



Social Wellbeing and Live Ability Status in Urban Centers of PurbaMedinipur District

West Bengal, India

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Abstract

A detailed examination of urban sustainability from the perspectives of wellbeing and prosperity is then added as a supplement, highlighting the biophysical components of urban sustainability. The population's ageing and the unrelenting increase in health care costs as a percentage of government spending are two universally significant medical conditions. The prosperity and well-being of urban dwellers are examined in both OECD and non-OECD nations, and go beyond the simple absence of physical and psychological maladjustment. Cities of the future will require more than just the simplest increases in energy efficiency. For the personal satisfaction of urban residents, the development of tolerable, reliable, and dynamic networks is also crucial and will become more so in the future. Particular attention is drawn to the urban issues in China, which is home to 20% of the world's urban population.

The assessment of social vulnerability plays a significant role in the framework for reducing catastrophe risk. Physical, social, economic, and natural factors, among others, all play a role in determining how vulnerable a community is to dangers. Social vulnerability has been measured over the course of the most recent years using a variety of philosophies. In the current work, social vulnerability systems in the PurbaMedinipur district of eastern India are closely examined. Z scores, greatest worth, and min-max rescaling are a few examples of the normalisation techniques that have been used to analyse and examine social vulnerability in the study area. Comparing the outcomes of the three techniques employed and identifying the district's weak points are the main objectives of this work. The results demonstrate that connections between the three systems are important sources of strength for admirably respectable, and Sutihata block is identified as the PurbaMedinipur district's weakest block.

Keywords: Social Wellbeing, Live Ability Status, Urban Centers, PurbaMedinipur District West Bengal



1. Introduction

The concept of social vulnerability was presented within the crisis the executives setting. Some populations are more likely than others to suffer the negative effects of various threats. Social vulnerability examines the social flow of risk and aims for an elevated level of risk connected for some networks to any threats. It is the process of risk and individual variation. Social vulnerability is the state of a community before a danger makes them vulnerable. One of the main responsibilities of the territorial readiness structure under the variation approach's moderation procedure is social vulnerability assessment. Social vulnerability is related to the wellbeing of individuals, networks, and societies.

Two methodologies are typically used to select and assess the social vulnerability. The first is a perceptive approach that depends on irrational comprehension. The second move is an inductive one that is exact and is reliant on the quantifiable relationship between a massive number of set pointers. While rational methodology adopts a "hierarchical" approach, inductive methodology takes a "granular perspective." After contrasting it with the inductive methodology and compiling data on social vulnerability for the Gulf of Mexico and Atlantic beach front regions, de Mello Rezende (2016) decided to use the logical methodology for social vulnerability estimation.

This article uses three logical procedures, such as z score change, greatest worth change, and min-max rescaling change, to quantify comparable social vulnerability assessments in 25 blocks of the PurbaMedinipur district in West Bengal, India.

How social vulnerability is determined in marker-based estimation is a significant problem. It is essential to use indicators when assessing social vulnerability. In order to create a social vulnerability record, this assessment uses twelve financial indicators (SVI). A social vulnerability list, a tool for organising information, aids in locating networks that might require assistance in protecting themselves from or recovering from threats. In the investigation, various information analysis systems are combined. It entails examining and fusing the connections, distinctions, and similarities between various techniques. Another clever vulnerability assessment methodology that emphasises the connections between at least two factors is this one. With the help of three different normalisation techniques and a



relative analysis of the gathered data, the main objective of this article is to pinpoint the areas of weakness in the PurbaMedinipur district.

Urban areas play a significant role in determining future sustainability and human well-being because there are so many people living in urban areas today and because it is anticipated that this number will keep rising for a sizable amount of time. Although the value of connecting urban climate with wellbeing and wellbeing outcomes is now widely acknowledged, experimental observation of the connections between the two is still far from being possible, let alone being used to inform planning, strategy, and administration of urban ecological issues.

The hidden factors affecting human wellbeing are multi-layered, diverse, dynamic, complex, and ever-evolving in urban environments. In terms of health, urban areas are preferred over rural ones all over the world. The many benefits of city living, such as business, higher incomes, better educational opportunities, and accessibility to healthcare, encourage urbanisation. The unfavorable effects of urban climate, increased dietary fat, and stationary lifestyles, however, demonstrate how these benefits of urban well-being status can be lost. Urban hazards that put people's health at risk include unsanitary lodging, crowded daily environments, contaminated food, dirty water, inadequate sterilization, unfavorable strong garbage removal services, air pollution, and backed-up traffic. Furthermore, urban communities frequently experience significant disparities in wellbeing. How does daily life differ between those in wealthy areas and those in ghettos, for example? These disparities in wellbeing can be linked to variations in urban dwellers' social and daily environments as well as various urban natural features. There are significant value issues with regard to medical care accessibility, immunization coverage, and the prevalence of work-related accidents and injuries in urban communities. Finding these urban wellbeing imbalances requires disaggregating data on wellbeing and wellbeing determinants as well as closely examining spatial and financial contrasts.

Importantly, successful interventions to enhance urban wellbeing and wellbeing frequently necessitate work beyond what the appropriate wellbeing area is capable of offering. All governmental levels—local, common, and public—as well as a number of cultural industries—including the provision of water, sanitary conditions for housing, transportation, and education—must be involved. Due to the complexity of the relationships between



urbanisation, ecological change, and human wellbeing and wellbeing, a framework approach to wellbeing, wellbeing, and urban climate is required. The accompanying area illustrates the complex relationships between urban climate and wellbeing, the challenges to wellbeing posed by rapid urbanisation, and the new ICSU programmed on Health and Wellbeing in the Changing Urban Environment, which was developed as a response to these challenges by the international academic community. a plan for carrying out such a drive successfully.

2. Global Health and Well-being Challenges

The term "urban sustainability" has been discussed by Nicola Dempsey and colleagues, who contend that it should also encompass surprising financial and social aspects in addition to the biophysical ones discussed in this article. Social sustainability is hampered by persistent (and frequently connected) urban issues such as unemployment, pay and social inequality, wrongdoing, and vagrancy. The only two of these essential urban issues that are fully addressed in this section are wellbeing and wellbeing. In any case, it is crucial that the solutions offered to enhance urban ecoefficiency and wellbeing do not completely resolve these various problems; rather, in an ideal world, they should contribute to their improvement. The prosperity and well-being of the world are examined in the following paragraphs. In the case of the OECD, the urban communities of the industrialising scene are generally examined, while the significant and extraordinary case of Chinese urban areas is examined, as well as the problems that have resulted from that country's incredibly rapid modernization and urban development.

2.1. Well-being: Another Component of Health

Up until now, we have only looked at mortality and disease. However, the World Health Organization has changed its definition of wellbeing to include more than just the absence of disease or infirmity. It now refers to a state of complete physical, mental, and social prosperity.

At the moment, there has been a lot of writing about "personal satisfaction" (QOL) records. Various records have been made in order to quantify QOL and rank countries and urban areas globally based on this premise. The most popular public level indicator is the UNDP's Human Development Index (HDI), which combines three standardized parameters: future prospects upon entering the world, number of years of conventional education, and GNI per



capita. Every boundary is subject to a shift in the UNDP's 2010 correction between 0 and 1. The mathematical mean of the three boundaries is the HDI of a country (and the list could be quickly adjusted for urban communities). The HDI can be criticized because only the midpoints are considered, which can mask population imbalances in each of the three boundaries. Additionally, why these three boundaries and not others? Pay disparities between nations are one obvious oversight. Normal lifespan and educational levels mask national comparative abuses. However, the HDI (and other suggested files that hope to develop the HDI) do provide a quickly understood way to compare overall government assistance in various countries and to track progress in any one country.

Even as average per capita earnings, as estimated on a public premise, are increasing, pay disparity disparities are widening. The share of wealth and pay going to the top one percent of families or pay workers has been steadily increasing in several major OECD economies, including the US, Japan, and a sizeable number of Western European nations. Their advantages have been significantly justified by declining top duty rates. It is advised that these leaders deal with these countries' political cycles. Most non-OECD countries are seeing an increase in pay disparity, and China is seeing an increase in provincial imbalance.

3. Complex and multifaceted linkages between urban environment and wellbeing

3.1. Typology of health risks in the urban environment

There are different chances of being happy in cities. Many urban areas have at least five different kinds of health risks: (1) Infectious diseases that spread when people are crowded together in unfavorable daily conditions; (2) Acute and persistent illnesses like respiratory disease and pneumonic malignant growth that are connected to modern contamination; (3) Chronic, non-transmittable infections that are increasing with unfortunate urban ways of life (actual latency, unfavorable eating habits, smoking, and harmful alcohol use); and (4) wounds.

When urban climate is taken into account in addition to medical services, the likelihood of developing practical solutions for these issues increases. The prevention of Type 1 health risks brought on by inevitable infections requires the provision of adequate housing and fundamental infrastructure. Businesses' contamination of the air and water is thought to be



the main contributor to the sharp increase in respiratory diseases, pneumonic, and breast tumours. Addressing the modern contaminations in urban areas is necessary to improve the Type 2 wellbeing result. Urban design and planning somewhat determine how people live in cities. It has been established that compact, walk able urban areas have a lower prevalence of overweight people than sprawling urban areas. Auto-dependent urban communities expose their residents to a higher risk of collisions. Contrary to what is commonly believed, research shows that the presence of common habitats in urban areas lowers stress, maintains community wellbeing, and helps hasten the recovery from illness.

Such linkages in no way, shape, or form are unidirectional. It is possible to make significant advancements in the areas of urban sustainability and well-being promotion. As the social and financial pillars of sustainability cannot be attained without full local community wellbeing, the focus of the sustainability plan is on residents' wellbeing, including their immediate and physical wellbeing. Urban sustainability, environmental change, and wellbeing are closely related, which creates the potential to pursue co-benefits on various fronts, such as walk able urban communities and weight loss, urban green regions and environmental transformation plans, such as reduced heat pressure, and clean energy and reduced respiratory illness.

3.2. An urban environmental evolutionary perspective

You can think of urban change as going through a transformative cycle with its surroundings. According to the experience of developed urban areas, the primary issues in urban areas are related to a period of destitution, contemporary contamination, issues with way of life and use, and typical urban health risks linked to each stage (Table 1). Though the occurrence of these risks is frequently related to changes in the economy, many urban areas in development deal with natural issues and related health risks in a cumulative and protracted manner rather than sequentially. Although the main health problems vary depending on the stage of development, it is unclear how those problems are connected. Chronic diseases that were once linked to opulent lifestyles in high-paying urban areas are spreading in low-paying urban areas, adding to the burden on society. Furthermore, environmental change has an impact on urban areas regardless of income level by posing new health risks or, at the very least, increasing heat pressure. General wellbeing executives need to be flexible and persistently improving in order to handle the new challenges of urbanisation and financial



change of events. This conceptualization is valued because it incorporates Stage 4 of the solid eco-city and acknowledges typical changes in the development of urban communities (Table 1). Instead of viewing the fleeting steps as a fixed or modified design, a developmental viewpoint emphasizes the nonlinearity of the directions experienced by various urban communities, the component of progress, and the potential for leapfrogging transitional advancements. The objective should be to avoid the well-known entanglements of the industrialization and utilization stages and attempt to move straight from stages 1 and 2.

Table: 1. Stages of urban development that are typical, as well as typical environmental conditions and health problems

STAGE	CHARACTERISTIC ENVIRONMENTAL CONDITIONS	CHARACTERISTIC HEALTH ISSUES
1. Poverty	Poor housing, inadequate sanitation, and contaminated water	Malnutrition, injuries, and infectious diseases
2. Industrial	Air Pollution, Chemical Land Pollution, and Solid Waste Pollution	Heart disease, injury, and chronic respiratory disease
3. Consumption	High Rates of Natural Resource Consumption, Including Water, Energy, and Other Resources	Obesity, Diabetes, Heart Disease, Cancers, Injury, and Depression are examples of chronic diseases.
4. Healthy Eco-City	Living Conditions That Are In Harmony With Nature	Maximum Potential for Health

3.3.Spatial and socioeconomic dimensions of the linkages

The population's financial situation is related to differences in wellbeing outcomes within cities. Urban unfortunate networks are unevenly exposed to health risks as a result of a weak foundation, limited access to medical services, and information and data organisations. In order to achieve fair wellbeing and wellbeing results, there is a general need for better urban administration. These distinctions are not only more pronounced when urban communities are being formed.



In spite of what was said earlier, there are big variations in happiness and happiness between cities. Some of the health risks brought on by the urban climate are influenced by the size of urban areas. Recent research from China shows that outcomes for respiratory illnesses are typically worse in larger urban areas than in smaller or medium-sized urban areas. It is anticipated that further investigation will reveal the basic systems.

3.4. The health implications of cities reach beyond the urban boundaries

In agricultural nations where urban areas lack or have insufficient sewage treatment infrastructure, which ranchers use for their water supply, untreated waste containing harmful agents, such as heavy metals, is released into water bodies. These harmful artificial substances then make their way into the food chain, harming people's health. Natural management in some developed urban communities has compelled defiling ventures to move to smaller urban communities or provincial regions, which may cause health risks to be transferred from urban to peri-urban and rural areas. Urban financial development is frequently the driving force behind the modern or private buildings that are replacing ranches on the outskirts of cities. Peri-urban networks are unable to adapt to shifting land use trends. Heat islands, once an urban anomaly, are now relocating to these industrialized peri-urban regions. To explain such urban-country joins, it is essential to provide experimental evidence and causal connections.

4. Methodology

4.1. Study Area

PurbaMedinipur district is located between longitudes 21E. The Midnapore district was split into Paschim4012E, 88503386 Midnapore, and PurbaMidnapore on January 1, 2002. The neighborhood map for the PurbaMedinipur district is depicted in Figure 1. A 65.5 km long shoreline surrounds the southern and southern-eastern portions of the district. PurbaMedinipur's district has been split up into 25 blocks and 5 regions. Panskura, Tamluk, Haldia, Egra (Egra-I Block), and Contai are the names of blocks in that order (Contai-I Block). The district's headquarters are located in Tamluk.

The lower Ganga plain is home to the PurbaMedinipur district. West to east slopes can be found in this area. Haldi, Rasulpur, Keleghai, Kanshabati, and Rupnarayan are some of the district's principal rivers. The area has a climate resembling a tropical downpour, with a hot,

muggy summer and a dry winter. 5,095,875 people, or 5.58 percent of West Bengal's total population, reside in the PurbaMedinipur district, according to statistics from 2011 (CI, 2011). The district has a population density of 1081 people per square km. The PurbaMedinipur district is eighth in the state for population density. The nor than parts of the district have a higher population density than other parts of the district. The rate of population growth is 15.36 percent. There are 938 women in the PurbaMedinipur district for every 1000 men in the entire population. While 88.4% of people live in rural areas, only 11.6% of them do so in urban areas. Despite the fact that 31.2% of Indians reside in cities.The district of PurbaMedinipur has a proficiency rate of 87.02 percent. The percentage of women who are educated is 81.37 percent, compared to 92.32 percent for men. The district currently has the highest notable proficiency rate on record for the state. The state's proficiency rate is 76.26 percent. Only 37.49 percent of people in the district are employed as laborers, making up 62.51 percent of the population. A sizable portion of the population in the district is dependent. Horticulture is the district of PurbaMedinipur's main industry. The yields include paddy, wheat, mustard, jute, potato, chilies, ginger, and other crops in the PurbaMedinipur district. With more than half of creation involved, paddy is the main harvest. The beachfront blocks are well known for hosting fish development. For many people, ocean fishing has turned into a significant source of loneliness. The economy of the beachfront blocks also benefits greatly from the tourism industry.

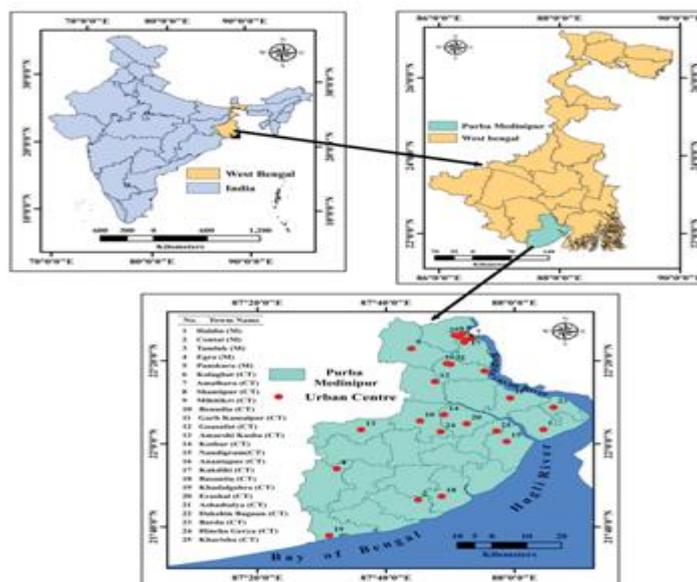


Figure: 1. Location Map of Purba Medinipur district



4.2.Data Base

The 2011 district human improvement report and the 2011 census data were the sources of all the information. ArcGIS was used to prepare the guides.

4.3.Standardization Methods

The SVI has been calculated using three logical procedures, which are fundamentally three different numerical conditions. It is an additional substance model that calculates a location's overall vulnerability based on a few selected markers. These philosophies have been used to normalize crude data in order to compute SVI. Since information about factors is typically tracked down in various scales, this approach makes it easier to think about scores. The primary goal of normalization is to change scores on a single scale. Three normalization techniques are proposed in Table 2.

Table: 2. three standardization methodologies

METHODOLOGY	THEORY		SIGNIFICANCE
	Positive Relationship	Negative Relationship	
Z score transformation	$x = (q - \mu) / \sigma$ Final value adds with total value	$x = (q - \mu) / \sigma$ Final value deducted from total value	q= Actual value μ = Mean σ = Standard deviation
Maximum value transformation	$x = \frac{x_i}{max}$	$x = 1 - \frac{x_i}{max}$	max= Maximum value x_i = Actual value
Min-max rescaling transformation	$x = \frac{x_i - min}{max - min}$	$x = \frac{max - x}{max - min}$	max= Maximum value min= Minimum

By averaging all indicators for each block's methodologies, the final value was determined.

5. Result and Discussion

5.1.Vulnerable Zone Construction

Tables 3 to 5 show the district of PurbaMedinipur's block-by-block social vulnerability scores according to various systems. Higher worth indicates a higher degree of vulnerability.

Table: 3. Results of the standardization technique for Z scores

Block Name	Indicators name												average
	PFEP	PCHP	PRUP	PMIP	PLIP	PHNOE L	PHNO SA	PHN OCA	PHN OKI	PHN OSE	EMR	IMR	
Tamluk	0.25	0.09	-2.27	-0.96	0.23	-0.52	2.50	-0.06	-2.26	0.03	0.53	-0.60	-0.36
SohidMotongini	-0.97	-0.88	0.08	-2.03	-0.09	2.72	2.45	-2.37	-0.68	-2.27	0.32	0.38	-0.18
Panskura-I	0.67	-0.15	-0.46	-0.35	-2.53	2.64	2.72	0.33	-0.33	0.32	3.15	-0.85	0.30
Kolaghat	-0.72	-2.05	-0.65	0.55	-0.72	-0.65	0.97	-2.05	0.55	-0.72	-2.05	-0.65	-0.30
Moyna	-2.52	0.02	0.50	-0.65	-2.52	0.50	-0.54	0.02	-0.65	-2.52	0.02	0.50	0.30
Nandokumar	-0.14	0.63	0.68	0.08	-0.14	0.68	-0.65	0.63	0.08	-0.14	0.63	0.68	0.30
Chandipur	-0.33	0.72	0.18	0.16	-0.33	0.18	0.89	0.72	0.16	-0.33	0.72	0.18	-0.02
Mohishadol	-0.04	-0.38	0.27	0.34	-0.04	0.27	0.46	-0.38	0.34	-0.04	-0.38	0.27	-0.32
Nandigram-I	0.56	3.50	0.52	0.89	0.56	0.52	-0.65	3.50	0.89	0.56	3.50	0.52	0.64
Nandigram-II	0.96	0.87	0.42	0.78	0.96	0.42	-0.78	0.87	0.78	0.96	0.87	0.42	-0.36

Table: 4.Results of the standardization technique for maximum value transformation

Block Name	Indicators name												Average
	PFEP	PCHP	PRUP	PMIP	PLIP	PHN OEL	PHN OSA	PHN OCA	PHN OKI	PHN OSE	EMR	IMR	
Tamluk	0.98	0.89	0.78	0.32	0.34	0.22	0.94	0.32	0.34	0.98	0.89	0.78	0.65
SohidMotongini	0.89	0.87	0.67	0.65	0.35	0.34	0.65	0.65	0.35	0.89	0.87	0.67	0.56
Panskura-I	0.96	0.82	0.33	0.54	0.31	0.65	0.32	0.54	0.31	0.96	0.82	0.33	0.54
Kolaghat	0.94	0.83	0.12	0.87	0.64	0.98	0.12	0.87	0.64	0.94	0.83	0.12	0.50
Moyna	0.92	0.84	0.01	0.95	0.35	0.87	0.23	0.95	0.35	0.92	0.84	0.01	0.34
Nandokumar	0.93	0.86	0.64	0.34	0.98	0.89	0.14	0.34	0.98	0.93	0.86	0.64	0.78
Chandipur	0.97	0.90	0.97	0.64	0.34	0.52	0.78	0.64	0.34	0.97	0.90	0.97	0.65
Mohishadol	0.94	0.87	0.54	0.02	0.36	0.12	0.98	0.02	0.36	0.94	0.87	0.54	0.85
Nandigram-I	0.91	0.83	0.95	0.45	0.31	0.65	0.65	0.45	0.31	0.91	0.83	0.95	0.94
Nandigram-II	0.96	0.86	0.64	0.34	0.02	0.75	0.45	0.34	0.02	0.96	0.86	0.64	0.62



Table: 5. Results of standardization using the min-max transformation

Block Name	Indicators name												Average
	PFEP	PCHP	PRUP	PMIP	PLIP	PHN	PHN	PHN	PHN	PHN	EMR	IMR	
Tamluk	0.98	0.89	0.78	0.32	0.34	0.22	0.94	0.32	0.34	0.98	0.89	0.78	0.65
SohidMotongini	0.68	2.27	0.32	0.09	2.72	2.45	0.35	0.34	0.65	0.89	0.87	0.67	0.43
Panskura-I	0.33	0.32	3.15	2.53	2.64	2.72	0.31	0.65	0.32	0.96	0.82	0.33	0.54
Kolaghat	0.55	0.72	2.05	0.72	0.65	0.97	0.64	0.98	0.12	0.94	0.83	0.12	0.65
Moyna	0.65	2.52	0.02	2.52	0.50	0.54	0.35	0.87	0.23	0.92	0.84	0.01	0.32
Nandokumar	0.08	0.14	0.63	0.14	0.68	0.65	0.98	0.89	0.14	0.93	0.86	0.64	0.23
Chandipur	0.16	0.33	0.72	0.33	0.18	0.89	0.34	0.52	0.78	0.97	0.90	0.97	0.45
Mohishadol	0.34	0.04	0.38	0.04	0.27	0.46	0.36	0.12	0.98	0.94	0.87	0.54	0.42
Nandigram-I	0.89	0.56	3.50	0.56	0.52	0.65	0.31	0.65	0.65	0.91	0.83	0.95	0.43
Nandigram-II	0.78	0.96	0.87	0.96	0.42	0.78	0.02	0.75	0.45	0.96	0.86	0.64	0.62

The analysis' findings indicate that the eastern portion of the PurbaMedinipur district is where the majority of the socioeconomically vulnerable blocks are located. However, Sutahata block is located in the least vulnerable area of all the blocks, each of which contains districts. The districts, which are made up of urban residents, are operated with more and better potential outcomes than rural areas.

6. Conclusion

Due to a few unfavorable factors, the twenty-first century won't be an easy time to work toward improving the wellbeing and prosperity of the entire world. By the middle of the next century, the population of the first world could exceed 9.7 billion people due to ongoing population growth. By 2050, 60 percent of people will live in the jungle, where disease is more common than in more civilized areas. The ageing of the global population increases the risk of fatal diseases in the elderly. Environmental change will also make urban medical conditions worse. Environmental change's impact on urban wellbeing will worsen air pollution in many urban communities. Infections that already exist could spread to new areas. Environmental change could negatively affect rural development in many unfortunate countries, forcing limited relocating to urban areas that already only provide food insufficiently to meet the needs of current residents. This essay has demonstrated the current



problems with prosperity and well-being that urban dwellers face today, as well as how environmental and other changes will likely make it more difficult to provide everyone with standards of wellbeing that are satisfactory. Obviously, original ideas are required. The recently introduced block level examination may support the development of a framework for checking and evaluating neighborhood level transformation projects. As a result of this examination, it will be easier to prepare for common risks and lessen the impact of potential catastrophic event occurrences in the future. The opposition force of high vulnerable blocks can be further strengthened by improved financial circumstances, in the majority; power, sterilization, sewage offices, and employment opportunities; this in turn can further strengthen the district of PurbaMedinipur's social vulnerability list. The lack of information at the block level for some of the markers is a limitation of this review and potential future scope of work.

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