



# Asansol: A Cosmopolitan Mining Industrial City Of Eastern India

Juel Sk<sup>1</sup>, Sasanka Ghosh<sup>2</sup>, Kuntal Kanti Chatteraj<sup>3</sup>

1. Research (Ph.D Scholar), Department of Geography. Kazi Nazrul University. Asansol, West Bengal, India.
2. Assistant Professor, Department of Geography. Kazi Nazrul University. Asansol, West Bengal, India.
3. Associate Professor, Department of Geography. Kazi Nazrul University. Asansol, West Bengal, India.

## Abstract

Asansol is India's 11<sup>th</sup> fastest-growing city in India and 42<sup>nd</sup> fastest-growing city in the world, known as the 'Land of Black Diamonds'. Two wings (Coal and iron industries) are the city's most influential factors for flourishing. After the extraction of the coal mine and installation of heavy industry, it made an excellent employment site and massive population attracted from neighbouring states. It got metropolitan dignity within a very few decades. Asansol belongs to a complex mosaic of economic, language, and cultural characteristics due to the migration of people from different parts of the country. This assimilation of the multi-lingual, multi-religious, multi-cultural populations from different parts of India makes it a coal mining and heavy industry-based cosmopolitan city.

**Keyword:** Asansol; Cosmopolitan city; Coal Mining; Industry; Cultural assimilation

## 1. Introduction:

The world is urbanizing at a very faster rate, especially in developing countries. United Nations (UN) report indicates that more than one-third population will reside in cities by 2050 (Liu, F., & Sun, W.2020). Indian cities are also experiencing a high rate of urbanization, and mainly this effect of rapid urbanization is experienced by secondary cities (Krishnamurthy, R. et al. 2016). Primary cities like Kolkata are already saturated with their carrying capacity and decentralizing their population toward edge city areas (Majumdar, S., & Chatterjee, U. 2021), but Asansol is a rapidly growing city in West Bengal state of India, demanding a better understanding of the urbanization process.

Asansol is the largest city in terms of area and second largest city in terms of population in West Bengal state, experiencing a high urban growth rate (Singh, M., & Siddique, G.2021). This coal mining and industry-based city attracts high-income people to live in this area for commercial purposes. The accumulation of people from different parts of India makes it a multi-cultural, multi-economic, multi-lingual city, giving it the characteristics of a cosmopolitan city (Saha, A., Malik. U.S. 2018). Mainly

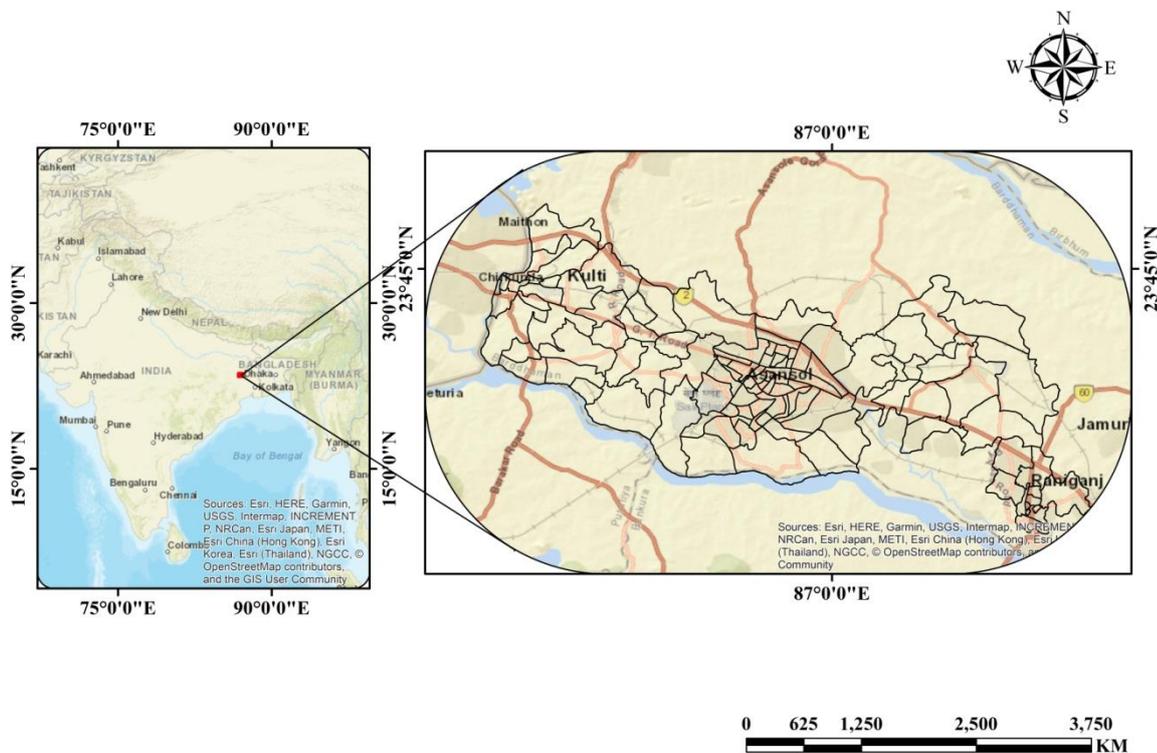
people from three states, i.e., Bihar, Uttar Pradesh, and Jharkhand, migrating here. The urbanization rate of this region is very high for many migrant people. As a result, slum areas have developed and are associated with many jobs in coal mining and the iron industry. Different kinds of heavy industries are located on the outskirts, and administrative activity is conducted from the central part of the city (Navratil, J.et.al., 2018). AMC found two spatial zones based on urbanism, population density, transport facility, and economic activity. In the inner part, strong urbanism, and the outer part followed relatively weak urbanism. Most migrants are residents closer to the inner part of the city.

Despite having these advantages, this area has some disadvantages and faces different socio-economic problems. Asansol Municipal Corporation authority and state authority are trying to address these issues through different policy implementations to help maintain better urban liveability.

The word Asansol consists of two words 'Asan', a species of tree found on the banks of river Damodar, and 'sol', which means land. Historically the city was written as 'Assensole,' but the name was redounding after Independence. It is believed that 'The Malla dynasty ruled here before the British (Acharya, N.D.2014). But, after, it rapidly flourished due to the excavation of coal mines and the installation of industries. The entire city divides into two parts. Grand trunk (present-day NH19) road a four-lane road runs along the middle of the city, importing and exporting various industries' products. Numerous state, district, and minor roads have been connected with this road. Rail communication is important as a means of communication with the entire country. Raniganj is India's first coal mine (Mondal, R., & Mistri, B.2021). Several coal mines in the north and Northwest of the city also provide an economic base to the region's people. Several such as Barnpur, Kulti, Binsha, Gajra, and Vijay Nagar, have formed iron and steel industries depending on the excellent coal quality in this city's heart. After emerging as an industrial town, Asansol attracts people from neighbouring states.

## 2. Location

According to International Institute for Environment and Development, UK report (2010), Asansol is India's 11th fastest-growing and 35rd largest urban agglomeration. These positions make it an important urban center, along with other factors. Two rivers flank Asansol. The Barakar River borders the western side, and the Damodar River is in the southern side. Physiographically this area is located at the fringe of the Chatanagpur plateau extending over a space between. 23.6889°N, and 86.9661°E covering an area of 326.48 km<sup>2</sup> (Figure-1).The nearness to the Tropic of Cancer makes the city hotter during summer. According to the Koppen climatic classification, AMC falls under the tropical savanna (Aw) region with semi-arid climatic conditions (Pal, S. et al. 2021). The highest temperature during summer touches 44° C, and the winter temperature may fall up to 5°C, and the annual rainfall of this region is around 1408 mm (Choudhury D. et al. 2019). The area is well diverse with demographic, cultural, and economic conditions even the area is well diversified in terms of settlement development. These diversified conditions make this area a cosmopolitan city with coal mining and an industry-based economy.



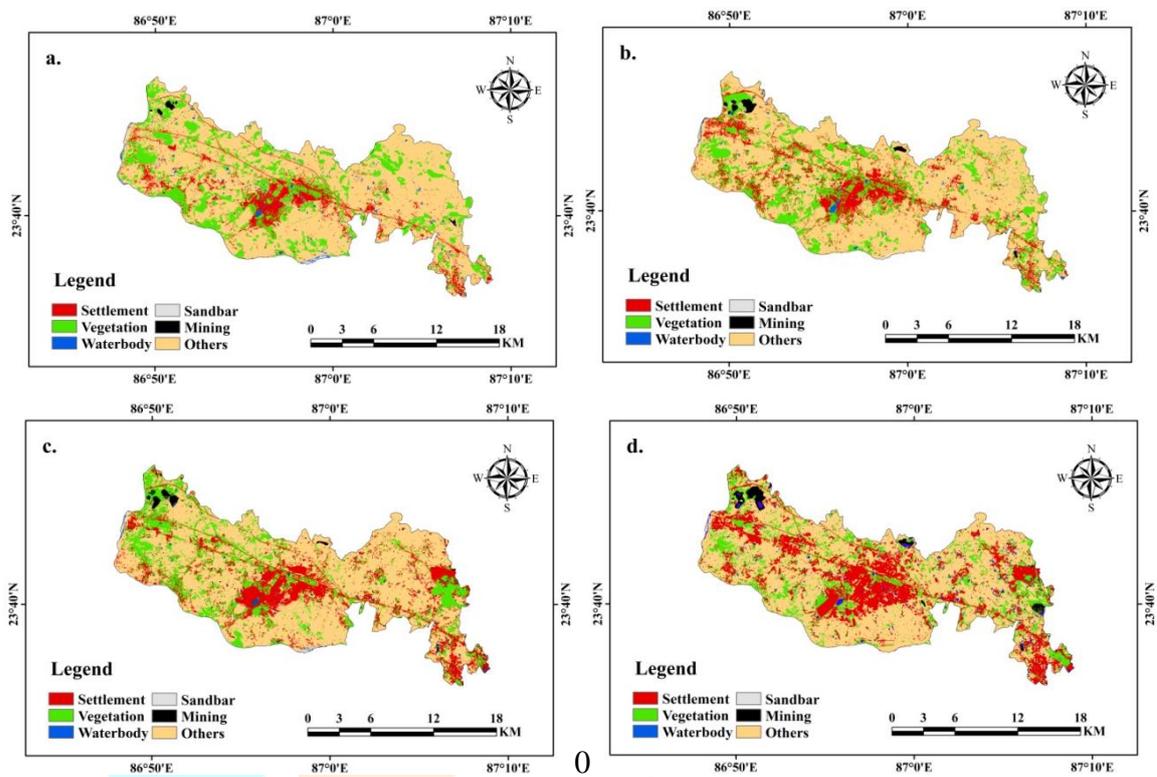
**Figure-1:** Location of the city of Asansol, a coal mining and industrial cosmopolitan city of eastern India.

### 3. Historical perspectives of Asansol development:

Historically, Asansol has been a very important center of India. Historical evidence suggests that Asansol was once inhabited by the Austric, Aryan, and Dravidian peoples (Acharya, N.D.2014). The 24th and the last Jain Tirthankar Mahavira, also known as Vardhamana, revived and disseminated Jainism in the region, evidenced by many religious signatures in the surrounding areas of Parasnath Hill and Dhanbad district of Jharkhand located next to Asansol (Saha, A., Malik. U.S, 2018). Before British rule in India started, the Malla, the Gupta dynasty, and the Mughals ruled here. During the Muslim and Mughal periods, Burdwan became an important administrative headquarters known as Sharifabad. During the Permanent Settlement in 1793, Cornwallis created the district to manage the administration in a better way. He divided the Burdwan district into six subdivisions: Budbud, Katwa, Raniganj, Jahanabad, Burdwan, and Kalna. The Britishers, especially the East India Company, identified Asansol-Raniganj as essential for exploiting Indian resources by excavating coal from these areas. Grant Hitley and John Samnar first extracted coal mines in 1774, and the region developed. After the establishment of the coal industry, the railway lines started expanding over the area for commercial purposes. On 3 February 1855, the railway line was extended up to Raniganj. Earlier, the railway line had a total length of 23 miles from Howrah to Hooghly. Later, it was extended up to Asansol in 1863 for commercial purposes. In 1870, Mr James Erskine set up the first iron factory at Kulti, which was known as Bengal Iron Works. This factory was India's first modern pig iron factory (Tarapada 28). Rampantly it makes an excellent place for employment opportunities and builds the most urbanized area in eastern India.

### 4. Contemporary urban growth of Asansol:

India experienced urbanization with steady growth in urban population from 109 to 377 million during 1971-2011 (Siddique, G. et al. 2020). Asansol is also experiencing rapid urbanization, and the people of Asansol increased from 3.7 lacks in 1971 to 12.5 lakh in 2011, showing a sharp increasing trend. LULC change helps to know the overall reflection of an area's human activity because humans are the crucial agents for land conversion (Table-1). The Asansol Land Use Land Cover (LULC) map from 1990 to 2020 is used at an interval of 10 years to demonstrate the recent urban growth (Figure-2).



**Figure-2:** Dynamicity of LULC pattern of Asansol Municipal Corporation area showing continuous growth of settlements in some pocket areas.

**Table-1:** Details of area under each LULC type showing a dynamicity of settlement growth of Asansol.

Year	Area in sq. km.					
	Settlement	Vegetation	Waterbody	Sand	Mining	Others
1990	32.2965	70.6149	3.9546	1.3509	1.9962	222.86
2000	44.0514	66.3957	3.2157	0.3978	2.6352	215.727
2010	58.5855	62.3025	4.2723	1.6119	3.3255	202.326
2020	77.1714	55.9053	8.6616	0.3843	5.0256	185.314

**1. Administrative set-up**

Asansol, the second largest city of West Bengal, presently covers an area of 326 sq km, divided into 106 wards, but, during 1897, the area coverage of AMC was only 4.02 sq km ( Hazra, T.2021). The first Asansol Municipal Corporation was formed covering Raniganj, Kalna, and Katwa by the Union Committee on 19 October 1885 and was later adopted as a municipality on 27 July 1885 and became fully functional from 1896 inwards; subsequently, in 1994, its status was updated with the addition of colliery area and parts of CD block. This region got its police commissioner in 2011. In 2015, Kulti, Jamuria and Raniganj municipalities were abolished, and the administrative Asansol Municipal Corporation (AMC) was formed to administer the area (AMC. 2018). But the maintenance of developmental issues for this huge area was difficult only through the AMC administrator. To solve the problem, Asansol-Durgapur Development Authority was established by the West Bengal Town and Country Planning Act of 1979. This authority was not only responsible for the developmental issues of Asansol, but it also looked after the developmental issues of Durgapur and its surrounding areas.

**5. Demography**

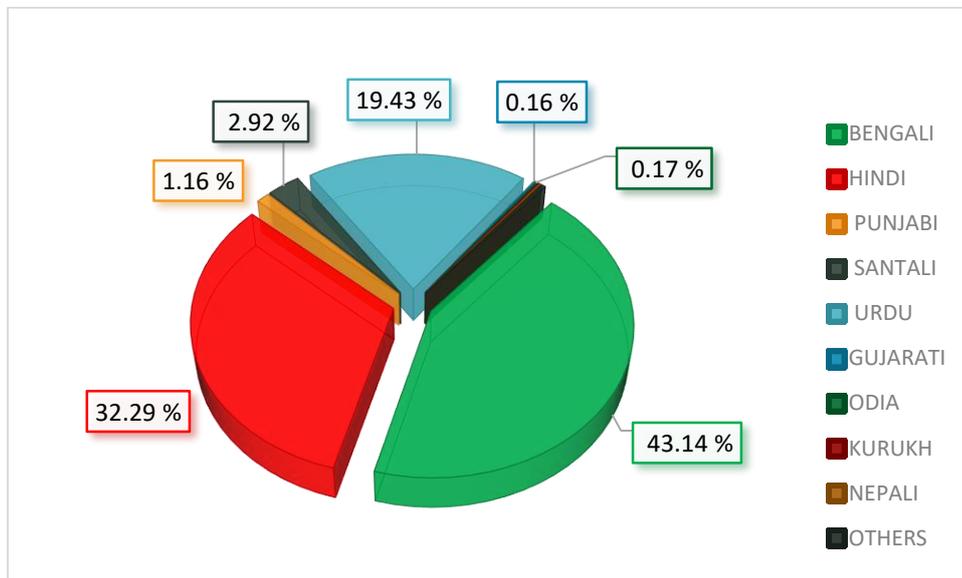
The size and density of the population, birth rate, death rate, age-sex structure, and sex ratio represent a region's demographic characteristics and socio-economic condition. Social units play an important role in building society. Asansol Municipal Corporation had a population of 1,073,000 in 2001 (Census. 2001), which increased to 1,243,414 in 2011, of which male and female people are 646,052 and 597,362, respectively. So, the population growth rate of this region is 15.9% (Census. 2011). AMC experiences the highest population growth rate compared to other blocks. The region's population growth rate is high due to higher Migration to different industrial areas to get their livelihood. This region experienced a population density of 4500 persons per sq. km with a sex ratio and child sex ratio of 929 and 922, respectively. The most common religion is Hinduism, with 75.18%, followed by Islam, at 21.26%. Apart from these two religions, people of other religions live here, but their number is less.

## 6. Cultural assimilation

Asansol Municipal Corporation (AMC) is in a transitional social culture and linguistic zone. Before 1774 the area was densely forested and sparsely populated as coal mines and industrial development attracted migrants from surrounding areas due to the disregard of the local people. Many people from neighbouring states migrate to the region to take advantage of the employment opportunities created by these industries (Amartuvshin. A. et al., 2021). About 70% of workers in Raniganj Colliery are migrants. As a result, religious and cultural diversity has increased in this region. After the partition of Bangladesh, migrants from Bangladesh also came to the Mahishila colony and got involved in the economy. AMC experienced Migration induced cultural assimilation between Bengalis and non-Bengalis. According to the 2011 census, 54.11 percent of the people are non-Bengalis. Hindi ranks as the second most-used language at 30.33%. Most of the people in the region speak Bengali. The number of people speaking Punjabi Santali language is very less.

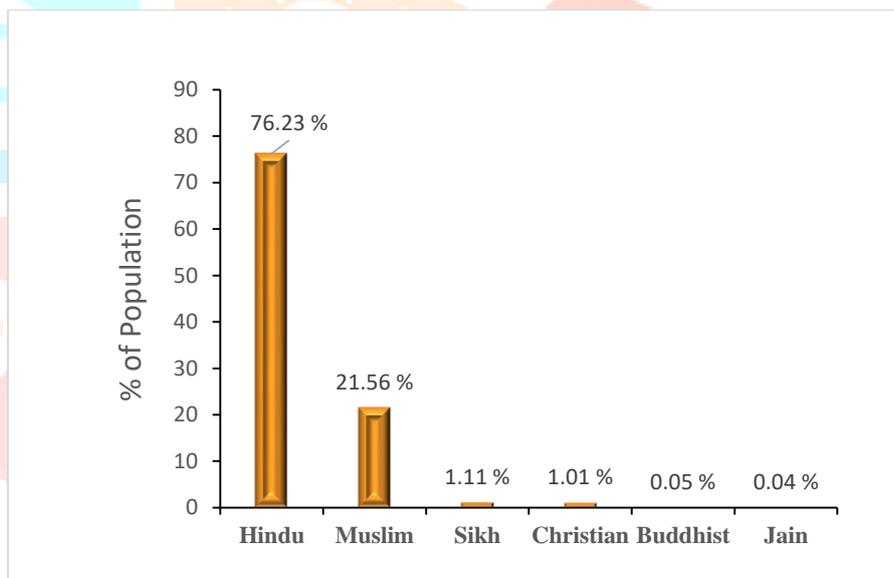
Over 50 percent of immigrants can speak more than two languages, and 14% can only speak one (Figure-3). While most migrants speak Hindi at work, they use their mother tongue to communicate at home. The number of such people is about 60%. Also, speaking people are seen in Bhojpuri, Rajasthani, Maithili, etc. (Singh, M., & Siddique, G. 2019). The lack of required cultivable land in the birthplace acted as a push factor, and the opportunity for other economic activities in the region served as a pull factor. These upper caste people are associated with white colour workers, i.e., tertiary economic activities, and some people, due to caste, cannot stay in their native place and are engaged in low-paying wage work (Singh, M., & Siddique, G. 2019). Migrants celebrate significant festivals like Holi, Navratri, Ganesh Puja, Diwali, etc., with much fanfare. About 38% of people go to neighbouring areas to celebrate other festivals. They are mushy towards their people and their own culture. Some changes can also be seen in their clothing. People from Bihar and Uttar Pradesh generally wear dhoti and kurta. Women usually wear a sari, ghagra choli, odhni, etc., while those from Rajasthan wear turbans in their native places, but this is not seen. A bulk of differences can be seen according to time and generation. While older immigrants, in particular, carry on the traditions and culture of their place of origin, the next generations born and raised in the region adopt the modern culture, and women are not far behind. In some cultural events, temples, shiv charcha, kirtan, folk music, etc., old migrants perform. However, it is rarely seen at present. Modern youth has the opportunity to come in contact with foreign cultures due to information and technology and can absorb the foreign culture easily. These factors make the acculturation issue even more rhetorical. Local people's passion for Bhojpuri music can also be noticed here.

The caste largely decides what kind of economic activity they will engage in. whose surname is Ray, Ahir, etc. Either they usually raise cattle and are known as Khatal. The agricultural community who immigrated to the region were involved in agricultural activities outskirts of AMC. People also engaged in dhobi, Kumor, etc. working in their place of birth because these jobs were inherited by caste.



**Figure-3:** Multi-lingual nature of the peoples of Asansol.

This pie graph represents the different languages spoken by the people in Asansol. The three most widely spoken languages in this municipal corporation are Bengali (43.14 %), Hindi (32.29 %), and Urdu (19.43 %). Bengali comes in the first place, followed by Hindi and Urdu. Other languages like Punjabi, Santali, Gujarati, Odia, Kurukh, Nepali, etc., are also spoken but in lesser numbers (Figure-3).

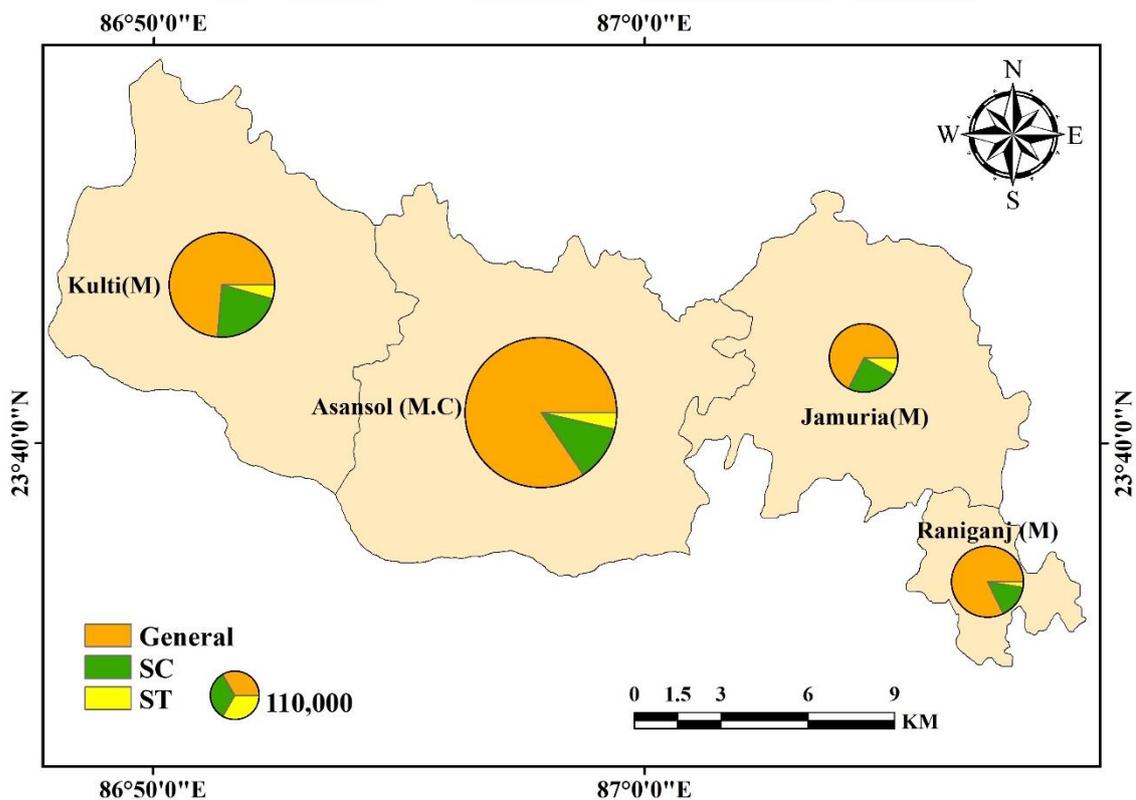


**Figure-4:** Religious Composition of Asansol residents.

The bar graph depicts the religious composition of Asansol Municipal Corporation. The Hindu religious group has the most members (76.23%), followed by the Muslim religious group (21.56%) (Plate-1). But other religions, like Sikh, Christian, Buddhist, Jain, etc., have a smaller number. It helps make Asansol a multi-cultural city (Figure-4).



**Plate-1:** Location of temples, mosques, churches, and gurudwara side by side in Asansol representing the religious diversity and religious harmony of the city.



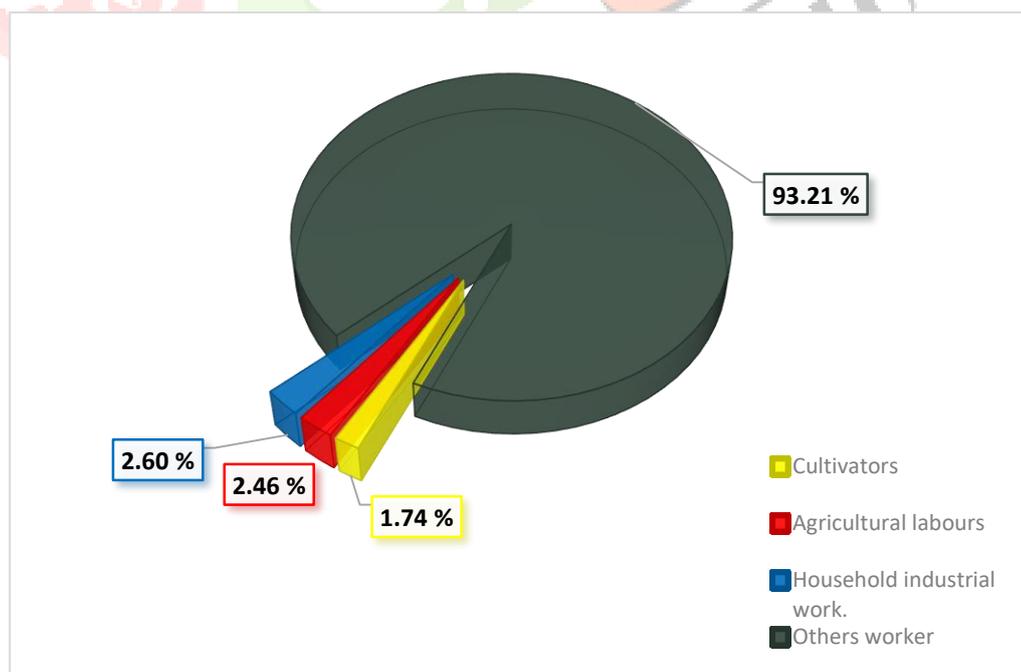
**Figure-5:** Map showing the patterns of caste composition of AMC.

This map represents the caste Composition of Asansol Municipal Corporation, which Raniganj, Jamuria, and Kulti Municipalities form. Jointly or separately, it is revealed that the general caste gets the prime position with the highest number of people. The Schedule caste category achieves the second position in terms of the number of people, while the Schedule Tribe has the lowest number of people compared to other castes (Figure-5).

## 7. Mining and industrial economy:

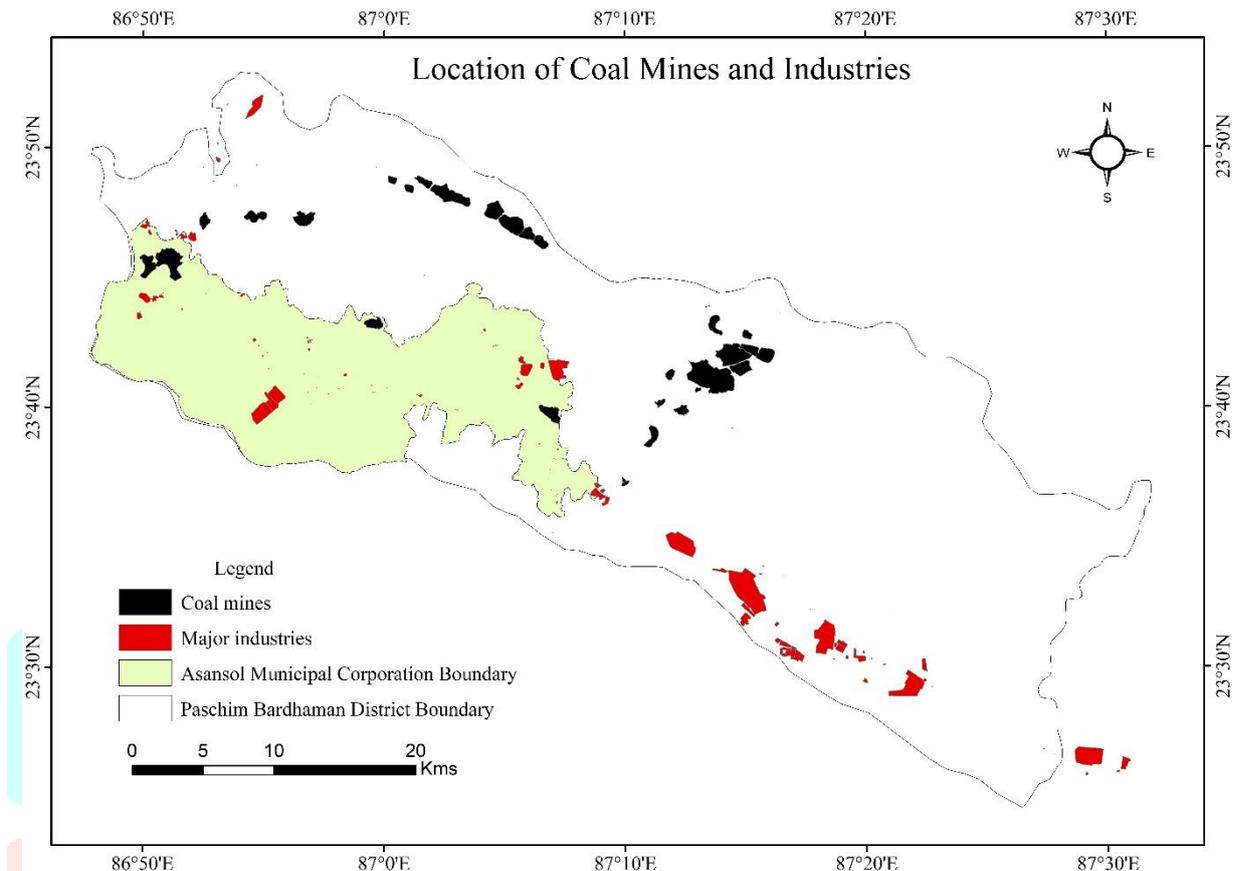
Mining and industry is the main economic pillar of this region (Brueckner M. et al. 2013). AMC was inhabited by indigenous people who depended on forestry and agriculture for their livelihood. Coal mines inaugurated economic activity at an advanced level. The major coal mines are in Pandaveswar, Kajora, Salanpur, etc.; minor coal mines are in Egara, Nimcha, Jemari, Charanpur, and Raghunath Chak. Coal mining was first started with the efforts of collectors Suetonius Grant Hitley and John Samnar (Saha, A. & Malik. U.S, 2018). The contribution of mining and industry to the national economy and sustainable development is undeniable (Hilson, G., & Murck, B. 2000). The discovery of the Raniganj coal mine brought about a breakthrough in the development of AMC. Its general elevation is 100 meters. The coal mines had an area of 450 sq. km in the 19<sup>th</sup> century, where the Permian age coals of the Gondwana group were found. But the total area of the Raniganj coalfield is 1530 sq. km, enveloping the Burdwan, Birbhum, Bankura, and Purulia districts in West Bengal and the Dhanbad district of Jharkhand. Chotanagpur Plateau is made up of granite rocks. Out of which 240 sq. km areas fall under Damodar Valley. In terms of rock formation, Raniganj is India's chief and stout coal field. These coal mines supply 30% of India's total production (Koshal, A.K .2002). Disheshgarh has notable deposits of high-quality coal reserves, a neighbourhood in Asansol.

Initially, the production of steel was started by the Indian Iron and Steel Company (IISCO). After it merged with the Steel Authority of India in 2006 (SAIL), it greatly influenced this city's rapid development. Based on the coal and iron industries establishment, some engineering colleges and universities like Asansol Engineering College, Asansol polytechnic college, Kazi Nazrul University etc. constructed. Coal and iron industry help to build some subsidiary industries, Chittaranjan Locomotive industry is the largest locomotive manufacturer unit in the world, Jubilee Petrol Pump, Raleigh company is the largest bicycle company in Asia which is located here, and other industries like cement, cable factory, power supply industry etc. placed here so, it makes a most attractive economic hub for an employment opportunity as a resultant enhanced number of migrant people from different surroundings area. On the other hand, migration from different parts of the country helps build a cosmopolitan nature of the area with mixed languages, cultures, economic activities, and many more. Additionally, the growth of the migrant population has led to an increase in the slum population in this area.



**Figure-6:** Categories of workers in Asansol city area.

Figure-6 indicating that, many workers are engaged in mining, building construction, fishing, etc. Agricultural laborers and household industrial workers are almost the same in number. Asansol has a smaller number of cultivators in comparison to others. There is a lack of agricultural land, but some pockets of the area experience notable monoculture practices. The continuation of mining activity and industrial development are the reasons for the increase in other workers (Figure-7) (Plate-2).



**Figure-7:** Location of coal mines and major industries which attract people from different parts of India developing a cosmopolitan nature of Asansol city.



**Plate-2:** Photographs of coal mining activities within the Asansol city area.

## 8. Critical evaluation

Asansol is one of the promising compact urban centres of Eastern India, going through rapid urbanization and economic development through the excavation of coal resources and industrial development. Although this city has a promising development centre, it faces a number of challenges

that restrict the way of sustainable planned development. Mainly this city is facing transportation network-related issues, environmental quality-related issues, and evenly spaces settlement development issues that need to be addressed to maintain a sustainable urban plan.

### ***a) Difficulties in the way of development***

#### **i) Inadequate Transportation network**

Among the difficulties faced by the Asansol, traffic congestion is significant. Settlements within the AMC region are concentrated in some specific pocket areas, especially in the core areas of older municipalities. These settlements are developing in a very compact manner, demanding the expansion of road networks for the smooth functioning of transportation activities, including industrial goods and products. But still, this area is dependent on an earlier road network system which is creating barriers in the way of industrial development and deteriorating the quality of life through traffic congestion within the city area.

#### **ii) Environmental pollution**

The concentration of coal mines and heavy industries within the Asansol area and an increasing number of vehicles are enhancing degraded air quality. Asansol ranked 9<sup>th</sup> among the cities of West Bengal in 2019, which reduced to 17 in 2022, although the air quality is not enough to support a healthy lifestyle for the inhabitants. A huge amount of generated solid waste, especially industrial waste, has become an important environmental issue for this area, increasing daily. Still, the area designated for dumping these solid wastes is not increased, which creates a huge problem for maintaining a healthy environment.

#### **iii) Social conflicts**

Asansol represents a very diverse social structure in terms of language, religion, caste, and economic activities. This diversification is sometimes creating social conflicts within the city area. These social conflicts arising from diversified social structures result in a loss of social harmony among the people and hamper the area's development in the broader sense.

### ***b) Prospect of Asansol***

Although AMC is facing different difficulties in the way of development, this area has a huge potential for future development as it has few advantages which can overlook the difficulties of this region.

#### **ii) Well connectivity with the country**

Asansol is well connected with the other parts of the country through road, rail, and air transportation medium. Asansol railway station is one of the very much important railway junctions in Eastern India from where a person can travel in any part of the country, especially it is well connected with the National Capital Region of India, Delhi, and also connecting Kolkata, Allahabad, Howrah, Kashmir, and many more cities. Not only the railway connection, but this city is also well connected through the road network. National Highway passes through this city, connecting different important cities of India. Kazi Nazrul airport is adjacent to AMC, connecting all parts of India through the air. This well connectivity of the city developed it as one of the country's major economic hubs and made it a cosmopolitan city by assimilating people from different religions, castes, and languages.

#### **ii) Decentralization of settlements growths**

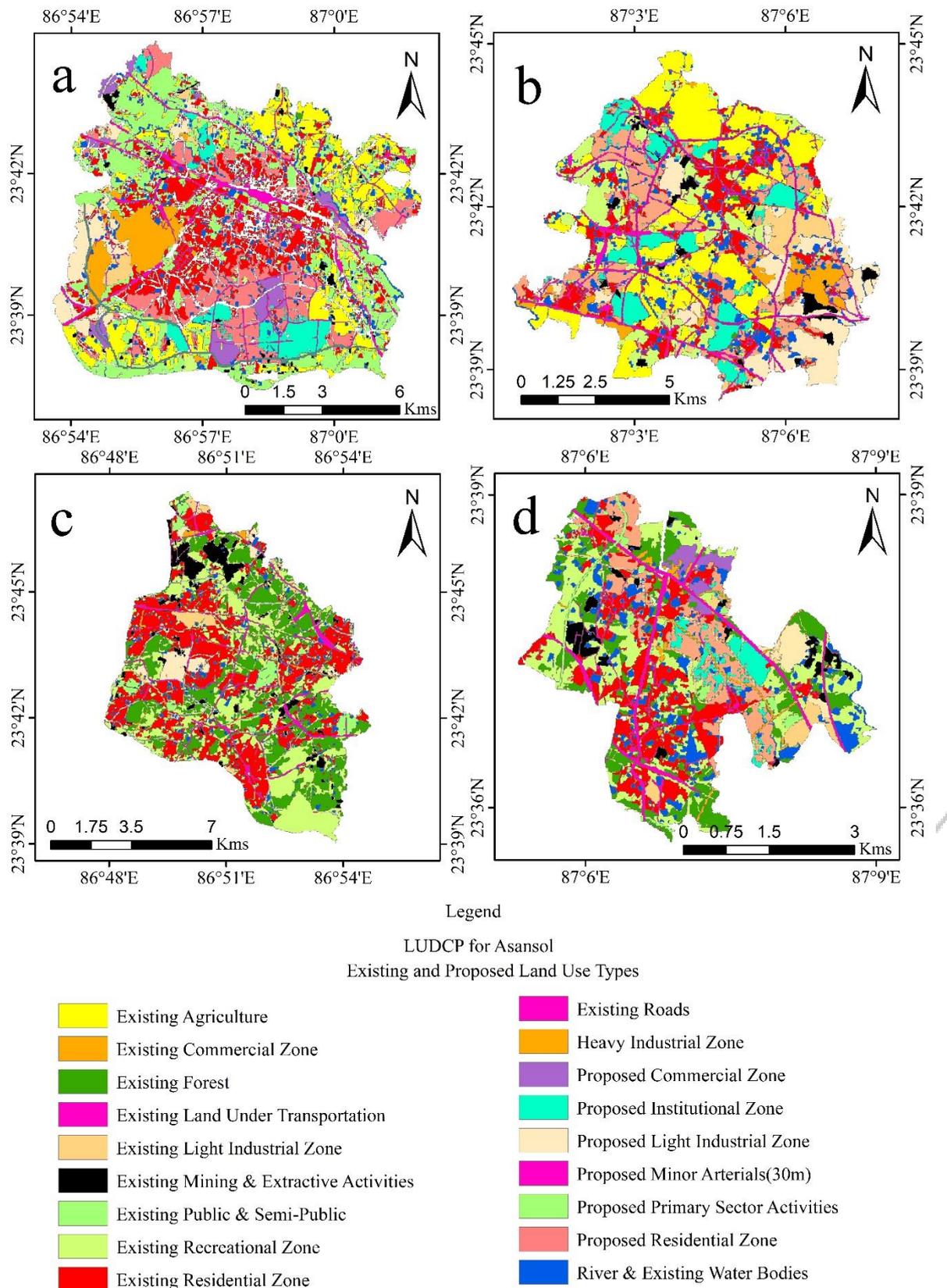
Settlements of the AMC area are concentrated in some small pocket areas of earlier municipalities, which later merged into the AMC area, but on the other hand, most of the areas under AMC are vacant, which needs to be considered for sustainable urban development. Suppose the present and future settlements can be decentralized into those vacant areas. In that case, pressure on existing settlement pocket areas can be reduced, and more open space will be available for the inhabitants, increasing the

quality of life of the urban dwellers and helping achieve Sustainable Development Goals number 11, Sustainable Cities and Society.

### iii) Land Use Development Control Plan (LUDCP)

To combat the city's problems, Asansol Durgapur Development Authority (ADDA) developed a LUDCP for Asansol, which will be targeted to complete within 2025, where more emphasis will be given on the proper use of lands for maintaining sustainable urban development of the area (Figure-8). In the LUDCP, transport network expansion is also emphasized to reduce traffic congestion and increase open space available for urban dwellers. Different other initiatives for the development of this region are also considered in the development control plan, which will help maintain sustainable land use planning.





**Figure-8:** Modified proposed Land Use Development Control Plan for Asansol city as proposed by Asansol Durgapur Development Authority.

iv) Reducing pollution level

Different initiatives for the development of the environmental quality of this city have already been taken, such as the plantation of street trees along the main roads, control of the emission of pollutants from the industries, closures of abandoned coal mines, and reclamation of abandoned coal mines, etc. If these initiatives can be enhanced in the future, the quality of the environment will increase to some extent which will help improve people's quality of life.

## 9. Conclusion:

This city profile focuses on identifying a coal mining and heavy industry-based city, Asansol. Growing coal mining activities in the eastern part of India and the development of heavy industries attracted people from different parts of India. The migrant population creates a cosmopolitan nature in the city and also helps the country's economic growth. Although this city has several advantages such as well connected road, rail and air transportation with the whole country, availability of huge coal, cultural diversity and many more, this city is also experiencing few difficulties in the way of development like lack of internal road network, the concentration of settlement areas in some pocket areas, religious conflicts, environmental pollutions, climatic extremity and associated problems.

Administrations have taken different steps to combat these existing problems, such as the formation of the development authority, the proposal of a Land Use Development Control Plan for better management of lands, the development of a better road network for transporting commercial products and coal, the establishment of pollution monitoring stations in different parts of the city, proper solid waste management strategies etc. If these plans can be implemented properly, the city will flourish in a new dimension, and it will help achieve the city's prospects at its full strength.

## Reference:

1. Asansol Municipal Corporation (2018 ) [http:// asansolmunicipalcorporation.com/aboutus/](http://asansolmunicipalcorporation.com/aboutus/). Accessed 2
2. May 2018.
3. Asansol, West Bengal, India. *Human Arenas*, 1-15.
4. Acharya, N.D.(2014). AsansolER Etihhas-O- Sanskriti. Mitram.
5. Amartuvshin, A., Chen, J., John, R., Zhang, Y., &Lkhagvaa, D. (2021). How does mining policy affect rural Migration of Mongolia?. *Land Use Policy*, 107, 105474.
6. Brueckner, M., Durey, A., Mayes, R., &Pforr, C. (2013). The mining boom and Western Australia's changing landscape: Towards sustainability or business as usual?. *Rural Society*, 22(2), 111-124.
7. Choudhury, D., Das, K., & Das, A. (2019). Assessment of land use land cover changes and its impact on variations of land surface temperature in Asansol-Durgapur Development Region. *The Egyptian Journal of Remote Sensing and Space Science*, 22(2), 203-218.
8. Hilson, G., &Murck, B. (2000). Sustainable development in the mining industry: clarifying the corporate perspective. *Resources policy*, 26(4), 227-238.
9. Hazra,T.(2021). Asansol Etihhas-O- Sanskriti. Aikya Prakasani.
10. Krishnamurthy, R., Mishra, R., & Desouza, K. C. (2016). City profile: Pune, India. *Cities*, 53, 98-109.
11. Koshal, A. K. (2002). Environmental Problems Analysis of Coal Mining in Raniganj& Asansol Blocks (West Bengal) Using Remote Sensing and GI S. *GIS Development, Map WorldForum, Hyderabad, India*.
12. Liu, F., & Sun, W. (2020). Impact of active "organic decentralization population" policy on future urban built-up areas: Beijing case study. *Habitat International*, 105, 102262.
13. Mondal, R., & Mistri, B. (2021). Opencast coal mining and rural livelihoods: a study of Sonepur-Bazari mine in Raniganj coalfield area, West Bengal, India. *Mineral Economics*, 34(3), 477-490.
14. Majumdar, S., & Chatterjee, U. (2021). Modelling urban growth using Urban growth deterministic model in Kolkata Metropolitan Area: a geo-statistical approach. *Modeling Earth Systems and Environment*, 7(4), 2241-2249.

15. Navratil, J., Picha, K., Martinat, S., Nathanail, P. C., Tureckova, K., & Holesinska, A. (2018). Resident's preferences for urban brownfield revitalization: Insights from two Czech cities. *Land Use Policy*, 76, 224-234.
16. Pal, S. C., Das, B., Malik, S., Shit, M., & Chakraborty, R. (2021). Flood frequency analysis and its management in selected part of Bardhaman district, West Bengal. In *Habitat, Ecology and Economics* (pp. 225-246). Springer, Cham.
17. Singh, M., & Siddique, G. (2019). IMMIGRANT COMMUNITIES IN ASANSOL MUNICIPAL CORPORATION AREA: PERSPECTIVES OF ACCULTURATION AND DECULTURATION.
18. Saha, A., Malik, U. S., 2018. The Urban Social Fabric of the City of Asansol, West Bengal. *Indian Journal of Spatial Science* Vol - 9.0 No. 2 Autumn Issue 2018 pp. 45 – 54.
19. Siddique, G., Roy, A., Mandal, M. H., Ghosh, S., Basak, A., Singh, M., & Mukherjee, N. (2020). An assessment on the changing status of urban green space in Asansol city, West Bengal. *GeoJournal*, 1-23.
20. Singh, M., & Siddique, G. (2021). Determinants of Local Language Acquisition by the Inter-state Migrants in
21. "Chittaranjan Locomotive Works is now world's biggest locomotive producer". *The Statesman*. 2 April 2019. Retrieved 12 September 2019.

