

An Analysis of Physical Distribution from Dhaka to Chittagong in Bangladesh

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1. Introduction

In Bangladesh with the increasing scale of goods and population in the two big city Dhaka and Chittagong needs most promising and universally accepted technology of goods mobility. One of the applications is to use logistics transportation in the world. Logistics may embrace the manufacturing function as well as goods procurement and distribution. The rationale is that production should be planned, not in isolation but to take the distribution and other corporate activities. General people now seeking a strong desire among physical distribution managers to improve the standard of professionalism within their ranks. This process has been encouraged by the creation of logistics operation and physical distribution in Bangladesh. In this paper analyzed the goods and their distribution to creating the logistics chain in the Dhaka-Chittagong transportation. In the long run, physical distribution is likely to promote efficiency and keep the costs under control.

2. Objectives

- To review the current logistics in Bangladesh.
- To identify the problem of physical distribution from Dhaka to Chittagong and to introduce the better logistics policy in Bangladesh.

3. General framework of logistics transportation

3.1 Physical distribution

Physical distribution is undoubtedly one of the major part of the logistics systems. Physical distribution depends on the six items of functioning; transportation, storage, loading, wrapping or packing, information and

lastly distribution processing, with these six items of combination natural resource and production is the main source of distribution, the Figure 1. showed it clearly.

Logistics is a changing factor of distribution structures and it has allowed the grouping of diversification of distribution patterns; especially mass

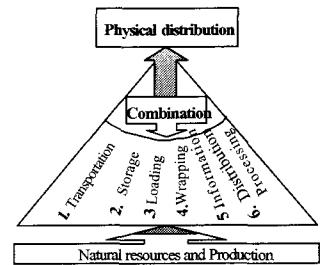


Figure 1. The Physical distribution function

selling or even direct selling such as mail order or door to door operations. To following the physical distribution this paper specifacally analyze the logistics transportation of Dhaka-Chittagong area in Bangladesh.

3.2 Logistics

It is important to recognize that economic improvement is largely a precondition for logistics development. The rapid urbanization of Bangladesh has been



Figure 2. The logistics function

a vital factor in this development. Logistics is the art and science of determining requirements; acquiring them; distribution them and finally, maintaining them in an operational ready condition for their entire life. Logistics is specially concerned with the flow of goods through supply to production then distribution and lastly to recovery or rearrange (see the Figure 2.). In this cycle environment is the big factor, and this logistics cycle only can maintained to reducing the environmental pollution.

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3.3 Production distribution Chain

'Logistics' is a military term originating in the Napoleonic era. Logistics activities provide the "bridge" between the production activities and the markets and it's a profound effect on the economic structure of a country. The supply chain (see the Figure 3) which links a number of participants are suppliers of raw materials, producers, wholesalers, retailers and final customers.

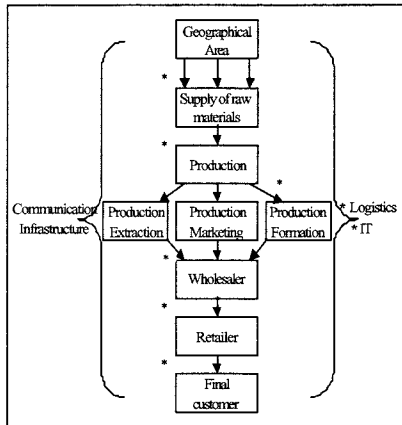


Figure 3. The Production-distribution chain

The concept of production distribution chain is the fundamental way of logistics systems. An understanding of the supply chain is the useful asset of assessing the way of distribution markets. This chain teaches to fixing the geographical area and then to supplying the raw materials and the production.

The figure 3. the production distribution chain can give the right products, right place, right time, right condition and right cost.

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4. Geography and population

4.1 Main transportation map of Bangladesh

Bangladesh a relatively small country covering 148,393 square kilometers. It is situated in the northeastern part of South Asia Sub-continent and bounded by India, Bay of Bengal and Myanmar, and it is called a land of rivers. With rapid growth and development, sustainability has emerged as a critical issue for all sectors, especially in transportation. The Figure 4 showed the Bangladesh transportation like highway road communication, railway, river, airways and seaport in Bangladesh.

From long time ago Chittagong is the important area of Bangladesh. Currently Chittagong is the 2nd largest city

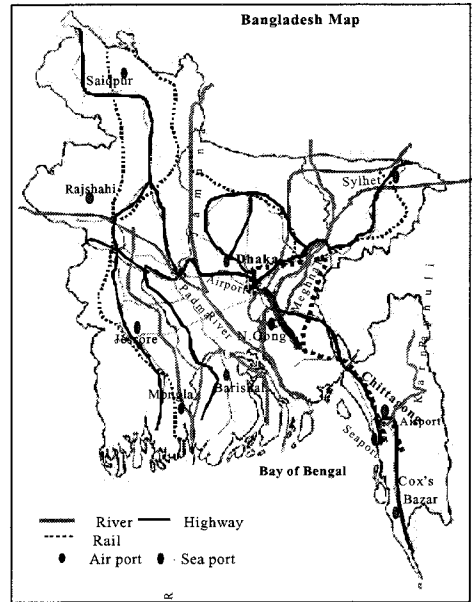


Figure 4. The Bangladesh Map

of Bangladesh and the trade and commercial area. So, it's a major demand to developing her transport network.

4.2 Population of the Dhaka-Chittagong City

Bangladesh got her independence in 1971 from Pakistan after that first census count on 1974 that time population was 71.4 million and Dhaka City's population was 1.67 million and the Chittagong City's population was 0.94 million respectfully. Until now four censuses performed in Bangladesh, last in 2001 January but this is unpublished yet. Approximately until 2000 Bangladesh

Table 1. Population information

(Million)

Year	Bangladesh	Dhaka City	Chittagong City
1974	71.4	1.67	0.94
1981	89.9	3.44	1.38
1991	111.4	3.69	1.40
2000	130.2	6.84	2.34

population was 130.2 million and Dhaka and Chittagong City's population counted in 6.84 and 2.34 million respectfully. And the area of Dhaka City is 1353 sq. km and the Chittagong City is 986 sq. km. In Bangladesh annual growth rate is now 1.5 percent.

5 Logistically Data analysis of goods in Bangladesh

5.1 Availability of goods

According to the table 1, availability of goods in 1986-87, crops for transportation was 15,818,000 metric ton, it was 31.8% of the total goods. In 1996-97 it's rose to 20,178,000 metric ton and it were 25.5% of the total goods. For domestically products like in forestry,

livestock, fishery, for the period 1986-87 the figure was 6.1%, 0.8% and 1.0% of the total goods. In 1996-97 it rose to 8.0%, 1.1% and 1.1% of the total goods. For other products like minerals, industrials and imported goods, in the period 1986-87 the figure was 22.7%, 22.7% and 14.9% of the total goods respectively. The grand total was 49,753,000 metric ton. For the same category of goods, in the period 1996-97, it was 28.0%, 22.1% and 14.2% of the total goods respectively with a grand total of 79,036,000 metric ton. Table1 shows that, goods in the period 1986-97 crops increased 1.28% and the increasing rate of the total goods is 1.5 percent.

Table 2. Availability of goods in Bangladesh (Metric ton)

Goods	1986-87 (%)	1996-97 (%)	Increasing rate
Crops	15,818,000 (31.8%)	20,178,000 (25.5%)	1.28
Forestry	3,018,000 (6.1%)	6,305,000 (8.0%)	2.09
live-stock	422,000 (0.8%)	871,000 (1.1%)	2.06
Fishery	517,000 (1.0%)	834,000 (1.1%)	1.61
Mineral Products	11,283,000 (22.7%)	22,135,000 (28.0%)	1.96
Industrial goods	11,302,000 (22.7%)	17,476,000 (22.1%)	1.55
Imported goods	7,393,000 (14.9%)	11,237,000 (14.2%)	1.52
Total	49,753,000 (100.0%)	79,036,000 (100.0%)	1.59

In table2 blazing up the goods like forestry, livestock and mineral products were increased speedily 2.09%, 2.06% and 1.96% respectively.

5.2 Distribution of goods

The movement of goods by means of air transportation in 1986-87 was 2,000 metric ton and it's a 0.01% of the total goods transportation, in 1996-97 it was 1,000metric ton and 0.002% of the total distribution amount. Transportation by other means like rail, water and road, for the period 1986-87 was 5.41%, 15.37% and 79.21% of the total goods respectively, with a grand total of 36,641,000 metric ton. Like wise in the year 1996-97, it

Table 3. Distribution of goods in Bangladesh (Metric ton)

Transport	1986-87 (%)	1996-97 (%)	Increasing rate
Air Transport	2,000 (0.01%)	1,000 (0.002%)	0.50
Bangladesh railway	1,984,000 (5.41%)	2,936,000 (4.953%)	1.48
Water Transport	5,633,000 (15.37%)	11,072,000 (18.678%)	1.97
Road Transport	29,022,000 (79.21%)	45,269,000 (76.367%)	1.56
Total	36,641,000 (100.0%)	59,278,000 (100.0%)	1.62

was the 4.953%, 18.678% and 76.367% of the total goods respectively, with a grand total of 59,278,000 metric ton. Table.3 shows that, the distribution of goods in between 1986-97 period, road transport was increased 1.56 percent and the total amount increasing was 1.62 percent. Its displayed goods mobility of Bangladesh

mainly depends on road transports, which were 76.37% of total distribution.

The period of 1986-97 in 11 years' distribution of goods at least 25% of goods were out of distribution, its totally depends on unorganized way of transportation.

6. Presently traffic of the Dhaka- Chittagong

6.1 Transportation facility

Communication of Dhaka-Chittagong is leading many types of traffic modes, non-stop bus services, local bus services, train, air and also the water services. And the distance between Dhaka-Chittagong is 278 km by road. Around 350 non-stop buses and around 180 local buses

Table 4. Train and Bus transportation in Dhaka-Chittagong

Dhaka-Chittagong rail and bus transport				
No	Transport	No. of transport	Passenger Capacity	Coaches
1	Inter-city trains	4	58	14-15
2	Express trains	2	60-70	16-17
3	Local trains	3	100-120	15-20
4	Non-stop Bus	350	40	0
5	Local Bus	180	56	0

are moving. Non-stop bus time required is around 4 and half-hours and local buses 6 hours. Goods movement of these areas is mainly dependent on road by truck communication. The inland transportation of goods is almost road based; it's around 80%.

Rail is the second most important transport in surface freight movement. Meter gauge and broad gauge these two types of rail line in Bangladesh. The Dhaka-Chittagong train lines have the meter gauge systems. The distances between two cities are 346 km. Faster and local trains are pulling on these communications. Figure 4 displayed it clearly. The rail communications is 68 km longer than the road communication and also detour.

The air communications of Dhaka-Chittagong are plying on governmental and private company jointly. And water communications have few links with other district.

6.2 Yearly registered truck types vehicles

Table 5. Transport registered per year in Bangladesh

Goods moving Transport registered by type in Bangladesh:			
Year	Truck	Tractor	Trawler
1993	40,373	3,475	2,350
1994	42,337	3,528	2,354
1995	45,805	3,597	2,370
1996	48,734	3,834	2,385
1997	50,016	3,884	2,400

Figure 5 showed the yearly registration vehicles in Bangladesh. Year by year its increasing rate is very slow to the demand the goods mobility. In 1997 it was 50,016

trucks, 3,884 tractor and 2,400 trawler in Bangladesh.

7. Problems of logistics in Dhaka-Chittagong

i. Production distribution chain

In Bangladesh the production distribution chain is not to maintaining yet, still now a very old style of transportation systems. The figure 3 the production distribution chain from geographical area to final customer Bangladesh needs to every types of data to assessing or planning the transportation order.

Production distribution chain is the fundamental structure of transportation sector; absence of good physical distribution sufferings is very high. In Bangladesh without supply chain goods mobility not right time basis of distribution.

ii. Goods demand

To analyze the goods availability and the distribution by the way of case study, it seems that all kinds of items are increasing. Population of these two region increasing drastically. So basic demands of goods supply not fulfilling the demand logistically.

iii. Lack of logistics policy

To observing the logistics and to introducing the new logistics policy lack of physical distribution sector facing lot of problems.

iv. Storage problem

This paper we found the big gap of storage and goods transportation. All kind of goods is increasing and there is no any combination to storage and goods mobility. So, it's a big problem of logistics transportation.

v. Road based transportation

Goods mobility in the Dhaka-Chittagong almost 80% depends on the road-based transportation. In logistics transportation physical distribution is very difficult to distribute only the road network. The population and the volume of traffic and goods are increasing dramatically, the number of streets not to increasing. So, road network have not to capacity to bear the more stress. Logistics transportation recommends also the rail and other

network transportation, which deficiency in Bangladesh.

vi. Environmental problem

Environment pollution's is very high, so current systems detract the environments.

8. Initiatives

- A) An understanding the supply chain is the useful asset of assessing the way of distribution markets. To build the production distribution chain can solve the proper physical distribution.
- B) To fulfill the demand of goods and maintain the economic stability needs to include the region of Dhaka-Chittagong area by logistics transportation.
- C) To innovating the logistics systems it's very important to making relations and to develop the basic six items of physical distribution.
- D) Logistically production distribution chain in Dhaka-Chittagong needs to build the storage both the city areas. Without storage logistically physical distribution couldn't go a long way.
- E) Road development is necessary and to improvement of rail, water and airways is very important.
- F) Logistics distribution followed the environment very carefully. So, logistics distribution chain can reduce the environment pollution
- G) In my next step I would like to introduce the method of Expand Contribution Rule (ECR) and field of survey to identified problems of Bangladesh transportation sector and to the solve.

My strong opinion is that, above of these initiatives should change the Dhaka-Chittagong transportation. To the development needs proper design and management and to needs traffic engineering techniques. Use to supply chain concept have to the ability to develop new physical distribution in Bangladesh.

References

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