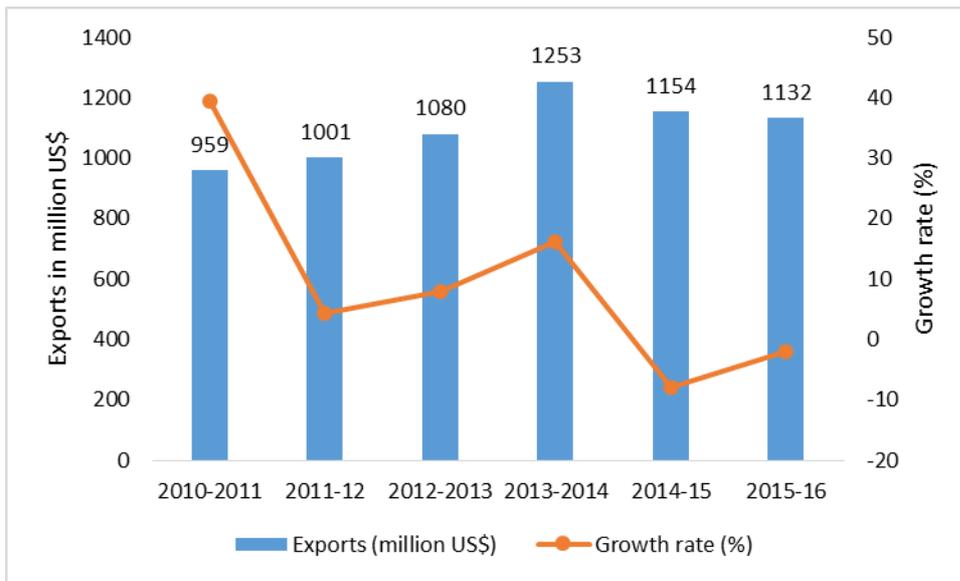


Source: BBS (2016)

¹² As Raihan (2016) shows, in the case of the shares of different sub-sectors in manufacturing GDP, during 1999–2000 and 2011–12, the major gainer was textiles and RMG, which by 2011–12 had increased its share of manufacturing GDP to 37.8% from 28.4% in 1999–2000. This suggests that, over the years, in terms of sub-sectoral shares in value-addition, the manufacturing sector has become more and more concentrated around the textiles and RMG sub-sector.

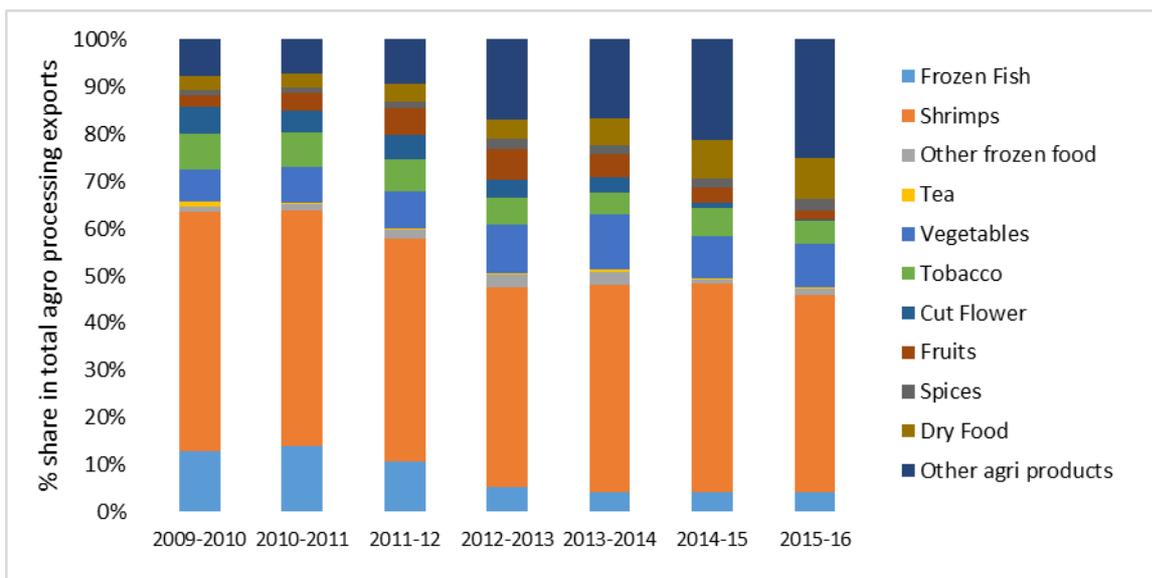
Interviews with stakeholders indicated that there were significant prospects of a much higher amount of exports of agro-processing products from Bangladesh than is currently the case. Some recent empirical studies endorse such views (e.g. Gregg and von Uexkull, 2011; ADB and ILO, 2016). Figure 14 shows that, in recent years, exports from this sector have been at a little over \$1 billion, and growth in exports has slowed. In terms of share in total exports, in 2005–16 the sector contributed only around 3.2% (EPB data 2016).

Figure 14: Food, beverages and tobacco exports (million US\$)



Source: EPB (2016)

Figure 15: Share of food, beverages and tobacco exports in agro-processing exports (%)



Source: EPB (2016)

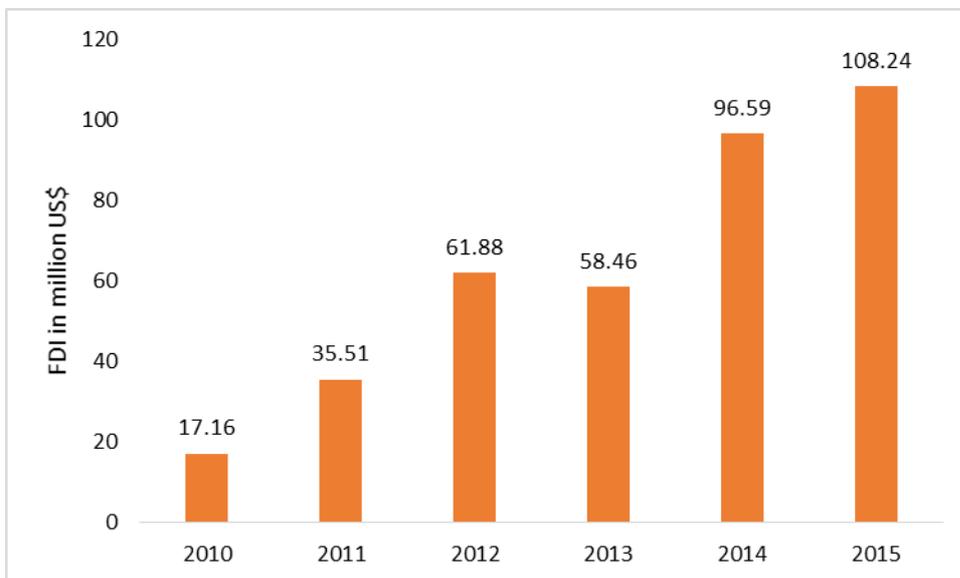
Bangladesh’s agro-processing exports are composed of frozen fish, shrimps, other frozen food, tea, vegetables, tobacco, cut flower, fruits, spices, dry food and other processed agricultural

products (Figure 15). In terms of share, shrimps dominate, with a growing share of other processed agricultural products and dry food. As mentioned before, the major export destinations are the EU, the Middle East and the US. However, it should be noted that, while Bangladeshi shrimp exporters have managed to position themselves in the main high-end markets, other agro-food exports are currently concentrated on a number of regional markets, mainly targeting ethnic food niches in countries with strong Bangladeshi diaspora, such as the United Arab Emirates, India, Saudi Arabia and other Gulf countries (Gregg and von Uexkull, 2011).

Bangladesh is a country with low foreign direct investment (FDI) orientation, which is reflected by the fact that the country’s average FDI–GDP ratio during 2011–15 was only 1.4% (Raihan and Ashraf, 2016). Raihan and Ashraf (2016) show that, in contrast, most Southeast Asian countries had FDI–GDP ratios well above 2% during the same period. The average FDI–GDP ratios of Malaysia, Indonesia, Thailand and Vietnam were 3.65%, 2.38%, 2.07% and 5.42%, respectively. Even the least developed countries such as like Cambodia, Lao PDR and Myanmar had much higher FDI–GDP ratios, at 8.98%, 5.43% and 3.15%, respectively.

In the agro-processing sector in Bangladesh, FDI is still very low but on an increasing trend (Figure 16). While in 2010 FDI was as low as \$17.2 million, by 2015 the amount had increased to \$108.2 million.

Figure 16: FDI in food products (million US\$)



Source: Bangladesh Bank (2015)

3.3. Prospects of the agro-processing sector

The discussion so far points to the high potential of the agro-processing sector. In particular, we can highlight three major reasons for the bright prospects in the agro-processing sector in Bangladesh: large domestic value addition, large-scale employment generation and high backward and forward linkages.

Three major reasons for the bright prospects in the agro-processing sector

1. Large domestic value addition
2. Large-scale employment generation
3. High backward and forward linkages

3.3.1 Large domestic value addition

Interviews with stakeholders clearly suggested that the agro-based sector in Bangladesh, compared with other manufacturing sub-sectors, enjoyed much higher value addition in the production process, given the domestic availability of raw materials. Stakeholders also highlighted that this advantage had put the agro-processing sector in a much better position in the international market compared with many other manufacturing sub-sectors with much lower levels of domestic value addition. As a least developed country, Bangladesh enjoys preferences in a number of markets in the developed (i.e. the EU and Canada) and advanced developing (India and China) countries. However, such preferences are subject to stringent Rules of Origin (RoO), which require a high level of domestic value addition. The agro-processing sector in Bangladesh is able to meet these stringent RoO criteria in most cases. Seeing this potential, GoB currently provides a 10% cash incentive programme as well as VAT exemptions for agro-food exporters, which many stakeholders in the sector see as a key in their competitiveness in the global market. However, most stakeholders also expressed the view that, although agro-processing sector's prospects were great, not even one fifth of the potential had been met.

3.3.2 Large-scale employment generation

Interview with stakeholders suggested there was growing demand for a skilled and semi-skilled workforce in the agro-processing sector in Bangladesh. As the sector is expanding, there is a shortage of workers in the areas of packaging, temperature control and other technical works. This indicates that the sector has the potential to absorb a large number of skilled and semi-skilled workers in coming years. It is also important to note that this sector has the potential to generate employment for women in the areas, which can help enhance female labour market participation in Bangladesh.

The employment multiplier analysis in ADB and ILO (2016) shows that the number of jobs created for an initial demand of \$ 1 million (current price) is 456 for the agro-processing sector, which is much higher than the figures for most manufacturing sub-sectors. For example, the comparable figure is 264 for RMG.

3.3.3 High backward and forward linkages

Stakeholders suggested the sector had enormous potential for development through the creation of forward and backward linkages, which would facilitate a high level of comparative advantage for the sector. They also highlighted that agro-processing linked the growth of different services sectors, such as wholesale and retail marketing, transportation, preservation

and communications. Therefore, it can generate employment, create supply chains, improve agricultural productivity and enhance the competitiveness of processed export products, which will help reduce rural poverty. Agro-processing is therefore expected to expand produce markets for farmers, increase value addition for agriculture and create employment in both agriculture and industry (Latif et al., 2015).

3.4. Constraints to the development of the agro-processing sector

Interview with stakeholders identified six major constraints to the development of the agro-processing sector in Bangladesh. These are related to problems in market access, inadequate infrastructure, problems at processing stages, lack of access to finance, lack of skilled labour and institutional inefficiency.

Six major constraints to the development of the agro-processing sector

1. Problems in market access
2. Inadequate infrastructure
3. Problems at processing stages
4. Lack of access to finance
5. Lack of skilled labour
6. Institutional inefficiency

3.4.1. Problems in market access

Market access, in terms of both tariff and non-tariff measures and related procedural obstacles, is a major concern for the exporters of agro-processing products from Bangladesh. In Middle Eastern and Gulf countries, Bangladeshi exporters face high tariff rates. As we have already mentioned, agro-processing exports are currently concentrated on a number of regional markets, mainly targeting the ethnic food niches in countries with strong Bangladeshi diaspora, such as the United Arab Emirates, Saudi Arabia and other Gulf countries. However, in order to be able to familiarise foreigners and foreign supermarkets with Bangladeshi vegetables, exporters need to improve their product quality to meet different sanitary and phyto-sanitary (SPS) criteria imposed by importing countries. Furthermore, exporters need to be able to supply the types of vegetables that non-ethnic consumers in these markets demand. Interviews with stakeholders found demand for Bangladeshi vegetables in foreign market was mostly static, because this demand comes only from a specific portion of consumers (mostly overseas Bangladeshis). To enter the mainstream market, there is a need to improve the quality and the standard of the products as well as to introduce new products. At the same time, Bangladeshi vegetable exporters face huge competition with Indian and Pakistani vegetable exporters in foreign markets.¹³

Compliance with SPS standards, especially in high-end destination markets, such as in the EU and the US, remains a concern for many Bangladeshi agro-processing exporters. On several occasions, exporters of shrimps and frozen fish have encountered either bans or export restrictions in the EU market on the grounds of health, safety and hygiene. Though these bans have been lifted, to ensure continued access to EU markets Bangladesh needs a proven

¹³ Gregg and von Uexkull (2011) also highlight that the business model of exporting to ethnic markets based on diaspora networks is bound to reach its limits, given that it is focused on a rather small fraction of the world market. New opportunities in this area would depend on developing access to new markets, consumer groups and retail networks.

traceability system.¹⁴ However, stakeholders argued this was particularly difficult in Bangladesh and other similar shrimp-exporting countries, given the large number of very small suppliers and the complex and irregular system of intermediaries. In many cases, buyers are increasingly using their own rather strict standards, which is resulting in an added burden for Bangladeshi exporters in terms of meeting these.¹⁵

It should be mentioned, however, that there is no other option but to enhance the domestic capacity of Bangladeshi exporters in meeting these SPS regulations in the export destinations. There is a need to upgrade cold storage facilities for more efficient supply chains. Also, the production process has to ensure that the different SPS regulations can be met. However, as most stakeholders mentioned, obtaining proper licensing and the certification required to access the markets of developed countries is quite challenging and very expensive for Bangladeshi agro-processing exporters; for small and medium-sized enterprises (SMEs) in particular the burden is much higher. Even for large-scale companies, obtaining an international standard certificate to export to foreign markets other than ethnic markets is difficult.

The exporters also face several procedural obstacles at home. For example, in Bangladesh, average customs clearing time is 15 days; this clearing time is only about one and two days in Vietnam and China, respectively. Also, completion of the necessary documentation requires a huge amount of time, as well as harassment, if exporters go through formal channels. In order to make the process smooth and fast, most exporters use informal channels. Also, there is an issue with holiday mismatches. For example, Friday and Saturday are weekly holidays in Bangladesh, whereas most of Bangladesh's trading partners' weekly holidays are Saturday and Sunday. This mismatch of holidays between trading partners accounts for a huge loss of time and money in terms of opening letters of credit and other necessary documentation for trade.

3.4.2. Inadequate infrastructure

All interviewed stakeholders expressed frustration over high transport costs resulting from road congestion and transport delays, which affect business operations. For products like fish and milk, transport costs make up a large share of trading costs, and transport delays are identified as a major reason for product damage and loss. Also, GoB's tariff policy with regard to small distribution vehicles, which are an essential medium of transport in the industry, is a problem: tariff rates on the import of these vehicles are very high, which increases transportation costs.

Power shortages are also defined as a major drawback to the sustainable agro-industrial development of the country. For years, an unreliable power supply has discouraged the private

¹⁴ Traceability is an important element in quality assurance, and especially in food safety. Traceability means that, through detailed record-keeping throughout the value chain, the origin of a faulty product or batch can be easily identified in order to block further supplies until the fault is rectified.

¹⁵ As Liu (2009) points out, the number of private standards and their influence on trade have risen steadily since the early 1990s under the combined forces of globalisation, policy liberalisation, changing consumer preferences and progress in IT. There is a wide array of private standards, each with its own objectives, scope, advantages and constraints, which makes it difficult to treat these standards as a homogeneous category. The type of organisation that develops the standard and the development process may have significant implications for the standard's suitability to producers. It is difficult to assess the market penetration of private standards, as national customs agencies do not monitor this information. However, there is evidence that the market for foods certified to private standards has expanded rapidly over the past decade, in particular in the fair trade and organic sectors.

sector from investing in the processing and packaging industries. Although the availability of electricity has improved in recent years, a majority of firms, especially SMEs, still face problems related to accessing new connections to the power supply as well as accessing quality power.

Also, the GoB decision not to provide any new gas connections to industries is greatly hampering the establishment of new production plans and the running of existing industries. This has resulted in a lack of cold storage, mills, warehouses for storage and equipment such as scales and packing machines, which has led to difficulties in meeting health and sanitation requirements.

There are also problems related to poor air cargo management, inadequate cold storage and cold chain transportation facilities for vegetables and lack of processing unit near the airport. Furthermore, Dhaka Airport is the only route for exporters to use in exporting their vegetables. In addition, Bangladesh Biman Airlines, which has limited capacity, is the only medium of transportation.

3.4.3. Problems at processing stages

The agro-processing sector encounters problems at most processing stages. Stakeholders said problems existed from the start, from stages such as cultivation of vegetables or crops, and prevailed until the packaging stage. At the primary stages, farmers use too much pesticide and fertiliser since they are not warned or sufficiently educated enough. Farmers' lack of knowledge on post-harvesting techniques also leads to a very high level of damage. At the packaging stage, exporters face problems related to buyers' different packaging requirement. Sometimes, buyers demand specific types of packaging that are costlier because they are not readily available in the local market. Also, tariff rates on the import of packaging materials need to be reduced.

3.4.4. Lack of access to finance

One of the most important problems affecting supply and export response is access to finance. Finance is required to enable firms to undertake productive investment in order to be able to initiate and/or expand a business and to introduce new products and market them. Availability of investment funds also makes it possible to acquire better technology to promote competitiveness. Various surveys and micro studies in Bangladesh have identified access to finance as the main problem facing businesses, including their export activities. Investors face credit constraints and have to pay high interest rates on loans unrelated to their own performance. Since banks have to make provision for non-performing loans, the large share of such loans ultimately increases the cost of capital for entrepreneurs. Despite the measures taken by GoB to improve the banking sector, including strengthening debt recovery, non-performing loans have remained a cause for concern. Liberalisation measures in the banking sector have increased the operations of private banks but competition in this sector is still weak.

The problem is even worse for SMEs, including export-oriented ones. Banks are shy to lend to SME activities, as they do not consider them attractive and profitable undertakings. In most cases, banks and non-bank financial institutions require collateral in the form of land and buildings before advancing loans to their clients. SMEs are also regarded as high-risk borrowers because of their low capitalisation, insufficient assets and high mortality rates and,

consequently, are not offered attractive deals in terms of loans and interest rates. Furthermore, loan application forms for investment financing from banks are long, tedious and redundant. SMEs in the export sector also have the problem of access to working capital, and there is no credit insurance policy for them.

Furthermore, although GoB's cash incentive¹⁶ plays a vital positive role in the export of agro-food processing products, exporters complain about difficulties in the access to this subsidy as a result of bureaucratic and other procedural obstacles. Many firms also complained about the duty drawback system,¹⁷ as the process is cumbersome and bureaucratic in nature and takes a long time to finish.

3.4.5. Lack of skilled labour

The agro-food processing sector is a labour-intensive industry that has an important role in employment generation in Bangladesh. At different stages, the demand for skills is different. For example, more skilled labour is needed at the processing stage. The demand for skilled labour is also growing at a higher pace along with the expansion of the sector. In many cases, industries cannot attain their desired level of productivity because there is an acute shortage of skilled workers.

The majority of agro-processing enterprises accept apprentices. It is also very common for agro-processing firms in Bangladesh to offer regular internal and on-the-job training. The majority of new recruits are fresh from various academic and training institutions. However, enterprises are often unable to provide skills in priority areas such as technical training related to food handling and processing, food safety and sanitation and food quality testing procedures.

3.4.6. Institutional inefficiency

GoB has given priority to agro-processing in its national industrial policy. Recently, it formed the National Skill Development Council, though this is yet to be functional. Institutions like Bangladesh Customs, the National Board of Revenue, Bangladesh Standards and Testing Institution (BSTI), Bangladesh Accreditation Board (BAB), Plant Protection and Plant Quarantine Wings of the Department of Agricultural Extension, The Public Health Laboratory (PHL) of Ministry of Health, and Ministry of Fisheries suffer from institutional inefficiency. Capacities of BSTI and other standard agencies are far from the desired level, which is reflected by the fact that certificates issued by them are not accepted in many export destination countries. BSTI and other standard agencies suffers from a shortage of skilled human resources, financial resources, testing labs and infrastructure. There are frequent allegations of corruption regarding the customs authority and the National Board of Revenue.

¹⁶ GoB currently provides a 10% cash incentive programme as well as VAT exemptions for agro-food exporters.

¹⁷ The duty drawback system relates to the refund of duties and taxes paid on inputs/raw materials used in the manufacture of exported goods and services. The term 'drawback' is used exclusively for the refund of duties and taxes against exports. Under the provisions of Sub-section (1) of Section 13 of the Value Added Tax Act 1991 read with Section 37 of the Customs Act 1969, all duties and taxes paid on inputs/raw materials used for the manufacture of exported goods or services shall be refunded except income tax paid in advance and supplementary duty paid on the inputs/raw materials declared by GoB in the official gazette as non-refundable (http://bangladeshcustoms.gov.bd/beta/trade_info/duty_drawback_t.html).

3.5. Policy suggestions for the agro-processing sector

Eight critical policy suggestions for the agro-processing sector

1. Enhance the domestic capacity of Bangladeshi exporters in meeting SPS regulations in export destinations.
2. Manage traffic conditions and improve trucking fleets to reduce transport delays and their associated costs.
3. Ensure the growing agro-processing sector has access to new and quality electricity connections.
4. Provide financial incentives to investors to set up cold storage facilities.
5. Ensure better access to financial services – i.e. easier payment system (electronic, e-cash etc.) and take the necessary steps to make the Entrepreneurs' Equity Fund effective.
6. Provide larger training facilities to generate a skilled and semi-skilled workforce.
7. Provide much more supportive tax and tariff policies.
8. Improve the capacity of BSTI and other standard agencies by increasing staffing levels, training and retention, increasing investment in equipment and facilities, introducing a single window depository and dissemination of all required documentation, setting up more testing labs and building the required infrastructure.

The 7FYP promises to provide financial, technical, technological and infrastructural facilities for agro-based goods. It aims to market hygienically processed frozen, pasteurised, canned or dry forms of food so that goods produced in the country are preserved and marketed in compliance with modern standards. Ultimately, the goal is to ensure processed foods are available in the local market or exported throughout the year. The 7FYP also highlights assisting backward-linkage industries on a priority basis. The objective is to diversify and produce goods of world standard as well as value-added items to diversify exports.

Regarding the quality control of agro-processed food products, government institutions, such as the Quarantine Wing of the Department of Agricultural Extension, are not properly equipped (Latif et al., 2015). This issue should be a priority within GoB's agro-processing promotional policy to ensure penetration in the world market of higher-end products.

Access to better transport and logistics is essential to attract investment in the trade of high-value products. Hence, additional investment in market facilities will become essential in the near future to manage traffic conditions and improve trucking fleets so as to reduce transport delays and their associated costs (World Bank, 2016).

Academic knowledge regarding agro-processing is basically absent in Bangladesh, because academic bodies do not offer relevant courses. This explains the absence of a skilled workforce in agro-processing. However, some courses have recently started to offer internships, factory visits, information-sharing and cooperation to encourage young people. These interventions could come under the GoB, so as to create a bigger group of beneficiaries.

The country's unreliable electricity supply is coupled with a shortage of cold storage facilities in Bangladesh. Investments in cold storage are also discouraged because they require a huge expenditure on gasoline. The electricity supply has improved in recent years but GoB must

ensure that the growing agro-processing sector has access to new and quality connections. Financial incentives should be provided to investors to set up cold storage facilities.

Policy-level constraints include high import duties on small distribution vehicles and raw material packaging, and lack of tax holiday provisions for large agro-processing firms. There is a need to provide much more supportive tax and tariff policies for the sector. The National Board of Revenue and the Ministry of Finance need to take necessary measures in this regard.

Ensuring better access to financial services is equally important to guarantee more investment in the sector. An easier payment system (electronic, e-cash etc.) would help reduce trading costs as well as confirm the engagement of potential entrepreneurs in trading services. Also, the experience of the Entrepreneurs' Equity Fund (EEF) needs to be critically evaluated and necessary steps need to be undertaken to make it effective. In this regard, it is Bangladesh Bank that must take the required actions.

Lack of capacity in BSTI to carry out accredited testing and certification is hindering Bangladeshi agricultural and food exports. To address this, GoB should formulate and implement standards, regulations and norms in compliance with international standards, especially for major and potential export sectors. The capacity of BSTI needs to be significantly improved by increasing staffing levels, training and retention, increasing investment in equipment and facilities and introducing a single window depository and dissemination of all required documentation. There is a need to set up more testing labs and build infrastructure. BSTI should aim to put in place a Mutual Recognition Agreement with standards authorities in major export destination countries so that the latter accept the certificates it issues. There is also a need for an SPS agreement and a single window and electronic data exchange interface at border custom points to facilitate agro-processing exports to neighbouring South Asian countries. The Ministry of Commerce needs to improve its capacity to negotiate at regional and global trade fora.

There is a need to provide larger training facilities to generate a skilled and semi-skilled workforce for the growing agro-processing sector in Bangladesh. In this connection, the Technical and Vocational Education Training (TVET) Reform Project, a European Commission-funded GoB project implemented by the International Labour Organization (ILO), has successfully established two industrial entities: the Industry Skills Council (ISC) and the Centre of Excellence Agro Food Skills Foundation (CEAFS). CEAFS, an initiative put in place by the ISC, is a one-stop resource and service centre to develop, support and strengthen the skills development system in the agro-food processing sector. Such initiatives should be expanded and new public-private partnership (PPP) programmes could be undertaken.

4. The leather sector in Bangladesh

Introduction

Leather is one of the oldest industries in Bangladesh. This is an agro-based by-product industry with locally available raw materials having a potential for high export and value-added growth over the coming years ((UNIDO Expert Team, 2005; Paul et al., 2013). About 40% of the supply of hides and skins comes from animals slaughtered during the annual Muslim festival of Eid-ul Adha. In addition, throughout the year, there is a substantial supply of hides and skins.

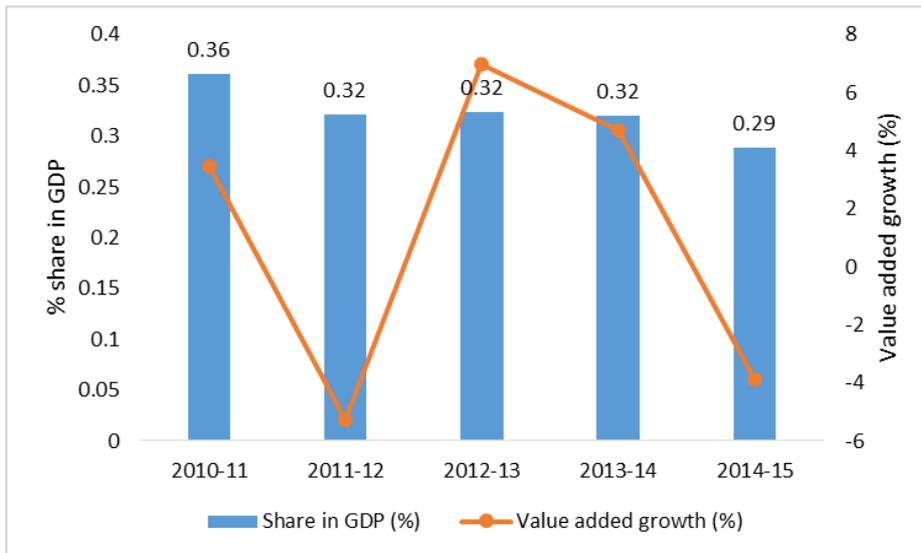
GoB's Industrial Policy of 2016 identifies the leather sector as one with considerable growth and investment potential. Bangladesh leather is widely known around the world for its high quality, relating to its fine grain, uniform fibre structure, smooth feel and natural texture (Paul et al., 2013). Bangladesh's leather exports account for a mere 0.5% of the global leather and leather goods market worth around \$230 billion (The Daily Star, 2014).

The Hazaribagh area of Dhaka has turned into a location that now accommodates a large number of tannery units. There are reportedly around 220 tanneries in Bangladesh but only 113 are in operation. Of these, 20 are reported to be fairly large (seven very large), around 45 are considered of medium size and around 48 are considered small groups (BTA, 2010). These tanneries in Bangladesh produce 180 million square feet of hides and skins per year. In addition, there are about 30 modern shoe manufacturing plants engaged in the production of high-quality footwear, with over 2,500 smaller footwear manufacturers also present in the sector. There are around 100 small-to-medium leather goods manufacturers, and a small number of niche larger manufacturers (Paul et al., 2013).

4.2. Structure of the leather sector

Despite significant prospects, the leather sector's contribution to GDP has declined in recent years (Figure 17). In 2010–11, the sector's share in GDP was 0.36%, which declined to 0.29% in 2014–15. The sector has been suffering from a declining growth in value-added since 2012–13, and in 2014–15 the growth rate turned out to be negative. This indicates that not only is the sector's relative contribution to GDP declining but also, in absolute terms, the sector has not been performing well in recent years.

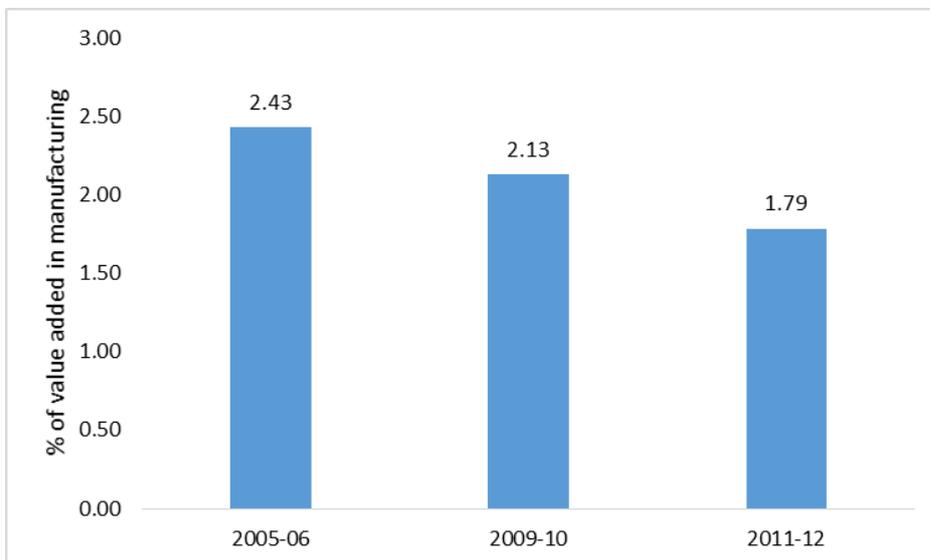
Figure 17: Share of leather and leather goods in GDP (%)



Source: BBS (2016)

The leather sector’s contribution to value-added in manufacturing is also on a declining trend (Figure 18). In 2005–06, this contribution was 2.4%, and this had declined to 1.8% in 2011–12. This fall is explained partly by the growing concentration of the manufacturing sector around RMG and partly by the sector’s declining performance.

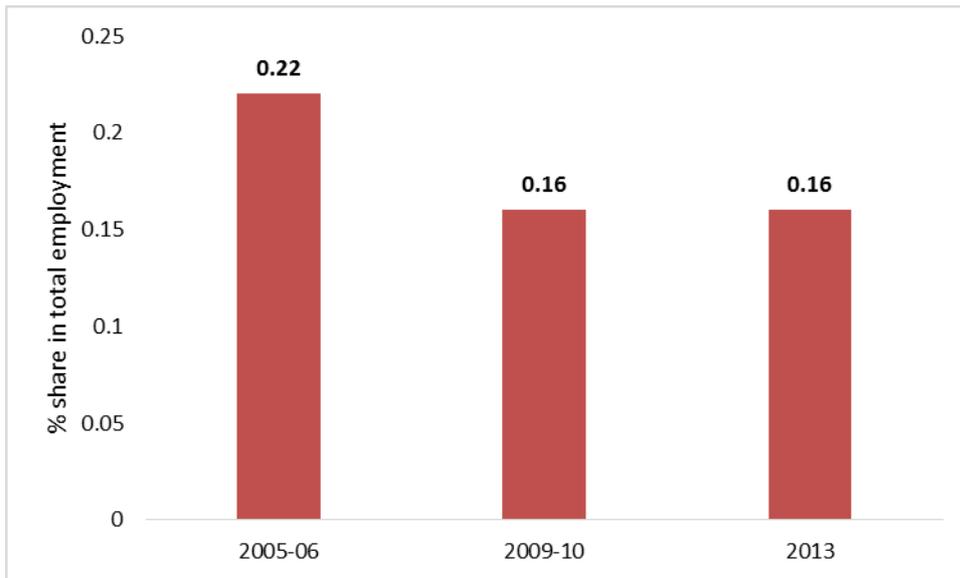
Figure 18: Share of value-added of leather and leather goods in manufacturing (%)



Source: BBS (2016)

The share of employment has seen a significant fall, from 0.22% in 2005-06 to 0.16% in 2013 (Figure 19). However, during 2009–10 and 2013 the number of employed people in the leather sector increased from 85,000 to 91,000 (Labour Force Survey data).

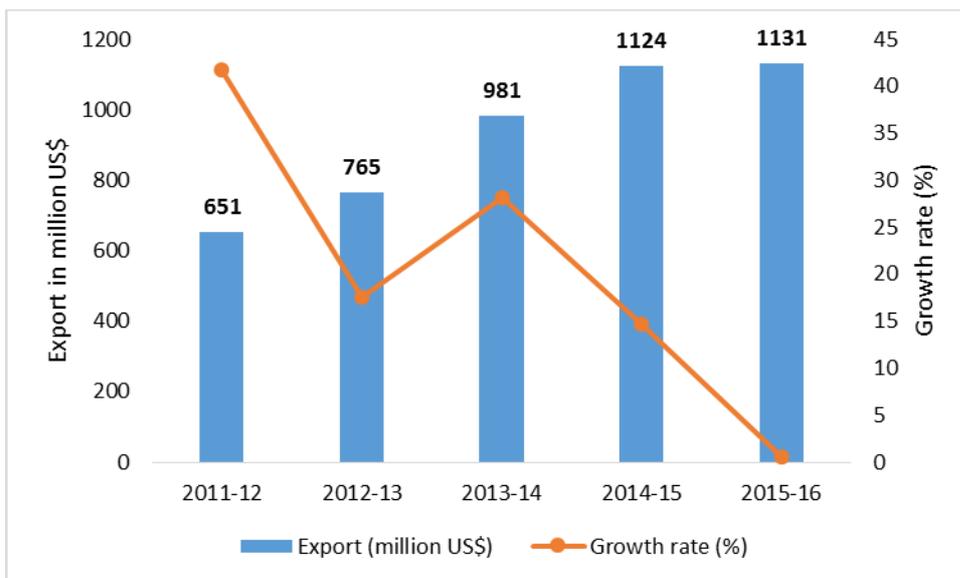
Figure 19: Share of leather and leather goods in total employment (%)



Source: BBS (2016)

About 95% of leather and leather products of Bangladesh are exported, mostly in the form of crushed leather, finished leather, leather garments and footwear. The major export destinations are Germany, Italy, France, Netherlands, Spain, Russia, Brazil, Japan, China, Singapore and Taiwan (Paul et al., 2013). In 2011–12, exports were at \$651 million, increasing to \$1.1 billion in 2015–16 (Figure 20). However, since 2013–14, exports from this sector have been experiencing a declining growth rate. The share of exports from the leather sector in the country’s total exports in 2015–16 was around 3.5% (EPB data).

Figure 20: Leather and leather goods exports (million US\$)

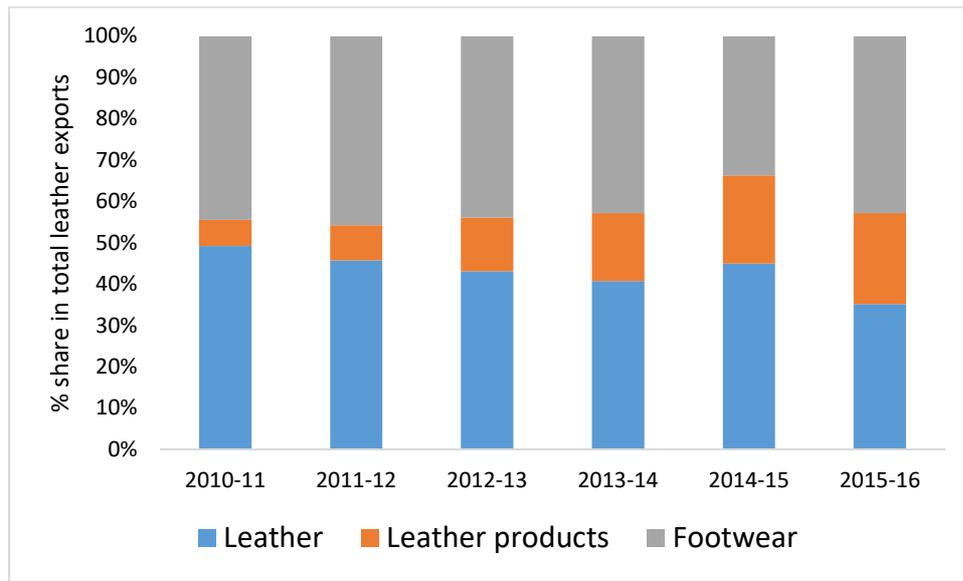


Source: EPB (2016)

Export data disaggregated by exports of leather, leather products and footwear present some insights. Figure 21 shows that, in recent years, the share of processed leather (crust and finished

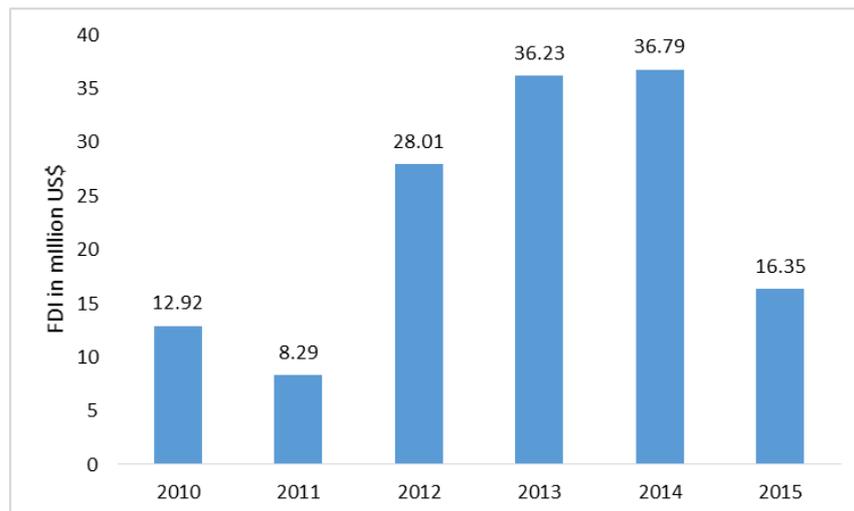
leather) in the total exports of leather has been declining while that of leather goods has been increasing. The share of footwear, however, with some fluctuations, has remained more or less stable. All this suggests some structural changes in the leather sector in recent years, where higher-value-added products (leather goods and footwear) rather than lower-value-added products (processed leather) have been accounting for the majority of the share of leather exports from Bangladesh.

Figure 21: Share of leather and leather goods exports in total leather exports (%)



Source: EPB (2016)

Figure 22: FDI in leather and leather goods (million US\$)



Source: Bangladesh Bank (2015)

As in most manufacturing sub-sectors, FDI in leather is very low. However, between 2010 and 2014, it increased almost three-fold – from only \$12.9 million to \$36.8 million (Figure 22). Regrettably, in 2015, inflows dropped to a meagre \$16.4 million. This suggests that, although

the sector has the potential to attract more FDI, certain constraints are hindering this. Section 4.4 discusses these in more detail.

4.3. Prospects of the leather sector

There are five major reasons for the bright prospects in the leather sector in Bangladesh: high domestic value addition, large-scale employment generation, high backward and forward linkages, high quality of domestic raw hide and bright investment opportunities.

Five major reasons for the bright prospects in the leather sector

1. High domestic value addition
2. Large-scale employment generation
3. High backward and forward linkages
4. High quality of domestic raw hide
5. Bright investment opportunities

4.3.1. High domestic value addition

Compared with in the RMG sector, which is Bangladesh's dominant export sector but has domestic value addition in the range of only 40–50%, domestic value addition in the leather sector is reported to be over 80% (LFMEAB, 2016). On account of its strong potential and high value addition, the Industrial Policy of 2016 deems it a priority sector.

4.3.2. Large-scale employment generation

Stakeholders believed Bangladesh had the potential to make \$5 billion from exporting leather, leather goods and footwear by 2020, riding on the back of product diversification and value addition, and this would create 200,000 jobs in that period (The Daily Star, 2014). They also argued that such a big leap forward could happen only with the shifting of the tanneries to the new 'tannery estate' under construction in Savar,¹⁸ where new investments would generate potential for large employment opportunities in the sector. The footwear sector also has the potential to generate employment for women, which can help enhance female labour market participation in Bangladesh.

4.3.3. High backward and forward linkages

The processed leather sector has strong backward and forward linkages, which facilitate a high level of comparative advantage in this sector. Backward linkage industries include the livestock sector, which is fast expanding in Bangladesh.¹⁹ The forward linkages include leather goods, footwear and different associated services sectors such as transport and wholesale and retailing. High backward and forward linkages lead to growth and employment generation in the linkage industries plus further expansion of the leather sector (Khondker and Eusuf, 2015).

¹⁸ The Ministry of Industry is building a tannery industrial estate around 30 km from Dhaka city to enable the development and modernisation of the tanning industry. The project is being implemented on 200 acres of land. Major infrastructural works such as internal roads, drains and culverts, street lighting, electricity and a water supply have been completed. A Common Effluent Treatment Plant (CETP) and waste dumping yard are under construction (<http://bscic.portal.gov.bd>). The tannery estate is expected to enable a clear transformation of the leather industry, with a marked increase in production, product diversification and new product lines with increased sustainability. Sustainable and cleaner production will be key (Paul et al., 2013).

¹⁹ The average growth of the livestock sector between 2011–12 and 2014–15 was around 2.8%, which is higher than the average growth rate of the crops sector (2.4%) (BBS).

4.3.4. High quality of domestic raw hide

Bangladesh's livestock population is large and growing enough to support a strong and growing tanning industry. Bangladesh produces between 0.96% of the world's raw hides and skins.²⁰ Most of the livestock base for this production is domestic, estimated at 1.8% of the world's cattle stock and 3.7% of its goat stock. Cow hides account for 56% of production, goat skins for 30% and buffalo the rest. The current leather output in Bangladesh is approximately 200 million square feet annually (Ahmad, 2014). Stakeholders argued that the hides and skins of Bangladesh had a good international reputation.

Apart from bovine hides, buffalo, goat and sheep, a good quantity of kangaroo hides (pickled condition/wet-blue) are imported from Australia and finished in Bangladesh. Shoes are made of this kangaroo leather for export, mostly to Japan. Some ostrich leather is also imported from Australia for the production of high quality and high priced bags and wallets for re-export to Australia (Ahmad, 2014).

4.3.5. Bright investment opportunities

FDI in this sector and in the production of tanning chemicals appears to be highly rewarding, given the presence of basic raw materials for leather goods and footwear, a large pool of low-cost and trainable labour and a tariff concession facility in major export destination countries under the Generalized System of Preferences. Stakeholders said the high quality of the leather had attracted international buyers, and Bangladesh had the potential to be an ideal offshore location for leather and leather product manufacturing of low cost but high quality. They also re-emphasised, however, that the sector's enhanced investment potential depended on the quick and effective shifting of the tanneries to the tannery estate in Savar. This reallocation of the tanneries will facilitate both domestic and foreign investment in the leather goods and footwear industries (Khondker and Eusuf, 2015; Harris, 2016). It is also important to note that rising labour costs in China have led to big retailers exploring countries like Vietnam, the Philippines, Bangladesh and India. According to a recent analysis, Bangladesh is one among the three countries to which China-based factories are planning to relocate, as the manufacturing of low-cost products is increasingly becoming pricier in the world's second largest economy (Norton, 2014).

²⁰ The leading producers of raw hides and skins in the world are China, India and Brazil, with shares of 13%, 12.1% and 11.2%, respectively (FAO, 2013).

4.4. Constraints to the development of the leather sector

Stakeholders mentioned five major challenges in the leather sector in Bangladesh, related to relocation of the tanneries, unskilled labour, health and environmental hazards, duty-free imports of raw materials and the high cost of doing business.

Five major constraints to the development of the leather sector

1. Sluggish progress of relocation of the tanneries
2. Lack of skilled labour
3. Health and environmental hazards
4. Lack of access to duty-free import of raw materials and machineries
5. High cost of doing business

4.4.1. Sluggish progress of relocation of the tanneries

Despite its steady growth and huge potential, the leather industry is now facing some critical challenges related to its tannery sub-sector. Environmental degradation of the existing tannery area in Hazaribagh is the major problem here. When the leather industry was established in Hazaribagh near to the river, the area was outside of the city and was non-residential. After 1972, during the post-independence period, the number of tanneries grew exponentially in the area, in the absence of any government regulation. Over the years, Dhaka city expanded rapidly, and Hazaribagh became part of the prime residential zone. Many new landowners began to use this industrial land illegally for residential purposes, given its central location (Khondker and Eusuf, 2015). Now, more than 80% of the total supply of hides and skins in Bangladesh is processed in a highly congested area of only 29 hectares of land (Paul et al., 2013). The tanneries are discharging chemicals and waste into the river, with 149 operating tanneries producing 14,910 metric tonnes of effluent during peak time and about 9,100 metric tonnes during the off-peak period (LFMEAB, 2016). And yet stakeholders pointed out that the sector had not even attained its full potential, primarily because of operating constraints stemming from its production base in Hazaribagh, where minimal waste management systems and inadequate industrial layout planning exist. There is no Common Effluent Treatment Plan (CETP) and solid waste management system, for example.

The Hazaribagh tannery industry is now legally bound to relocate all factories to the new, environmentally compliant estate in Savar. But the relocation has created some problems for small firms. First, GoB is giving some compensation for the move but according to business owners this is not enough to meet the costs entailed. Second, new machinery is required for production at Savar but banks will not provide loans without a proper mortgage (i.e. land, building) to use as collateral – and the Bangladesh Small and Cottage Industries Corporation (BSCIC) has not yet handed over the land titles to the plot owners. The promised ‘green loan’ from Bangladesh Bank funded by the World Bank is yet to become available. Many small tanneries are facing the risk of closure. Furthermore, so far, the deadline for shifting the tanneries to Savar has been rescheduled several times.

4.4.2. Lack of skilled labour

The sector suffers from a lack of skilled labour. Most of the firms are small and family-based. Workers learn skills from elders rather than through any formal education. Most of the entrepreneurs in the leather and leather goods sector industry are first generation businessmen and many do not have the required knowledge of the export business. As the sector is expanding, with increased demand for more skilled labour in the leather products and footwear sub-sectors, there is a shortage of technical personnel and trained manpower.

Stakeholders indicated that even 'skilled' workers were skilled in the sense that they had practical experience, but did not have any formal and theoretical knowledge in relation to operating machines and other equipment. Butchers have limited knowledge of modern butchery techniques, which results in demurrage of raw hides and skins.

4.4.3. Health and environmental hazards

Most stakeholders emphasised workers' health problems as a major issues. Workers wearing no protective equipment at all are kneading hides in drums containing hazardous chemicals. Under such working conditions, skin corrosion, fungal infections and persistent headaches from breathing chemical vapours are commonplace.²¹ Reportedly, 90% of tannery workers die before they reach at the age of 50 (ADB, 2015). Health problems hamper the productivity of labour in this sector and undermine much of its growth and export potential.

4.4.4. Lack of access to duty-free import of raw materials and machineries

Stakeholders highlighted as one of the major problems in the leather sector access to duty-free imported raw materials. Not all firms have access to bonded warehouse facilities: only 100% export-oriented firms are allowed this.²² Firms that do not have such access are forced to buy chemicals and important raw materials from other importers at high prices on the local market. This undermines the competitiveness of many firms in export markets.

Furthermore, there are import duties on advanced machinery for the leather processing sector, which undermines the prospects of modernisation of the tanneries. Stakeholders revealed that most tanneries were still using old machinery and technologies, whereas Bangladesh's competitors like Vietnam and India were using more advanced machinery and technologies.

²¹ Inside the factories, workers are exposed to toxic waste and carcinogenic chemicals such as arsenic, chromium sulphate and hexavalent chromium. Meanwhile, tanneries also pollute the nearby area – and most of the workers live near the tanneries, as residential costs are low. They are thus forced to survive in one of the most polluted places on earth. Other people in the area are victims of the pollution of the tanneries too (ADB and ILO, 2015).

²² GoB bonded warehouses aim to expedite exports. A bonded warehouse is a building or other secured area in which dutiable goods may be stored or manipulated or undergo manufacturing operations without payment of duty. Access is given to 100% export-oriented manufacturing units. As per the Customs Act of 1969 and the Value-Added Tax Act of 1991, with very few exceptions, almost all exports are tax-free; these units also enjoy tax-free imports or local purchases of raw materials for use in the manufacturing of goods for export. But imports of raw materials are taxable under the regular tax regime. Exporting industries that work under the normal tax regime thus have to pay tax during the import of raw materials. After exporting their finished goods, they can claim duty drawback. Those under the bond system do not need to pay tax during raw material imports

(https://en.wikipedia.org/wiki/Bonded_warehouse)

4.4.5. High cost of doing business

Stakeholders complained about the very high cost of doing business in Bangladesh. A leading exporter of footwear, Mr Nasim Manzur, has said,

The cost of land and capital are very high in Bangladesh compared to China, the world's largest footwear manufacturer, with a 60% share of global shoe production. Bangladesh's share in the world market is still below 1 per cent. If we want to attract foreign direct investment (FDI) into the sector, we have to reduce the cost of doing business. The interest rate on working capital is between 10 to 12 per cent in Bangladesh, which is still 5 per cent in China (Hawker, 2015).

In addition, the cost and availability of utilities like electricity and gas aggravate the cost of doing business. Mr Manzur elaborated,

According to the 13 indicators of Doing Business Report 2015, Bangladesh severely underperformed in the following three: (i) enforcing contracts: It takes 1442 days to enforce a contract in Bangladesh, while in Vietnam and China corresponding figures are 400 and 443 days; (ii) electricity connections: It takes 429 days to get electricity connection in Bangladesh compared to 115 days in Vietnam and 143 days in China; (iii) registering property: It takes 244 days in Bangladesh to register a property. In West Bengal it has been pulled down to 7 days only. It takes 57 days in Vietnam while in China it takes 19 days. We did a study on Bangladesh, Vietnam and Cambodia regarding the cost of a squared-meter of land. Near Dhaka (42 km vicinity) it is \$340 while in the industrial zones of Vietnam and Cambodia; where you have water, electricity and gas connections, it is \$144. Thus whoever goes there with the permission can just immediately set up a plant (Raihan, 2015).

4.5. Policy suggestions for the leather sector

Six critical policy suggestions for the leather sector

1. Quickly and effectively operationalise the tannery estate in Savar
2. Enhance technical education and training opportunities to generate a large skilled workforce
3. Provide incentives, in terms of duty-free imports of eco-friendly machinery and raw materials, and different tax incentives for factories that comply with health and environmental standards
4. Extend bonded warehouse facilities to all export-oriented firms
5. Introduce a more flexible loan processing system and provide subsidised loans to entrepreneurs
6. Prioritise electricity and gas connections for new investors

The tannery estate in Savar needs to be effectively operationalised at the earliest opportunity possible. This will be a prerequisite in capturing markets in high-end export destinations in Europe and North America. Issues related to the shifting of the tanneries from Hazaribagh to Savar, as mentioned in Section 4.4, need to be solved with urgency. The Ministry of Industry must take the necessary measures in this regard.

The tannery estate will include water and waste treatment systems, including a CETP, a central dumping yard, a water treatment plant with a capacity of 22.8 million litres per day and a sewage treatment plant with a capacity of 5 million litres per day. There are also power generation and recovery systems: a Sludge Power Generation System and a Common Chrome Recovery Unit. All these are essential to an environmentally friendly leather industry. However, most stakeholders pointed to a shortage of skilled operators and managers to work on these advanced systems. Therefore, there is a need to develop such a skilled workforce for the effective operation of the tannery estate. The Ministry of Industry, in collaboration with industry associations and partner international agencies (such as ILO), has to take the necessary measures in this regard.

Most stakeholders pointed out that the production of leather using eco-friendly and sustainable methods was warranted to respond to growing standard- and compliance-related non-tariff measures in most export destinations. This can be achieved if the sector properly addresses health and environmental concerns and complies with international standards (ADB, 2015). There is a need to provide incentives, in terms of duty-free imports of eco-friendly machinery and raw materials, as well as different tax incentives for factories that comply with health and environmental standards. The National Board of Revenue and the Ministry of Finance need to take the necessary measures in this regard.

Enhanced technical education and training opportunities are critical to generate a large skilled workforce in the leather goods and footwear sub-sectors. There are few technical education and training institutions in the leather sector. The Institute of Leather Engineering and Technology delivers four-year undergraduate courses in leather technology, footwear technology and leather goods technology. Khulna University of Engineering Technology has started a Department of Leather Engineering, providing a BSc in Leather Engineering. The Centre of Excellence for Leather Skills Bangladesh is the nation's first institute targeted at increasing and improving the overall skills level of the workforce in the leather sector. This is an industry-led PPP facilitated by the EC-funded TVET Reform Project to enhance work place learning and productivity through improved skills of the employees. There is a need to establish more such technical institutes and training facilities to cope up with the vision of the leather sector becoming a \$5 billion export industry by 2020.

Financial constraints are a big problem in the leather sector. The loan processing system has to be made flexible for entrepreneurs and banks need to provide subsidised loans for use in importing raw materials and machinery. Meanwhile, the issue facing tannery firms in the process of shifting to the tannery estate – that they cannot obtain bank loans because BSCIC has not yet handed over land titles – must be resolved with urgency.

Bonded warehouse facilities should be extended to all export-oriented firms. Furthermore, electricity and gas connections for new investors should be prioritised, to help reduce the cost of doing business. The Ministry of Industry has to take necessary steps in this regard.

Stakeholders emphasised the importance of the international branding of Bangladesh's leather. Government ambassadors in different export destination countries and leather associations need to conduct promotional activities, including leather fairs and exhibitions, and disseminate publicity on leather and leather goods from Bangladesh. There is also a need to find new markets for leather exports. These promotional activities need to convince

international buyers of the quality of the leather sector in Bangladesh and its compliance with standards and regulations. The Export Promotion Bureau (EPB) has to take necessary steps in this regard.

There is no fashion designing house for the leather sector in Bangladesh. All designs come from international fashion houses, which is time-consuming and costly. The establishment of a fashion house in Bangladesh for the leather sector would also assist with moving up to higher value chains and product upgrading. Technical education and training centres should also provide course on designing leather products. PPPs to establish fashion designing houses could be an effective way forward here. However, as Mr Nasim Manzur pointed out,

Many of the investors are not fully acquainted with the concept of PPP. Once the laws of PPP are well prepared, the government should go for some small projects. It is necessary to set up some success stories of PPPs which could attract the investors. Any investor will not be encouraged to be the first mover in any new projects unless there are some well-established examples of success (Raihan, 2015).

The Public Private Partnership Authority of Bangladesh has to take necessary steps in these regards.

The Institute of Leather Engineering and Technology of Dhaka University should be made more active and should engage in research work to develop the leather sector. Dhaka University needs to employ qualified domestic and international professors to increase the standard of education and send graduates to eminent international universities for higher qualifications in leather processing. Stakeholders emphasised the need for further research on chemical usage, raw hide processing and environmentally-friendly production processes for the benefit of this sector.

5. The ICT sector in Bangladesh

Introduction

In recent years, Bangladesh has made major strides in terms of laying the groundwork for a diverse and successful outsourcing market. In particular, the IT services industry within Bangladesh has been growing, serving international and domestic clients in the banking and telecom sectors. Bangladesh's emerging IT outsourcing players already have strong credentials, and the Bangladeshi freelancer community has supplemented IT exports. Bangladesh is consistently ranked among the top freelance work locations on employment websites like oDesk, eLance and the like (ITC and KPMG, 2012). Bangladesh is the seventh top country in terms of registered users of Upwork, which is the largest online marketplace for freelance jobs in the world (through a recent merger of eLance and Odesk). There are about 67,000 registered users in Bangladesh (Husain, 2015).

The country offers a vast pool of young, trained and English-speaking labour, which is available at costs almost 40% lower than in established destinations like India and the Philippines. Government authorities have demonstrated a determination to promote IT services in the country, including by providing cheaper bandwidth and alternate international cables, setting up technology parks and offering tax holidays for export-oriented industries. The GoB Digital Bangladesh initiative is helping set up ICT infrastructure for enhanced connectivity, ICT-based citizen service delivery and an ICT-based education system. Many global players, like Samsung, AMD, VizRT, and WorldBridge Global, are setting up operations in Bangladesh (ITC and KPMG, 2012). The country has positioned itself as a key outsourcing destination by enhancing delivery capability and skills availability, lowering costs of operations, making focused investments in telecom and IT infrastructure and highlighting success stories.

Simulation exercises using a computable general equilibrium model by Raihan and Cheong (2013) suggested that under different scenarios relating to IT export growth there would be positive impacts at the macro, sectoral and household levels. A positive export shock in the IT sector would lead to a rise in employment not only in the IT sector but also in all other sectors in the economy, and indirect employment generation would be much higher than direct employment generation.

There are over 1,500 registered software and IT-enabled services (ITES) companies in Bangladesh. Among these, over 1,100 companies are members of the Bangladesh Association of Software and Information Services (BASIS). Bangladesh exports software and ITES to more than 60 countries around the world and the number of exporting companies excluding freelancers is about 400. In terms of export destinations, the US dominates; European countries like the UK, Denmark and Netherlands have emerged as major destinations during the past few years. A number of companies regularly export to Australia, Japan, Malaysia, Singapore, the United Arab Emirates, Saudi Arabia and South Africa, where sizable Bangladeshi expatriate communities have played an important role in creating attractive market demand for communication-based IT services.²³

²³ <http://www.basis.org.bd/>

The local market still takes up most of the business of the software and IT services industry. About 63% of BASIS member companies are focused only on the local market. Over the past few years, the ICT sector of Bangladesh has been growing at a consistent rate of around 20–30%. This trend also shows that the market is maturing in terms of both client requirements and solution response from IT companies.

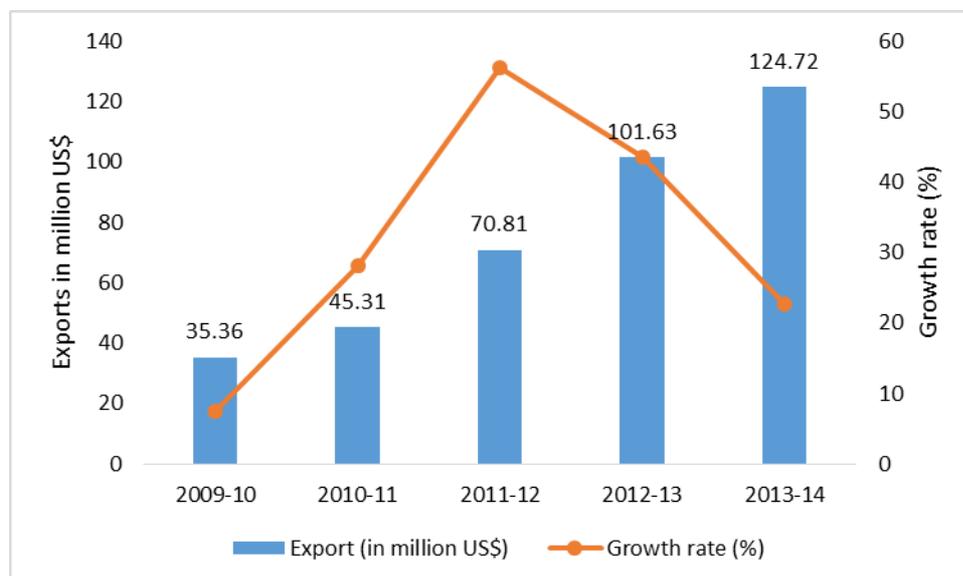
GoB has demonstrated determination to promote ICT. The Industrial Policy of 2016 prioritises the sector, and GoB initiatives to promote ICT include cheaper bandwidth and cable lines from India, establishing technology parks and providing tax holidays for industries. The Digital Bangladesh initiative is helping set up ICT infrastructure for enhanced connectivity, ICT-based citizen service delivery and an ICT-based education system.

5.2. Structure of the ICT sector

There are no readily available data on the ICT sector’s contribution to GDP. According to the Input-Output table for Bangladesh for 2012, ICT contributed a share of 0.01% of GDP (Khondker, 2016). This growth in business process outsourcing (BPO) exports has been accompanied by considerable employment growth in this industry. An estimated 20,000 or more skilled and semi-skilled professionals are employed in the ITES sector. Another 35,000 BPO professionals are employed in business enterprises, the government sector and non-governmental organisations. Over 10,000 individuals are estimated to be engaged in freelance outsourcing jobs such as editing, proof-reading, data entry and web research. Freelance billings were worth over \$7 million in 2010, which placed Bangladesh seventh in freelance outsourcing earnings and Dhaka among the top five cities for such work (ITC and KPMG, 2012).

The ICT sector in Bangladesh, though small in size, is seeing a growing amount of exports. From a very small amount of \$35.4 million in 2009–10 the sector increased its exports to \$125 million in 2013–14 (Figure 23). However, between 2011–12 and 2013-14 the growth rate of exports in this sector decelerated.

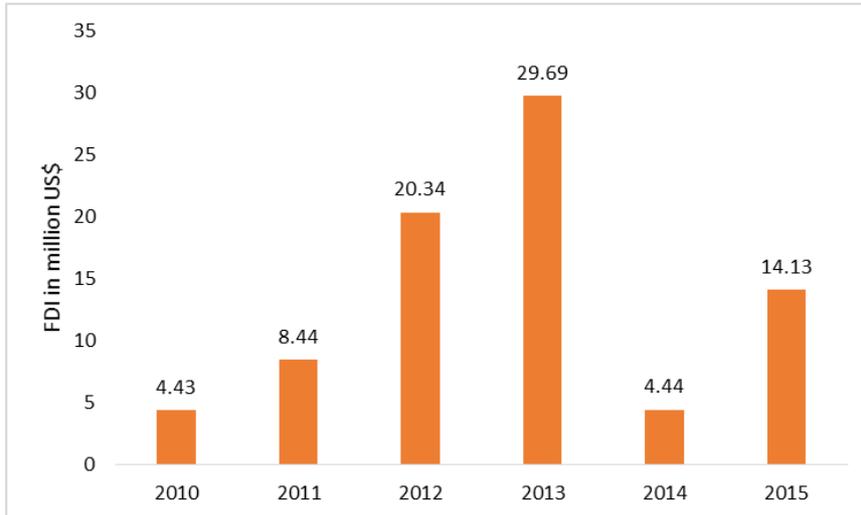
Figure 23: ICT sector exports (million US\$)



Source: EPB (2016)

FDI in the ICT sector in Bangladesh increased from 2010 until 2013, from only \$4.4 million to \$29.7 million, but declined in 2014 and 2015 (Figure 24). FDI in the ICT sector is still very low given the sector’s stated growth and export potential.

Figure 24: FDI in the ICT sector (million US\$)



Source: Bangladesh Bank (2015)

5.3. Prospects of the ICT sector

There are six major reasons why the prospects for the ICT sector in Bangladesh are very bright. These reasons are related to lower costs and investment opportunities, availability of English-speaking employees, rising worker productivity, significant employment opportunities and supportive government initiatives.

Five major reasons for the bright prospects in the ICT sector

1. Lower costs and investment opportunities
2. Availability of English-speaking employees
3. Rising worker productivity
4. Significant employment opportunities
5. Supportive government initiatives

5.3.1. Lower costs and greater investment opportunities

Although India is the major player²⁴ in the global ITES market and Bangladesh is a late-comer, the latter’s major advantage lies in its cheap operating costs. High labour costs are persuading developed countries to offshore a part of their services to places where the cost of labour is relatively low, as in call centres and BPO services. Bangladesh’s ICT is growing because it has a significant advantage in terms of labour cost. The wage rate for ICT professionals is among the lowest of ICT-exporting countries. According to KPMG (2012), the average entry-level salary is over 50% less than in other Asia-Pacific countries like India, the Philippines, Malaysia, Sri Lanka,

²⁴ India is the world’s largest sourcing destination for the IT industry, accounting for approximately 67% of the \$124–130 billion market. The industry employs about 10 million workers (<http://www.ibef.org/industry/information-technology-india.aspx>).

Thailand and Vietnam. Moreover, salaries are lower by 75–80% than in Eastern European countries like Poland, Hungary, Russia, Ukraine, the Czech Republic and Romania and Latin American countries like Brazil, Chile and Mexico. The average monthly salary of senior managers and highly experienced managers ranges between \$500 and \$600, less experienced engineers receive around \$350 and computer operators receive on average of \$150.

Bangladesh also has an advantage in terms of real estate costs. Almost all software and other IT-enabled services companies are concentrated in Dhaka city, where the cost of real estate is significantly lower than it is in other competitor destination countries (e.g. 20% lower than in Delhi (Chanda and Raihan, 2016)). In addition, the ICT industry is enjoying a tax holiday, which is helping keep costs low.

5.3.2. Availability of English-speaking employees

A vast majority of educated people in Bangladesh can read and speak English fluently. Currently Bangladesh has more than 7 million English-speaking residents, which is more than in its Latin American and East European counterparts (KPMG, 2012). Highly experienced computer operators and ICT graduates are not required for all ICT sub-sectors, such as in call centres and e-commerce, for which proficiency in English along with a commanding knowledge of computers is sufficient for employment.

5.3.3. Rising worker productivity

Stakeholders said the productivity of ICT workers had been on the rise over time and would rise further if workers were provided with proper benefits. Closely related to this are working conditions in the sector. Stakeholders said conditions in ICT were better than in many other sectors as most jobs are formal, so employees receive all the necessary benefits. The quality of engineers and scientists produced by Bangladeshi universities is on par with in most developing countries and productivity is significantly higher; in fact, according to some global publications, Bangladeshi graduates are better in this regard than those in many developing countries (ITC and KPMG, 2012).

5.3.4. Significant employment opportunities

Stakeholders highlighted that employment prospects in the ICT sector were immense. Over the years, as the sector has been growing, it has been creating more and more employment opportunities for skilled and semi-skilled labour. Software companies require highly skilled ICT graduates, and semi-skilled labour is doing well also. One of the big ICT sub-sectors is call centres. About 25,000 people now work in these, and if public call centres are established this will generate more than 40,000 jobs in the next four years, with the private sector generating another 60,000. Employment in e-commerce is increasing day by day where total direct employment is about 8,000 people (related to payment processing, order processing, logistics, delivery, etc.). Through vertical and horizontal integration, many other firms are also engaged in the industry. This means that as ICT grow, other related industries are also growing and creating new employment opportunities.

5.3.5. Supportive government initiatives

GoB has put in place several initiatives to help develop the sector. For example, one aim is to implement e-governance, to ensure greater efficiency, effectiveness, transparency and

accountability of public agencies. A high-tech park is being developed in Kaliakoir near Dhaka, with all modern infrastructural facilities, on 231,685 acres of land. This will be a major bonus for firms working on software and ITES, electronics and PCB-related equipment and products, telecommunications, hardware assembly/component/VLSI design, optoelectronic equipment and biotechnology, as well as related linkage industries. It will include a hi-tech university to provide technical support and conduct research and development.

5.4. Constraints to the development of the ICT sector

The major constraints in the ICT sector are related to labour and skills mismatch, inadequate infrastructure, lack of access to finance, inadequate financial system, weak governance and institutional issues and lack of supportive government policies.

Six major constraints to the development of the ICT sector

1. Labour and skills mismatch
2. Inadequate infrastructure
3. Lack of access to finance
4. Inadequate financial system
5. Weak governance and institutional issues
6. Lack of supportive government policies

5.4.1. Labour and skills mismatch

Development of the IT sector depends on skilled labour. Unfortunately, Bangladesh has not improved significantly in this regard. Stakeholders and policy-makers said that, although Bangladesh produces about 10,000 IT graduates yearly, their average quality was unsatisfactory. The country has a cost advantage in ICT but for the most part labour skills are not at the level required.

Meanwhile, the top 5% or so of graduates leave the country, mostly for the US. Out-migration of skilled labour occurs because of low wages in Bangladesh and higher demand for skilled labour overseas. Along with lack of the required skills in the domestic market, high mobility of IT professionals and absenteeism are major problems preventing firms growing in this sector (Shinkai and Hossain, 2011). Furthermore, to cater to growing domestic demand, the country needs to hire foreign experts.

Out-dated curricula, inadequate training facilities and trainers and lack of adequate facilities in institutions are core reasons for inadequate labour skills (Chanda and Raihan, 2016). The curriculum taught at universities is not linked to the needs of the market. Most stakeholders said there was no coordination between universities and professionals, meaning graduates' skills do not match what firms require. Traditional education is unable to create professionals according to market demand and IT graduates often end up not being suitable for work in the ICT sector. GoB, BASIS and others offer training programmes but the scope of these is very limited.

5.4.2. Inadequate infrastructure

Physical infrastructural constraints include a shortage of power supply and broadband connections, etc. Bangladesh is one of the lowest power-generating countries in the world and the supply is not adequate. Frequent load-shedding and voltage ups and downs put constraints

on productivity for software companies (Chanda and Raihan, 2016). However, interviews with stakeholders revealed that in recent times, with power generating improving and an enhanced supply, the situation had been getting better. Issues related to access to uninterrupted and quality power remain, however.

Meanwhile, broadband quality is at one of the worst levels among South Asian countries and other ICT-exporting countries. On the World Economic Forum's Networked Readiness Index 2016,²⁵ Bangladesh ranked 112 among 139 countries. The rankings for China, Philippines and India were 59, 77 and 91, respectively.

There are two types of internet connection: through the SEA-ME-WE4 submarine cable and through terrestrial internet connectivity imported from India. However, stakeholders said the quality of the latter was poor and it was expensive as well. Connectivity through the submarine cable is of better quality and cheaper but the set-up costs are high. Technical and policy issues mean bandwidth internet is not yet available on a mass scale. As a consequence, consumers are paying more to surf the internet and firms are bearing extra costs for rendering ICT services.

Also, thanks to globalisation, branding is very important if exporters want to be able to sell in new markets. Stakeholders emphasised that there were no help or export desks at Bangladesh's overseas embassies to help in this regard.

5.4.3. Lack of access to finance

Access to finance is one of the major problems in the ICT sector, with entrepreneurs facing credit constraints in relation to investment. Banks do not want to provide loan facilities because of the high risks associated with the sector. As there are no proper laws or policies in place to quantify the value of ICT work, it is very hard to arrange loans from private banks. Among these, only IDLC has any provisions for ICT firms, but the provisioned amount (BDT 430 million) is not adequate to build the capacity of existing firms or open new ones. Banks and non-bank financial institutions require collateral (proper security deposits) in the form of lands and building and start-up firms do not have such facilities and therefore have no access to institutional loans.

Furthermore, unlike in RMG, investors in ICT do not receive any borrowing and loan benefits from the financial sector and the rate of interest is very high, ranging from 14% to 21% (Shinkai and Hossain, 2011). These credit constraints are acute for SMEs in particular, as banks do not consider their activities attractive and profitable (Chanda and Raihan, 2016). Most of the capital in the ICT sector comes from private financing.

A few firms have access to formal financing, including the EEF, a venture capital fund provided by Bangladesh Bank. According to BASIS, they have applied to bank for funding of BDT 2 billion but this has not yet been approved. Other venture capital financing opportunities are limited. E-commerce companies do not have access to finance at all as they do not have any products.

²⁵ The Networked Readiness Index, also referred to as Technology Readiness, measures the propensity for countries to exploit the opportunities offered by ICT.

5.4.4. Inadequate financial system

Stakeholders revealed that another key problem in the sector was that there were no figures on ICT exports/production in Bangladesh. Many firms and freelancers earn through ITES and BPO services but they do not report to the authorities as they are paid through online financial systems (with their accounts in foreign countries) that are not recorded through domestic official payments systems. Even some large firms do not show their exports as IT exports, according to stakeholders. Lack of proper reporting should be addressed by policy for the sector as a whole.

Another problem for freelancers and BPO service providers is that the payment gateway infrastructure is still overregulated.²⁶ GoB should take the necessary steps to make payment easier. It has already implemented an initiative called the National Payment Switch. However, with neighbouring countries concentrating on e-wallet mechanisms like PayPal, there are no such initiatives in Bangladesh. Moreover, existing payment gateways are not getting any incentives to grow and spread.

Another major issue with respect to the financial system is lack of trust in e-commerce, which is one of the main problems for its expansion. A reason for this lack of trust relates to weak regulations and laws regarding e-commerce.

5.4.5. Weak governance and institutional issues

Most stakeholders were of the view that, as in other sectors, political uncertainty had a negative impact on investment in ICT. Attraction of FDI in the ICT sector requires stability of policies and politics. Private investment in ICT has not seen any significant increases in the past few years mainly because of political turmoil, although this has changed very recently as a result of increased steadiness and strong government commitment to the sector.

5.4.6. Lack of supportive government policies

Another problem, reported by some stakeholders, is that many policies are set up with provisions that enable only large producers/exporters to gain from any incentives. This kind of policy creates an inherent entry barrier for new and small entrepreneurs. One example of such discrimination is the current law regarding data storage. Firms with more than 200-bit data storage packages obtain tax incentives, whereas firms with less than 200-bit data storage have to bear a large burden of tax. Data storage has become one of the leading areas of importance in the ICT sector, so this is a significant issue.

Also, in some cases, an absence of policies or of updated policies is hindering the growth momentum of the ICT sector. In some cases, policies are backdated – for example policies related to financial transactions (as mentioned before) and lack of any software procurement policies.

²⁶ An online payment gateway is an e-commerce application service that authorises or arranges the sending and receiving of money online from one place to another.

5.5. Policy suggestions for the ICT sector

Nine critical policy suggestions for the ICT sector

1. Expand the scale and scope of ICT training programmes
2. Upgrade course curricula in universities in line with market needs and introduce e-commerce in the curriculum
3. Ensure uninterrupted and quality electricity and low-cost broadband connections
4. Make the special economic zones instrumental in attracting FDI
5. Ensure better access to financial services and subsidised loans and make the EEF effective
6. Establish ICT export desks at Bangladesh's embassies overseas
7. Ensure provisions for export subsidies for ICT firms
8. Generate political capital for the ICT sector through agreements among political elites
9. Lower the VAT and tax on ICT services (which is now about 25%) to 0%

There should be proper training facilities for the ICT sector. Some companies train their employees according to their own needs. Additionally, the Department of Youth Development is working to train youth, and BASIS and some other private institutions are also providing some training. However, the scale and scope of these training programmes should be expanded. To be able to make the most of the opportunities in ICT market expansion, Bangladesh should create a highly skilled ICT labour force, with an emphasis on good data scientists and analytics to work on the Internet of Things.²⁷

More seminars and workshops should be arranged for existing ICT firms, to expose them to global trends and demands. It is important to guide new ICT firms so they can compete in the global market with more competency. If proper trainings are arranged, many domestic-oriented firms will be willing to expand the scope of their operations in the global market. The GoB ICT Division, in collaboration with BASIS and other relevant stakeholders, needs to take the necessary measures in this regard.

Curricula in universities should be updated in line with the needs of the market. Universities should coordinate with professionals to upgrade their curricula and introduce e-commerce as a subject.

The overall infrastructure of Bangladesh is weak. Although hard infrastructure – like roads and highways – is not directly linked to ICT development and exports, it has important implications in terms of attracting FDI in the ICT sector. High-tech parks are timely interventions by GoB. However, soft infrastructure is also very important, such as internet connectivity – the lifeline of the ICT sector. There is a need to ensure low-cost broadband connections for the whole country. This will lower the costs of hiring for firms as the cost of living outside Dhaka is much lower. For many ICT and BPO firms, which work for offshore companies, outskirts cities other

²⁷ The Internet of Things is the internetworking of physical devices, vehicles (also referred to as 'connected devices' and 'smart devices'), buildings' and other items, which are embedded with electronics, software, sensors, actuators and network connectivity that enable them to collect and exchange data.

than Dhaka are more suitable, provided they have skilled labour and proper internet connectivity. Also, there is a need for access to uninterrupted and quality electricity.

Only two companies are supplying bandwidth in Bangladesh. More companies will mean more competition, which will improve the quality and reduce the price. ICT infrastructure like network modules and data centres are necessary as well.

Government policies in the ICT sector need to be up to date and dynamic in nature. A solid foreign investment policy and institutional financing policies are required. Investment policies should be business-friendly and GoB policy-makers need to have ICT knowledge. There should also be provisions for new entrepreneurs; banks should provide loans of a certain amount to ICT firms without collateral, and at a lower interest rate. Also, there is a need to critically evaluate the experience of the EEF and to take the necessary steps to make it effective. In this regard, Bangladesh Bank needs to take the required actions.

GoB should incentivise the incorporation of all ICT firms in accounting. Proper accounting of the ICT industry will help policy-makers formulate policies. Also, there is a need for a proper regulatory system for the payment gateway infrastructure for freelancing and BPO service providers.

GoB should establish an ICT export desk at Bangladesh's embassies overseas, at least at the major export destinations, for the promotion and further expedition of the sector. This will enable ICT companies enlisted with GoB and BASIS to showcase their products and arrange seminars/festivals to attract new buyers, and will increase engagement between clients and Bangladeshi ICT companies. IT and ITES firms should be able to participate in different IT fairs at major export destinations. In most cases, firms do not have the financial capability to do this, so GoB should help in this regard.

Both monetary and non-monetary incentives should be provided to ICT firms. Among the monetary incentives, there should be provisions for an export subsidy for ICT firms. There is a tax holiday for ICT firms until 2024 but VAT on ICT services is still making these costly for the consumers. Hence, VAT and tax on ICT services (which is now at about 25%) should be taken down to 0%. On top of this, BASIS demands that VAT on house rents (which is about 9% at present) should be abolished to encourage new entrants into the industry. Among non-monetary benefits, a 'one-stop solution desk' should be established to help new entrepreneurs start up their business. It will also help ICT firms sort out other problems related to necessary services.

With the development of software and software-related companies, there is a need to emphasize hardware manufacturing. In this respect, FDI can play a major role. The special economic zones can be instrumental to attracting FDI in this regard.

Meanwhile, attracting FDI in the ICT sector requires stability of policies and politics. There is a need to generate political capital for the sector through agreements among the political elites.

6. Conclusion

This research paper identifies three sectors that could potentially stimulate inclusive growth in Bangladesh. The selection of the three sectors is based on their capacity to meet three principle criteria: growth drivers, diversification and government buy-in. Agro-processing, leather and leather goods and ICT are the three sectors selected.

There are three major opportunities in the agro-processing sector in Bangladesh, which include value addition, employment generation and linkage effects. Table 8 summarises these major opportunities.

Table 8: Summary of opportunities in the agro-processing sector in Bangladesh

Opportunity	Description of the opportunity
Large domestic value addition	The agro-based sector in Bangladesh, unlike many manufacturing sub-sectors, enjoys much higher value addition in the production process as a result of domestically available raw materials.
Large-scale employment generation	There is growing demand for skilled and semi-skilled workers in packaging, temperature control and other technical works in the sector.
High backward and forward linkages	The sector has enormous potential for development by creating forward and backward linkages.

Source: Section 3 of this paper

There are five major constraints in the agro-processing sector in Bangladesh. These relate to market access, infrastructure, finance, skills level of the workforce and institutional efficiency. Table 9 provides a summary of the major constraints and related policy recommendations in agro-processing.

Table 9: Summary of constraints and policy recommendations in the agro-processing sector in Bangladesh

Constraint	Nature of the problem	Policy recommendation
Problems in market access	Tariff and non-tariff measures and related procedural obstacles in major export destinations.	Enhance the capacity of exporters in meeting SPS regulations in export destinations. Also, the Ministry of Commerce needs to improve its negotiating capacity at regional and global trade fora.
Inadequate infrastructure	High transport costs, power shortages, poor air cargo management, inadequate cold storage and cold chain transportation facilities for vegetables, lack of processing unit near the airport.	Manage traffic conditions, improve trucking fleets to reduce transport delays and their associated costs. GoB must ensure the growing agro-processing sector has access to new and quality electricity connections. Financial incentives should be provided to investors to set up cold storage facilities.
Problems at processing stages	Example includes, at the packaging stage, problems related to different packaging requirements of buyers. Also, tariff rates on the import of packaging materials are high.	Provide much more supportive tax and tariff policies at the processing stages.
Lack of access to finance	For SMEs and export-oriented firms, lack of finance is a big problem. Exporters complain about difficulties in access to the cash subsidy owing to bureaucratic and other procedural obstacles.	Ensure better access to financial services. An easier payment system (electronic, e-cash etc.) would reduce trading costs as well as confirm the engagement of potential entrepreneurs.
Lack of skilled labour	Industries face an acute shortage of skilled workers.	Provide larger training facilities to generate a skilled and semi-skilled workforce.
Institutional inefficiency	BSTI suffers from a lack of capacity and institutional inefficiency.	The capacity of BSTI needs to be significantly improved by increasing staffing levels, training and retention, increasing investment in equipment and facilities and introducing a single-window depository and dissemination of all required documentation. Set up more testing labs and build required infrastructure.

Source: Section 3 of this paper

Table 10 summarises the five key opportunities in the leather sector: domestic value addition, employment generation, growth of linkage industry, high quality of domestic raw hide and investment opportunities.

Table 10: Summary of opportunities in the leather sector in Bangladesh

Opportunity	Description of the opportunity
High domestic value addition	Domestic value addition in the sector is reported to be over 80%.
Large-scale employment generation	Bangladesh has the potential to churn \$5 billion from exporting leather, leather goods and footwear by 2020, and this will create 200,000 jobs in that period.
High backward and forward linkages	High backward and forward linkages lead to growth and employment generation in linkage industries with further expansion in leather.
High quality of domestic raw hide	Hides and skins of Bangladesh have a good international reputation.
Bright investment opportunities	FDI in this sector along with the production of tanning chemicals appears to be highly rewarding given this presence of basic raw materials for leather goods and footwear, a large pool of low-cost, trainable labour and a tariff concession facility in major export destination countries under the Generalized System of Preferences .

Source: Section 4 of this paper

The major constraints in the leather sector include relocation of the tanneries, unskilled labour, health and environmental hazards, duty-free import of raw materials and machinery and the high cost of doing business. Table 11 provides a summary of the main constraints and related policy recommendations for this sector.

Table 11: Summary of constraints and policy recommendations in the leather sector in Bangladesh

Constraint	Nature of the problem	Policy recommendation
Sluggish progress of relocation of the tanneries	The deadline for shifting the tanneries to Savar has been rescheduled several times, with little success.	The tannery estate in Savar needs to be effectively operationalised at the earliest.
Lack of skilled labour	The sector suffers from a lack of skilled labour.	Enhance opportunities for technical education and training to generate a large skilled workforce.
Health and environmental hazards	Factory conditions hamper the productivity of labour in this sector and undermine much of the growth and export potential the sector has.	Provide incentives, in terms of duty-free imports of eco-friendly machinery and raw materials, and different tax incentives for factories that comply with health and environmental standards.
Lack of access to duty-free import of raw materials and machineries	Not all firms have access to bonded warehouse facilities as only 100% export-oriented firms can have this.	Extend bonded warehouse facilities to all export-oriented firms.
High cost of doing business	The cost of land and capital is very high. The cost and availability of utilities like electricity and gas aggravate the cost of doing business.	A more flexible loan processing system and subsidised loans for entrepreneurs. Prioritise electricity and gas connections for new investors.

Source: Section 4 of this paper

There are five major opportunities in the ICT sector in Bangladesh: lower costs and greater investment opportunities, language skills, productivity, employment opportunities and government policies. Table 12 reviews these major opportunities.

Table 12: Summary of opportunities in the ICT sector in Bangladesh

Opportunity	Description of the opportunity
Lower costs and greater investment opportunities	The wage rate of ICT professionals is one of the lowest among ICT-exporting countries. Bangladesh has an advantage in terms of real estate cost.
Availability of English-speaking employees	Currently, Bangladesh has more than 7 million English-speaking residents, which is more than in its Latin American and East European counterparts.
Rising ICT workers' productivity	The quality of engineers and scientists produced by Bangladeshi universities is on a par with most developing countries and productivity is significantly higher.
Significant employment opportunities	As the sector is growing, it is creating more and more employment opportunities for skilled and semi-skilled labour.
Supportive government initiatives	A high-tech park is being developed with all modern infrastructural facilities at Kaliakoir near Dhaka on 231,685 acres of land.

Source: Section 5 of this paper

The major constraints facing the ICT sector in Bangladesh relate to a labour and skills mismatch, infrastructure, access to finance and government policies. Table 13 presents a summary of the prime constraints and related policy recommendations for the ICT sector in Bangladesh.

Table 13: Summary of constraints and policy recommendations in the ICT sector in Bangladesh

Constraint	Nature of the problem	Policy recommendation
Labour and skills mismatch	Labour skills are not at the level required by domestic companies. Out-dated curricula, inadequate training facilities and trainers and lack of adequate facilities in institutions are the core reasons for this.	The scale and scopes of training programmes should be expanded. Curricula in universities should be updated in line with the needs of the market. Universities should coordinate with professionals to upgrade curricula and include e-commerce. More seminars and workshops should be arranged for existing ICT firms to expose them to global trends and demands.
Inadequate infrastructure	Physical infrastructural constraints such as lack of power supply and broadband connection.	Ensure uninterrupted and quality electricity and low-cost broadband connectivity for the whole country. More competition is needed in the supply of bandwidth. ICT infrastructure like network modules and data centres are also key. A solid foreign investment policy and institutional financing policies are required. The special economic zones can be instrumental to attracting FDI in this regard.
Lack of access to finance	Entrepreneurs face credit constraints for investment. The banking sector does not want	Ensure better access to financial services. Subsidise loans. Critically evaluate the

	to provide loan facilities because of the high risk associated with this sector.	experience of the EEF and take the necessary steps to make it effective.
Inadequate financial system	There are no reported figures on ICT exports/production in Bangladesh. Also, for freelancing and BPO service providers, the payment gateway infrastructure is still under a lot of regulation.	Incentivise the incorporation of all ICT firms in accounting. Also, set up a proper regulatory system for the payment gateway infrastructure for freelancing and BPO service providers.
Weak governance and institutional issues	Private investment in ICT has not seen any significant increase over the past few years mainly because of political turmoil and uncertainties.	Attracting FDI in the ICT sector is very important to ensure stability of policies and in politics. There is a need to generate political capital for the ICT sector through agreements among the political elites.
Lack of supportive government policies	Absence of policies and lack of updated policies are hindering the growth momentum of the ICT sector.	Establish ICT export desks at Bangladesh's embassies overseas, at least at the major export destinations. There should be provisions for export subsidy for ICT firms. Lower VAT and tax on ICT services (now at about 25%) to 0%. Abolish VAT on house rents (at about 9% at present) to encourage new entrants. A 'one-stop solution desk' should be established.

Source: Section 5 of this paper

The analysis of the constraints in the selected sectors suggests there are three leading common constraints that affect all three sectors. These are:

- 1. Weak infrastructure:** Weak, overall and sector-specific, infrastructure is a major problem for all three sectors under consideration. As Raihan (2017b) argues, 'large scale investments are needed in both 'broad general' and 'sector-specific' infrastructures. However, policymakers are so inclined to improvement in the broad general infrastructure, that the developments of critical sector-specific infrastructure are largely overlooked. As a result, many potential growth enhancing sectors, critical for economic and export diversification, may fail to enjoy the benefit from the improvement in broad general infrastructure. It is also important to bear in mind that though infrastructural investment is conducive for growth acceleration, bad, poorly planned and delayed infrastructural investment hampers economic growth. Therefore, there is a need for a 'breakthrough' in the policy making process for infrastructural investment in Bangladesh.' In this regard, there is a need for coordination among relevant ministries and departments and industry stakeholders.
- 2. Lack of access to finance:** Lack of access to finance is a major problem for all three sectors under consideration. Raihan (2017b) argues that 'a major "breakthrough" is needed in the monetary policy too. The monetary policy by the Bangladesh Bank has been, in general, able to maintain a so-called stable "status quo"; but has failed to generate a big push for accelerating private investment, which is much warranted at this moment. Recent banking scams and escalation of non-performing loans show major institutional weakness of the financial sector. Furthermore, mere lowering of the interest rate is not enough for private sector credit expansion. There are numerous

other challenges with respect to business environment, which the private sector face, and these need to be addressed.' SMEs in particular are the major victims here.

3. **Unskilled labour:** Improvement of the skills of workers, through effective training in line with the needs of the industries, is a must for the development of all three sectors. In this context, relevant ministries and departments, in collaboration with industry associations and development partners, have to take the necessary steps.

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