



Government of the People's Republic of Bangladesh
Ministry of Housing and Public Works
Urban Development Directorate
82 Segunbagicha, Dhaka-1000

PREPARATION OF DEVELOPMENT PLAN FOR MEHERPUR ZILLA

REPORT ON ASSIGNMENT-5

**Spatial Transformation of Socio-Economic Survey
Output such as Spatial Transformation, Comparison
between PRA and Socio-Economic**

June 2025

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ASSIGNMENT 5:

**Spatial Transformation of Socio-Economic Survey
Output such as Spatial Transformation, Comparison
between PRA and Socio-Economic**



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PREPARATION OF DEVELOPMENT PLAN FOR
MEHERPUR ZILLA



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Summary

The adaptive cycle, which consists of four stages—exploitation, conservation, release, and reorganization—is a well-known paradigm that explains the dynamic character of complex systems, especially in social-ecological situations. The exploitation or growth phase is when resources are abundant and systems expand quickly. According to the adaptive cycle, urban settings go through cyclical phases of expansion, conservation, collapse, and rearrangement, just like ecosystems. A city's growth, infrastructure consolidation, stress or collapse periods, and eventual rebirth or change are all reflected in these phases.

The area is classified into seven zones-1. Urban Core Zone 2. Inner Urban Zone 3. Outer Urban Zone 4. Sub-Urban Zone 5. Urban-Rural Transition Zone 6. Rural Fringe Zone

A primary observation is that the map reflecting Newspaper Information generally portrays a more negative emotional landscape across Meherpur Pourashava compared to the map reflecting Individual Emotions which shows broader areas of positive emotions. This suggests a potential difference in the focus or nature of information conveyed by newspapers versus direct individual experiences.

(Sanjib Saha)

Urban Planner

Spatial Transformation of Socio-Economic Survey Output such as Spatial Transformation, Comparison between PRA and Socio-Economic Adaptive Cycle of Emotion in Meherpur Paurashava

Adaptive Cycle

The adaptive cycle, which consists of four stages—exploitation, conservation, release, and reorganization—is a well-known paradigm that explains the dynamic character of complex systems, especially in social-ecological situations. The exploitation or growth phase is when resources are abundant and systems expand quickly. This stage, which is frequently observed in social and economic environments, is defined by the pursuit of new opportunities and a focus on growth. After that comes the conservation phase, during which time systems stabilize and build up capital or resources.

The collective emotional reactions of communities to changes in their urban surroundings are referred to as public emotion. People's emotions are greatly impacted by urban dynamics, particularly when planning choices have an impact on daily life, livelihoods, and social relationships. Public sentiment and urban growth and development are closely related, with better infrastructure—such as new roads or public areas—often generating feelings of enthusiasm and optimism. On the other hand, because of the disruption of traditional neighborhoods, gentrification or rapid urbanization can cause negative emotions including anxiety, fear of displacement, and resentment.

Adaptive Cycle and Urban Development

According to the adaptive cycle, urban settings go through cyclical phases of expansion, conservation, collapse, and rearrangement, just like ecosystems. A city's growth, infrastructure consolidation, stress or collapse periods, and eventual rebirth or change are all reflected in these phases.

Release (Collapse): Public sentiments can drastically change toward dread, rage, or frustration in the face of crises, such as economic downturns, natural disasters, or social unrest. Urban planners must act swiftly and efficiently to restore public confidence during the release phase, which frequently involves the collapse of antiquated infrastructure or unstable economic conditions.

Reorganization (Renewal): After a collapse, cities may reorganize by implementing creative fixes or altering their policies. People's feelings during this stage are frequently a mixture of caution and optimism. In order to create a more resilient urban environment, urban planning is essential in directing this regeneration by incorporating learning from past mistakes and attending to public concerns.

Exploitation (Growth): Cities undergo a boom in development marked by new enterprises, infrastructure, and opportunities during times of urban growth. Residents become more optimistic as a

result, which promotes favorable public sentiments like excitement and hope. Rapid expansion without thorough planning, however, can also lead to worries about congestion and uneven development.

Conservation: As a city stabilizes and becomes more established, public emotions may include contentment or pride in its successes. Yet, as the system grows more rigid and less adaptable, rising costs and inflexible urban systems can lead to anxiety or frustration among residents.

Public Emotion as Feedback in the Adaptive Cycle

Public sentiment serves as a real-time gauge of how well a city manages its adaptive cycle. Urban planners, who must be aware of changes in public opinion throughout the different stages, can receive important input from the population's emotional reactions.

As systems malfunction during the Release Phase, emotional reactions can range from fear and rage to despair. In order to assist communities, manage and recover, this emotional input calls for quick planning measures, such as disaster relief and social support programs.

Planners have a chance to rebuild urban areas in a more resilient, sustainable, and equitable manner during the Reorganization Phase thanks to feelings like hope and cautious optimism. For revitalization initiatives to accurately represent the needs and preferences of the public, community involvement is essential.

During the Growth Phase, public sentiment may initially exhibit enthusiasm regarding new developments; however, if this growth is inadequately managed—evidenced by insufficient affordable housing or rising congestion—sentiments can rapidly transition to dissatisfaction. It must pursue inclusive and sustainable growth to uphold public confidence.

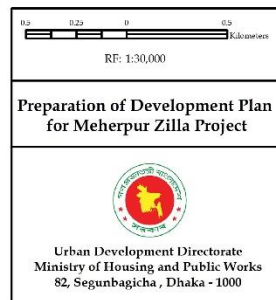
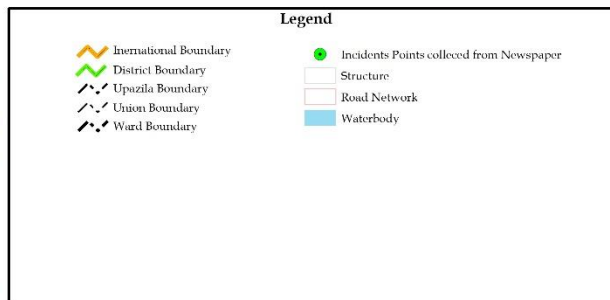
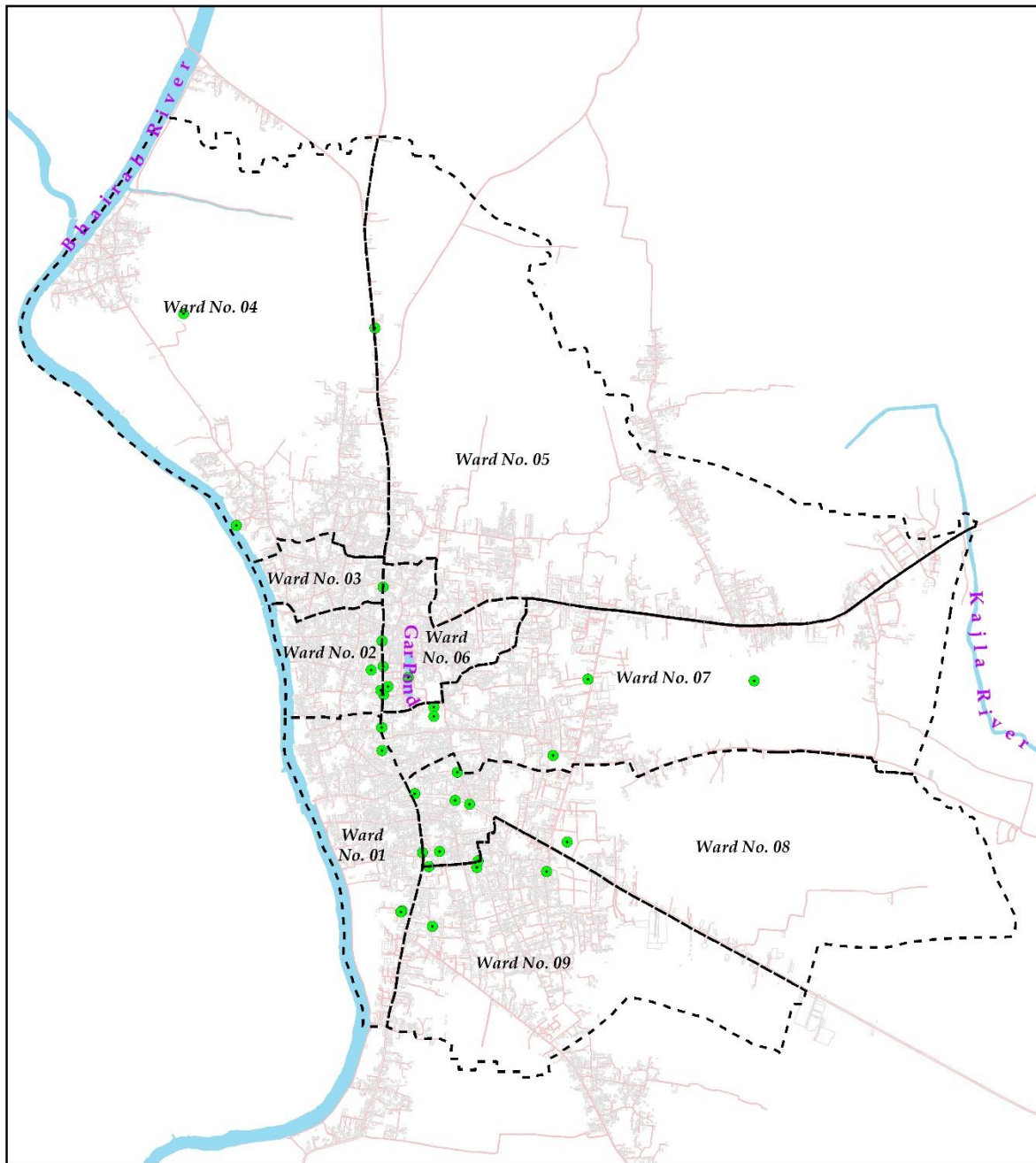
Carelessness in planning during the Conservation Phase might result in stiff systems that could engender negative feelings due to increased prices and disparities, even while stability can produce satisfaction. In order to anticipate these feelings, planners must implement adaptable and flexible policies.

Process and Analyze

Newspapers are seen as a window into society since they convey everyday events to people's doorsteps. Depending on the nature of news, people experience a range of feelings. For instance, happy emotions are evoked by excellent news. As a result, newspaper stories are a valuable source of knowledge about any particular geographic area. Using surveys of newspaper articles from local and regional newspapers, this study used a multi-step methodology to examine emotional dynamics in geographical contexts.

Map - 1

LOCATION OF INCIDENTS COLLECTED FROM NEWSPAPER OF MEHERPUR POURASHAVA



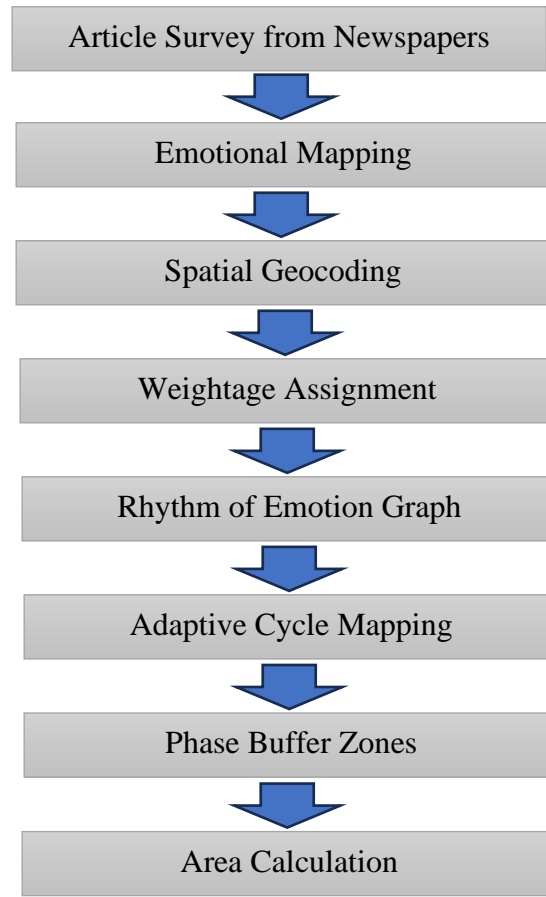


Figure 1: Flow Diagram of Adaptive Cycle Mapping

For the analysis of emotions related to newspaper articles, several news from 2018 to 2024 have been collected. There is total 33 news have been collected for Meherpur Paurashava. More than 60% news shows positive impacts with positive emotions. For the analysis of the study, the locations of the incidents are geo-located. Then the distances of the incidents are measured from the center of the Paurashava, Boro Bazar Char Rastar Mor and has done the analysis like the previous one. From the trend line, the distance from the center is segmented as Release, Reorganization, Growth, Conservation and Release with a distance of 100m, 250m, 500m, 1500m and 2200m respectively.

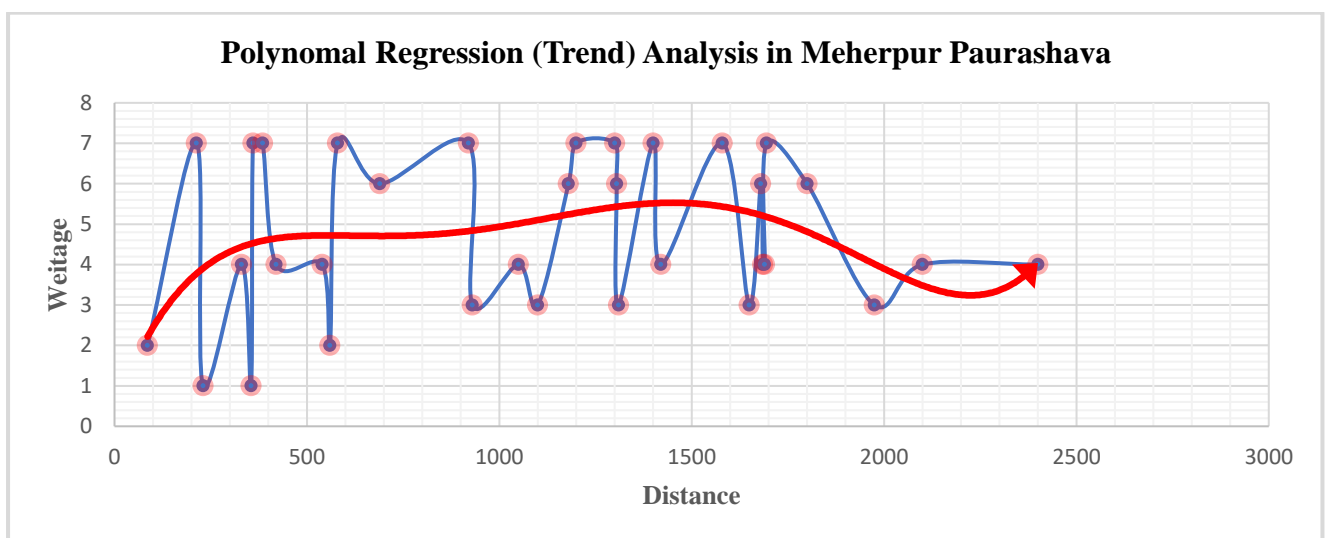
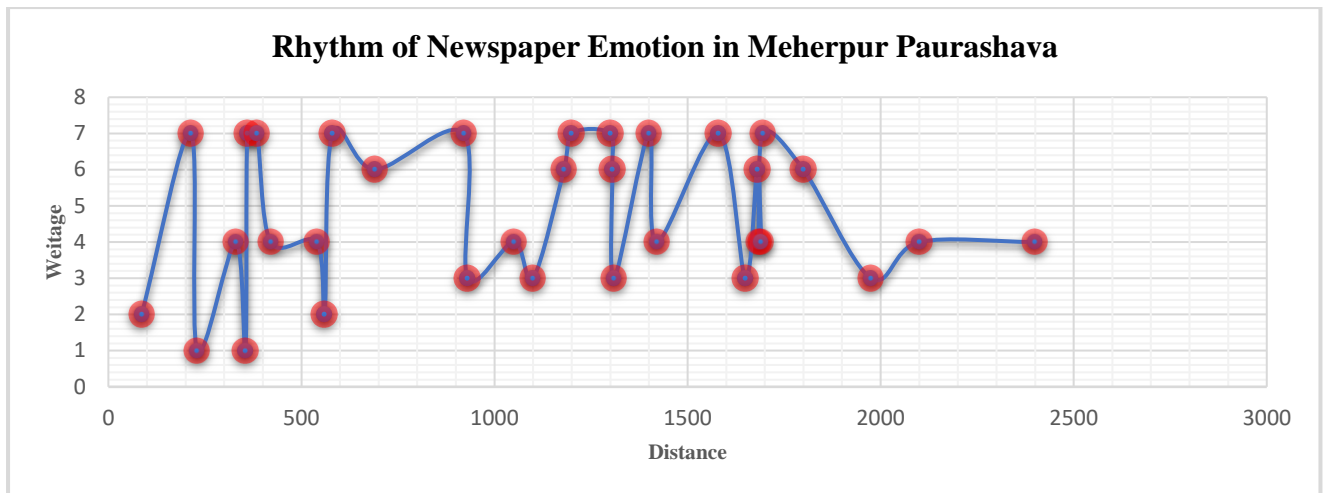


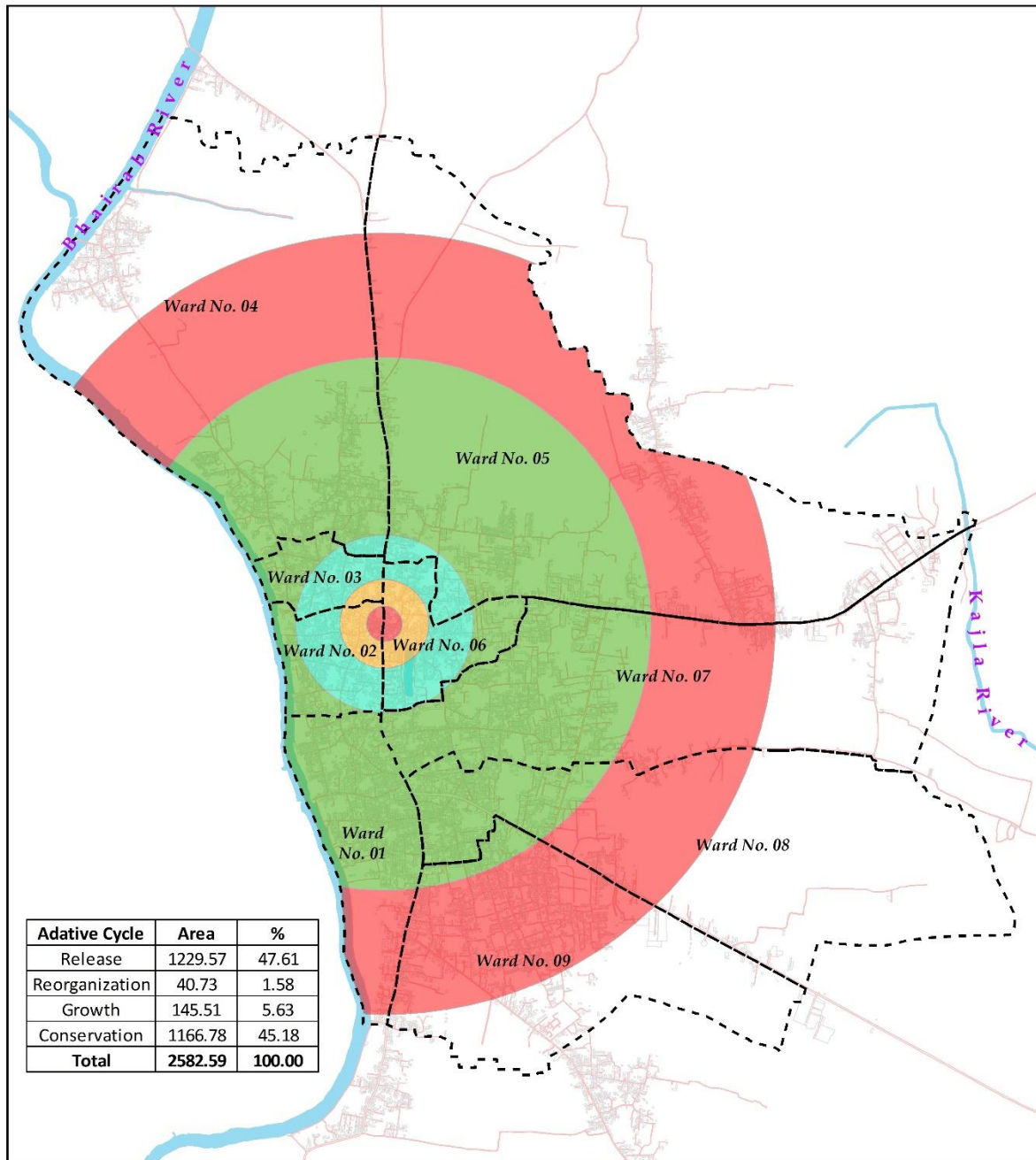
Figure 2: Rhythm of Newspaper Broad Emotion in Meherpur Pourashava

The map of the adaptive cycle has prepared from with the calculated distances from the above regression analysis and trend line following some interpolation analysis to covert it for the whole Paurashava.

In Meherpur Pourashava, the adaptive cycle starts with release phase spanning from the Boro Bazar Mor, the center of the Pourashava to 100-meter buffer zone. Beyond that the phases of Adaptive cycle were distributed like this, within 100-250 Meters Reorganization Phase, within 250-500 Meters Growth Phase, within 500-1500 Meters Conservation and within 1500-2200 Meters are again Release Phase. Please see Map 2 for details.

Map - 2

ADATIVE CYCLE OF NEWSPAPER EMOTIONS IN MEHERPUR POURASHAVA



Adative Cycle	Area	%
Release	1229.57	47.61
Reorganization	40.73	1.58
Growth	145.51	5.63
Conservation	1166.78	45.18
Total	2582.59	100.00

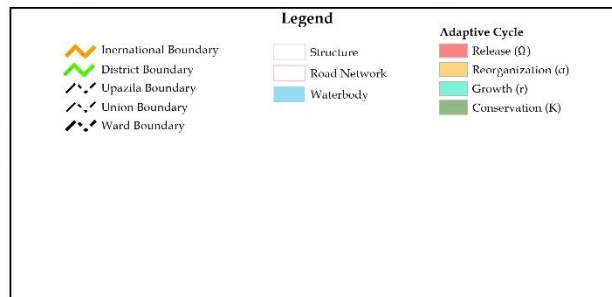
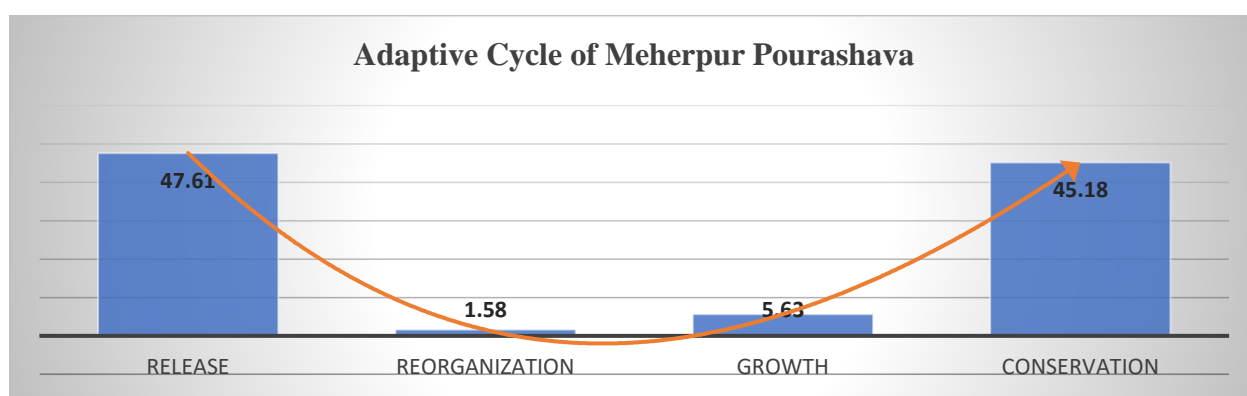


Table 1: Adaptive Cycle of Meherpur Pourashava

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**Figure 2: Adaptive Cycle of Meherpur Pourashava**

In this Pourashava, the adaptive cycle begins with the release (Ω) phase, which covers the highest area of 1229.57 acres, making up 47.61% of the total land area. The release phase, signifies a dominant impact on the settlement. Following this, the conservation (K) phase emerges as the most prominent, encompassing 1166.78 acres (45.18%), symbolizing stability and preservation. The growth (r) phase, which represents expansion and development, spans 145.51 acres, accounting for 5.63% of the area, showing an upward trend in progress. Lastly, the reorganization (α) phase is also noticeable, covering 40.73 acres, or 1.58% of the total area, indicating a significant level of restoration and rebuilding efforts in the town.

Zoning Classification

Urban Core Zone

The Core Urban Zone is the oldest, most central, and typically the most intensely utilized part of a city. It is characterized by:

- **High Density:** Concentrated built environment, including multi-story commercial buildings, administrative centers, and high-density mixed-use developments.
- **Economic Hub:** The primary location for business, commerce, finance, and major government institutions.

- **Transportation Nexus:** A convergence points for public transportation systems, high pedestrian traffic, and significant vehicular movement.
- **High Land Values:** Due to high demand and accessibility, land in this zone commands the highest prices.
- **Cultural and Civic Center:** Often home to key cultural institutions, major public spaces, and civic landmarks.

Inner Urban Zone

The Inner Urban Zone is located immediately outside the Core Urban Zone. It represents a transition area where the intense, primarily commercial and administrative functions of the core begin to give way to a more mixed-use but still highly urbanized environment.

Key characteristics include:

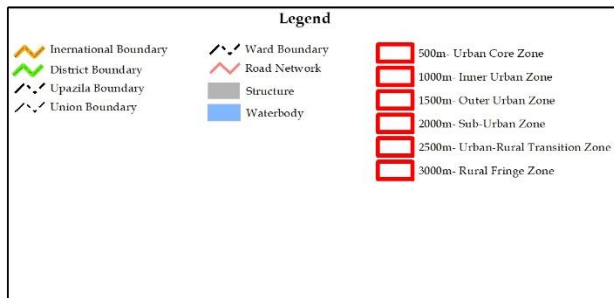
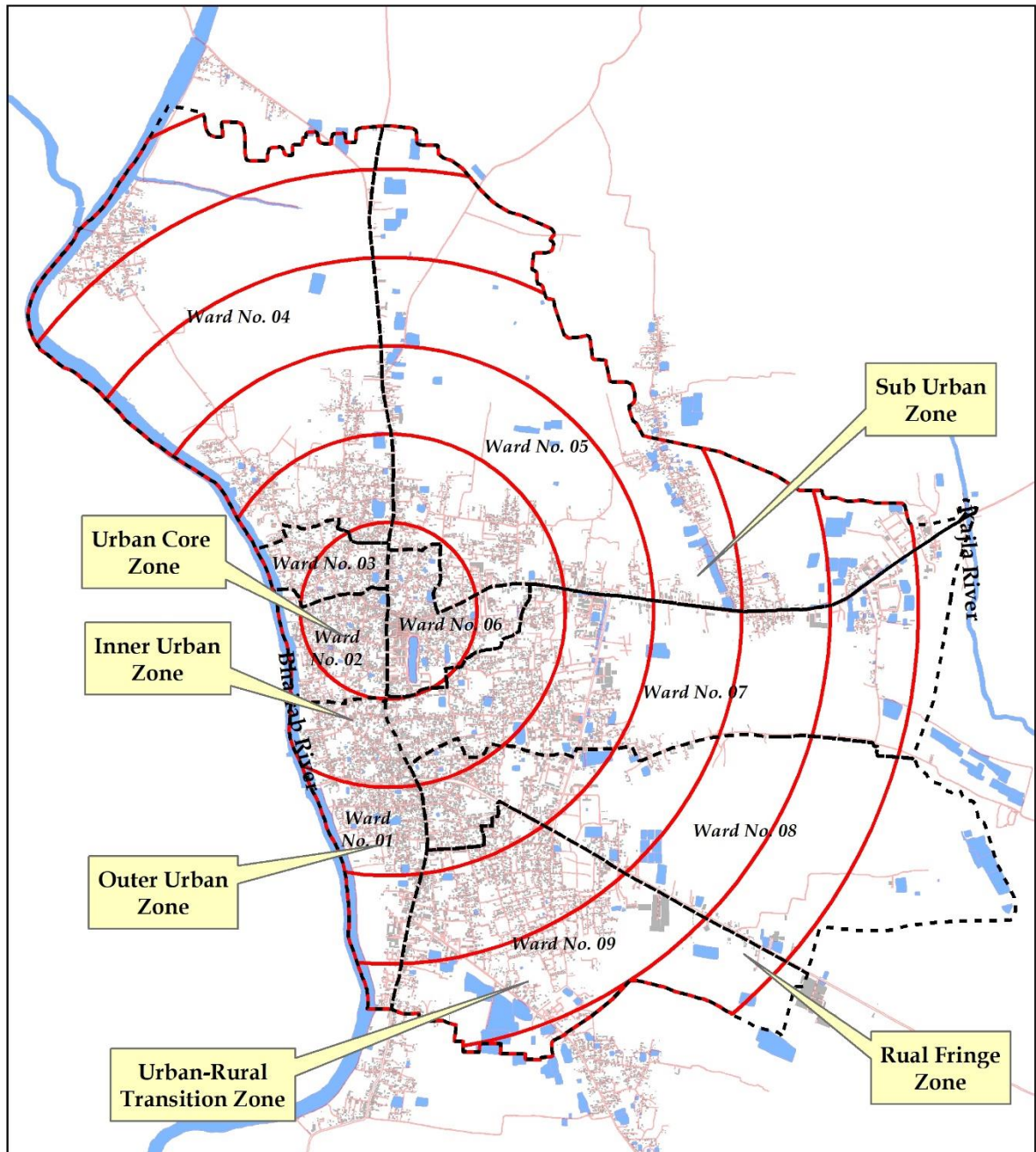
- **Mixed Land Use:** A blend of medium-to-high density residential (often older apartment buildings, row houses), smaller local commercial establishments, community facilities (schools, local markets, clinics), and sometimes older light industrial areas or workshops.
- **Established Neighborhoods:** These areas often contain established communities with a sense of local identity and history.
- **Good Accessibility:** Still very well-connected to the core via various transport modes, though traffic can still be an issue.
- **Infrastructure Age:** Infrastructure (roads, utilities) can be older and may require upgrades.
- **Greenspace Scarcity:** While possibly having more tree-lined streets than the core, significant public green spaces might still be limited.

Outer Urban Zone

The Outer Urban Zone is situated beyond the inner, more densely built-up areas of the city. It represents a further transition from the high-intensity core, often characterized by a shift towards more predominantly residential functions and lower densities compared to the inner zones.

Map - 3

ZONING MAP OF MEHERPUR POURASHAVA



Key characteristics include:

- **Dominantly Residential:** Primarily comprises residential areas, often single-family homes, lower-rise apartment buildings, or new housing developments.
- **Lower Density:** Generally, less dense than the core and inner urban zones, allowing for more open space around properties.
- **Local Services:** Features neighborhood-scale commercial establishments, schools, local parks, and community facilities designed to serve the immediate residents.
- **Increased Green Space:** More opportunities for private gardens, street trees, and larger local parks or recreational areas compared to inner zones.
- **Accessibility:** Still generally well-connected to the core via arterial roads, but public transport options might start to thin out compared to the very center.

Sub Urban Zone

The Suburban Zone lies beyond the more established and often denser urban areas. It represents the interface where urban characteristics begin to blend with a more spread-out, lower-density residential landscape.

Key characteristics include:

- **Predominantly Residential:** Overwhelmingly dominated by residential land uses, typically single-family homes or lower-rise multi-family units, often on larger plots.
- **Lower Density:** Significantly lower population and building densities compared to inner and outer urban zones.
- **Green Space and Openness:** More prevalent private yards, street trees, and often larger public parks, recreational fields, or even remnants of natural areas.
- **Local Services (Dispersed):** Commercial and service centers are typically strip malls or dispersed clusters, often requiring car travel for access. Neighborhood schools and community facilities are common.
- **Newer Development:** Often comprises newer housing developments, sometimes built on former agricultural land.

Urban Rural Transition Zone

The Urban-Rural Transition Zone is the dynamic, often chaotic, area at the edge of the continuously built-up urban fabric where urban and rural land uses and characteristics intermingle. It's a highly fluid and rapidly changing landscape.

Key characteristics include:

- **Mixed and Fragmented Land Use:** A heterogeneous mix of:
 - Remnant agricultural land (farms, fields).
 - Scattered, low-density residential development (often unplanned or informal settlements, or new large-scale housing projects).
 - Small-scale industrial or warehousing units (often those that require large plots or are undesirable closer to the city).
 - Informal markets, brickfields, and other resource-extraction activities.
 - Undeveloped or vacant land.
- **Infrastructure Deficiencies:** Infrastructure (roads, water, sanitation, electricity, drainage) is often inadequate, poorly maintained, or entirely absent, leading to significant service gaps.
- **Rapid and Uncontrolled Growth (often):** This zone is frequently where much of the city's spontaneous and unplanned growth occurs, leading to urban sprawl.
- **Environmental Degradation:** Vulnerable to environmental issues like groundwater depletion, waste dumping, pollution from informal industries, and loss of agricultural land or natural habitats.
- **Socioeconomic Heterogeneity:** Can include established rural communities, recent migrants seeking affordable housing, and speculative developers. This mix can lead to social tensions.
- **Dependence on Urban Core:** Residents often commute to the urban center for employment, higher education, and specialized services.

Rural Fringe Zone

The Rural Fringe Zone is the outermost ring of urban influence, acting as a buffer between the built-up urban area (including its peri-urban/transition zones) and the predominantly agricultural or natural countryside. While still feeling some pressure from urban expansion, its character is much more rural.

Key characteristics include:

- **Predominantly Rural Land Use:** Dominated by agricultural fields, small villages, natural landscapes (forests, wetlands, uncultivated areas), and very low-density scattered rural housing.
- **Minimal Urban Infrastructure:** Basic urban services (piped water, sewerage, formal waste collection, extensive road networks) are typically absent or extremely limited. Residents rely on traditional or self-provided infrastructure (e.g., tube wells, septic tanks, unpaved roads).

- **Low Population Density:** Very sparse population distribution compared to all other urban zones.
- **Agricultural Livelihoods:** A significant portion of the population relies directly or indirectly on agriculture for their livelihood.
- **Environmental Sensitivity:** Often contains important ecological areas, water bodies, and agricultural land vital for regional food security or environmental services.
- **Vulnerability to Uncontrolled Sprawl:** While more rural, it's the next target for unplanned urban expansion and speculative land development.

Conflict between Newspaper and Individual Emotion Analysis

A primary observation is that the map reflecting Newspaper Information generally portrays a more negative emotional landscape across Meherpur Pourashava compared to the map reflecting Individual Emotions which shows broader areas of positive emotions. This suggests a potential difference in the focus or nature of information conveyed by newspapers versus direct individual experiences.

Ward 01

A substantial disparity. While newspaper reports for this ward suggest a more troubled or conflict-ridden environment, individual experiences appear to be more favorable. This may suggest that while people's daily lives may be more settled, news stories about Ward 1 arouse significant negative emotions.

Ward 02

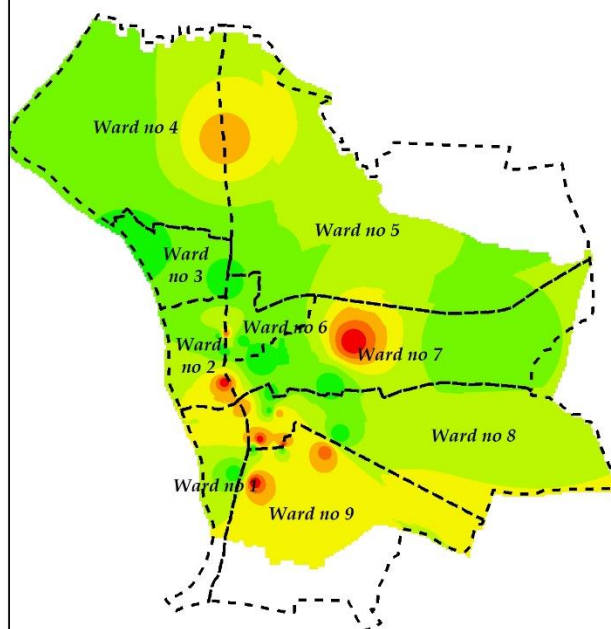
Most people have had good experiences. However, newspaper data indicates a greater "Anger" and a clear "Disgust" hotspot that is less prevalent in personal experiences, indicating media focus on certain unfavorable events or circumstances.

Map - 4

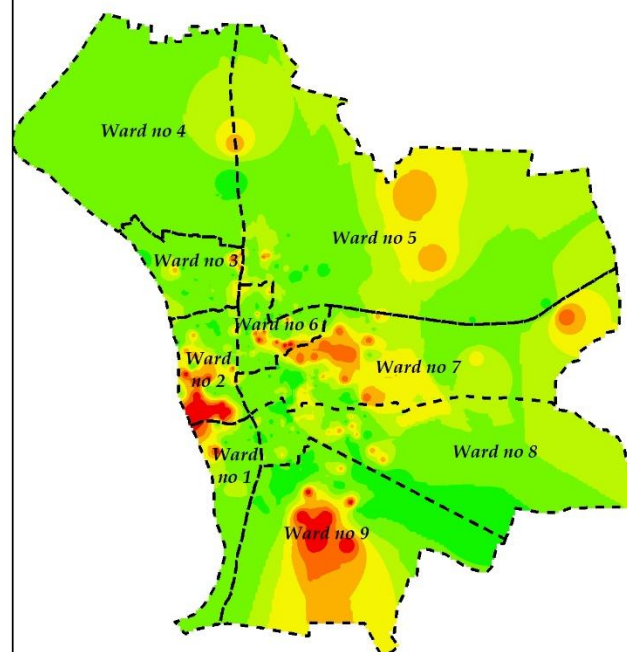
COMPARETIVE ANALYSIS BETWEEN ANALYSIS FROM NEWSPAPER AND ANALYSIS FROM INDIVIDUAL EMOTION



ANALYSIS FROM NEWSPAPER'S INFORMATIONS



ANALYSIS FROM INDIVIDUAL INFORMATIONS

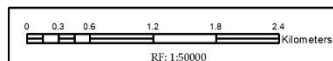
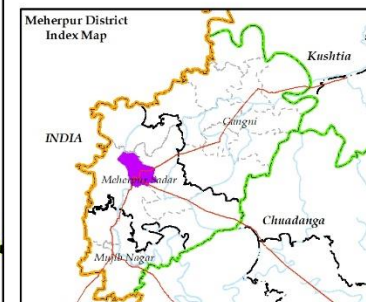


Legend

- International Boundary
- District Boundary
- Upazila Boundary
- Union Boundary
- Ward Boundary

Broad Emotion

- Disgust
- Fear
- Sad
- Anger
- Surprise
- Happiness
- Love



Preparation of Development Plan
for Meherpur Zilla Project



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Ward 03

Newspaper data shows that "Anger" is much more common in the northern part. This may be because of issues that are getting more attention in the media. On the other hand, people usually report more "Happiness" and "Surprise." In newspaper data, the Disgust hotspot is less noticeable or dispersed than in individual data.

Ward 04

One of the biggest contrasts is seen in this ward. While media reporting significantly emphasizes negative emotions (Anger, Sad, Disgust), people primarily feel pleasant emotions (Happiness, Surprise). This suggests that news from this ward may concentrate on certain issues or disputes.

Ward 05

The presence of "Surprise" in Ward 5 is confirmed by both maps. Newspaper data, on the other hand, indicates an "Anger" hotspot that is not as prevalent or prominent in individual emotional data, indicating a particular problem being covered.

Ward 06

This ward shows relatively good consistency in the overall mixed emotional pattern, particularly for specific negative hotspots. Being a more central ward, overt events or conditions might be both experienced by individuals and reported in the news, leading to convergence.

Ward 07

High consistency in identifying the significant "Disgust" hotspot, indicating a major, widely recognized problem area. Both also show "Surprise," but newspaper data might amplify the perceived scale of "Disgust." High consistency in identifying the significant "Disgust" hotspot, indicating a major, widely recognized problem area. Both also show "Surprise," but newspaper data might amplify the perceived scale of "Disgust."

Ward 08

Both generally portray positive emotional landscapes. However, individual experiences lean more strongly towards widespread "Happiness," whereas newspaper reporting places more emphasis on "Surprise" and highlights an "Anger" spot not as prominent in individual perceptions.

Ward 09

Individual experiences show more widespread "Happiness." Newspaper data for Ward 9 portrays a more challenging emotional landscape with greater "Anger" and "Sadness" in the northern half, suggesting that issues reported by news outlets might be more negatively impactful for this area than what individuals generally experience.

Key Insights and Implications for Planning:

"News Bias" Towards Negativity/Conflict: The general trend suggests that newspaper reporting tends to highlight negative events or problematic conditions (Anger, Sadness, Disgust) more frequently or intensely than the everyday positive experiences (Happiness, Surprise, Love) of individuals. News media often focus on "problems" that demand attention.

Identified Problem Hotspots: Where prominent negative hotspots (especially Disgust in Ward 7 and Ward 6, and Anger in parts of Ward 3) align between both individual and newspaper data, these areas likely represent **critical and widely recognized issues**. Planners should prioritize these locations for immediate and targeted interventions (e.g., waste management, sanitation, public safety, traffic solutions).

Unreported Well-being: The broad areas of "Happiness" and "Surprise" in individual emotion maps (e.g., Ward 4, 8, 9) that are less prominent in newspaper maps suggest areas of **existing high quality of life that might be overlooked by problem-focused media narratives**. Planners should understand the drivers of this well-being and seek to preserve, enhance, and replicate these conditions elsewhere.

Divergent Perceptions: Discrepancies (e.g., Ward 1, 4) highlight a potential gap between how residents truly feel about their living environments and what is highlighted in the news. Relying solely on news information might lead to a skewed understanding of citizen well-being and misdirected planning efforts.

Complementary Data Sources: This comparison underscores the value of using multiple data sources for urban planning. Newspaper information can pinpoint acute problems and areas of public concern, while individual emotional data provides a more nuanced and pervasive understanding of lived experience and quality of life. Combining both offers a more holistic and accurate picture for evidence-based planning.

PRA Output

The PRA outcome represents the spatial distribution of predominantly negative "Broad Emotions" across the 9 wards of Meherpur Paurashava. The emotions depicted are limited to:

- Red: Disgust
- Orange: Fear
- Orange-Yellow: Sadness
- Yellow: Anger

Dominance of Negative Emotions

The map is heavily saturated with colors representing negative emotions indicating that the PRA, the participants likely focused and identified the areas of distress or dissatisfaction.

Concentrated Hotspots of Disgust and Fear: There are several distinct "hotspots" of Red (Disgust) and Orange (Fear).

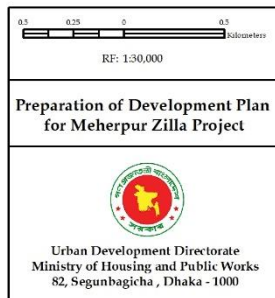
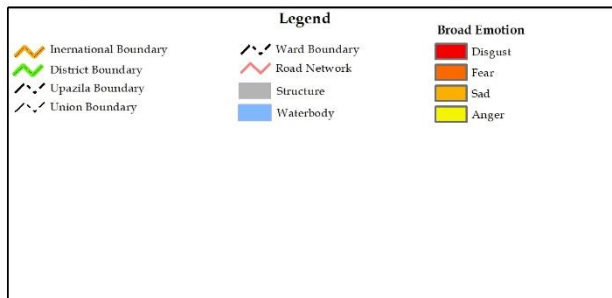
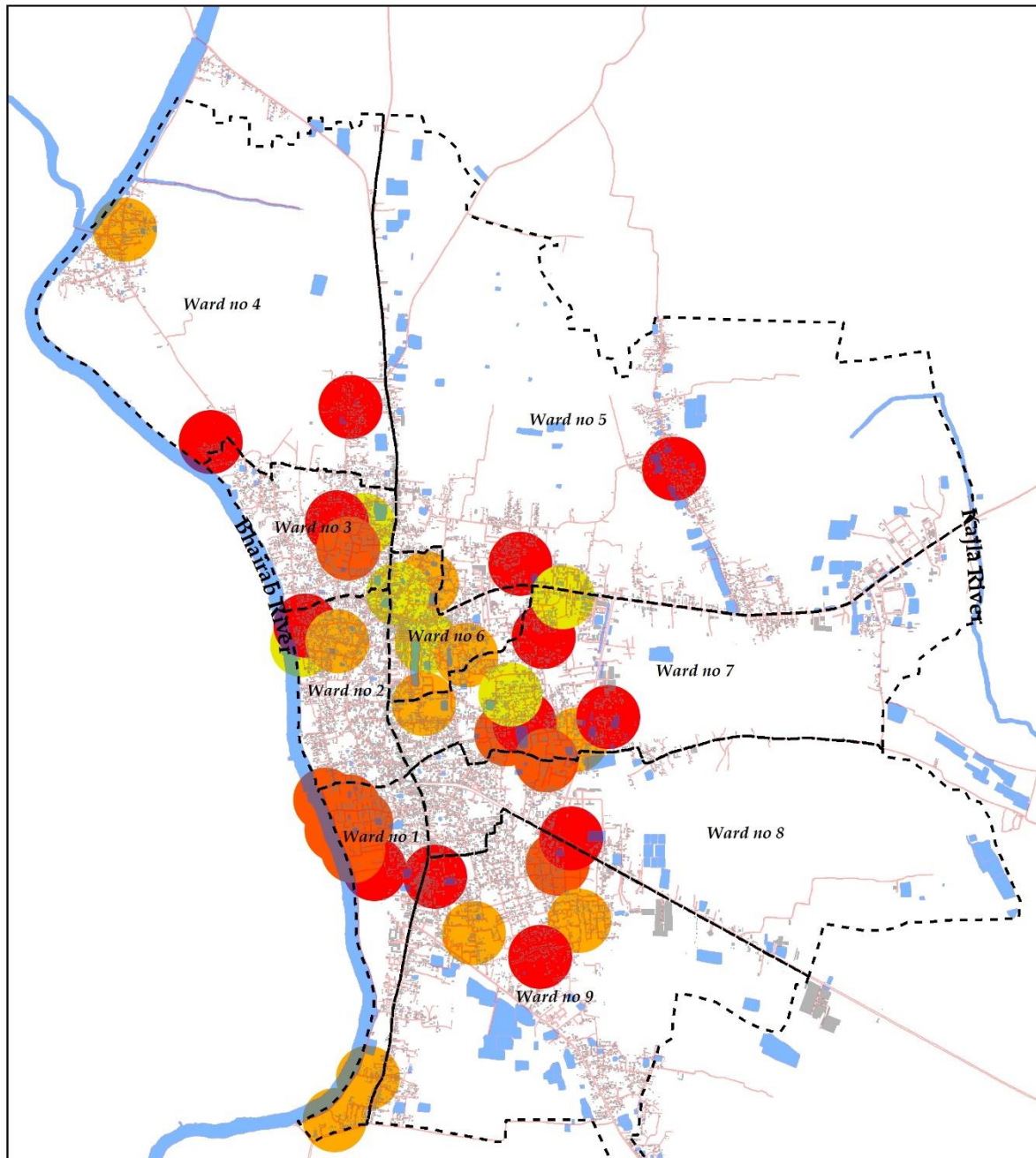
Prominent "Disgust" (Red) hotspots are visible in Ward No. 04, Ward No. 03, Ward No. 05, and particularly a large cluster in Ward No. 07.

Significant "Fear" (Orange) hotspots appear in Ward No. 01 (southern tip), around Ward No. 02, and also mixed with other negative emotions in several central wards.

Widespread Anger and Sadness: Yellow (Anger) and Orange-Yellow (Sadness) are widely distributed, often forming larger areas or surrounding the more intense "Disgust" and "Fear" hotspots. This suggests that frustration and a general sense of unhappiness are more pervasive across multiple wards.

Map - 5

PRA OUTCOME MAP OF MEHERPUR POURASHAVA



Ward-Specific Concentrations

Ward No. 04 & 05: Show prominent "Disgust" and "Anger" hotspots in their northern sections.

Ward No. 03: Features "Disgust" and "Anger."

Ward No. 06, 07, 08, 09: These central and southern wards exhibit a high concentration of all four negative emotions, with "Disgust" particularly intense in Ward No. 07.

Focus of PRA: The outcome of this PRA exercise, as mapped, clearly points towards specific geographical areas within Meherpur Paurashava where residents are experiencing significant negative emotions, likely related to existing bad condition of road, drinking water issues, water logging and missing of proper drainage system.

In essence, the "Outcome from PRA" map serves as a critical diagnostic tool, pinpointing areas within Meherpur Paurashava that require urgent attention and targeted interventions to address the root causes of public "Disgust," "Fear," "Sadness," and "Anger."