



IMPACT OF COVID-19 ON PRIVATE PLANT NURSERY BUSINESS: A CASE STUDY OF SYLHET DISTRICT, BANGLADESH

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ABSTRACT

The Plant nursery industry is an integrated section of the afforestation program in Bangladesh. Around 18000 plant nurseries are playing a vital role in employment creation and income generation. But due to Covid-19 shutdown, this industry faced a lot of difficulties. Considering the importance, this research was performed in Sylhet district to trace out the pandemic impact on private plant nursery business. Randomly 31 nurseries were selected to fulfill the objective and data were collected using semi-structured questionnaires through direct interviews. In the questionnaire, 5 points Likert scale was used to collect responses of nursery traders. The study analyzed the socio-economic attributes of nursery traders. The conducted survey found out nursery input, transport, and selling tasks were affected most owing to the pandemic and it forced them to adopt several strategies to manage the loss. The study also revealed important suggestions and recommendations for the betterment of the nursery industry which are expected to help students, researchers, policymakers, and entrepreneurs.

KEYWORDS: Covid-19, Impact, Nursery, Case study, Sylhet, Bangladesh.



I. INTRODUCTION

To sustain the balance of ecology it is required to have 25 percent of forest land in a country. But overpopulation, unplanned urbanization, industrialization have caused a serious ecological imbalance in Bangladesh. The forest area of Bangladesh has been recorded to cover 25% of the entire land in 1936 but at present, this has declined to 10.96% of the entire land (WB, 2016). In 1994, the target of Bangladesh's National Forest Policy was to ensure 20 percent of the nation's forests and trees cover. To increase afforestation, in the mid of the 19th century, Forest Department (FD) first introduce plant nurseries in Bangladesh for producing forest trees but later they enlarged their nurseries to commercial fruit trees on Government level (Amin, 2016). Few private nurseries were flourished and exhibited in the twentieth century. And now this particular sector is the largest division (Amin, 2016). Nurseries have become an integral section of afforestation program. As a consequence, need for nurseries is constantly increasing and new nurseries are emerging. As the nursery business field is growing, educated entrepreneurs are joining this business and thus creating employment opportunities. At present around 18000 nurseries in Bangladesh at where 69000 families are associated partially or fully rely on the plant nurseries for their living (Amin, 2016). Around 0.2 million people are directly associated with nurseries and 0.15 million number of farmers are connected with commercial horticulture and floriculture business (ITR, 2015). Nurseries are playing a vital role to sustain cities and towns. It is increasing greeneries and also have great contribution to the local economy and national economy.

In December 2019, Covid-19 contagious virus detected in Wuhan, China. The virus devastated quickly throughout the world and World Health Organization(WHO) declared it a pandemic. As per Worldometer (January12,2021) almost 1.95 Million people died. 8 March 2020, Bangladesh observed the first coronavirus cases. After detection, the Bangladesh government declared a lockdown. The lockdown effect has broken the synchronization of demand and supply, the chain of supply along with relationship with producers and workers also messed up. Overall activity from production to selling was interrupted. The lockdown has affected the income of 500 families in Narayanganj district who were involved in flower production and marketing (Kumar, 2020). Covid-19 pandemic slowed down flower production and commercialization with TK 250 crores loss (Bhuyan, 2020). A supply chain expert predicted that present marketing condition may hamper obtaining growth of total income (Kumar, 2020).

In Bangladesh, few studies have been carried out to found out Covid-19 impact on agriculture and

related sectors (Begum et al., 2020; Kumar, 2020; Sarwar et al., 2020). But no research has been found about Covid-19 impact on plant nurseries. There are few studies on nursery business in Bangladesh (ISLAM, 2006; Haque et al., 2007; Amin, 2016; BARI, 2016). In there, only one study found which is related to plant nurseries in the Sylhet region (Ahmed et al., 2008). Therefore, considering the facts, it has become necessary to examine the present status of the nursery business in Sylhet district. This study had conducted by following the survey method in Sylhet district, Bangladesh. The specific purpose of the conducted study-

- Analyze the socio-economic attributes of private plant nursery business owners.
- Find out which nursery activities were affected most due to shut down.
- Owner adaptation strategy to manage the pandemic impact.
- Owner choice of suggestion overcoming the pandemic effect.

The findings will help the policymakers to understand better about the current condition of nursery business. It is expected that policymakers would contribute in formulating effective policies for expansion of this industry. Likewise, entrepreneurs will understand the situation of the nursery business and there are further possibilities for the researcher to do more research.

II. METHODOLOGY

Study Area

The survey-based research was performed in Sylhet district, north-eastern part of Bangladesh. The coordinates of Sylhet 24° 30'N and 91° 40'E.

Sources of Data

To collect primary data a survey was carried out from 28th October 2020 to 10th December 2020. Secondary data has been obtained from the journal, research articles, websites, and newspapers.

Sample size and sampling technique

To select nursery a simple random sampling was used. Randomly 31 nurseries were selected to collect data at the studied area.

Collection of Data

Data were collected by authors themselves. All the survey information was collected during the daytime and all precautionary measures of COVID-19 were maintained during data collection. Responses were collected by using semi-structured questionnaires through face-to-face interviews. 5 points Likert scale (5=Strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree) was used to fulfill objectives of this study.

Analytical technique

Collected data were tabulated and analyzed by descriptive statistics such as frequency, percentage, mean derived from 5 points Likert type scale.

**III.RESULTS AND DISCUSSION****Socio-economic Attributes**

The study found that (Table 1), In the study area 100 percent of plant nursery business owners were male. It indicates commercial nursery business is dominated through males. A study discovered a similar observation which was performed in the Dhaka district, Bangladesh(Amin, 2016). Bangladesh is the toughest place for female business owners because women continue to be restrained by deeply rooted socio-cultural alongside financial constraints(Bangladesh, 2020). Among the owners, 29 percent were young adults (age between 18-35) and 71 percent were middle-aged adults (age between 36-55). Above 55 age no owner was found. It indicates middle-aged entrepreneurs are more active in this business. The Majority of owners were

educated. Around 48.39 percent obtained tertiary education,38.71 percent had secondary education and 12.9 percent had primary education. They agreed that education has vital role in decision making, adaptation ability and developing economically. It's a clear indication of educated young participation as educated populace are highly joining this business. At Sylhet, the study revealed that 54.84 percent of owners established their nurseries in their land and 45.16 percent developed their nurseries by taking land as lease. Although there are lots of fallow land in Sylhet district. Still, there are issues to use those land for the nursery business. 58.06 percent of owners developed their nurseries between 30-60 decimal of land where 29.03 percent and 12.90 percent of owners conducted their nurseries above 60 decimals and

Table 1. Socio-economic attributes of private plant nursery business owners at Sylhet, Bangladesh. (n=31)

Variable		Percentage
Gender	Male	100
	Female	0.00
Age(years)	Young age adult (18-35)	29
	Middle age adult (36-55)	71
	Old age adult (55<)	0.00
Level of education	No formal education	0.00
	Primary education	12.90
	Secondary education	38.71
	Tertiary education	48.39
Size of nursery(Decimal)	<30	12.90
	30-60	58.06
	60<	29.03
Land ownership	Self	54.84
	Lease	45.16
Business experience (years)	1-5	3.23
	6-10	51.61
	11-15	32.26
	15<	12.90
Training experience	Yes	6.45
	No	93.55
Participation in tree fair	Yes	58.06
	No	41.94
Sources of Capital	Self	90.32
	Bank	9.68



	NGO	0.00
	Others	0.00
Annual income (Crore)	>1	35.48
	1-2	32.26
	2<	32.26

below 30 decimals of land respectively. Experience is always vital factor that helps an entrepreneur to manage a business more smoothly and efficiently (Mamun et al., 2018). Around 51.61 percent of owners were experienced in doing business for 6-10 years. 32.26 percent had experience for 11-15 years and 12.90 percent had experience above 16 years and only 3.23 percent of respondents had experienced between 1-5 years. Training paves way of skill acquisition technique and knowledge but a greater part of the owners received no training (93.55 percent). Tree fair is always great way to add extra income alongside the marketing of nursery. 58.06 percent of owners attended in tree fair. This outcome revealed that owners did not take a loan from Non-Government Organization(NGO). Though nursery owners are interested in taking loan from bank but only 9.68 percent of owners have taken a loan from bank. A large portion around 90.32 percent of owners established their business by self-capital. Income level determines the financial status of a business. Around 35.48 percent of owner annual income was below one crore taka, 32.26 percent have an annual income between one to two crore taka and 32.26 percent of owners have annual income above two crores taka.

Nursery Owner perception on the impact of Covid-19 in the plant nursery

It was found from the conducted study (Table 2), a significant proportion of nursery owners agreed with such statement of, "Problem was high in transportation of nursery material" (100%), "Production cost has increased a lot" (100%), "Selling of product has decreased a lot" (100%), "No advisory services were gained from agricultural representative" (97%), "Input material price has increased a lot" (94%), "Product marketing problem has increased" (81%), "Accessing in credit facilities were very difficult" (77%), "Product price has decreased" (68%), "availability of materials was limited" (55%) ". Meanwhile, a substantial number of nursery owners disagreed with the statements of "difficulties were high in performing daily activities"

(77%), "labor wage was increased a lot" (90%), "monitoring problem was high"(97%), "labor availability was limited" (100%), "problem faced during new plant production" (100%), "management problem was high" (100%), "wide number of product was damaged" (100%) and "storage problem was high" (100%)".It means Covid-19 has affected the nursery business and owners recognized which activity faced difficulties and interruption throughout the shutdown. All kind of transportation system, even people's movement were restricted in Sylhet (*Coronavirus*, 2020). Consequently, input material was limited and the price increased a lot which increased total production cost. But owing to restriction, buyers decreased alongside product prices also decreased. Agricultural representatives were also failed to provide information. Also, small farmers and businessmen could not be able to access Government loan facilities (Uttom, 2020). Opposed to, owners faced the least difficulties in performing daily activities, management activities. Owing to the availability of laborers, the monitoring of management activities was not harder. Moreover, no problem was faced in the storing of plants. The finding is congruent with a report which was conducted by BRAC at the farmer level in Bangladesh revealed that Covid-19 shutdown caused production problem, marketing problem, lack of decent prices, higher price of input, and limited operation of markets(*BDT 565bn Loss in Farmers' Income in 45 Days*, 2020). This study supports several studies of Bangladesh that were conducted finding out the impact level of the Covid-19 in agriculture (Bhuyan, 2020; Kumar, 2020; Mannan, 2020). However, one study reported that sales had risen while the lockdown eased but the corporate sale and NGO sales had dropped to 50% and 40% respectively

**Table 2. Nursery owner perception on the impact of covid-19 in the Plant nursery business. (n=31)**

Impact	%Agree	%Disagree	%Neutral
Problem was high in transportation of nursery material	100	0	0
Production cost has increased a lot	100	0	0
Selling of product has decreased a lot	100	0	0
No advisory services were gained from agricultural representative	97	3	0
Input material price has increased a lot	94	0	6
Product marketing problem has increased	81	19	0
Accessing to credit facilities were very difficult	77	23	0
Product price has decreased	68	32	0
Material availability was limited	55	42	3
Difficulty was high in performing daily activities	16	77	6
Labor wage has increased a lot	10	90	0
Monitoring Problem was high	3	97	0
Labor availability was limited	0	100	0
Problem faced during production of new plant	0	100	0
Management problem was high	0	100	0
Wide number of product has damaged	0	100	0
Storage problem was high	0	100	0
Original Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree Responses were collapsed into: Agree, Neutral, and Disagree.			

Adaptation strategies

Beginning of the lockdown was most difficult time for business. To manage pandemic impact nursery owners intended to follow diverse types of strategies. The analysis found that (Table 3), a major portion of nursery traders (35.48%) depended on savings. Low investment and high profits in the nursery business enable nursery owners to be reliant

Table 3. Nursery Owner's adaptation strategies to manage the pandemic impact. (n=31)

Strategy	Percentage
No plan	9.67
Increased alternate income source	6.45
Depended on savings	35.48
Sold asset	12.90
Started online sale	29.03
Reduced production of new plant	6.45

on savings. 29.03% owners started the online sale, it worked significantly. Online sales have increased by 70-80 percent in pandemic since the past time (Hasan, 2020). 12.90% owners sold their assets and 6.45% owners increased income source. 6.45% reduced new plant production due to decline of sales. 9.67% of the owners had no plan.

Suggestion to overcome the pandemic loss

This study found out (Table 4) the most necessary list of suggestion which includes, government should subsidize, special transport service should be commenced to carry nursery material, improvement of marketing channel, government should reduce taxes on import of nursery material, nursery modernization, virtual training program arrangement should be commenced, mobile based information service should be commenced, online platform should be undertaken for only selling nursery product and interest-free loan should be arranged". The greater part of the owners wanted government subsidies to stabilize this industry again. They demanded transport facilities for nursery material. Limited transport caused a miserable impact on marketing and some owners showed priorities on improved marketing channels. Market structure influenced overall nursery activities. Besides the pandemic impact, nursery owners believe that irrelevant practices of middle man, poor communication system, transportation of

**Table 4. Important list of suggestions by nursery owners**

Suggestions	Mean	Rank
Government should Subsidize	4.935	1
Special Transport service should be commenced	4.870	2
Marketing channel required to be improved	4.838	3
Govt. should reduce taxes on import of nursery material	3.677	4
Use of modern technology should be increased	3.612	5
Virtual training service should be commenced	3.548	6
Mobile-based information service should be commenced	3.548	7
Online platform should be commenced only for selling nursery product	3.483	8
Interest free loan should be arranged for nursery traders	3.419	9

(n=31) Cut-off score=3.0 (>3.0 = important suggestion, <3.0 =unimportant suggestion).

products without any storage facilities, unfair prices of products, products damaging are also salient features. Owners were engaged in the importation of nursery material. So, they wanted low tax because high tax increases input material price which led high product prices. In the present situation, it will create more difficulties. Social distance reduced the working efficiency of workers. Modern technology will assist to improve production and management activities. They recommended virtual training services, mobile-based information services so that they could communicate easily and they need not to present physically. They already started online selling but they want a trustable app, website only for selling nursery products will assist to grow business. Owners are not inspired enough due to high-interest rates, delay in loan approval, difficulties in understanding procedures, dissatisfactory client services, time-consuming procedures. They demanded an interest-free loan to decrease the pandemic induced impact.

IV.CONCLUSION AND RECOMMENDATIONS

Plant nurseries act as a leading source of plant supply in Sylhet city. Nurseries have a great contribution to employment, environment and secure food security. This study found that mainly nursery input and marketing tasks have been largely affected due to covid-19. Nursery traders are facing losses that have force small traders to omit the business. Consequently, employment has become uncertain for many workers and Sylhet 's sustainability is now under threat. For the prosperity of this industry, the study is providing the following recommendations.

- I. Government and NGOs need to provide easy financial assist for the nursery business. That will attract the young entrepreneur.
- II. This industry has great export potentiality. So, research is required for uplifting this sector. Government and NGO should provide funds for this industry.
- III. The Government should develop a suitable policy to use fallow, unfertile land for establishing nursery.
- IV. This industry needs modernization. New technology will enhance the potency of activity. Modernization will enable this business to drive in the international market.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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