



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-3

Prepared Ward Wise Urban Area Plan Map and Generate Statistics

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Mohuya Binta Masud
Junior GIS Consultant

Summary of Assignment-3

A. Summary of Assignment-3

The report on Ward 07 of Savar Municipality highlights the ward's demographic, socio-economic, environmental, and infrastructural conditions, along with its resilience challenges and planning needs. With a population of 3,164 (BBS 2022), projected to rise slightly to 3,310 by 2047, Ward 07 is primarily agricultural (67.93%) with significant residential land (23.95%), while commercial, educational, and community services remain critically low compared to urban standards. Socio-economic analysis shows that small-scale businesses (54%) and farming (38%) dominate the local economy, supported by moderate literacy levels (63.86%) but constrained by inadequate healthcare, education, sanitation, and recreational facilities. Environmental conditions are shaped by favorable elevation that reduces flood risk, but vulnerabilities persist due to poor drainage, waterlogging, waste mismanagement, and risks of agricultural land encroachment.

In terms of urban resilience, Ward 07 remains in the Reorganization (α) phase of the Adaptive Cycle, where fragmented social structures, an informal and unstable economy, and unmanaged environmental processes hinder sustainable growth. Key problems include unmanaged sprawl, overstressed infrastructure, lack of government health services, inadequate road and drainage networks, poor housing quality, and absence of recreational spaces. To strengthen resilience and guide the ward toward the Growth (r) phase, the report recommends compact vertical housing to reduce sprawl, strict protection of agricultural land, expansion of commercial and community service areas, improved education and health facilities, upgraded road and drainage networks, and safeguarding natural waterbodies.

Overall, the report stresses that strategic, resilience-based land use planning is essential for Ward 07 to transition from its current vulnerabilities to a more sustainable, adaptive, and inclusive urban future

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Existing Situation:

Ward 07 of Savar Municipality presents a complex but insightful case for understanding the dynamics of urban resilience and land use planning in small towns of Bangladesh. According to the BBS (2022), the ward has a population of 3,164 people, projected to grow modestly to 3,310 by 2047. Despite its relatively small population size, the ward exhibits diverse land use patterns and faces significant planning challenges. Current land distribution is dominated by agriculture (67.93%), followed by residential (23.95%), while other categories such as commercial (0.69%), community services (0.05%), and education (0.33%) (*Source: Physical Feature Survey, 2025*) remain disproportionately low compared to national and international urban planning standards.

Socio-economic conditions further highlight the ward's vulnerabilities and opportunities. Agriculture and small-scale business form the backbone of the local economy, while literacy levels (63.86%) and infrastructural quality indicators such as the PQLI (60, moderate) and IQLI (69, moderate) suggest gaps in education, health, and service delivery. QLI 75, High, reflecting strong resident satisfaction and better access to services and infrastructure; CCI 75, High, highlighting strong cultural facilities and community participation (*Source: Socio-Economic Survey, 2025*). Community surveys and participatory rural appraisal (PRA) have identified recurring issues including waterlogging, poor drainage, inadequate waste management, insufficient health facilities, low-quality educational infrastructure, and lack of recreational spaces.

From an environmental perspective, the ward benefits from a relatively favorable elevation profile (15.74m–9.57m), reducing flood vulnerability in higher settlement zones, but it remains at risk due to encroachment on waterbodies and inadequate drainage maintenance. The dominance of non-motorized transport (90.5%) (*Source: Physical Feature Survey, 2025*) also reflects both resilience in low-carbon mobility and a lack of modern transport infrastructure.

These overlapping social, economic, and environmental dynamics place Ward 07 in the Reorganization (α) phase of the Adaptive Cycle, where fragmented systems, unmanaged growth, and overstressed services highlight the urgent need for planned interventions to ensure long-term resilience and sustainable urban development.

| Feature | Existing Situation |
|-----------------------------|---|
| Occupational Analysis | Service holder: 8%, Business: 54%, Driver: 0%, Worker: 0%, Education: 0%, Medical service: 0%, Farmer: 38%. Formal employment: 15%, Informal employment: 85%%. (Source: Socio-Economic Survey, 2025) |
| Transportation Analysis | By foot: 44.69%, Rickshaw: 20.67%, Van: 17.88%, Cycle: 7.26%, Motorcycle: 9.50%, Car: 3.33%, Bus: 0%, Microbus: 0%, Others: 0%. Non-motorized: 90.50%, Motorized: 9.50%. Gender-wise: Females mainly use van (27.70%), walking (39.40%), and rickshaw (28.70%), while males depend on cycle (15.29%), walking (50.59%), rickshaw (11.76%), and motorcycle (15.29%). (Source: Socio-Economic Survey, 2025) |
| Drainage System | Covered drains: 14.39 km, Uncovered drains: 0 km. (Source: Physical Feature Survey, 2025) |
| Building Type | Katcha: 109, Pucca: 584, Semi-Pucca: 882, Tin Shade: 448, Under Construction: 20. (Source: Physical Feature Survey, 2025) |
| Building Floor Distribution | 1 floor: 1,850; 2 floors: 151; 3 floors: 33; 4 floors: 09. (Source: Physical Feature Survey, 2025) |
| Elevation Profile (DEM) | 15.74m- 9.57m (higher elevation): settlements, institutions, commercial areas—less flood-prone, suitable for permanent housing and dense development; concentration of educational and service facilities. (Source: Physical Feature Survey, 2025) |
| Land Use Status | Administrative: 0.63 acre (0.14%), Agricultural: 315.87 acre (67.93%), Commercial: 3.22 acre (0.69%), Community Services: 0.21 acre (0.05%), Education & Research: 1.52 acre (0.33%), Mixed Use: 0.88 acre (0.19%), Residential: 111.34 acre (23.95%), Road: 14.03 acre (3.02%), Waterbody: 17.26 acre (3.71%). Total: 464.97 acres (100%). (Source: Physical Feature Survey, 2025) |
| Utility Services | Deep tube wells: 67, Electric Pole: 96, Street lights: 23. (Source: Physical Feature Survey, 2025) |

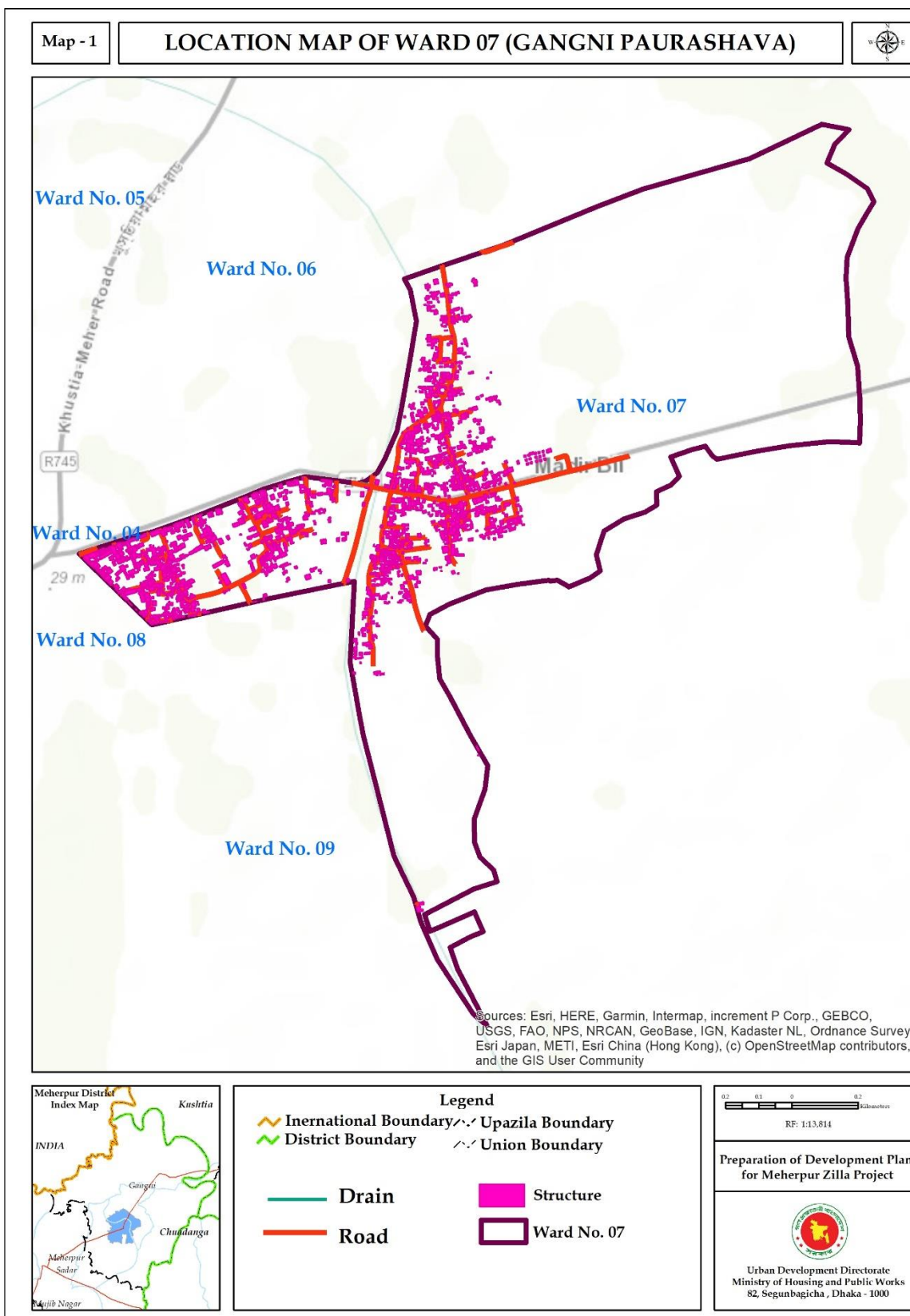
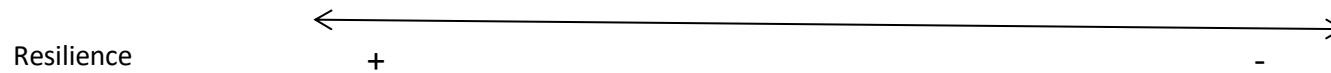


Figure 1: Location Map of Ward 07

Problem Identification:

| Source | Key Problems Identified |
|---------------------|---|
| PRA | <ul style="list-style-type: none">• Communication Problem• Water Logging• Electricity Problem• Lack of Govt. health facility• Sanitation Problem• Lack of Pure Drinking water (Deep tube well)• Lack of Dustbin• Low quality Educational Infrastructure• Lack of recreational facility• Drainage Problem• Lack of Street road light |
| Socio-Economic Data | <ul style="list-style-type: none">• Need to construct Proper drainage system at Dakbangla Para and Vita Para.• Need Playground at Vita Para.• Community Clinic is Needed at Purba Malshadoho and Vita Para. |

Adaptive Cycle Phase Analysis:



| Adaptive Cycle Phase | Release (Ω) | Reorganization (α) | Growth (r) | Conservation (K) |
|------------------------------|--|--|--|---|
| Social System | One population overwhelms all others, which disappear, or a revolt occurs, breaking the homogeneity of the space. | Heterogeneous populations mixing at the individual level; and absence of barriers. Mainstreaming (residents and explorers) and marginal (drug traders and sex workers) are present. | Selected populations begin to grow; the mainstream populations may begin to overtake marginal populations. Space encourages inclusion. | One population may begin to dominate; Population in the area becomes homogeneous. Segregation occurs are barriers, both physical and implied, rise. |
| Economic System | Small permutation in customer or market yields collapse | Small, opportunistic, and temporary business emerges. | Entrepreneurs create highly flexible businesses. Imported or local response to local needs. | Large-scale economic entities emerge emphasizing “one size fits all” Efficiency is paramount: customization disappears and the system is inflexible. |
| Environmental System: | Out of bounds event overwhelms engineered and separated system. | Spontaneous and visible natural processes in the site. | Designed, visible Reinforcing the connection to other systems. | Engineered, hidden Separates the bio-system from others Inflexible. |
| Results | Unmanaged Sprawl: The primary issue is the unplanned and rapid conversion of land from its current use, such as agriculture, to urban development. This leads to the loss of valuable | Lack of Infrastructure: Areas begin to reorganize, the public infrastructure (roads, water, sewage) may not keep pace with the development. Ad-hoc Growth: Without a clear plan, the reorganization | Congestion & Overburdened Infrastructure: As the population and economic activity increase, the existing infrastructure can become overstretched, leading to traffic congestion, strain on the water supply, and inadequate | Stagnation: The strong emphasis on stability can lead to stagnation, preventing necessary upgrades to infrastructure and amenities. Rigidity: A rigid system of conservation can prevent the area from adapting to new social or |

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| | <p>farmland and natural spaces.</p> <p>Vulnerability: Areas in this phase are highly vulnerable to uncontrolled change, which can overwhelm existing infrastructure and services.</p> | <p>can lead to scattered and uncoordinated development, making it difficult to provide efficient public services in the future.</p> | <p>sanitation.</p> <p>Environmental Degradation: Rapid development can lead to the loss of urban green spaces and a decline in air and water quality.</p> | <p>economic needs, potentially hindering long-term sustainability.</p> <p>Resistance to Change: The population in this phase may resist new development or changes, which can slow down progress and prevent the area from evolving.</p> |
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- (Source: Anderson, 2011)
- Source: Marcus, L., & Colding, J. (2023). Placing Urban Renewal in the Context of the Resilience Adaptive Cycle. Land. <https://doi.org/10.3390/land13 010008>.
- Source: Peng, H., Lou, H., Liu, Y., He, Q., Zhang, M., & Yang, Y. (2025). Spatial and Temporal Evolution Assessment of Landscape Ecological Resilience Based on Adaptive Cycling in Changsha Zhuzhou–Xiangtan Urban Agglomeration, China. Land. <https://doi.org/10.3390/land14040 709>.
- Source: Wang, Z., Lin, L., Zhang, B., Xu, H., Xue, J., Fu, Y., Zeng, Y., & Li, F. (2023). Sustainable urban development based on an adaptive cycle model: A coupled social and ecological land use development model. Ecological Indicators. <https://doi.org/10.1016/j.ecolind.20 23.110666>.
- Source: Marcus, L., & Colding, J. (2023). Placing Urban Renewal in the Context of the Resilience Adaptive Cycle. Land. <https://doi.org/10.3390/land130 10008>.

Urban Resilience

Ward 07 of Savar Municipality is situated in the Reorganization (α) phase of the Adaptive Cycle, where systems are attempting to reorganize but remain unstable. From the social perspective, the ward hosts a heterogeneous mix of residents. Limited educational land (only 1.52 acres) and low-quality infrastructure further constrain social development. The economic system is dominated by small-scale businesses (54%) and farming (38%), which provide livelihoods but lack diversification and stability; informal roadside trading has emerged due to insufficient commercial land, reflecting opportunistic but unsustainable growth. On the environmental side, large areas of agriculture are under pressure from encroachment, while inadequate drainage and poor waste management contribute to waterlogging and pollution, undermining ecological balance. These conditions collectively result in unmanaged sprawl, vulnerability to sudden change, overstressed infrastructure, and environmental degradation, preventing Ward 07 from transitioning to the Growth (r) phase. To move forward, compact vertical housing, expanded civic facilities, and strict protection of agricultural and natural spaces are essential for strengthening its urban resilience.

Urban Resilience Analysis for ward 07:

| Adaptive Cycle Phase | Problem arises in ward 07 | Planning Intervention | Implementation Authority |
|---------------------------|--|--|---|
| Reorganization (a) | <p>Lack of Infrastructure:</p> <ol style="list-style-type: none"> 1. Poor drainage system & water logging (Dakbangla Para, Vita Para). <i>(Source: PRA)</i> 2. Lack of pure drinking water (deep tube well scarcity). <i>(Source: PRA)</i> 3. Electricity problem in some areas. <i>(Source: PRA)</i> 4. Sanitation issues (no proper drainage, no dustbins). <i>(Source: PRA)</i> 5. Lack of government health facility / community clinic (Purba Malshadoho, Vita Para). <i>(Source: PRA)</i> 6. Low quality educational infrastructure (insufficient school land – only 1.52 ac). <i>(Source: Physical Feature Survey and PRA)</i> 7. Poor road quality & lack of RCC/CC roads. <i>(Source: Physical Feature Survey and PRA)</i> 8. Lack of street lighting → insecurity at night. <i>(Source: PRA)</i> 9. Absence of recreational facilities like playgrounds, parks. <i>(Source: PRA)</i> | <ol style="list-style-type: none"> 1. Agricultural Area: 315.87 ac (67.93%) Preserve agriculture; no scope to expand inside Ward 7, but must strictly protect existing land <i>(Source: FAO Urban Agriculture Guidelines)</i> 2. Residential Area: Can proposed for 105 ac ($\approx 22.6\%$) where existing 111.34 ac (23.95%) (-6.34) ac Residential land is already oversupplied. Promote vertical growth instead of expanding horizontally; reallocate some land to community/recreational uses. <i>(Source: The standards of UDD for Small Towns of Bangladesh)</i> 3. Commercial Area: Existing 3.22 ac (0.69%) and proposed for 8 ac ($\approx 1.7\%$) (+4.78) ac Needed for future economic growth, formalizing street businesses, and supporting projected population. <i>(Source: UDD Land Allocation Norms (2015))</i> 4. Community Service: existing 0.21 ac (0.05%) and proposed for 5 ac ($\approx 1.1\%$) (+4.79 ac) Very low now; must increase for playgrounds, community centers, and public services. Recreational areas can be built up at the Urban Void area of Ward 07. (Figure 2) <i>(WHO Urban Health & Recreation Guidelines (2016))</i> 5. Education Institution: Existing 1.52 ac (0.33%) and proposed for 3 ac ($\approx 0.65\%$) (+1.48 | <p>Recreational Place implemented by LGED (Local Government Engineering Department) in collaboration with the Municipality.</p> |

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| | <p>Ad-hoc Growth:</p> <ol style="list-style-type: none"> 1. Oversupplied residential land (111.34 ac vs. required 105 ac) → scattered housing without coordination. <i>(Source: Physical Feature Survey)</i> 2. Predominance of katcha & tin-shade housing → unplanned, low-rise sprawl instead of vertical growth. <i>(Source: Physical Feature Survey)</i> 3. Encroachment risk on agricultural land (315.87 ac) due to uncontrolled expansion. <i>(Source: Physical Feature Survey)</i> 4. Very low land for community services (0.21 ac, only 0.05%) → settlements grew without space for health, recreation, or civic uses. <i>(Source: Physical Feature Survey)</i> 5. Commercial and mixed-use areas underdeveloped → leads to informal roadside businesses. <i>(Source: Physical Feature Survey)</i> | <p>ac) To accommodate literacy and infrastructure improvements. <i>(Source: Community Anchor Spaces in Resilient Cities)</i></p> <p>6. Road Network: Existing 14.03 ac (3.02%) and proposed for 18 ac (≈3.9%) (+3.97 ac Expanding and upgrading for RCC/CC roads, pedestrian paths, and cycle lanes. <i>(Source: LGED Urban Road Standards (2018))</i></p> <p>7. Mixed Use: Existing 0.88 ac (0.19%) and proposed for 2 ac (≈0.4%) (+1.12 ac) Encouraged for compact development, reducing commuting needs. <i>(Source: Smart Growth Principles (World Bank, 2013))</i></p> | |
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