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# Connecting local data ecosystems

Policy brief

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The D4D Program aims to improve the sharing and use of data as evidence for development. Implemented by The Asia Foundation in partnership with Development Initiatives with funding from UK Aid, the D4D Program supports a range of local organisations to conduct innovative technical initiatives, research studies and engagement activities aimed at growing the demand for, supply of and use of data. Through this the D4D Program works to strengthen a functional, inclusive, and locally led data ecosystem in Nepal.



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# Executive summary

Nepal became a federal state in 2015. As a result, a new layer of local administration was created and local governments took on a number of crucial responsibilities. For federalism to succeed at the local level, municipal governments, relevant civil society organisations (CSOs), private businesses and other actors need to use data. However, at the local level, data is used infrequently. This is not because of an absence of data, but largely because data is not accessible for use. Open Knowledge Nepal (OKN) has developed a solution to this – Integrated Data Management Systems (IDMSs). This brief provides a summary of the proposed solution, how it can be implemented and the challenges it faces.

# Introduction

Through its Data Unit Strengthening Program in Tulsipur Sub-Metropolitan City OKN identified significant gaps in:

- The connectivity between the different management information systems (MISs) in use
- Public access to municipal data

These observations align with the experiences of government and non-government stakeholders alike. For example, in Birgunj there is not a centralised database to store information about public workers from different sectors. This means the General Administration Office, whose job includes managing finance, accounts and budgets, does not have the oversight it needs to do its job efficiently. Similarly, a workshop held in Tulsipur by Development Initiatives (DI) as part of a different workstream found that:

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**“The participants all agreed they need better data sharing between the sectors, as they could learn different things by having a better picture of what data is available cross sectorally, and from knowing how another sector is using data.”**

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Summary of data ecosystem self assessment completed by officials in Tulsipur - Data for DI, 2022. Internal document.

In addition, members of CSOs explained that while their activities depend on local government data, they cannot easily access it. A prominent representative of the Dalit community summarised:

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**“I am interested in advocacy based on data. It is essential to highlight exclusion from many government services. Some government data is made available by government offices on request, but the processes we have to go through are not easy and are inefficient.”**

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Prominent campaigner for Dalit rights, 2022.

## **Methodology**

This brief is based on a larger diagnostic report. Research was conducted through desk-based literature reviews, key informant interviews and observations in the second half of 2022 by OKN, with support from DI.

# A solution: Local-level Integrated Data Management Systems

OKN developed a concept for an **Integrated Data Management System** (IDMS) to be implemented by each municipality in response to the identified gaps. An IDMS pulls data from other data systems (for example, the Health Management Information System, Education Management Information System and Employment Management Information System) either automatically or semi-automatically, then stores the data in a central database and displays it on an open webpage.

## Benefits

The data an IDMS will retrieve is available through the MISs already deployed at the local level, and the concept of IDMSs aligns with policy and legislation set out by the federal government. For example, The National Information and Communication Technology Policy (2015), Local Government Operations Act (2017), The Fifteenth Plan 2019/20–2023/24 (2020) and The Statistics Act (2022).

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**“[All governments will adopt] the prevailing best practices and technologies [in statistical activities] including Open Data [to maximise] communication, publication, and dissemination of data in a user-friendly manner”.**

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The Fifteenth Plan, 2020.

An IDMS would be a unique intervention and is differentiated from comparable projects in three critical ways:

- An IDMS will operate at the local level where other projects have worked at the national level.
- An IDMS can be implemented using local staff as it is not technically challenging, does not rely on foreign consultants and is cost efficient.
- The scope of IDMS is multisectoral where comparable projects focus on one sector.

Municipal governments all have dedicated websites that are used to disseminate information, but IDMS is different in two critical ways.

1. An IDMS will publish data in machine readable and standardised formats, whereas the websites are mostly used to publish non-standardised reports in formats which are not machine readable.
2. IDMS will pull data from sources semi-automatically or automatically, whereas officials have to manually upload files to municipal websites.

## **Implementation of an IDMS**

In the interest of sustainability it is essential that municipal governments assume ownership of their IDMS, because OKN will not be able to support the systems beyond the lifecycle of the project. Therefore, OKN will work to:

- Convey the long-term purpose of IDMS within the context of local development to officials
- Create a clear plan that covers policy, guidelines and training materials on how to operate the IDMS
- Locate software on equipment owned by the municipality, not on project partners' equipment.

Officials will be incentivised to work on an IDMS if they believe it is important for local development. Post-implementation, this will be facilitated by continued training of staff and ensuring that the software is stored on equipment owned by the municipality.

Once the IDMS is taken on by the municipality, managing the activities surrounding it will be a key part of its implementation and ongoing maintenance. Ideally the municipality would establish and coordinate specialist working groups consisting of government and non-government stakeholders to undertake specific activities. These activities should include:

- Developing funding pipelines – preferably through public institutions – and producing budget documents
- Preparing a step-by-step timeline that sets out when specific MISs should be connected with the IDMS and deciding what data from each MIS will be retrieved and published
- Completing an extensive mapping of the MISs in order to identify links between them
- Ensuring the IDMS complies with any regulations relating to data protection set out by the Government of Nepal – for example, article 29 of the Constitution, the Individual Privacy Act (2075), the Muluki Criminal Code (2076) and the Individual Privacy Regulation (2077)

- Overseeing the development and implementation of a business continuity plan to make sure the IDMS continues to operate at a minimum standard throughout disruptive events and can recover post-event
- Developing a monitoring and evaluation framework to track the progress of IDMS implementation and its ongoing operation
- Sharing learning about IDMS with other municipalities, provincial and federal governments
- Sensitise CSOs and media professionals on the new access to local government data.

Outside the specialist working groups, the municipality more broadly should use policy to institutionalise the IDMS in the day-to-day activities of officials, and develop a human resource policy with the objective of ensuring there are enough staff with the technical skills needed to run the IDMS. This involves implementation, maintenance, repairs and continued development. This could include redrafting job specs, creating new roles, and providing training. The team should make full use of the technical blueprint OKN has prepared.

Municipalities that have relatively small amounts of infrastructure (e.g., electrification, ICT hardware, etc.), financial and human resources at their disposal may not be able to implement the full plan as laid out above. This means a reduced programme will be needed. The following are essential:

- Ensuring the IDMS is compliant with data protection protocol
- Sharing knowledge about the IDMS with other municipalities, the provincial and federal governments
- Developing a step-by-step timeline on MIS connectivity and deciding what data should be published
- Developing a human resource policy to determine who will implement and maintain the IDMS.

## Challenges to IDMSs as a solution

This section highlights some key challenges the actors implementing IDMSs in municipalities are likely to face.

### **1. Increasing local data use is the end goal of the IDMS, however some key user groups do not currently use data**

Some of the key groups of intended users are not in a position to fully utilise the data published by IDMS. In many local governments the digital and data literacy of officials and elected representatives are below what is considered ideal.

For example, while the Education Department in Simta regularly reports data into its Integrated Educational Management Information System (IEMIS), it knows that the data is underused locally partly because of low levels of data literacy. Additionally, demand for



data from the general public is low, especially outside of urban centres. This is partially caused by low levels of digital literacy which mean people are not in a position to utilise data-related digital interventions.

Implementing actors can strengthen the use of data by key user groups by:

- Identifying the data these key user groups demand and prioritising its publication.
- Creating opportunities for key user groups to increase their digital and data literacy, including developing local government decision-makers' capacities to develop evidence-informed policies through targeted training.
- Hosting events where topical issues are debated by key users and publishing data through the IDMS that will be the basis of the discussions.

## **2. Some municipalities do not have the technical capacities to implement IDMS to its full potential**

IDMS is not technically complicated and all municipalities have the capacity to implement it at a basic level. However, municipalities that have especially limited technical capacities may struggle to operate an IDMS to its full potential. This is because they might not have the level of ICT infrastructure, ICT and data literacy needed, or they have other priorities. For example, in Simta:

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**“The municipality has been discussing a couple of projects in digital data production and management but they have not yet come to a conclusion. The first priority of the municipality is the electrification of all of its households and connecting all ward offices to the internet.”**

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Chairperson of Simta Municipality, 2022

## **3. The implementation of an IDMS will rely on cross-departmental collaboration, however local government departments do not regularly collaborate**

Currently it is normal that different departments work independently of each other. For example, in Tulsipur officials explained that staff concentrate on their departmental duties without giving much thought to interdepartmental collaboration. This is repeated when it comes to managing data. Departments must make requests to other departments to access their data. This is usually by physically visiting different offices, and if they are granted access they normally receive the data as printed copies, on a USB drive, or sometimes via email. An IDMS will rely on more open and integrated data management between departments.

## **4. Local officials will need to reach a consensus about what data is published on the IDMS, it is likely that there will be different opinions about this**

It is likely that there will be disagreement among officials about the extent of openness and transparency an IDMS should have. For example, in Birgunj the Head of the Education Department thinks that the open publication of data is not always good for the

relationship between local governments and citizens. However, officials from other departments think that government data should be opened up to public scrutiny, especially if it is about marginalised populations. Officials reaching agreements on what data should and should not be published will be an ongoing part of the implementation of an IDMS in a municipality.

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