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The Position of Bangladeshi Agro-based SMEs in International Market and Applicability of PPP

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Abstract

Bangladesh is a developing country with full of natural resources and huge working age population which are the advantage of initiating of any development activities. To achieve the government vision to be a middle-income country by 2021 and developed country by 2041 it is very much necessary to eradicate poverty, ensuring employment, keeping continuation of better growth rate as well as achieve the social solidarity and environmental sustainability and sound industrialization. Small and Medium Scale Enterprise (SME) plays the leading role in industrial sector as a contributor of achieving economic growth, recovered the global economy in a sustainable way, create the employment opportunity and poverty reduction as well. The role of SMEs is inseparable for overall economic development of Bangladesh. By considering SMEs as 'the driving force for industrialization' Bangladesh government put emphasis the development in this sector. Along with textiles, garments, light industries, agro-based SMEs are another part which has a great potentiality in Bangladesh as an agricultural dominated country with 84% among rural population who are directly or indirectly engaged with agricultural activities. The available rich raw materials are supporting investment opportunities in agribusiness with high profit return can create many opportunities for establishing agro-based SMEs to increase the export as well as meet the rapidly growing local demand of agro-processed product. But along with the financial problem, it faces other institutional and infrastructural obstacle creating barrier to flourish this sector. Its competitiveness in international market is decreasing day by day. The EXPY trend shows slow incensement in this sector. Besides, there are lack of product diversification and sophistication which need attention. Its agricultural capacity still is in underutilized and public sector can play vital role within the PPP structure in this perspective. The study analyzed the government policy strategy for the development of agro-based SMEs and the applicability of PPP for its development. It has been found that PPP has the potentiality to fostering the agro-based SME

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sector by contributing in the field of Product Chain Development (PCD), Innovation and Technology Transfer (ITT), Development of Physical Infrastructures (DPI) and Delivering Business Development Services (DBDS) within the frame work of government policy strategies and it can promote backward linkage industry as well. Both qualitative and quantitative methods have been adopted in present study for fulfilling its objectives by using secondary data which included UN COMTRADE data set on SITC Rev.2 at 4-digit level, previous studies and research on the specific sub-sectors, particularly shedding light on agro-based SMEs and public private partnerships in Bangladesh and other country which are practicing PPP in this sector.

Keywords: PPP, Agro-based SMEs, Market, PCD, ITT.

Introduction

Bangladesh is a developing country with full of natural resources and huge working age population.Its progress depends on industrial sector achievement as well as the implementation of social development projects which is leading the country to achieve the middle-income status by 2021 and developed country by 2041, the present desired goal and promotion of the export sector can be consider as the best way to achieve this. In manufacturing sector Small and Medium Scale Enterprise (SME)[1]plays the leading role by recognizing as the achiever of economic growth, recovered the global economy in a sustainable way, create the employment opportunity and can contribute to reduce poverty (OECD 2004). Recent empirical studies show that in high income country SMEs have over 55 percent contribution on GDP and over 65 percent on total employment where as in low-income country it constitutes over 60 percent of GDP along with over 70 percent of total employment, in middle-income country over 95 percent of total employment and about 70 percent of GDP is coming from this sector (OECD, 2014).

By considering SMEs as ‘the driving force for industrialization’ Bangladesh government also put emphasis the development in this sector (GED, 2012). Agro-based SMEs are one of theparts of this sector carringgreat potentiality with 84% rural population who are directly or

[1]According to National Industrial Policy 2016 Section 3.3.3 -3.3.8 the industry with amount of investment (Replacement cost and value of fixed assets, excluding land and factory buildings) Tk. 75 lakh to Tk.15 crores for Manufacturing having 31 to 120 workers and Tk. 10 lakh to Tk.2 crores for Service sector having 16 to 50 workers are defined as Small Industry. The industry with amount of investment (Replacement cost and value of fixed assets, excluding land and factory buildings) Tk. 15 crores to Tk.50 crores for Manufacturing, having 121 to 300 workers and Tk. 2 crores to Tk.30 crores for service sectors having 51 to 120 workers are defined as Medium Industry.

indirectly engaged with agricultural activities by producing conventional and non-conventional fruits, over 90 varieties of vegetables as well as aquatic resources. This sector has 15.35% contribution in GDPs and absorb nearly half of the labor force(MoF,2016).To increase the export as well as meet the rapidly growing local demand of agro-based SME products there should have synchronization between highly productive farm and non-farm agriculture in the time of industrial expansion(GED 2012). The study aims to analyze the position of agro-based SMEs in global trade and the applicability of PPP for its development within the government policy structure.

Significance of the Study

As with many developing countries, there is limited research and scholarly studies about international competitiveness of Bangladeshi agro-based SMEs and applicability of PPP in this sector. Considering the importance of agro-based SMEs to the economy, there was a need to conduct an empirical enquiry to know its global positionand applicability of PPP to develop this sector.

Goal and Research Objectives

The overall objective of the present study was to assess the current situation of Bangladeshi agro-based SME product on international market and applicability of PPP for the development of this sector.

The specific objectives

The specific objectives of the study were to:

a. assess the current status of Bangladesh agro-based SME sectors and its products with special emphasize on export performance;

b. know government’s policy strategy/ initiatives for fostering the agro-based SMEs for achieving the development growth;

c. explore the applicability of PPP for the development of agro-based SMEs; and

d. Provide some policy recommendations based on findings.

Scope of the study

The study has been conducted within the specific area which are composed with the status of SME and Agro-based SME, Investment or Financing in SMEs and Agro-based SME sector, Income Generation and Export Earning, its Position in International Market in terms of Competitiveness, Government Policy and Regulations, Institutional set up related to Agro-based SMEs, Policy Strategy of PPP for Agro-based SME sector. Besides RCA model, with the variables PRODY and EXPYwhich were originally introduced by Hausmann, Hwang and Rodrik, has been used to see the current situation of agro-based exporting product.

Definitions

SMEs and Agro-based SMEs

According to financial and industrial view SMEs have some country and international organizations specific definitions, by different parameters and indicators. But most of them have some similarity about the component which consists of either manpower or investment size with some fixed assets. Some consider about annual turnover of the invested money. According to the World Bank (2008) an enterprise will be considered as a medium enterprise which established with at most 300 employees and the annual turnover of that enterprise will not exceed 15 million US dollars whereas the enterprises consist of less than 50 employees and annual turnover up to 3 million US dollars will be consider as small-scale enterprise (Ahmed, 2009). According to OECD (2004) EU and most of the OECD country as well as transition and developing countries has some limitation about number of employees and those are between 200-250, whereasthe employee limitation of Japan and the USA are 300 and 500 respectively. According to the European Union (2003) (EU recommendation 2003/361) the enterprise consist of 250 employees with 50 million Euros annual turnover limit is called as medium enterprise.

A common and "*Traditional definition of agro-based industry refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector"*(shodhganga.inflibnet.ac.in/jspui/bitstream/10603/112309/6/06_chapter%202.pdf). According to the traditional UN International Standard Industrial Classification of All Economic Activities (ISIC), agro-industrial production is the combination of different manufacturing sectors such as manufacture of Food, Beverages and Tobacco; Textile, Wearing Apparel and Leather Industries; manufacture of Wood and Wood Products, Including Furniture; manufacture of Paper and Paper products, Printing and Publishing; and manufacture of rubber products.

In Bangladesh according to National Industrial Policy 2016 Section 3.3.3 to 3.3.8 the definition of SMEs can be present as the following table:

Table -1: Definition of SMEs in Bangladesh (amount in Bangladeshi currency, million Taka (Tk.)

Type of Industry		**The amount of investment***	**Number of employed workers**
Cottage Industry		Below 1	Up to 15
Micro Industry		1 to 75	16 to 30
Small Industry	Manufacturing	75 to 150	31 to 120

Type of Industry		The amount of investment*	Number of employed workers
	Service	1 to 20	16 to 50
Medium Industry	Manufacturing	150 to 500	121 to 300
	Service	20 to 300	51 to 120
Large Industry	Manufacturing	More than 500	More than 300
	Service	More than 300	More than 120

** Replacement cost and value of fixed assets, excluding land and factory buildings*

Source: *National Industrial policy-2016*

Public-Private Partnership

The concept of PPP started to early 1980s but flourished as a tool of public policy in 1990s. It emphasized using private finance for government work to improve public services (Khanom, 2011). According to ADB PPP is a contractual arrangement between public and private entities in where skills, assets, and/or financial resources will be allocated in a complementary manner by sharing the risk and rewards to achieve the optimal level of service delivery and good value to citizens (The Asia Foundation, 2010). According to Hart which. et. al. (2008) PPP is a collective operation in where public organization and private entities share resources, knowledge and risk for efficiently produce and delivery of product and services. *The Policy and Strategy for Public-Private Partnership (PPP), 2010 of Bangladesh* provides a detailed definition along with some key characteristics of PPP which covers public good provisions characterized by indivisibility and non-excludability, natural monopoly characterized by declining marginal cost, and lumpy investment characterized by long gestation period.

Importance of Agro-based SMEs

"Agro-processing industries generate value addition by the processing of agricultural raw materials, both food and non-food, into products which are marketable, useable or edible; have improved storability and/or nutritive value and enhance income and profitability for producers"

… ....Asian Productivity Organization, 2004:32

This sector is important for industrialization in Bangladesh for their following characteristics (bea-bd.org/site/images/pdf/078.pdf):

1. the exclusive contributory nature for huge employment creation
2. both the ratio of labor-capital and capital-output is high
3. the size of investment is lower comparatively to other industry
4. increase growth within short time

5. create development opportunity for all region
6. ensure fair income distribution
7. can ignites the growth of entrepreneurship
8. diffuse the pattern of ownership
9. the SMEs, bearing creativity, is the strength of a country

In Bangladesh over 99 percent SMEs are established by private sectorsand counts 28 to 30 percent of value addition in manufacturing sector. Besides, 58% of establishments and 55% of job was created in 2006 by SMEs in rural areas (GED, 2009) which shows the path to solution of the unhealthy migration problem from rural to urban areas. A study conducted by Carl Liedholm et al. (1994) found that in rural Africajob growth percentage is higher than that of urban areas by the enterprise expansion.

Importance of PPP on Agro-based SMEs

As agrarian country agriculture, consider as one of the main sources of income, has a significant role to the economic growth of Bangladesh. As per data from UN COMTRADE during 2015 the export earning of agricultural products was US$ 1447.40 million, but in 2016 the earning was US$1369.00. Besides, the number of export partner also increased within that period which indicates the growing demand of Bangladeshi agro-based product in international market.

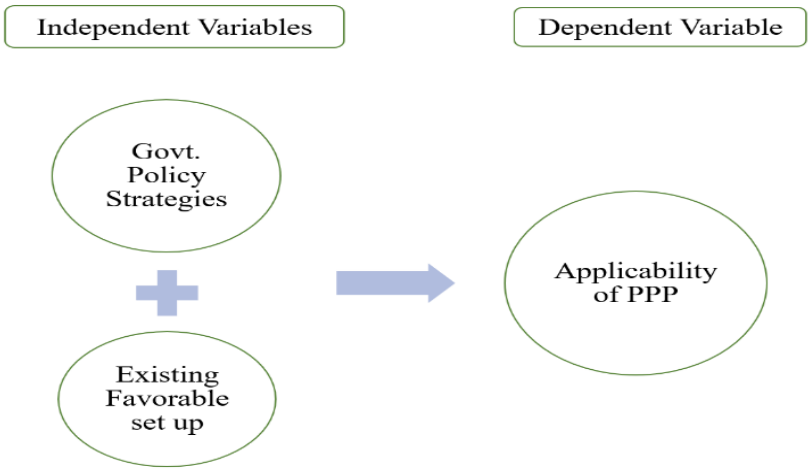
Every year tone of vegetables, fruits go to waste annually due to lack of post-harvest handling knowledge, lack of processing and preservation facilities, lack of efficient technologies and trained manpower. Referring to a BBS report it has been shown that post-harvest losses among 12 fruits and vegetables ranged from the lowest 8.1% to 32.4% in 2010-11. Losses of crops are much higher at traders’ level than at farmers’, and cold storages were almost exclusively used for potato and there were virtually none for other horticulture crops (The Daily Star, 1st October issue 2017, accessed 20th May 2018).

Besides, from UN COMTRADE data it is found that the productivity or income potentiality of Bangladeshi agro-based product is decreasing and EXPY trend of these kind of products increasing very slowly which need special attention.

The demand and popularity of processed food is increasing both in domestic and international market. So, there is a huge opportunity to invest in food processing (specifically in fruit, vegetables and meat processing), frozen food, technology for agriculture, technology for processing/preservation/packaging agricultural products, training and consultancy etc. But there are no sufficient processing plants/industries to process and preserve fruits, vegetables and meat.

Besides, lack of determinant of export competitiveness such as intra-firm factors (managerial efficiency, technology) and extra-firm factors (wage level, interest rate, price, export financing), poor networking or communication gap is creating barrier to expand the number of product items as well as supply the sophisticated product. According to Joynal (2016) the main problem of internationalization of SMEs of Bangladesh is information and networking gap. But the development of more dispersed agro-based SMEs is the base of rural development (Bhardwaj, 2001). PPP can create a progressive environment in where private sector can build them in such a way that without government involvement, they can be able to run the business smoothly and sectoral growth can also be ensured after the time out of project period (FAO,2016). To fulfil the motive of public and private sectors in transition and developing countries donors can put their contribution by sharing good practices, technical and financial assistance for overcoming from barriers and improvement of competitiveness of SMEs (OECD, 2004).

Conceptual Framework of the Study



Research Design and Methodology

Selection of the topic

The topic has been purposively selected with the following considerations:

1. It is an emerging sector with vast potentiality and has an increasing positive growth trend;
2. Prospective and increasing demand in domestic and foreign market for Agro-based products;

Sources of Data and Sampling

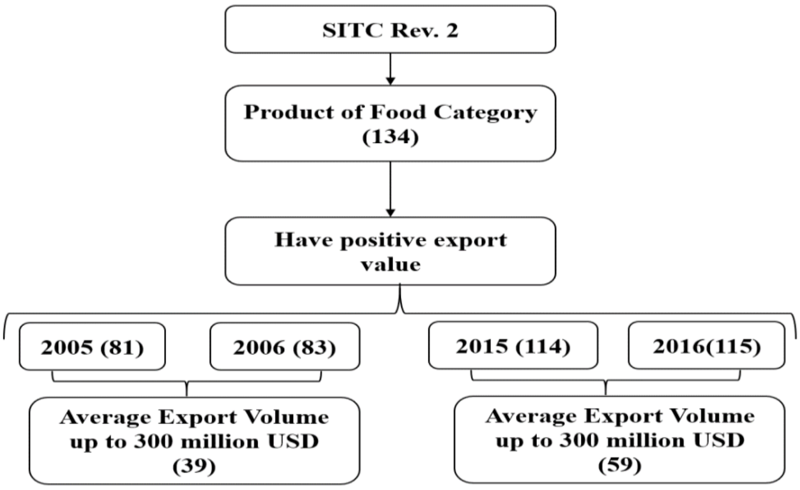
Main sources of secondary documents include:

1. Documents found on the internet pertaining to the work of different development projects and organizations, donors, research and

educational institutions, academic website, international and government agencies particularly shedding light on agro-based SMEs and public private partnerships in Bangladesh.
2. Information from some agro-processors' websites and repositories was also incorporated here.
3. Product disaggregated data were retrieved from UN COMTRADE database on SITCRev.2 at 4-digit level (data are available at https://comtrade.un.org/db/dqBasicQuery.aspx) for analyzing the actual position of Bangladeshi agro-based products in international market for last one decade according to RCA[2] model.Purposive sampling method has been used to select agro-based product.

The flow chart of sampling the number of products has been shown below:

Flow Chart of Sampling the number of product



**Parentheses indicate the number of products*

The selected products have been divided into five groups according to the range offollowing product code:

Sl. No.	Product Group (Code Range)
1.	Food, Live Animals (0001-0999)
2.	Beverage (1101-1199)
3.	Tobacco (1201-1299)
4.	Oil seed and oleaginous fruit (2201-2299)
5.	Animal and vegetable oils, fats (4001-4999)

[2] The revealed comparative advantage (RCA) is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. It is based on the Ricardian comparative advantage concept. It most commonly refers to an index, called the Balassa index, introduced by Béla Balassa and Mark Noland (1965).

Besides, to know the actual change of product competitiveness over the decade the selected products were classified into four groups according to the following RCA ranges:

Sl. No.	Product Class
1.	Classic: RCA>1(2005-06) & RCA>1 (2015-16)
2.	Marginal: 0<RCA<=1 (2005-06) & 0<RCA<=1 (2015-16)
3.	Disappearances: RCA>1 (2005-06) & 0<RCA<=1 (2015-16)
4.	Emerging Champions: 0<RCA<=1 (2005-06) &RCA>1 (2015-16)

Analysis, interpretation and presentation of data

Data analysis was conducted in two phases: quantitative with descriptive statistics and qualitative from published documents. The collected data was processed both in manually as well as software generated and paper was prepared in order to make the study more informative, analytical and useful for the users. Tabular, chart and graphical representations was made in MS Word and MS Excel.

Econometric Model

To know the competitiveness of Bangladeshi agro-based product in international market the following model has been analyzed:

$$RCA_{c,p} = \frac{X_{c,p} / \sum_p X_{c,p}}{\sum_c X_{c,p} / \sum_c \sum_p X_{c,p}}$$

$X_{c,p}$: Exports of product p from country c

$\sum_p X_{c,p}$: Total exports of country c

$\sum_c X_{c,p}$: Total exports of product p from all countries

$\sum_c \sum_p X_{c,p}$: Total world exports

Variables

Two variables have been used here to actualization of agro-based products position in international market on the basis of product sophistication and its contribution of country's export basket. The variables are as follows:

PRODY

$$PRODY_p = \sum_c \frac{X_{c,p} / \sum_p X_{c,p}}{\sum_c (X_{c,p} / \sum_p X_{c,p})} y_c$$

$X_{c,p}$: Export of product p from country c

$\sum_p X_{c,p}$:total exports of country c

$\sum_c \left(X_{c,p} / \sum_p X_{c,p} \right)$: Export share of product p in a country's export basket summed across all countries.

EXPY:

$$EXPY_c = \sum_p \left(\frac{X_{c,p}}{\sum_p X_{c,p}} \cdot PRODY_p \right)$$

Limitations of the Study

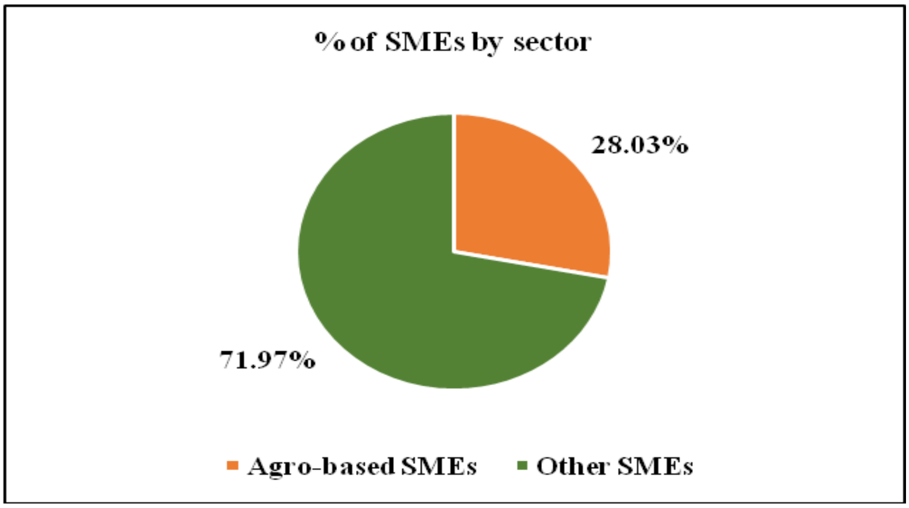
The study has been conducted with available secondary resources. So, it is not out of limitations which can affect the degree of accuracy. The limitations were as follows:

a. there needed some primary data for actualization of present context in field level;
b. there had some controversy with different sources of data;
c. some government websites were not properly updated; and
d. While analyzing UN COMTRADE data set on SITC Rev.2, only one category of product group has been chosen with a certain amount of export volume which cannot represent the whole industry or economy.

Current Status of Agro-based SME sectors in Bangladesh

Bangladesh has huge potentiality to expand its industrial sector with its natural resource and abundant manpower. Among the declared eleven SME booster sectors by SME Foundation Agro-processing/ agri-business/plantation agriculture/specialist farming/tissue-culture and related business are one of them (Afroz, 2012).According to Bangladesh Bank there are 28.03% SMEs are Agro-based SMEs along with 71.97% of other SMEs in manufacturing sectors which are indicating in Chart-1.

Chart 1: % of Agro-base SMEs in manufacturing sector



Source: Bangladesh Bank

According to Bangladesh Bank there are 132 types of production activities listed as SMEs in manufacturing sector. Besides, SME foundation recognized 177 SME clusters[3] in where 34 (26%) clusters are

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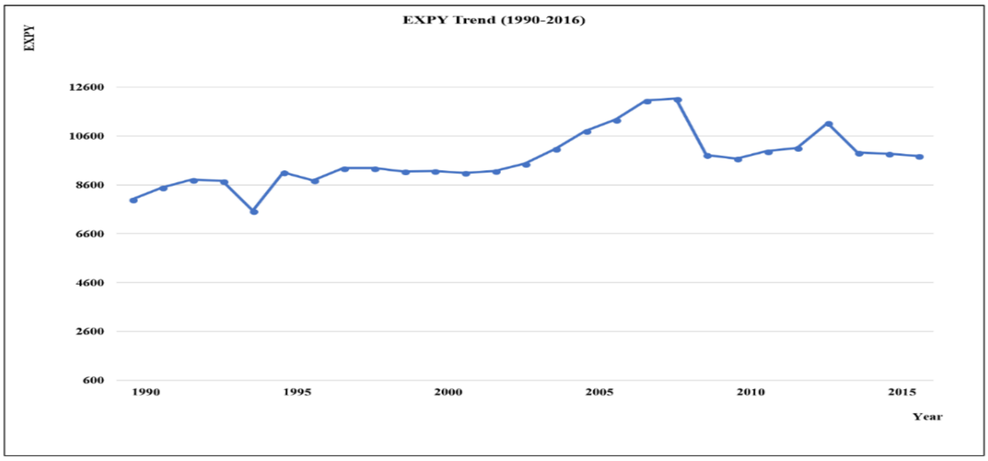
3A Cluster is a concentration of enterprises producing similar products or services and is situated within an adjoining geographical location around 5km radius and having a common strengths, weaknesses, opportunities and threats. [SMEF, 2013:20] recognized as Agro-based SME (Agro-processing/Agro-Business/Plantation) (SMEF, 2013) and among the sectors 32% workforce are engaged there. The maximum average annual turnover is Tk. 108.54 million per enterprise observed in Agro-processing sector which indicate the increasing potentiality as well as economic viabilityof this sector. Besides, in SME cluster agro-processing enterprises use 100% local raw materials (SMEF, 2013) which are reducing its comparative cost.

Agro-based Product in international market

In the era of market economy, it is very much necessary to keep concentration on progressive out ward looking policy as it plays a vital role to achieve a country's desired economic growth. To achieve the expected trade volume, a country needs to aware about the competitiveness with sophistications of its products in international market. RCA value indicate how much comparative advantage a product has in and EXPY trend indicate the contribution of selected product have in a country's export basket over the year.

Figure-1: EXPY Trend (1990-2016) of Bangladesh



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

It has been shown from figure-1 that the EXPY trend of selected agro-based products is not stable for recent years. From 1990 its trend is increasing except in 1994 it reaches the lowest level within 1990 to 2016 but after that the country's EXPY value is increasing with a little bit fluctuated way and reaches at peak in 2008.

Export Performance of Agro-based SME products

Table-2: Export performance of Agro-based Product

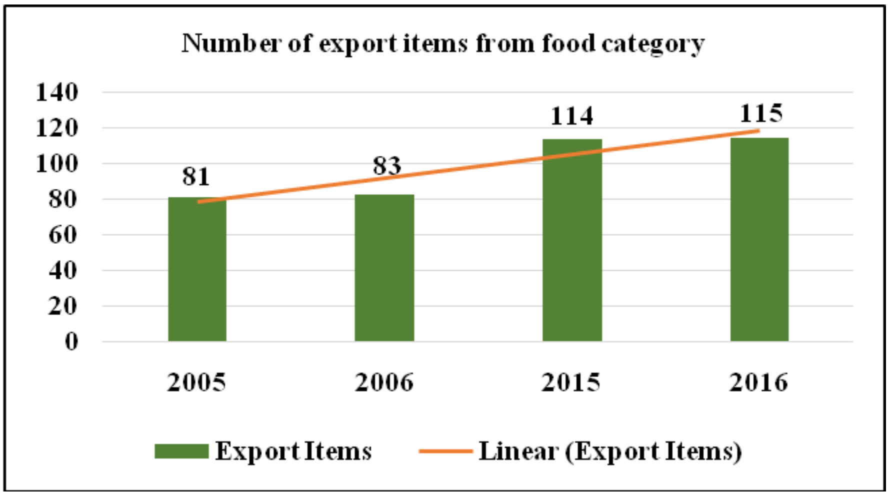
Items	1976-1980	1981-1990	1991-2000	2001-2010	2010-2016
Total Number of Export Partner	40	72	106	152	154

Total Number of Product items	57	89	107	123	124
Total Trade Value (mil. USD)	194.20	1904.65	3466.77	8425.50	8678.04

Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

According to SITC Rev. 2 data there are 134 products included in food category from which 115 products earned foreign currency for Bangladesh in 2016. The number of product items increased from 83 to 115 in 2006 to 2016 which is insignificant in terms of diversification of product (Figure-2) and need special attention. The volume of export earnings was US$ 570.330414 in 2006 (for 84 products item) to US$ 947.513103 in 2016 (for 115 product items).

Figure-2: Trend of Export Product from Food category



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

It has been shown from Table-3 and Chart-2 and Chart-3that among the five group of products according to product code Food, Live animals (Code: 0001-0999) is dominating over the decades andOil seed and oleaginous fruit (Code: 2201-2299) is emerged as a promising sector by adding over 33 million US$ in 2015-16 in country's export basket which was not an export product in 2005-06.

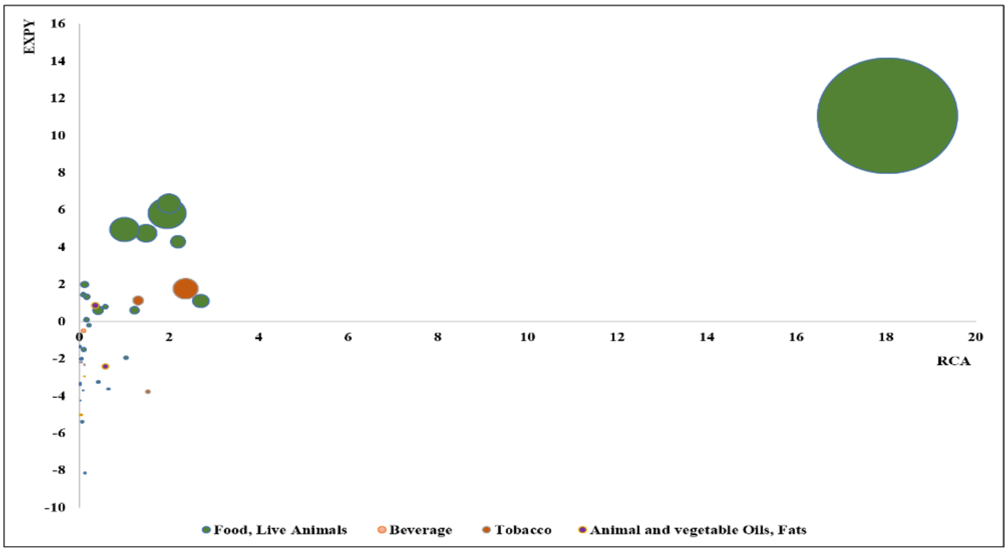
Table-3: Contribution on Export According to Product Group 2005-06 & 2015-16

Sl. No.	**Product Group (Code Range)**	**Number of Product**		**Total Export (Million USD)**	
		2005-06	**2015-16**	**2005-06**	**2015-16**
01	Food, Live Animals	29	44	991.45	1649.30

	(0001-0999)				
02	Beverage(1101-1199)	1	1	1.88	30.01
03	Tobacco(1201-1299)	5	6	32.35	212.91
04	Oil seed and oleaginous fruit(2201-2299)	-	2	-	33.98
05	Animal and vegetable oils, fats(4001-4999)	4	6	8.46	24.20

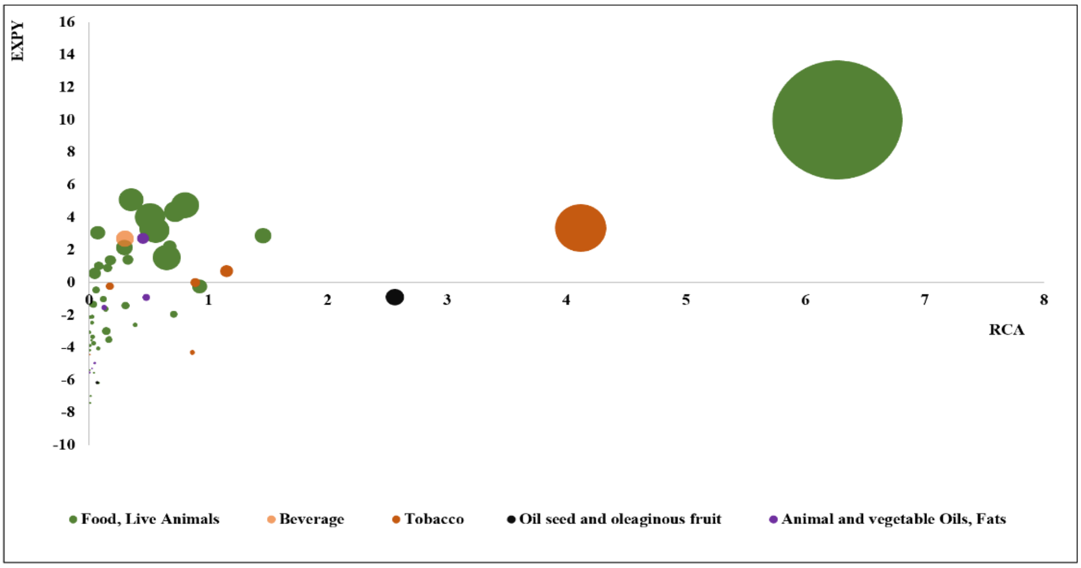
Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

Chart-2: Share of EXPY by product group in export basket 2005-06



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

Chart-3: Share of EXPY by group product in export basket 2015-16



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

It has been found that over the decade there are few products which are come to the front to country's export basket with handsome amount of earning. Table-4 and Table-5 show top ten export earning product of year 2005-06 and 2015-16 respectively.

Table-4: Top 10 Export earning product 2005-2006

Product code	Product Name	Total Export (Million USD)
360	Crustaceans and molluscs, fresh, chilled, frozen, salted, etc	777.175028
342	Fish, frozen, excluding fillets	57.509764
545	Other fresh or chilled vegetables	33.635892
341	Fish, fresh or chilled, excluding fillet	31.443144
1212	Tobacco, wholly or partly stripped	25.508067
372	Crustaceans and molluscs, prepared or prepared, nes	22.146743
741	Tea	17.390331
350	Fish, dried, salted or in brine; smoked fish	15.619785
577	Nuts edible, fresh or dried	7.604597
1211	Tobacco, not stripped	4.971757

Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

Table-5: Top 10 Export earning product 2015-2016

Product code	Product Name	Total Export (Million USD)
360	Crustaceans and mollusks, fresh, chilled, frozen, salted, etc	1032.533135
1212	Tobacco, wholly or partly stripped	186.754547
341	Fish, fresh or chilled, excluding fillet	78.492132
577	Nuts edible, fresh or dried	76.243947
545	Other fresh or chilled vegetables	75.754765
342	Fish, frozen, excluding fillets	57.031192
484	Bakery products	50.779562
585	Fruit or vegetable juices	36.144512
2225	Sesame seeds	33.109714
1110	Non-alcoholic beverages, nes	30.012508

Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

From Table-5 it is shown that theBakery products (Code 484), Fruit or vegetable juices (Code 585), Sesame seeds (Code 2225) and Non-alcoholic beverages, nes (Code 1110) are emerging as new export item in Bangladesh for global export market by breaking the traditional export items in agro-based products.

Export partner for agro-based product

Over the decade the export partners for agro-based product is increasing which indicate the demand of such Bangladeshi product in international market (Table-3). But it is more concentrated in European and Asian country and the market is very limited in Africa and Latin America which need more attention for expansion, as the market is also big in those continents. Table-5 shows the top ten export partner of Bangladesh for agro-based product and total trade value for the year 2015 and 2016.

Revealed Comparative Advantage (RCA) of Agro-based Product

Though the earnings of export from agro-based product is increasing but it is very much needed to know the actual position of international arena of those products in terms of RCA for further expansion of that sector. The study found that only three products constitute in classic class and those are Crustaceans and mollusks, fresh, chilled, frozen, salted, etc (Code 360), Tobacco, not stripped (Code 1211) and Tobacco, wholly or partly stripped (Code 1212) though the RCA of product Code 360 reduced from 18.033 in 2005-06 to 6.268 in 2015-16 and product Code 1211 reduced from 1.308 in 2005-06 to 1.152 in 2015-16 and for product Code 1212 RCA has been increased from 2.36 in 2005 to 4.118 in 2015-16. In 2005-06 out of 29 products 26 are in marginal class, one is in emerging champion class and 9 are in disappearing class, where as in 2015-16 along with three classic products 42 products are in Marginal class, 9 are in Disappearance class and 2 products constitute in emerging champion class which has been shown in Table-6.

Table-6: Classification of Product according to RCA ranges 2005-06 & 2015-16

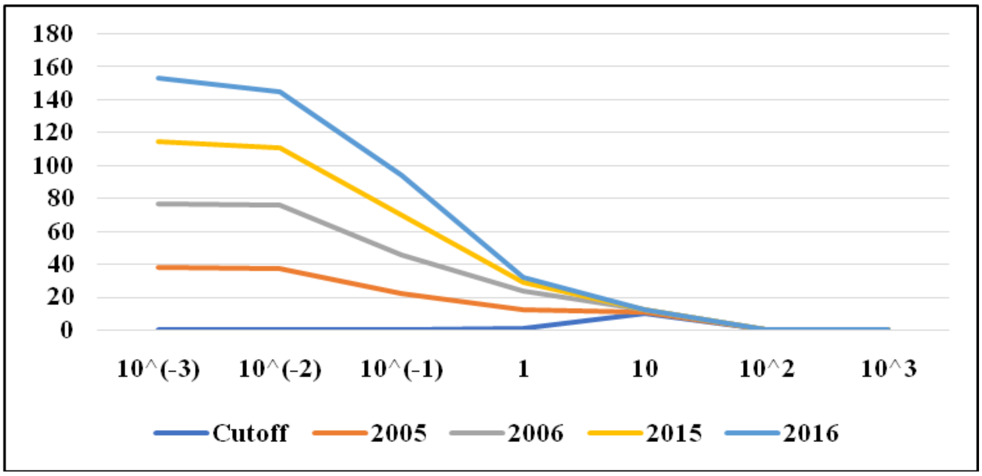
Sl. No.	Product Class (RCA range)	Number of Product	
		2005-06	**2015-16**
01	Classic (RCA>1(2005-06) & RCA>1 (2015-16))	3	3
02	Marginal (0<RCA<=1 (2005-06) & 0<RCA<=1 (2015-16))	26	42
03	Disappearances (RCA>1 (2005-06) & 0<RCA<=1 (2015-16))	9	9
04	Emerging Champions (0<RCA<=1 (2005-06) &RCA>1 (2015-16))	1	2

Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

RCA Cutoffs, Exports and Products' level of diversification

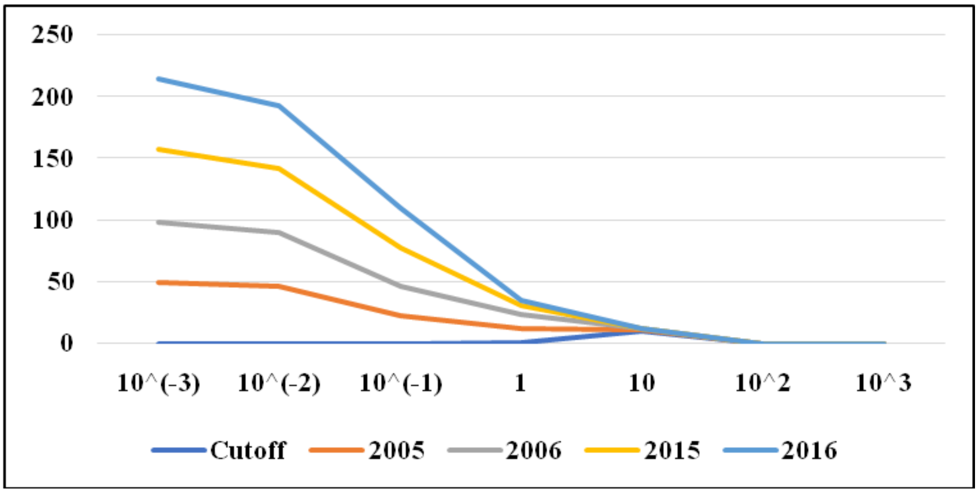
It has been shown from the Chart-4and Chart-5 that over the period the RCA of most of the products is in decreasing trend and there are few which have comparative advantage in international market.

Chart-4: RCA distribution comparison chart in different year for 2005-06 products



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

Chart-5: RCA distribution comparison chart in different year for 2015-16 products



Source: *Author's own calculation from UN COMTRADE data (SITC Rev.2, 4 digits), 2018*

Besides, both the charts also showed that the number of export items has risen which indicate more diversified product from 2005-2006 to 2015-2016, though the diversification is very slow.

PRODY analysis of agro-based products

Among 59 selected products for 2016 top 10 products of high PRODY value lies in marginal class according to RCA classification, which indicate the shortage of sofisticated product export by Bangladesh. The top three products which are in classic group have less PRODY value secured 40, 41 and 58 position among 59 selected product which need attention to increase its income potentiaity to contribute more on country's export value. To survive in international market and increase the productivity of these products research initiatives is urgently necessary. It has been found from the data that the product of high PRODY value has less comparative advantage of Bangladesh which need more attention, otherwise Bangladesh export market of agro-based product will be squeezed.

Government initiatives for fostering the Agro-based SMEs

SME Policy, Regulation and Institutional set up

Macroeconomic policy environment and specific sector development policies and strategies plays a vital role to enhance the economic efficiency and better performance for SMEs. So, for understanding the SMEs situation it is very much necessary to understand the government initiatives and examine the policy environment and institutional set up in this area (Ahmed, 1999).

Table-7: SME Policy and Regulation

<table>
<tr><th colspan="3">Regulations and Policy makers</th></tr>
<tr><th>Name</th><th colspan="2">Responsibility</th></tr>
<tr><td>Ministry of Industries</td><td colspan="2">Industrial Policies including SME sector development</td></tr>
<tr><td>National SME task force
Bangladesh Bank</td><td colspan="2">SME promotion policy
Regulate and supervise commercial banks and non-bank financial institutions</td></tr>
<tr><td>Micro Credit Regulatory Authority</td><td colspan="2">Regulate and supervise microfinance institutions</td></tr>
<tr><th colspan="3">Regulations</th></tr>
<tr><th>Name</th><th colspan="2">Outline</th></tr>
<tr><td>Prudential Regulations for Small Enterprise Financing (Bangladesh Bank, First Edition 2004)</td><td colspan="2">Guidelines and regulations for SME finance by banks and financial institutions</td></tr>
<tr><th colspan="3">Policies</th></tr>
<tr><th>Name</th><th>Responsible Entity</th><th>Outline</th></tr>
<tr><td>Industrial Policy 2005 (2005)</td><td>Ministry of Industries</td><td>1. Recognize SMEs as an important engine for economic growth and treat the SME sector as priority
2. Identify the type of industries most</td></tr>
</table>

		suitable for SMEs 3. Lay down the objective of establishing on a greater scale 4. Draw up a separate SME policy to provide necessary guidelines and strategic assistance in respect of establishing SMEs throughout the country
Policies and Strategies for Development of SMEs 2005 (2005)	SME Cell, Ministry of Industries	1. Proposal to form an SME advisory panel to work with the SME Cell of the Ministry of Industries 2. Over the medium term and beyond, proposal to form an SME foundation as a pivotal organization for the development of SMEs 3.Proposed 11 broad objectives including promotion of private sector development and foreign direct investment, establishment of appropriate infrastructure, and regulatory framework for SME development
Industrial Policy 2010 (2011)	Ministry of Industries	1. Adopt the Policy Strategies for the development of SMEs by 2010 2. Accentuate and sustain SME activities through motivation, loan allocation, and training of entrepreneurs 3.Refinance the SME sector through funds created by Bangladesh Bank 4. Women entrepreneurs to be given priority in the SME sector, 15% of total sanction to be held in reserve in favor of 10% interest rate only 5. Special preferences to be provided to the development of industries dealing with information and communication technology
Small and Medium Enterprises Credit Policies and Programs (2010)	Bangladesh Bank	1. Propose the target for SME credit 2. Lay down the refinancing schemes of Bangladesh Bank for SME financing 3. Special arrangement for women

		entrepreneurs 4. Propose the adoption of cluster development policy by banks and nonbanks financial institutions
Industrial Policy 2016	Ministry of Industries	1. Consider SMEs as engine of economic growth 2. Accentuate and sustain SME activities through motivation, loan allocation, and training of entrepreneurs 3.Refinance the SME sector through funds created by Bangladesh Bank 4. Women entrepreneurs to be given priority in the SME sector, 15% of total sanction to be held in reserve in favor of 10% interest rate only 5. Keep agribusiness/food processing/agriculture machinery i.e. agro-based SMEs in high priority sector 6. Establishment of industries by PPPs where SMEs also incorporated irrespective of product and size.

Source: *MoI (2016) and https://www.adb.org/sites/default/files/linked-documents/36200-023-sd-01.pdf*

Besides, over the years a number of semi-governmental and private sector institutions have become active in the SME area. Bodies such as the NASCIB, BASIC Bank, MIDAS, CARITAS, WEAB, and BWCCIare some of the organizations that have emerged in the private sector and are contributing to the promotion and development of the SMEs (Moazzem, 2008).

Investment or Financing in SMEs and Agro-based SME sector

A total target of SME credit worth Tk. 23,995 crore has been set by the banks and financial institutions for the first time in 2010 (BB, 2010). After that SMEs and Agro-based SMEs are getting different kinds of financial support from Public, Private banks and Financial Institutions such as:

Credit to Small and Medium Scale Enterprises (SMEs);

i. Bangladesh Bank's Refinance for SMEs;
ii. Refinance Scheme for Agro-based Product Processing Industries in Rural Area;
iii. Refinancing Fund in Contrast to the Islamic Shariah.

Table-8: Summary Information on SME Refinancing (Up to June 2016)

Name of Fund	Amount Refinance (Tk. In crore)				No. of Beneficiary (sector wise)			
	Working Capital	Mid Term Loan	Long Term Loan	Total Loan	Industry	Trade	Service	Total Loan
Agro-based	258.32	148.33	473.09	879.74	2312	-	-	2312
BB Fund	691.65	1495.31	609.61	2796.57	9857	14413	3886	28156
IDA	80.34	132.47	99.80	312.61	1368	1306	486	3160
ADB-1	144.48	132.27	58.19	334.94	800	2096	368	3264
ADB-2	-	568.39	178.56	746.95	3765	7435	2445	13645
JICA	20.99	85.38	347.14	453.51	416	9	129	554
New Ent.	0.10	6.93	1.13	8.16	88	-	118	206
Islamic	160.06	11.65	39.00	210.71	54	375	6	435
Total	1355.94	2580.73	1806.52	5743.19	18660	25634	7438	51732

Source: *Bangladesh Bank and Bangladesh Economic Review, 2016*

Table-9: Refinance Scheme for Setting up Agro-Based Product Processing Industries in

Rural areas (As on October 31, 2017, Amount in BDT)

Name of PFI	Refinanced	Recovered	Outstanding
20 Private Bank 15 financial Institutions	11,948,967,002.46	7,846,666,148.35	4,102,300,854.11

PFI=Private Financial Institutions

Source: *Bangladesh Bank*

Table-10: Refinance Scheme for Shariah Based financing in Agro-based Industry

(Cumulative figure as on 30 November, 2017, Taka in Crore)

Name of Banks/ Financial Institutions	Refinance Amount							Total Recovery	Total Outstanding
	Term wise			Sector wise			Agro Based		
	ST	MT	LT	Manuf.	Trade	Service			
Banks									
Shahjalal Islami Bank Ltd.	259.30	7.35	0.00	160.85	105.78	0.02	147.82	250.98	15.67
Al-Arafa Islami Bank Ltd.	0.80	0.00	0.00	0.75	0.00	0.05	0.02	0.80	0.00
Union Bank Ltd.	0.61	2.21	0.28	0.83	1.67	0.60	0.39	2.64	0.46
Sub Total	260.71	9.56	0.28	162.43	107.45	0.67	148.23	254.42	16.13
Financial Institutions									
Islamic Finance & Investment Ltd.	21.50	23.66	83.14	112.87	11.74	3.69	98.42	116.17	12.13
Sub Total	21.50	23.66	83.14	112.87	11.74	3.69	98.42	116.17	12.13
Grand Total	282.21	33.22	83.42	275.30	119.19	4.36	246.65	370.59	28.26

ST= Short Term, MT= Mid Term, LT=Long Term

Source: *Bangladesh Bank (https://www.bb.org.bd/aboutus/dept/sme/sme_factsnfigure.php)*

Policy strategy of PPP for Agro-based SME sector

The Government has already published a set of guidelines for PPP titled "Policy and Strategy for Public-Private Partnership (PPP), 2010". In line with this policy, the Government has established a separate Public Private Partnership office and a PPP unit in Prime Minister's office and Ministry of Finance respectively. (MoF, 2016).

The first goal of industrial policy 2016 is to develop the socio-economic status of people by achieving industrial growth and creation of huge employment opportunity through coordination between public and private sector. Chapter five discussed about the government commitment and the given facilities about the development of SMEs irrespective of gender, location, categories of SMEs according to size and product. Chapter six discussed about the establishment of economic zone, industrial park, cluster industry, hi-teck park and industries established by public-private partnership. From section 6.1, 6.4 and 6.8 we can know about the PPP for industry where SMEs can incorporate.

Besides in the policy agriculture/food processing and agriculture machinery industry include as high priority sector where as medicine, leather and leather product industry, jute and jute product industry incorporated in priority industry list which are consider as agro-based industries/SMEs (MoI, 2016).

With the help of the existing set up PPP can introduce in the following structure:

Table-11: The Structure to organize/ harmonize with existing set up where PPP can work on agro-based SMEs

(Ideas taken from FAO, 2016 with modifications)

Content	Description
Partnership Duration	2-5 years (Depends on category of industry and provided services)
Public Partners' Objectives	1. Increase Rural Employment 2. Income Generation 3. Improve Access to Export Market 4. Increase the potentiality and productivity of Developing Domestic Industry 5. Diversification and Value Addition of Product 6. Environment Protection
Private Partners' Objectives	1. Leveraging Finance 2. Infrastructure Facilities 3. Risk Sharing

Content	Description
	i. Returns on Investment ii. Easy Access to Productive Inputs iii. Reduce Political risk with government interference iv. Overcome from the Barriers to Entry Market
Public Partners*	1. Ministry of Industries (SME Cell) 2. Ministry of Trade and Commerce 3. Ministry of Agriculture 4. Regional and local level government representative offices (Divisions, Districts, Sub-districts) 5. SME Foundation 6. SME and Special Program Department of Bangladesh Bank 7. State Owned Enterprises 8. Publicly Funded Research and Education Institutions 9. International Donor/ Investors
Private Partners**	1. Privately Established Legalized agro-based SME Associations 2. SMEs related to Agri-business 3. NGOs 4. Farmer Associations (for backward linkages)
Key Driver***	Public/Private
Types of agro-based SMEs-PPP****	1. Product Chain Development (PCD) 2. Innovation and Technology Transfer (ITT) 3. Development of Physical Infrastructures (DPI) 4. Delivering Business Development Services (DBDS)

**Depends the need of agro-based SMEs*

***Depends the products of agro-based SMEs*

**** In this case it varies according to their roles and level of engagement*

***** Depends the need of agro-based SMEs*

Conclusion

The demand of agro-processed product is increasing day by day both in domestic and international market. Besides, Bangladesh can export processed agricultural commodity which can increase the income as well as create employment opportunity. The policy strategies and different rules and laws, existing public and private institutional set up is favorable for boosting up this sector if there can build a favorable environment in a better coordinated way. To increase the income potentiality of the products of low RCA values it is necessary to build strong agro-based SMEs with government initiatives by lowering the barriers and promoting entrepreneurship. Product development research is urgently necessary in these perspectives.

The study also found that the promotion of and over come from existing problems, public-private partnership can be a better option. Access and integration of SMEs into local, national, regional and global markets require substantial investments in sustainable physical infrastructure development and business service delivery in all areas irrespective of geography (OECD, 2004).

Recommendations

1. To mature enterprises for some years PPP can play an initiative role within existing favorable policies, rules, regulations, institutional setup both in government and private level.
2. PPP can be applicable in the following four areas:
   i. Product Chain Development (PCD)- from farmers to producers for reducing the post-harvest losses, maximize and efficient utilization of raw materials;
   ii. Innovation and Technology Transfer (ITT)-from research institutions to farmers (for strengthening backward linkage industries), SMEs to innovate new product, quality assurance, increase the production and lower the opportunity cost of time;
   iii. Development of Physical Infrastructures (DPI)-Can provide industrial plot in Special Economic Zone, BSCIC can be modernize, existing 30 clusters can be developed and more clusters can be introduced;
   iv. Delivering Business Development Services (DBDS)-Can strengthen the agro-based business associations for work as network between government institutions and agro-based SMEs to enhance the export market as well as meeting the increasing domestic market.

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