development
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LNOB assessment Nepal: Data landscaping in Tulsipur municipality

Report

June 2023

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Introduction

Leave no one behind (LNOB) is the central transformative promise of the 2030 agenda. It compels development actors to consider the furthest behind first and to tackle the discrimination and exclusion that drive inequality. Within Development Initiatives' (DI's) Poverty and Inequality (P&I) programme, we use our expertise in data and evidence to produce outputs that support our partners and allies to better understand who has been left behind, in what ways, and why.

DI's LNOB assessments have been developed to apply a systematic methodology that:

1. Identifies and reviews relevant existing data.
2. Analyses existing data to answer a locally relevant and targeted policy question.

During 2022 and 2023, four assessments were conducted in Kenya, Uganda, Benin and Nepal. Each assessment had a distinct focus that was identified and developed with local partners.

The LNOB assessment in Nepal sought to understand data and data infrastructure at the municipal level, considering how data can be used to inform local decision-making to reduce poverty and inequality. This approach was applied in two municipalities: Tulsipur and Simta.

This report presents the first part of the LNOB assessment in Tulsipur. It is based on DI's data landscaping approach and assesses the range, quality and utility of existing data that can potentially inform issues relating to poverty and inequality in the municipality. It also assesses and makes recommendations about the underlying factors that could strengthen Tulsipur's data ecosystem and enable improved and accessible evidence to be available in the future.

In November 2022, DI and Backward Society Education (BASE) held a co-creation workshop in Tulsipur. This was attended by representatives from Tulsipur's municipal government, the Asia Foundation, the Sewa Foundation, the NGO Federation of Nepal, Didi Ghar and Apanaga Samhua. In the co-creation workshop, stakeholders identified priority research questions and discussed the methodological approach. Based on this, DI and BASE adapted DI's general analytical framework for data landscaping in line with the set parameters. The team then conducted desk-based reviews of grey literature and face-to-face key informant interviews (KIIs) between December 2022 and January 2023. KIIs were conducted with 10 actors from 10 different departments of the local government. A final dissemination workshop was held in Tulsipur on 20 March 2023, with a total of 34 participants representing various organisations.

Part 1 of this report describes the quantity and quality of data included in the data inventory. Part 2 describes how this data is used in the municipality. Part 3 reviews the strength of the poverty and inequality data ecosystem as a whole, beyond the properties of individual data sources, and Part 4 provides recommendations for strengthening the local data ecosystem.

Part 1: Tulsipur's poverty and inequality data inventory

The study team identified 11 data systems that provide information on poverty and inequality in Tulsipur; five administrative data systems, one survey and five mixed-method sources (i.e. unique sources that collate data from administrative systems, official surveys and censuses).

The identified systems produce data on social security payments (e.g. allowances for children and senior citizens); employment; asset ownership; education (e.g. enrolment rates and not-in-school numbers); health (e.g. vaccination and nutrition); violence against women; and disability (e.g. prevalence). The study team was unable to identify data on dimensions of poverty relating to voice and political participation.

Although the study team tried to identify unofficial data sources, they were unable to.[1]

Inventories of data systems in Tulsipur

Table 1: Inventory of Tulsipur's five administrative data systems

Data system	What data is collected?
DRR Portal	Type of incident (e.g. fire, animal incident, storm), location of incident, number of people impacted by an incident and how (e.g. killed or injured), damage to infrastructure.
Employment Management Information System (EMIS)	Information about applicants (ethnicity and gender, etc.).
Health Management Information System (HMIS)	Information on maternal and neo-natal health, nutrition, vaccination and immunisation, and more.
Integrated Education Management Information System (IEMIS)	Information on students, teachers and other staff.
Vital Event Registration and Social Protection	Information on births, deaths, marriages, divorces and migration.

management information
system (VERSP MIS)

Table 2: Inventory of Tulsipur's five mixed-method sources

Data system	What data is collected?
Disability identity Card	Classifications of disabilities.
Education data at district level	Information about numbers of students and teachers by municipality and school type.
Judicial committee register	Information on violence against women, people moving home and divorce.
Senior citizen identity card	Individual information: name, age and address, etc.
Smart Daughter Programme	Information about family members: name, address and place of birth, etc.

Table 3: Inventory of Tulsipur's official survey

Data system	What data is collected?
Municipal Profile Survey	Overall household survey including demographic profile, socioeconomic profile, infrastructure, occupation, unemployment, etc.

Disaggregation

In order to inform a leave-no-one-behind approach, it is necessary to identify individual and group-based characteristics that may influence poverty outcomes. To enable this, data must capture variables relating to multiple dimensions of poverty, such as health or access to electricity, but also include variables that can allow for disaggregation by characteristics that may be associated with inequality and exclusion within a population, such as gender, age or geography.

All of the data sources included in the data inventory produce data disaggregated by gender. Therefore, we can conclude that gender disaggregation has been successfully mainstreamed into data collection activities in Tulsipur.

Conversely, data disaggregated by geography (i.e. down to the ward or facility levels) is only collected by six of the data systems, and data disaggregated by age is only collected by five of the data systems (this does not include the education data available to us, as this was disaggregated by grade or year group).

In addition to this, only three of the data sources produce data disaggregated by 'ethnicity'.[2] However, the lack of data disaggregated by ethnicity is not always due to this data not being collected. For example, administrative data is collected by ward offices when they issue disability identification cards. Initially, information is recorded on paper forms, and it is subsequently uploaded to an Excel file. Ethnicity data is collected on the paper forms, but it is routinely omitted from digital uploads. The paper forms then sit in storage and are not used. Stakeholders say the omissions are due to limited digital and human resource capacities.

The type of disaggregated data collected least often is (types of) disability data. This data is only collected by one of the identified data systems.

The omissions of these characteristics (e.g. geographic location, age, ethnicity and disability) from datasets prevents users from being able to use those datasets to generate insights about these dimensions via quantitative analysis (e.g. investigating how disability intersects with health outcomes), and significantly limits the range of available evidence. Collecting and digitally storing disaggregated data across all data systems in Tulsipur would better enable intersectional analysis.

Figure 1: There are low levels of disaggregated ethnicity and disability data in Tulsipur's data systems

Number of data systems by type of disaggregation
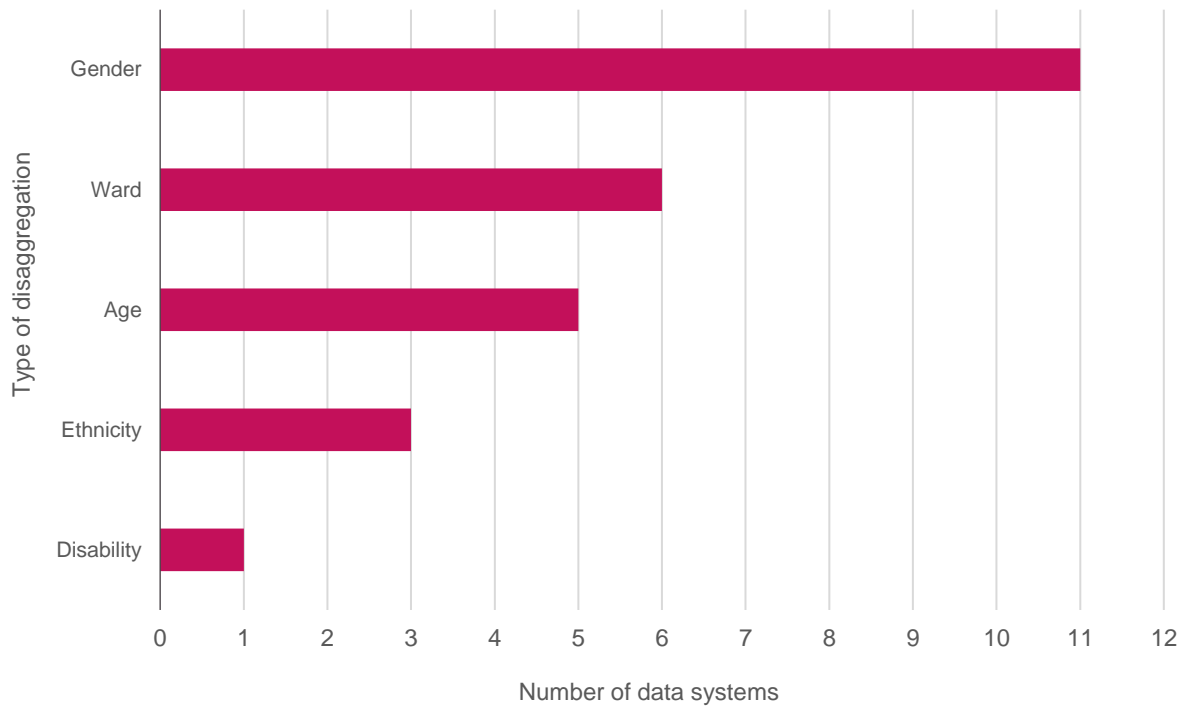
Source: DI, 2023.

Frequency

Ward offices upload civil registration data (e.g. birth and death registrations) to VERSP MIS on a daily basis, and Nepal Police also upload data to the DRR portal on a daily basis. This means users get to access this information in real time.[3]

However, data is collected and uploaded to other systems on a much more infrequent basis, meaning actors rely on information that may no longer be accurate or relevant. For example, data for the IEMIS is collected twice a year – at the beginning and end of the academic calendar – and is uploaded to the digital system by headteachers and the municipality's education department around the same time it is collected. The schedule followed for the Prime Minister's employment program is similarly infrequent; data for it is only collected once a year (in February and March) and is uploaded to the digital system about a month later (in March and April).

Data is collected via the Municipal Profile Survey even less frequently: every five years. This infrequent scheduling is due to the costs of carrying it out. Therefore, despite the survey's capacity to produce good-quality statistics, it is not administered regularly enough to be relied on as the main source of evidence for local decision-makers.

Data sharing and open data

Data from the identified systems is generally not accessible in Tulsipur municipality; data from only three of the identified data systems is openly available, and in the case of two of these data systems, this is in the form of aggregated statistics, not microdata. Inaccessible data creates an obvious blockade preventing data use.

Figure 2: The majority of data in Tulsipur is not openly accessible

Proportions of open-access and inaccessible data in Tulsipur

Open-access
aggregate statistics
18%

Open-access
microdata
9%

Inaccessible data
73%
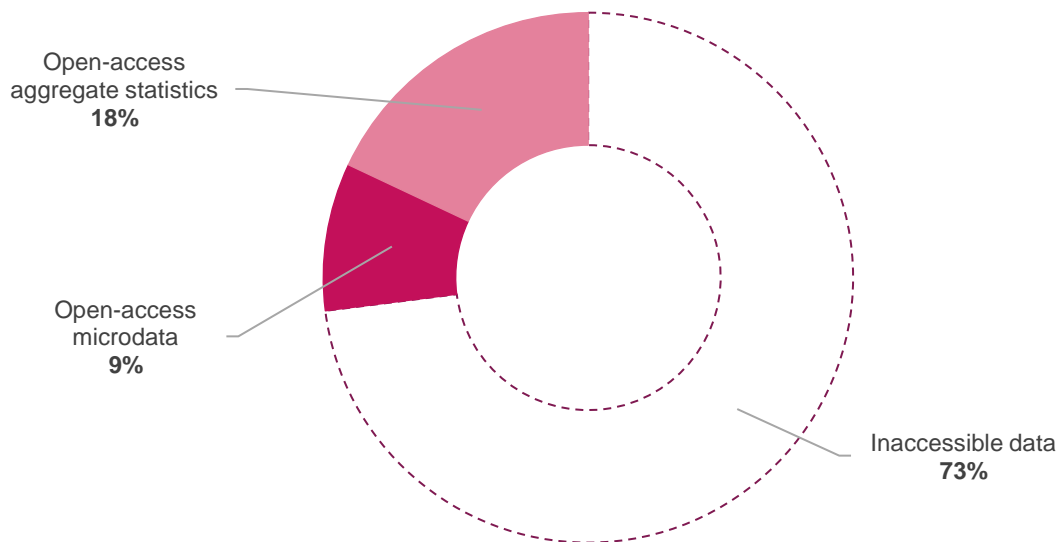
Source: DI, 2023.

However, there is reason to believe this will change in the future. Tulsipur's municipal government recently established an Integrated Data Management System (IDMS). The IDMS will pull data from other data systems semi-automatically, store it in a central database and display it on an open webpage. Presently, it is being piloted and some examples of anonymised data on civil registration, cooperatives, health, education, and agricultural services are available through it.

While the implementation of the IDMS is good for data sharing and open data, it does raise concerns about privacy. This is because there is a risk that the individuals or

communities the published data is about will be identifiable. Nepal's federal government has taken steps to make data protection more robust, namely through Article 29 of the Constitution (2015), the Individual Privacy Act (2075), the Muluki Criminal Code (2076), and the Individual Privacy Regulation (2077).

However, the majority of staff in Tulsipur who will upload data to the IDMS are not aware of these laws.

Ensuring staff are not only aware of these laws but also understand and abide by them is critically important. If this is done it will mean standards are kept, and it will reduce the risks associated with individuals relying on their own discretion to judge if something should or should not be published. This is especially important from a poverty and inequality perspective: if sensitive data about vulnerable individuals/communities is uploaded to the IDMS, it could put these people at a disproportionately increased risk of harm.

Metadata

Complete metadata allows actors to understand the data they are working with more promptly and thoroughly, and this encourages data use. Four of the 11 sources are accompanied by complete metadata; these are the VERSP-MIS, IEMIS, Health Management Information System and Employment Management Information System. A further four of the 11 data sources are accompanied by partially complete metadata. For example, the single Excel sheet where data for the senior citizen identity card, Smart Daughter Programme and disability identity card is collated, contains some metadata but is missing critical information such as the exact date the data was collected.

Part 2: The use of poverty and inequality data in Tulsipur

In general, the use of poverty and inequality data in Tulsipur is relatively low. For the most part, decisions are based on other priorities because actors have low levels of data literacy, do not fully appreciate the importance of evidence, perceive the quality of the available data as too poor to use,[4] and/or make decisions to meet other objectives (such as maintaining patronage networks).

Accessibility, particularly of microdata, is also a challenge that obstructs more data use. The culture of not sharing data is common across Nepal, and it even pervades the federal level of government: for example, the national statistical office does not currently have a policy for sharing or selling microdata, and, as such, it is not planning to share the latest census data with municipalities. However, the establishment of an Integrated Data Management System (IDMS) means that Tulsipur municipality is well placed to make improvements.

Despite these challenges, a number of interviewees told us they are interested in developing their use of evidence. For example, the Deputy Mayor is planning to identify key indicators for measuring poverty in the municipality, which align with local needs, and will prepare an index based on them. However, the municipal government has not yet drafted a plan on how this will be achieved. Moreover, other participants at the project workshop suggested that increased data use could be encouraged by departments attempting to analyse existing data, identify problems with it (such as data gaps), and find solutions (e.g. additional indicators) that can be applied during upcoming data-collection cycles.

Part 3: The foundations of Tulsipur's poverty and inequality data ecosystem

Governance and management

Issues with the foundational components of Tulsipur's local data ecosystem are unpacked in the following subsections of this report. Some analysis relates entirely to poverty and inequality, whereas the focus of other analysis is more general but equally significant.

ICT infrastructure and human resources

The information department is the municipality's central body that should manage IT systems and data. Interviewees informed us that it has trained staff and sufficient ICT infrastructure. However, interviewees also reported that in most of the municipality's other departments, there are too few staff who are adequately trained. This greatly restricts departments' abilities to support data systems and conduct analysis for decision- and policy-making purposes.

> **"The employment department only has access to two staff that can support our work on data, and due to demands for their skills they have to shuffle between our department and others."**

Interviewee working in Tulsipur's employment department, 2022

However, interviewees report that Lumbini's provincial government has invested in training and skill development at the municipal level to boost officials' digital literacy and their ability to use some specific information systems. For example, the province has already trained officials in the education department and is in the process of training officials from the health department. In addition to this, the Data for Development Program – a multi-year project funded by the UK's Foreign, Commonwealth and Development Office – has provided training on digital literacy to municipal officials. These types of interventions need to be provided more regularly and to a wider group of stakeholders.

Cross-departmental coordination

Coordination on data by different stakeholders is a cornerstone of advanced data ecosystems. Effective coordination is difficult to achieve, but it can reduce the costs of data-related activities (e.g. collection and analysis), reduce data gaps and duplication, increase data access, and improve data quality.

Unfortunately, there is a severely restricted culture of coordination on data in Tulsipur municipality among departments, as highlighted by participants in the project workshop.

However, despite the absence of any formalised coordination on data across the municipality, some informal coordination between departments does happen in order to facilitate data sharing for specific purposes. For example, the health department shares data on malnutrition with the education department, and based on this data the education department prepares plans for midday meals in schools. But this type of coordination is cumbersome and relies on personal relations; it does not extend to collaborating on departmental data-collection exercises or analysis.

Workshop participants recommended establishing a unit or division at the municipal level to support data-informed policy and planning. They suggested that it should also work on cross-departmental data sharing.[5] Moreover, the Deputy Mayor proposed to work with departments and relevant organisations to improve joint departmental data management.

Legislation and policy

The Local Government Operations Act (2017; LGOA) outlines the responsibilities of local governments. It stipulates that municipal governments are responsible for poverty alleviation and the collection of the statistics required to fulfil their mandates. Therefore, local governments have a legal requirement to collect data related to poverty alleviation. The government in Tulsipur is aware of this. However, it has not designed a specific policy that would enhance its collection and management of poverty and inequality data. At present, this is being done on an ad-hoc basis by individual departments.

Tulsipur's municipal government did prepare its own general 'Statistics Act' (2077). However, this contravened federal law and, therefore, was never fully instituted and is not practised. Despite this, the fact such an exercise was undertaken indicates that there is a general willingness to work on and improve municipal data.

Budget

An analysis of the budgets for health, education, social security, civil registration, land management, the environment, and disaster management, shows that a very small fraction of spending is directly allocated to data-related activities. The total budget for FY 2079–80 was NRs 1,864.78 million: only 0.14% of this was allocated to data collection and management.

Table 4: Budget allocated to data-related activities in select sectors

Department	Activity (2078–79)	Budget (2078–79)	Activity (2079–80)	Budget (2079–80)
Health	Purchasing computers and enabling connection (digitising health institutions)	NRs 600,000 (US$4,500)	Purchasing computers and enabling connection (digitising health institutions)	NRs 200,000 (US$1,500)
Land management	Data and record collection on landless squatters, Dalit, and unorganised dwellings	NRs 1,800,000 (US$13,600)	Data and record collection on landless squatters and Dalits, unorganised dwellings	NRs 2,000,000 (US$15,098)
Municipality special project and plan			Digitisation of IT	NRs 500,000 (US$3,800)
Social security and registration department	Orientation programme on civil registration	NRs 200,000 (US$1,500)		

Part 4: Recommendations

This section outlines top-level policy recommendations based on the findings detailed in parts 1–3.

Data sources:

- Ensure data disaggregated by ethnicity is digitised.
- Increase the frequency of data collection and the speed at which it is uploaded into digital systems.
- Continue the development of an Integrated Data Management System (IDMS).
- Ensure staff who upload data to the IDMS are aware of, understand and adhere to the protocol set out by data-protection legislation.
- Train administrative staff who input data into data systems in basic statistical concepts, plus the specific software they work with.
- Ensure complete metadata is collected and published alongside datasets.

Data use:

- Support the Deputy Mayor in their efforts to bolster data use in the municipality.
- Train key staff so they have the skills to conduct basic data analysis.
- Identify what data key users need and prioritise its publication through IDMS.

Data governance and management:

- Ensure there are enough staff with requisite skills to effectively manage and deliver sectoral departments' data-related activities.
- Ensure all departments and other stakeholders are aware of IDMS and its potential to effectively share data.
- Enable a department (e.g. the information department) to take a greater lead in coordinating data-related activities across the municipality.
- Increase the proportion of budgets allocated towards data-related spending (e.g. training, hardware and coordination).
- Design and publish a strategy on how the municipality's data ecosystem will be strengthened and how departments will coordinate/collaborate with each other on data-related activities.

Our recommendations aim to strengthen the local data ecosystem in Tulsipur, support evidence-informed policymaking and service provision, and contribute towards a reduction in poverty and inequality. To enhance data quality, disaggregated data must be digitised, the frequency of data collection needs to be increased, and digital systems must be used to expedite data sharing. Training staff in data analysis, statistical concepts, and the use of relevant programmes is also key to developing a more sophisticated data ecosystem. A municipal strategy for cross-departmental data sharing, as well as the greater allocation of resources to data infrastructure development and training, can also help to positively transform the collection, use and management of data in Tulsipur.

Annex

Table A1: Data systems and processes

Systems used	Who collects data?	How often is it collected?	What data is collected?	Where is the data input into the digital system and by whom?	Who uses the data?
Disability identity Card	Ward Office staff and Department of Women, Children and Social Development	Ad hoc	Classifications of disabilities	Department of Women, Children and Social Development record data in register and computer (Excel sheet)	Ward Office, Registration Department and Planning Department use the data for decision-making
DRR Portal	Nepal Police	Daily	Information about incidents, such as fires and storms, and their impacts (e.g. loss of life)	By police officers	Local Emergency Operation Center and Local Disaster Management Team

Education data at district level	Schools: headteacher and concerned focal person from education department at the municipality	Twice a year	Student information by school and municipality and teacher information about private and government Schools	School administrative staff and municipality education department	Schools, local government, district unit and province level
Employment Management Information System (EMIS)	Ward Office staff	Once a year in February and March	Information about applicants (ethnicity and gender, etc.)	Employment Department staff	The municipality, Ward Office, Registration Department and Planning Department use the data for decision-making
Health Management Information System (HMIS)	Female health volunteers and health workers	Data is collected daily and uploaded to the digital system monthly	Information on maternal and neo-natal health, nutrition, vaccination and immunisation, and more	Health post and municipal health section	Health post and municipal health centres, department of health services at federal level
Integrated Education Management Information System (IEMIS)	Headteachers and a focal person from the education department at the municipality	Twice a year: beginning and end of the academic year	Information on students, teachers and other staff	In schools by headteachers	Schools, central, provincial and local governments, and District Education Coordination Units
Judicial Committee Register	Department of Women, Children and Social Development	It is collected when any incident is reported in the municipality by the concerned person	Information on violence against women, people moving home and divorce	Department of Women, Children and Social Development record data in register and digitally (Excel sheet)	Deputy Mayor's Office and Department of Women, Children and Social Development
Municipal Profile Survey	Municipality office	Every five years	Overall household survey including demographic	Information Department	Planning and budgeting, making policies and reporting

			profile, socioeconomic profile, infrastructure, occupation, unemployment, etc.		
Senior citizen identity card	Ward Office staff and Department of Women, Children and Social Development	Data is collected when individuals register for services in the ward office	Individual information: name, age and address, etc.	Department of Women, Children and Social Development record data in register and digitally (Excel sheet)	Ward Office, Registration Department and Planning Department use the data for decision-making
Smart Daughter Programme	Ward Office staff and Department of Women, Children and Social Development	Data is collected when families submit details	Information about family members: name, address and place of birth, etc.	Department of Women, Children and Social Development record data in register and digitally (Excel sheet)	Ward Office, Registration Department and Planning Department use the data for decision-making
VERSP MIS	Staff at ward office	Daily	Information on births, deaths, marriages, divorces and migration	Staff at ward office	Ward office, municipal government, department of national ID and civil registration, and Central Bureau of Statistics

Table A2: Municipality data-related responsibilities as per the Local Government Operations Act (2017)

Areas	Functions and duties related to data
Data collection about unemployment	Data collection, processing and information system establishment for the employed and unemployed labour force Domestic and foreign labour records management
Disaster management	Data management of local disasters
Health	Health insurance and social security management programme
Landless squatter management	Identification and record management
Livestock	Data management and information system on local livestock
Local data and records compilation	Policy, law, standards and regulation related to local data Basic data collection and management Registration of births, deaths, marriages, divorces and migration Acts related to local data management
Local records management	Formulation and Implementation of policies, plans and standards for local records management Use of information technology in records management
Personal incidents registration	Vital registration and records management
Social security and poverty alleviation	Local policy, standards and legislation for social security and poverty alleviation Social security-related data management and information management Identification of households living in poverty and information management

Notes

[1] Obtaining unofficial data in small localities is notoriously difficult without pre-existing relationships with local organisations. Therefore, the study team not being able to identify any unofficial poverty and inequality data in Tulsipur does not necessarily mean there is not any.

[2] 'Ethnicity' and 'caste' are used interchangeably across the different data systems. We decided to use ethnicity because slightly more systems use this term.

[3] VERSP-MIS data suffer from some time lag caused by families/guardians reporting events to ward offices after the specified time limit (i.e. 35 days).

[4] For example, the participants of the project dissemination workshop in Tulsipur expressed particular concerns about the validity of data in the Municipal Profile Report (2017/18). They said the process of data collection was not consultative, the data was not validated before it was published as a report on the municipality's website, and they suggested the need for more disaggregated data, particularly by ethnicity, to identify which groups are most affected by poverty and inequality.

[5] Guidelines stipulate that officers in the information department should work with other departments to obtain the data they collect and disseminate it. This means the information department should have oversight of data-related activities in the municipality and could play a coordination role. However, interviewees report that the department's interactions with other departments do not currently extend to data, let alone facilitating cross-departmental data coordination.

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