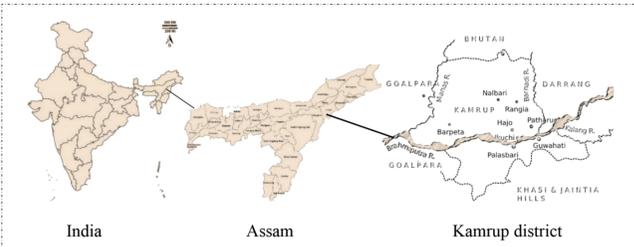


# Examining Built Environment, Climate, Health and Well-being of Weavers of Sualkuchi, Assam

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## Location



Sualkuchi is one of India's most significant handloom weaving settlements, located along the floodplains of the Brahmaputra River. The site is based on its unique position as one of India's most iconic saree weaving clusters recognized by UNESCO.

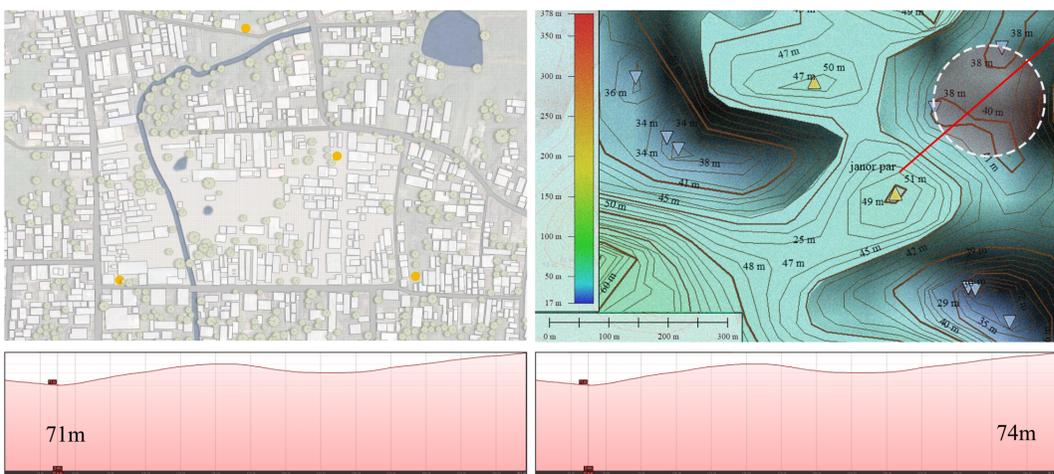
The settlement is exposed to monsoon rainfall, seasonal waterlogging, and fluctuating groundwater conditions, making it a critical site to study the intersections of climate, WASH, housing, and health.

## Context and Problem Statement



Weaver households in Sualkuchi combine living, working, and sanitation spaces within compact domestic environments. The result is everyday environment where climate stress, WASH failure, and occupational exposure intersect directly inside the home.

## Layerings and Site Details



The site plan clearly shows how units in the study area are positioned near open drains and zones of waterlogging. This spatial condition leads to problems of foul smell, mosquito breeding, and the illnesses. The issue extends beyond health, as water contamination from these drains prevents reliable access to clean drinking water.



**Open Limited Waste disposal points**  
Open dumping in close proximity to houses leads to persistent foul smell and airborne pollutants, creating unhealthy living and working conditions and increasing the risk of air-borne diseases.

**High density settlements**  
High residential density results in congested living and weaving spaces, poor ventilation, and limited hygiene, collectively degrading the built environment and contributing to the spread of contagious diseases.

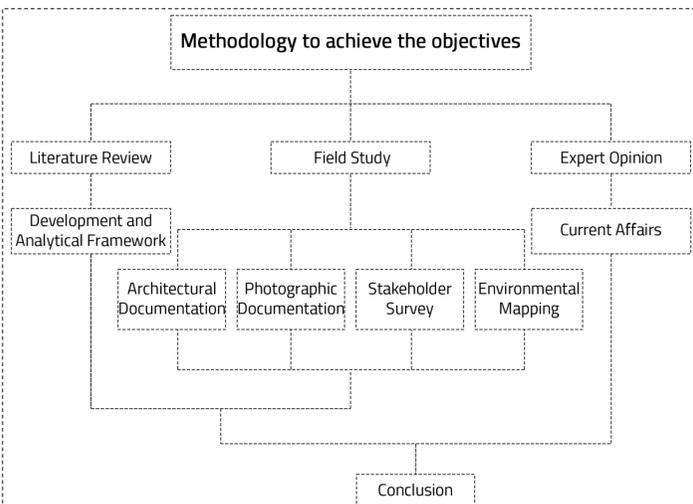
## Aim, Research Objectives and Methodologies

**Aim:**  
To examine how housing conditions, climate and WASH infrastructure influence health and well-being within weaver households in Sualkuchi, Assam.

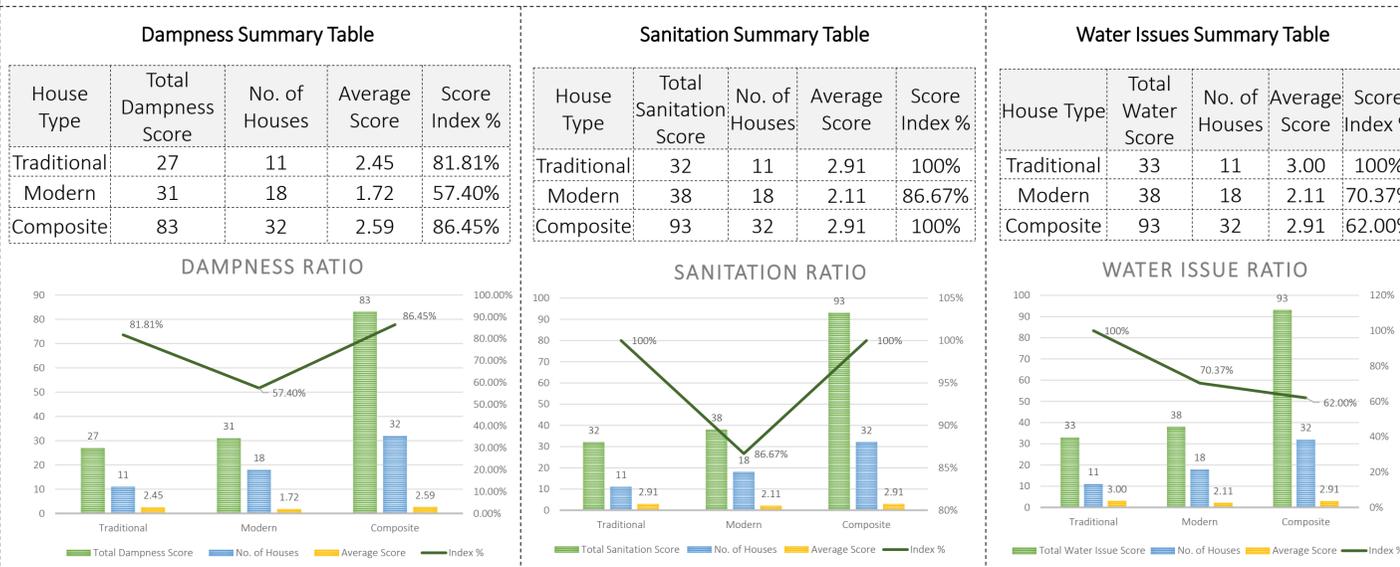
- Research Objectives:**
- To examine how built form responds to climate and waterlogging
  - To assess relationships between housing, WASH conditions, and health
  - To compare traditional, transitional, and altered weaver dwellings
  - To derive climate-responsive and health-sensitive design insights



Surface Temperature Gun      Air Quality and CO2 Monitor      Hygrometer for temperature difference



## Analysis (The graphs show dampness, sanitation and water conditions from a field survey of 61 households using simple random sampling method)



## Key Observations

**Contaminated Air**  
Air filled with pollutants and allergens

**Persistent Dampness**  
Continuous moisture causing mold growth

**Mold Growth**  
Fungi thriving in damp environments

**Poor Infrastructure**  
Deteriorating building conditions

## Inferences and Implications

**Inferences:**  
The study reveals that health vulnerability in Sualkuchi emerges from the combined stress of climate exposure, inadequate WASH infrastructure, and spatial transformation of housing. Vernacular dwellings once functioned as integrated climate-responsive systems, while incremental alterations have weakened this balance.

