

Growth Pattern Analysis of Khagrachari Pourashava

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Abstract:

Growth pattern is an important factor for a city because it can help to predict future growth trend and the development of a city. Khagrachari District is one of the three hill tracts districts in Bangladesh. It is bounded by the Indian State of Tripura on the north, Rangamati and Chittagong districts on the south, Rangamati district on the east, Chittagong district and the Indian State of Tripura on the west. Here Mostly Khagrachari Pourashava is surrounded by hills and waterways. The Pourashava area is mostly inhabited by non-tribal population, while tribal population mostly lives in hilly regions within and around the Pourashava area. The hilly area growth is different. Based on questioners & expert opinions survey, growth pattern of Khagrachari is evaluated. Different culture, history, tribal people, non-tribal people enrich the hilly heritages. In our study, we analyze the city growth pattern & identify the prominent factors that influence the city growth by. Thus it can help us to identify growth trend of the city.

Key words: Growth pattern, growth trend & prominent factors

1. Introduction

1.1 Background of the Study

Khagrachori is one of the most developing city in comparison with the other hill tract districts in Bangladesh. Day by day the

population of the city is increasing. As a result the city grows. Nowadays it is very important to know the growth pattern and growth trend of a city because it helps to plan the city in a structured way. In our study we also try to know the growth trend and growth pattern of the Khagrachori Pourashava. Not only the growth trend and growth pattern but also we try to find out the factors which are responsible for this growth so that in future it may help to take necessary measures to plan the city.

1.2 Goal

To analyze the growth pattern of Khagrachari Pourashava

1.3 Objectives

1. To identify the growth trend and growth pattern of the region.
2. To identify the influencing factors.

1.4 Scope of the Study

In this study, we have a wide scope to learn and analyze the overall growth pattern and trend. It can also be used for research purposes on relevant topics like growth pattern analysis of other hill tracts. This study can also be used for any development programs (both government and non-government) for the city. In this project, an overall idea about influencing factors that are responsible for the growth of the city can be identified.

1.5 Limitation of the study

1. Though the place is unknown to us & due to lack of man power and shortage of time we cannot survey adequately to cover the whole area.
2. There are some restricted areas where outside persons are not permitted to enter and that area could not be analyzed

2. Study area:

Topic	Information
Date of Foundation of Khagrachori Pourashava	31 st Dec, 1984.
Volume of Khagrachori Pourashava	13.05 sq km. (BBS,2012) 13.98 sq km. (UNDP-2010)
Topographical location	It is located at 23.0417° North 91.9944° East.
City established by	Remrochai Chowdhury,1860
Number of Ward	09
Total population	Total-47,278 (BBS 2012) 71,250 (Source- UNDP-2010)
No. of Thana	01
No. of Para	63
Total Holding	Total- 9861 1. Govt.- 680 2. Residential-6751 3. Commercial-2340 4. Others-121
Rivers	01 (Chingri River)

Table 2.1: Khagrachori Pourashava at a glance

Source: Khagrachari Pourashava, 2013

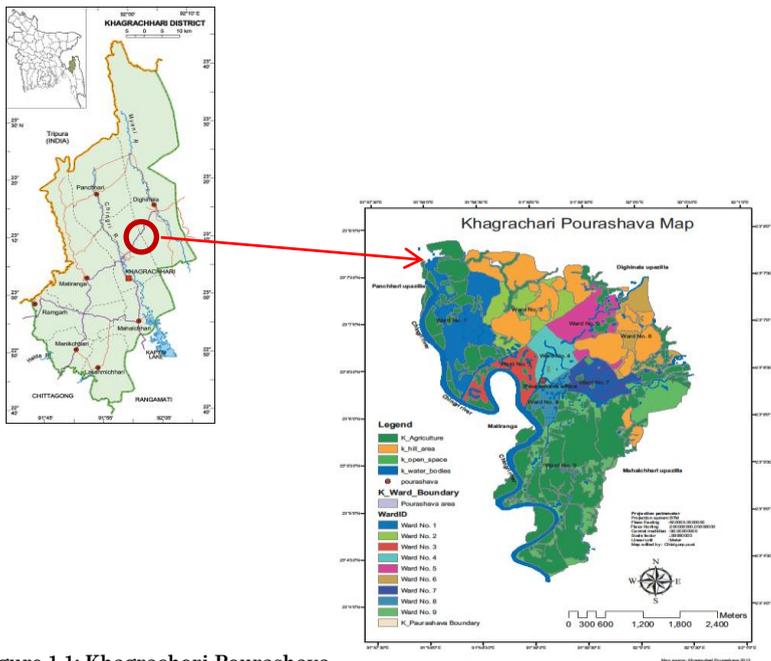


Figure 1.1: Khagrachori Pourashava

3. Methodology

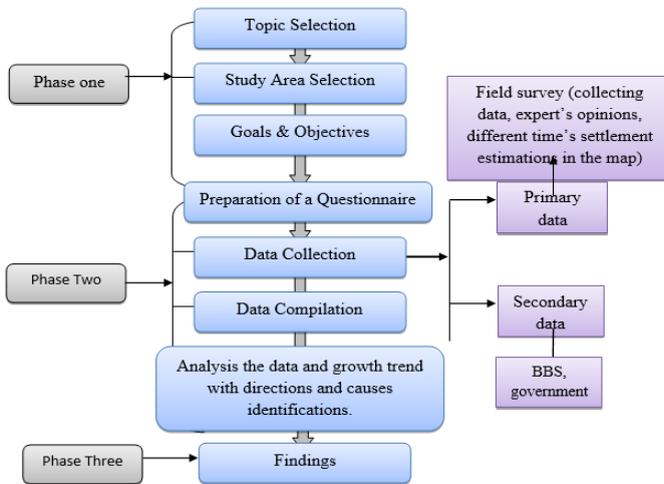


Fig 3.1 Methodological flow chart

4. Analysis

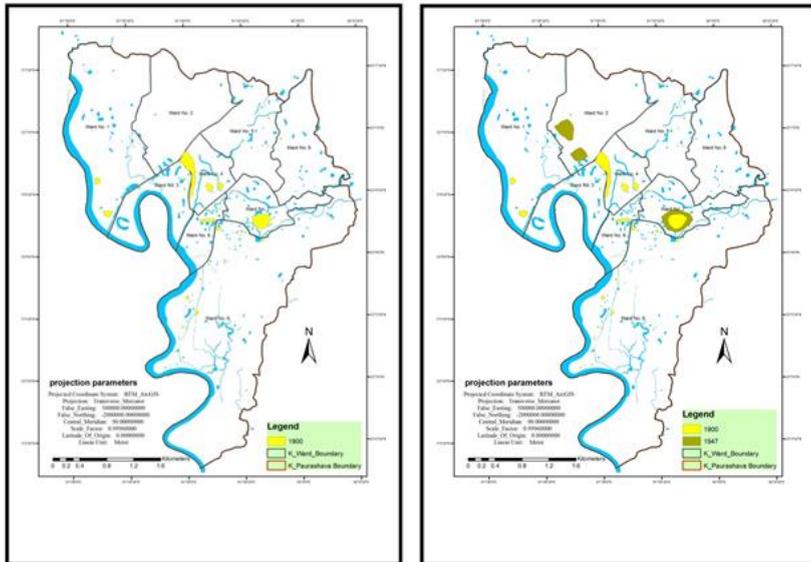
Khagrachari Pourashava was given recognition as a Municipality in 1984 by the then Bangladesh government. Presently the growth of Khagrachari Pourashava is increasing rapidly. It is necessary to determine the present growth trend and growth pattern of the Pourashava area to predict the future expansion area.

From the data collected from the field survey the analysis has been completed in three phases.

The three phases are –

- Phase 1: Analysis based on map
- Phase 2: Analysis from survey data (questionnaire survey)
- Phase 3: Analysis based on Expert opinion

5.1 Phase 1: Analysis based on map

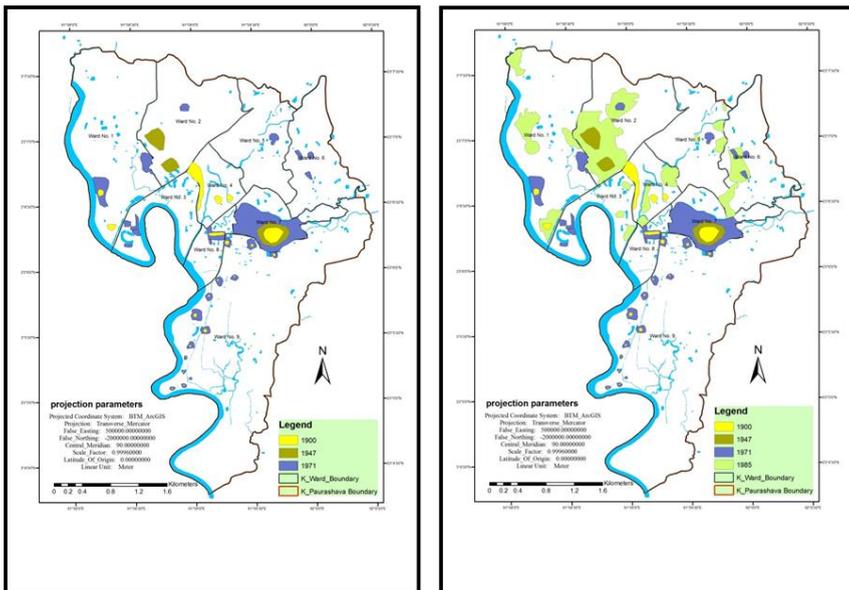


**Figure 5.1: Growth pattern in Khagrachari Pourashava in 1900(left)
Growth pattern in Khagrachari Pourashava in 1947 (right)**

In 1900 the British period, the settlement pattern of Khagrachari town was dispersed. The main settlement grows up based on Chengi River and Chengi River is the only communication system in this area. During that period Shapla chatter was the only prominent commercial place. The other settlement found in that time were: Bottali, Rajjomoni para, Lucai para, Golabari, Aporna chowdhury Para, Pangkhaiya Para, North khagong puria, Shinggi Para, Mohajon Para. The main communication system in that period was the river and it was based mainly on boat and raft. The land lord used elephants for their transportation. (Figure 5.1 left)

In 1947, the settlement pattern of Khagrachari town was also dispersed. Some new settlement found in two no ward mainly LGED office area, Sobujbag, and Comilla tila area. Some new settlement was also found in pank haipara area. In that period non-tribal people came from different districts and

built up their residences Comilla tila, sobujbag, college gate area. Non-tribal people who came different district, most of them were landless. In that period 4-5 non-tribal family were found in college gate and sobujbag area. in 9 no ward mainly bottali, golabari area settlement expanded based on family. People who lived in that area most of them were farmers because the soil in that area was very fertile. (Figure 5.1 right)



**Figure 5.2: Growth pattern in Khagrachari Pourashava in 1971 (left)
Growth pattern in Khagrachari Pourashava in 1985 (right)**

Due to the construction of the Kaptai dam in 1960, thousands of people became homeless and refugee. At this perspective the hill population revolted claiming autonomy. Some tribal people came in that area from Rangamati and Bandarban, and some non-tribal people also came and built some little disperse settlement mainly in ward no 5 & 6. About 60 Muslim family came from kaptai area and build their house in 3 no ward mainly bangalipara which was located near changgi river. In 1900 the British offered independent status to Chittagong Hill Tracts recognizing the culture and language of the hill tracts

population. But during the Pakistan period this status was abolished, which created anger among the hill population. (Figure 5.2 left)

After 1971 suddenly the city was grown in the direction of north in an epidemic form especially in ward no 2. As the land value is very high in the center so the low class landless people, who migrated there, built settlement comparatively far from center in the downstream of hill. In this period a large number of non-tribal people migrated there. In this period a bridge was constructed over Changgi River which was one of the most prominent factors for migrating of non-tribal people. (Figure 5.2 right)

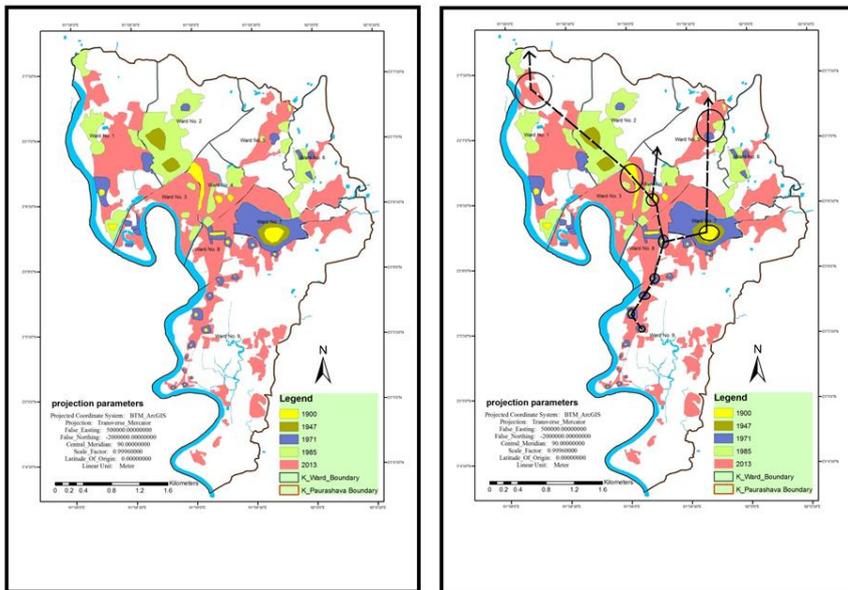


Figure 5.3: Growth pattern in Khagrachari Pourashava in 1900-2013 (left) & Growth direction in Khagrachari Pourashava (right)

After the declaration of Khagrachari Pourashava, due to the community facility and job opportunity people of outer Pourashava area came to the Pourashava and people of different district also came here and built settlement there. The comparatively high class people tend to live nearer the center

due to availability of all facility like educational institution and distance from their working place and the low class people build their settlement far from the center due to the high land value in the center. Safety factors is another important reason for compact settlement. People tend to live together. A large number of non-tribal family built their settlement in ward no 3, 5, 6. Agriculture based settlements were also found at that time. New Zealand area is a new settlement area which completely depends on agriculture. (Figure 5.3 left)

From the above analysis it can stated that the city is growing in the North -West direction because of the availability of flat land and well accessibility and safety on those areas. Disaster and natural barriers are a prominent issue for not expanding in the other area. In the south side the soil quality is loose, which is good for agriculture rather than building constructions; this area is also an earthquake prone area so building cost is hig. The ward no-09 is mainly an agro based area where ward no. 3 is frequently affected by flood of Changgi River and Muslim Para and dhonjo Para are the worst sufferer. That's why people prefer crop production in south than settlement. Another reason for not growing in the south direction is vulnerability of soil erosion of Changgi River. The city gets impendance in growing directly north so it is growing in North- West direction along dighinala. (Figure 5.3 right)

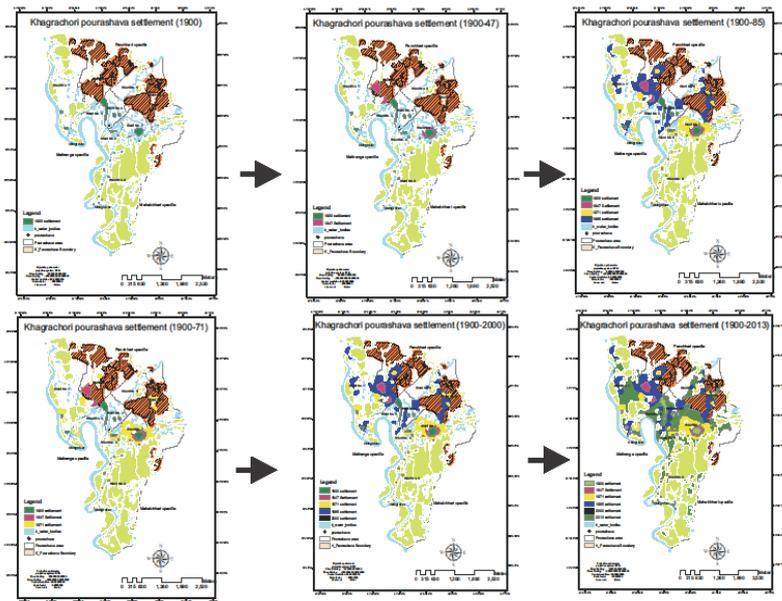


Figure 5.4: Scenario of urban growth pattern of khagrachori (1900-2013)

5.2 Phase 2: Analysis from survey data (questionnaire survey)

5.2.1 Effect on slope & soil condition

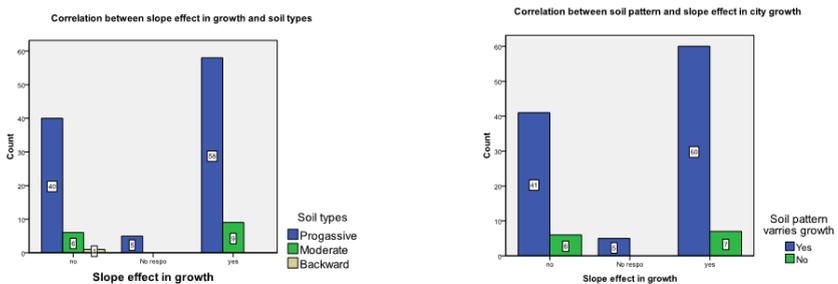


Figure 5.5 : Effect of slope & soil condition

5.2.2 Effect of slope

It is seen that 56% people's opinion that there is an effect of slope on growth pattern. Most of the people say that they tend

to live in flat land than slope area.

Causes for not want to live in slope area	Causes for want to live in flat land
Scarcity of water	In flat land, building cost comparatively low
Building construction difficult	Availability of utility service
Difficult to stay in slope	Availability of job opportunity
Bad transportation system	Good transportation facilitates

Table 5.1: Effect of slope to live

But now among the people living in slope area, most of them are tribal who are directly depending on agriculture and jhum cultivation, which is the main source of their livelihood. Another reason of living in slope is safety, they think that if there any community conflict they can hide themselves in the hill forest and save themselves.

5.2.3 Effect of soil type on growth pattern

Because of the loose soil in the south people prefer this land for cultivation than construction. So the growth is low in the south side and because of hard soil in north side people build their residential and commercial building in hard soil. Loose soil is an important factor for land slide, river bank erosion.

5.2.4 Preferable area in Khagrachari Pourashava

Here in the map it is seen that most of the people of high class prefer living in the area especially which is near to the center like islampur, pankai para, modhupur, master para, college gate etc. Most of the people's opinion is that from that area they can easily go to their working place and get all kinds of community services like educational institutions, hospital etc. The people who are comparatively low class they prefer the place shalbon because it is seen that people on that area mostly depend on forest and their lifestyle is not same as high class so they prefer the area of low land value. So it can be said that

most people prefer the land of North West side and they live concentrically, which creates the cluster settlement.

5.2.5 Vulnerable area in Khagrachari Pourashava

This map represents the vulnerable area in this Pourashava. People’s opinion is that most of the people in ward no 2. especially the area sobujbag and Comilla tila, cutting the hill and building their constructions at the downstream of the hill, create the possibility of landslide occurring in this area. In the ward no 6 especially the salbon people are also cutting down the hill and live in the downstream, so this is also vulnerable for landslide. In the ward no 9 there occurs soil erosion in battali. When there is excessive rainfall, flash flood occurs in the shanti nagar area. According to field study, most people do not prefer to build settlement in this area because of vulnerability but somehow they have to live in that area for their livelihood. In salbon area some people want to live because of their dependency on the forest.

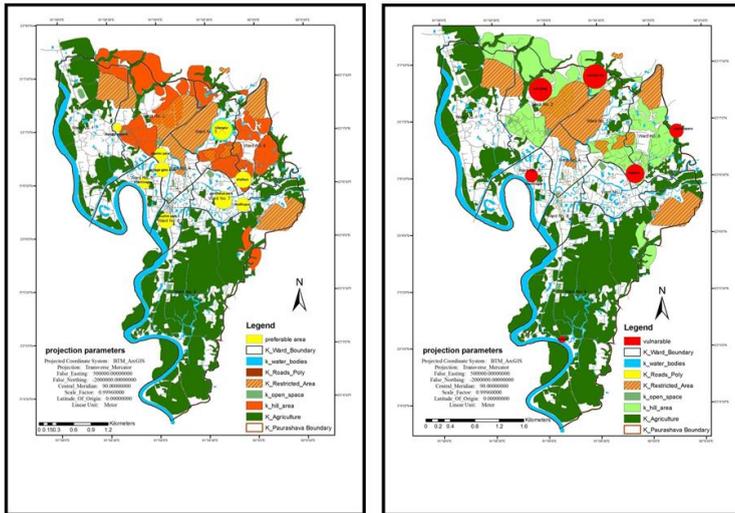


Figure 5.6: Preferable area in Khagrachari Pourashava (left) & Vulnerable area in Khagrachari Pourashava (right)

5.2.6 Land use in Khagrachari Pourashava

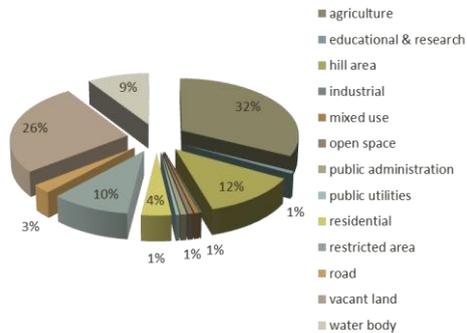


Figure 5.7: Land use in Khagrachari Pourashava

In this Pourashava area most of the land is divide into: agriculture (32%) followed by vacant land (26%), hill area (12%) and restricted area (10%) and 4% area are used for residential purpose. From the map (figure 1.1) it is seen that most of the area in the southern part is cultivable land where the soil is loose and fertile. This is perfect for the agricultural purpose and it is difficult to build any structure here. In the north side, because of hard soil, most of the land is used for residential and commercial purposes. From the field survey we find that most of the land is vacant in the North West part; being a hard soil, this vacant land is covered gradually by structure and growing in North West direction.

5.2.7 Population trend Analysis

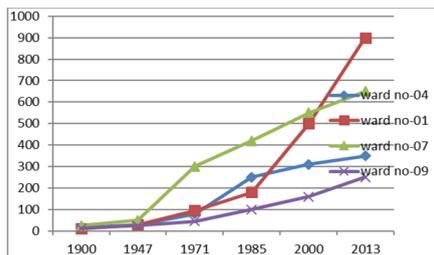


Figure 5.8: Population trend in most old area

Here this is the population trend of oldest ward In Pourashava such as pankaiia para, Mohajon para, golabari, north kogonpuria, LGED office area, lukai para, and Rajjomoni para. Here we see that from the beginning the population was very low but due to some reasons such as good communication facilities, job opportunities and increase of safety the population has rapidly grown after 1985. In the ward no 1 the population has increased suddenly due to the proximity of Khagrachari highway road. Another reason for growing is the existence of educational institutions and stadium.

5.2.8 Land value analysis

After the independence the landless people of different districts suddenly migrated in this area in an epidemic form and settled here. This three wards developed at the same time because of the non-tribal people coming from different districts for their livelihood.

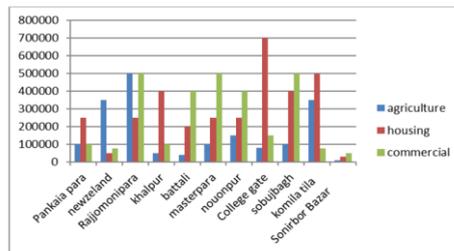


Figure 5.9: Land value of different area

Here we see that the area which is near to the center has high land value for both residential and commercial purposes and in the newzealand area because of the fertile land the agricultural land value being higher than in other areas. After the building of the Mohila College and teachers training college the land value of newzealand and Rajjomoni para area has increased very rapidly.

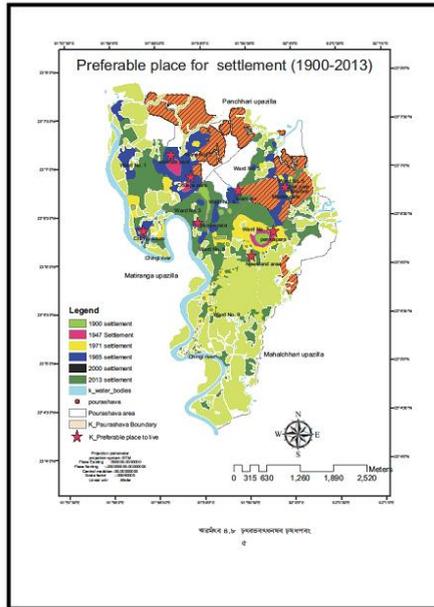


Figure 5.10: Preferable area of Khagrachari Pourashava

Because of high land value in the center the landless people live comparatively far from the center. In the North West direction the land value is comparatively low so people chose this area for new settlement.

5.3 Phase 3: Analysis based on Expert opinion

5.3.1 Direction south west region and reason

- Overall expansion of the city mainly follows a Circular cluster settlement.
- For the direction of growth - the south west region is indicated, which is currently a growth trend of the city.
- The marma people of the west side are very much amiable with the Bengali and new immigrant people.
- The Distance from house to the Shapla chatter around growth center area.

5.3.2 Growth trend the north - west direction and reason

- The city is presently expanding in the north - west direction.
- The reason behind this is the availability of plain land and good accessibility and safety of those areas.
- Disaster and natural barriers as prominent issues for not expanding in the other areas.
- That the ward no-09 is mainly an agro based area whereas ward no. 3 is frequently affected by flood of Changi River and Muslim Para and dhonjo Para are the worst sufferers.
- Most of the people who come from different districts prefer low cost land which is found in the North West direction.

5.3.3 The Influencing factor for growing of the city according to expert opinion

It is said that the factor which affects very much is the safety factor, the opinion that the non-tribal people have a fear of conflicts, therefore preferring to live together with other non-tribal people. Another important factor is the proximity factor, such as distance from their work place, distance from the growing center, distance from major road etc. The topographical factor has a low effect on the growing of the city.

Factors affecting urban growth		Priority ranking	Priority ranking (among major factors)
Topographical factors	· Slope / Elevation	1	4
	· Soil type	2	
Proximate factors	· Distance to CBD	2	2
	· Distance to Growth center	1	
	· Distance to major road	7	
	· Distance to industrial area	No area.	
	· Distance to work places	3	
	· Distance to health care facility	6	
	· Distance to existing urban cluster	4	

	· Accessibility to water supply	8	
	· Accessibility/proximity to educational facility/ religious places	5	
Economic factors	· Job opportunity	1	3
	· Industrialization	no.	
	· Land value	2	
Political situation	· Safety issues	1	1

Table 5.2: The influencing factors for the growing of the city

6. Findings

6.1 Growth pattern

- Overall expansion of the city is mainly following a concentric cluster settlement.

6.2 Growth trend

The city is growing in the north west direction in spite of some experts saying that the city grows in south west direction. Analyzing the survey data and maps we found that the city is actually growing in the North West direction. In the south direction, because of the loose soil, high land value and earthquake prone area, the settlement is lower than in the other.

6.3 Influencing factors

- Safety is a prominent issue, followed by economic, proximate and topographical factors respectively.
- Job opportunity and utility services represent other factors of attraction people in this city.
- The main reason for the growth of the city is that immigrant people who have come to do business are attracted to this location and start living here because of its good habitual environment.
- The NGO's funded a lot in this area because of the tribal communities - many utility services and development projects have been implemented, which ultimately affects

the growth of the city.

6.4 Potentiality

- Soil of the south side is very fertile.
- It has many recreational spots which attract many foreigners to visit this place.
- The main potentiality of the city is its growth in a planned way because the population of the city is not as large as in other developed city.

6.5 Problem identification

- 3 no. ward is a flood prone area.
- 2 and 6 no ward face water crisis.
- 6 no. ward is land slide prone area.
- Community conflict is a major problem which affects city growth.
- River bank erosion in 9 no ward is a threat for city growth.

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Competing Interest

The authors declare that they have no competing interest.