Co-designing urban health data hub: A multi-phase approach for digital transformation in an urban municipality of Nepal

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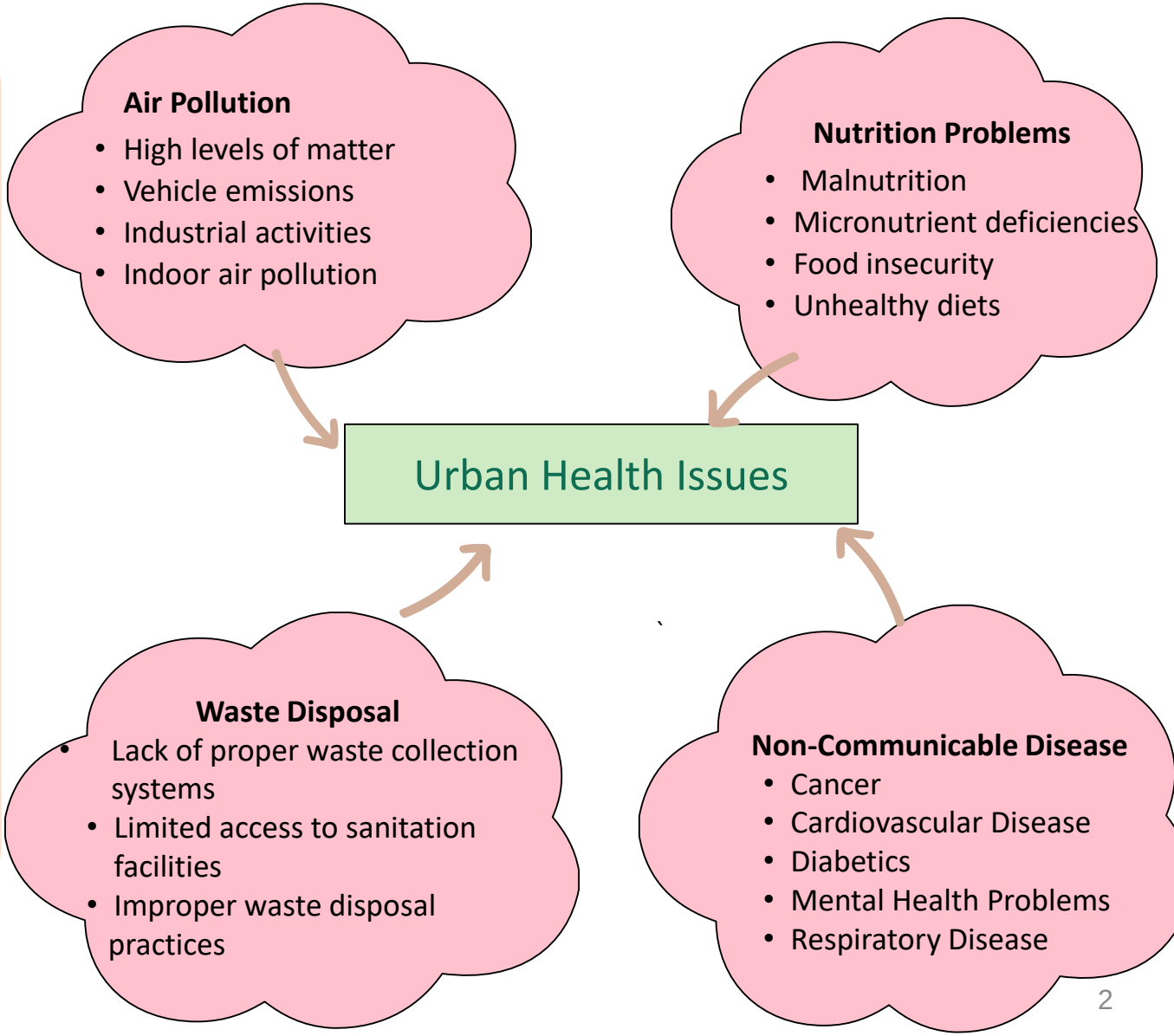
Introduction: Emerging Urban Health Issues

- Nepal has experienced unprecedented urbanization in recent decades, leading to both opportunities and challenges in public health.
- The urban municipalities of Nepal, characterized by rapid growth, grapple with pressing environmental and health issues in recent years.
- Urban environment face challenges related to air pollution, waste disposal, nutrition, and non-communicable diseases (NCDs).



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Rationale: Fragmented Data within Municipality

- The municipally include data on health, environment, agriculture, economic, infrastructure and education sectors.
- Fragmented nature of data sources that possess a significant challenge for holistic urban development.
- The absence of data harmonization across different sectors impedes informed decision-making.
- Intersectoral collaboration gaps lead to duplicated efforts and inefficiencies.
- Lack of a centralized and responsive data management system poses a significant barrier to informed decision-making and collaborative efforts.

Data Integration health and other data of Municipality

Objectives of the study

- Analyze the existing urban policies and secondary data existed within the municipality.
- Identify and map the municipality's demographic details, housing sector, social, economic, and health infrastructure
- Assess the health facilities within the municipality to evaluate their capacity and effectiveness.
- Evaluate the prevalence of communicable diseases, non-communicable diseases, and environmental health issues of the municipality
- Develop and implement a comprehensive urban health data hub for the municipality.

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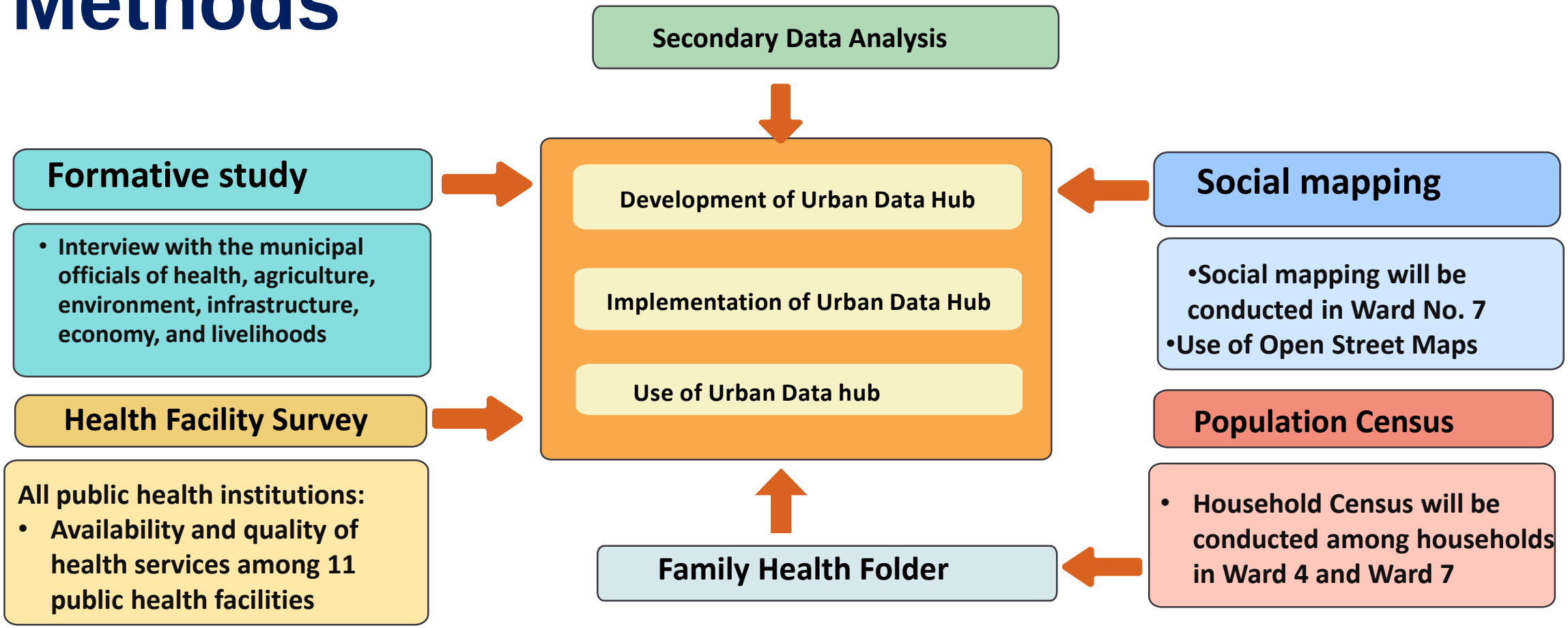
Methods


Secondary Data Analysis
Formative study
Interview with the municipal officials of health, agriculture, environment, infrastructure, economy, and livelihoods
Health Facility Survey
All public health institutions:
Availability and quality of health services among 11 public health facilities
Development of Urban Data Hub
Implementation of Urban Data Hub
Use of Urban Data hub
Social mapping
•Social mapping will be conducted in Ward No. 7
•Use of Open Street Maps
Population Census
Household Census will be conducted among households in Ward 4 and Ward 7
Family Health Folder

Formative Research

Objective

To examine the characteristics of the current municipal data landscape in Budhanilkantha Municipality, including its data structures, sources key actors, data ownership models, levels of disaggregation, and mechanisms for data sharing.

Methods

Formative research was conduct 14 key informant interviews to gain further insights into their perspectives on data use and the challenges and opportunities for data generation, quality assurance and utilization

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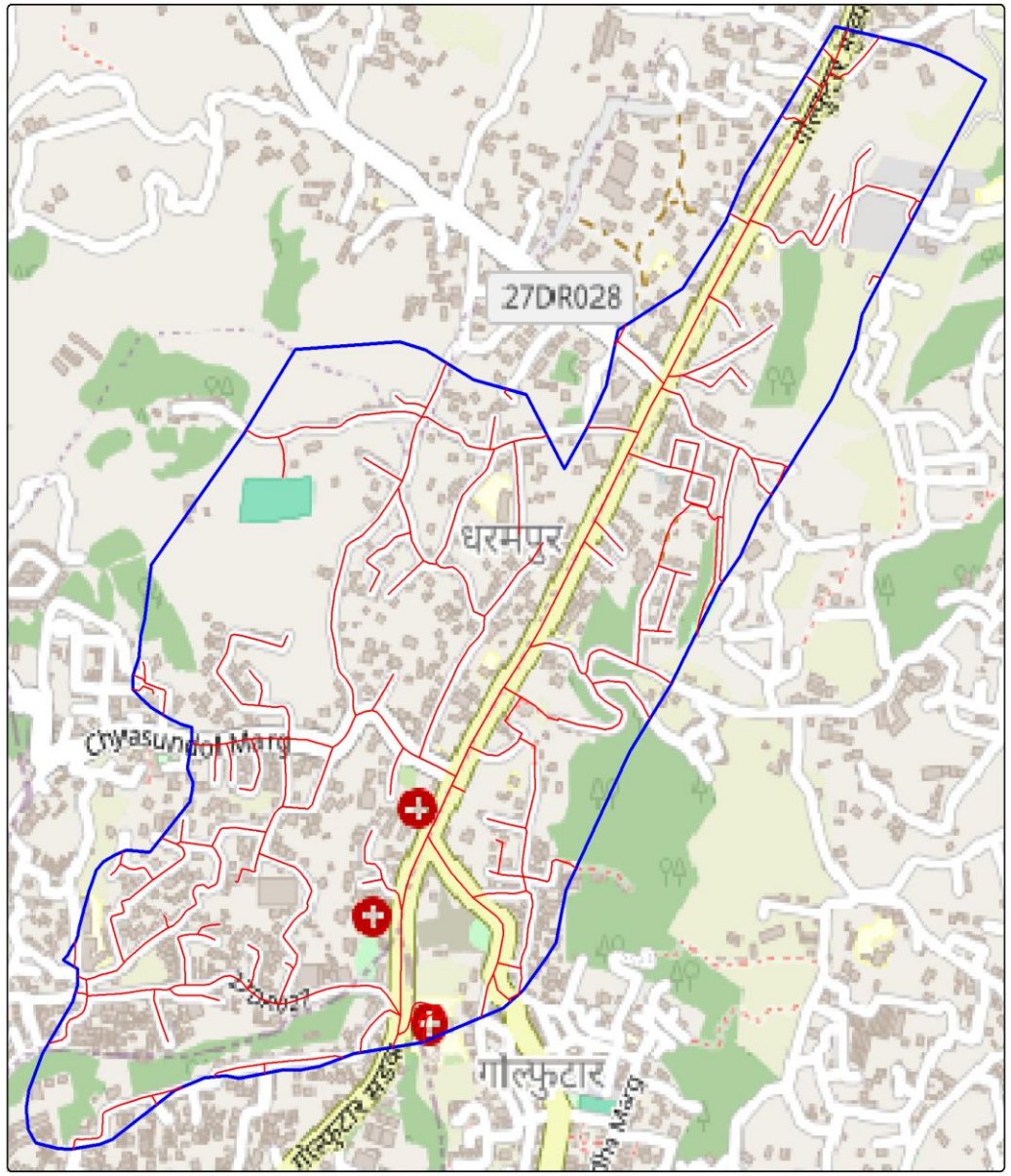
Social Mapping

Objectives:

To map and analyze demographics, infrastructure, community resources, and health-related factors, fostering data-driven planning.

Indicators of Social Mapping

- Education Institutions
- Health Facility
- Child Development Center
- Office
- Petrol Pump
- Green space
- Blue space
- Police Station
- Industries/factories
- Public Toilet
- Dumping site
- Water source
- Informal settlement area
- Farm
- Residential Institution
- Shop
- Apartments/Housing
- Risk zone
- Fire brigades
- Recreational Facility
- Construction sites
- Agricultural areas
- Religious Place
- Public transportation stand
- Market
- Open space/Barren land



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Household Census

Introduction and Rationale

- The population census in Ward No. 7 and Ward 4 of the municipality seeks to enumerate 1,700 households and 2500 households, encompassing approximately 7,000 individuals, based on the 2022 population census data.
- This initiative is essential for generating accurate and comprehensive demographic, socio-economic, and health profiles to support evidence-based planning and targeted interventions.
- A key component of the census is the creation of a **Family Folder**, a consolidated repository of household-level data designed for systematic tracking and monitoring of family health over time.

The objective of the population census is to develop a detailed demographic, socio-economic, and health profile of the ward's population, collect health and lifestyle information, and enable evidence-based decision-making with potential scalability to other wards.

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Health Facility Assessment

Objectives: To evaluate the availability and quality of health services, the condition of infrastructure, and the availability of essential medical supplies and equipment.

Methods: This assessment will involve visiting all public health facilities to evaluate

- Availability and quality of health services, the
- Condition of infrastructure
- Availability of essential medical supplies and equipment.

The assessment will also include interviews with healthcare providers to gather insights into staffing levels, training, and the challenges faced in delivering care.

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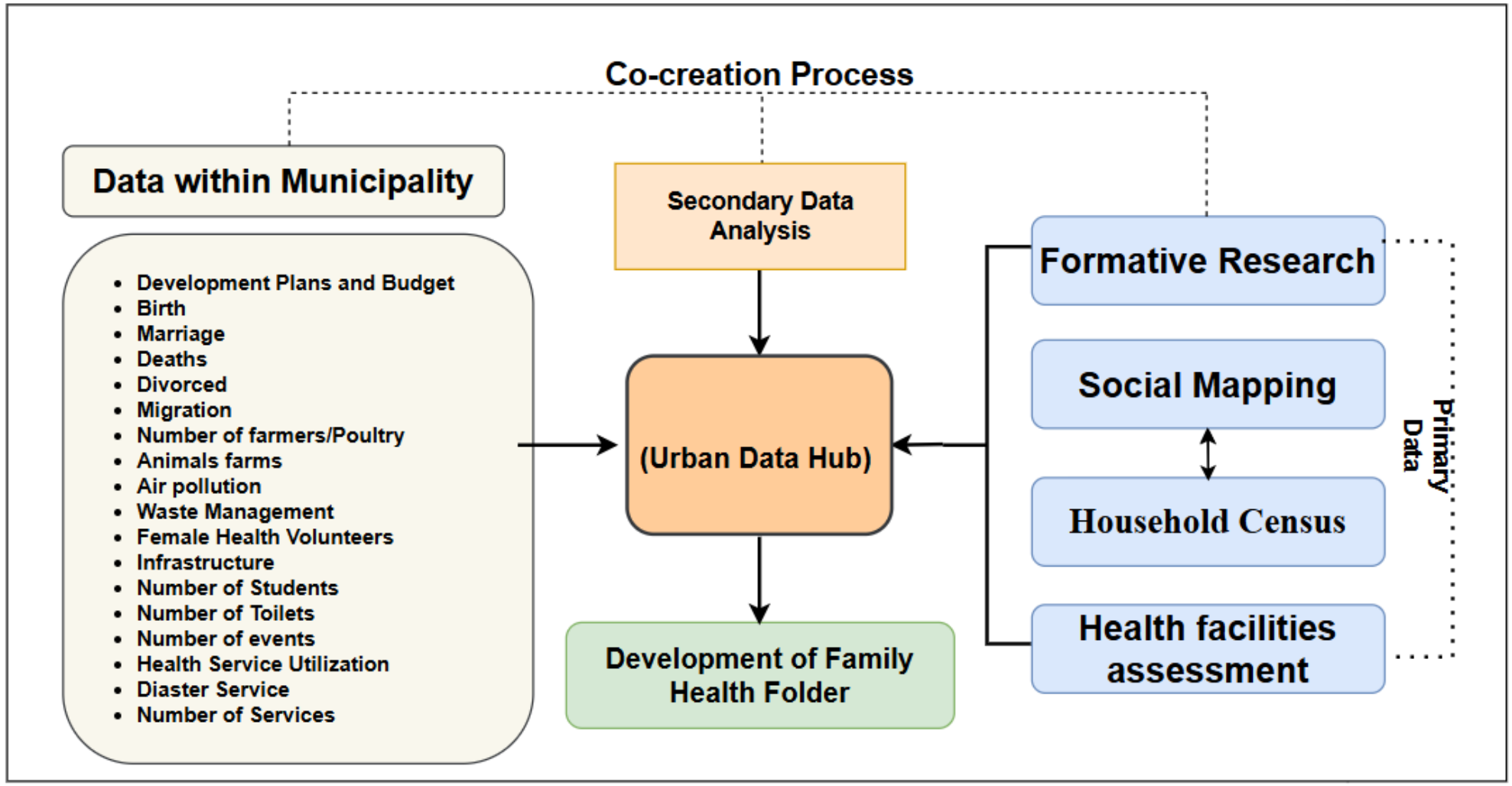
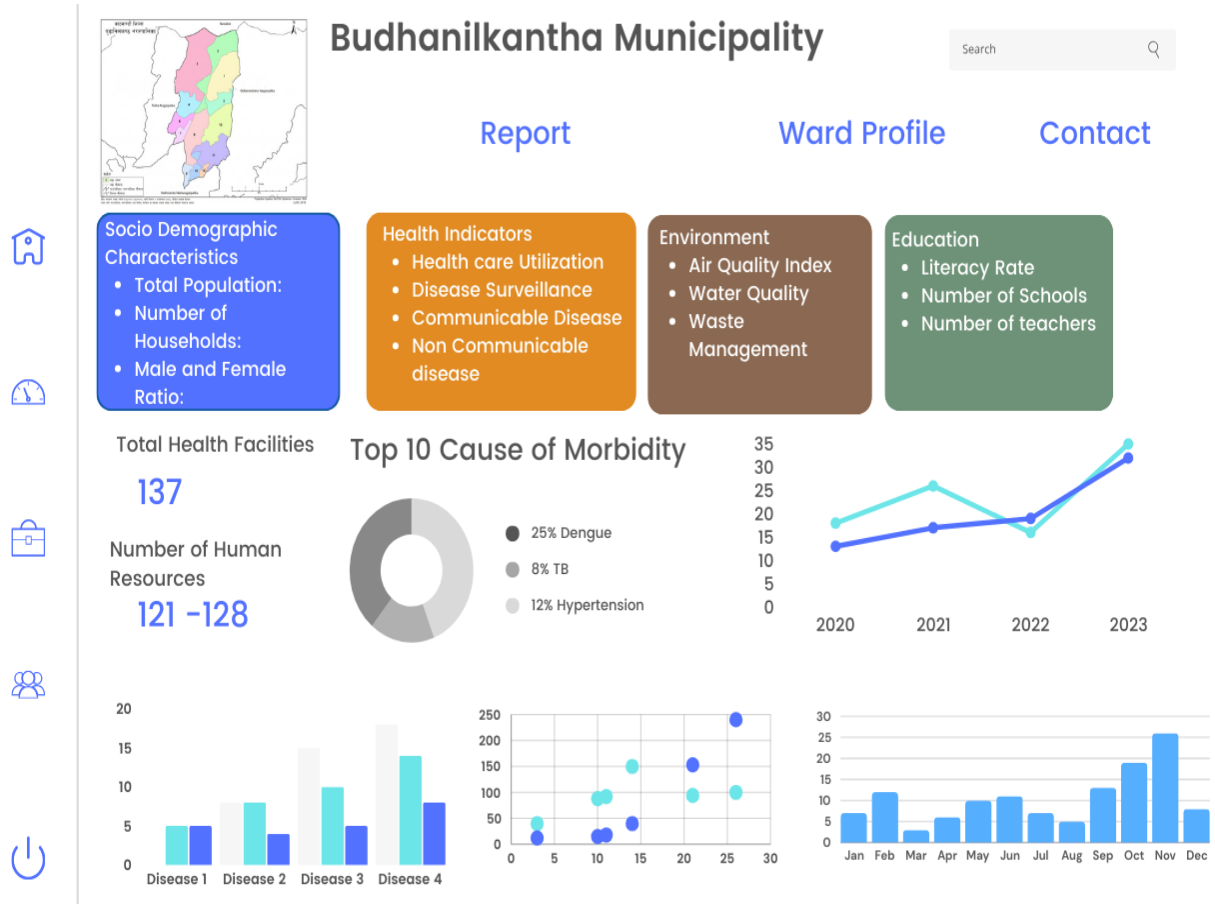
Development of Urban Health Data hub

- Integrate various data sources such as data within municipality, social mapping, health facility assessment, household census to establish an Urban Data Hub for municipality.
- Integrate health data with other critical sectors – education, livelihood, and agriculture.



Implementation of Urban health Data hub

- Formulating plans for Budhanilkantha Municipality using evidence from the Urban Data Dashboard.
- Creating a basic platform for evidence-based community discussions for local development using data from the Urban Data Dashboard.
- Raising community awareness in Budhanilkantha Municipality by utilizing evidence from data.
- Conducting training and capacity building among stakeholders for the effective use of the Urban Data Dashboard.



Major Research Activities

01

Planning and coordination

Coordination between municipality, KIOCH, Herd International

02

Stakeholder's Engagement

Identifying various stakeholders in Municipality and inform them about the project

03

Implementation of research activities

Conducting formative research, social mapping, household census, and health facility surveys

04

Designing the Urban Data Hub

Designing the data hub using a co-creation approach by municipal officials, local leaders, health experts

05

Evidence generation and use

Using evidence from data to create a basic platform for evidence-based community discussions for local-level development

06

Capacity building of stakeholders

Conduct training and capacity building among stakeholders for the effective use of the urban data hub

07

Use of the Urban Data Hub

Continuously update data in the urban data center and engage and collaborate with stakeholders for its use

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THANK YOU!

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Dr. Sampurna Kakchapati is a distinguished public health professional and research expert with a Doctoral degree in Research Methodology, bringing over a decade of extensive expertise in public health, data science, research, monitoring and evaluation, and statistics.