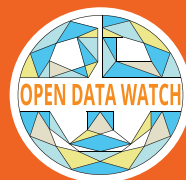


# The Development of a Gender Data System Maturity Model



JULY 2023



data2x<sup>o</sup>

# Purpose and Definition

This brief proposes a gender data system maturity model for national statistical systems. A maturity model is a tool that allows an organization, funders, or outside evaluators to assess the organization's practices and capacity to achieve its goal. Maturity models are used to identify strengths and weaknesses by establishing a framework for future assessments; they can be used to measure organizational progress. Though maturity models of both statistical capacity and gender equality exist, to date none bring together both. The model proposed here does, allowing governments to take a holistic approach to improving gender data systems (for examples of existing maturity models, please see the annex). This gender data system maturity model assesses the capacity of a national statistical system (NSS) to produce a robust set of gender data needed to guide policies, monitor progress, and measure their effects as seen through a central actor, the national statistical organization (NSO).

The following sections describe the guiding principles that informed the development of the maturity model, its expected applications, and its structure. One application is a self-assessment tool for NSOs and relevant ministries to identify their needs and advocate for additional resources through a gender data financing lens. **Learn more about the self-assessment tool developed based on this maturity model [here](#).**

# Guiding Principles

Six principles guided the development of this gender data system maturity model covering all aspects of the [Data Value Chain](#):

## PRINCIPLE 1

The ambition of the maturity model is to be **intuitive, actionable, and comprehensive**. The model covers five dimensions with four levels of maturity: foundational, emerging, intermediate, and advanced.

## PRINCIPLE 2

The maturity model is built on the United Nations Statistics Division's [definition of gender data](#). Gender data:

- Are collected and presented by sex as a primary and overall classification;
- Reflect gender issues;
- Are based on concepts and definitions that adequately reflect the diversity of women and men and capture all aspects of their lives;
- Are developed through collection methods that consider stereotypes and social and cultural factors that may induce gender bias in the data.

This definition describes the scope of the data systems that will be assessed and their steps to maturity. Improvements to gender data systems can pave the way for broader and more inclusive data overall, including data on diversity, equity, the measurement of gender identity and more.

## PRINCIPLE 3

**The principal actor responsible for building a stronger gender data system is the NSO.** While financing, coordinating and leading data collection and use efforts for a gender data system are not solely the responsibility of the NSO, the NSO plays a pivotal role in bringing resources to bear, coordinating across the NSS, and building technical capacity for better gender data systems. The primary user of this maturity model will be the NSO seeking to improve gender data along the Data Value Chain from production to use. But other actors within the NSS, donors, international organizations and civil society organizations can also use this model to map their gender data programs.

## PRINCIPLE 4

The proposed maturity model is explicitly **focused on gender data**, not broad statistical systems. However, gender data systems and national statistical systems do not operate in silos. A foundational statistical system is crucial for a mature gender data system, and improvements to a country's gender data system will likewise improve the functioning of its overall data system.

## PRINCIPLE 5

The maturity model is **outcome and results focused**, but some elements of the maturity model describe processes, as they are paramount to building effective data systems. With the guidance of the Data Value Chain, the maturity model is used in a **prescriptive** manner to help NSOs and NSSs develop a vision of a gender data system that leads to increased value from gender data.

## PRINCIPLE 6

The maturity model is designed to be **flexible and adaptive** to NSOs in their respective contexts. In its current form, the model is designed to assess gender data systems in low-, middle- and high-income countries. However, by using different indicators to measure outcomes and processes, it can also be adapted to apply to other sectors of interest. For example, the structure of the maturity model could be adapted to assess migration data systems.

This section introduces the proposed gender data system maturity model followed by a table and detailed text describing each level of maturity and dimension. A use case for the imaginary country of Xanadu illustrates the maturity model's application.

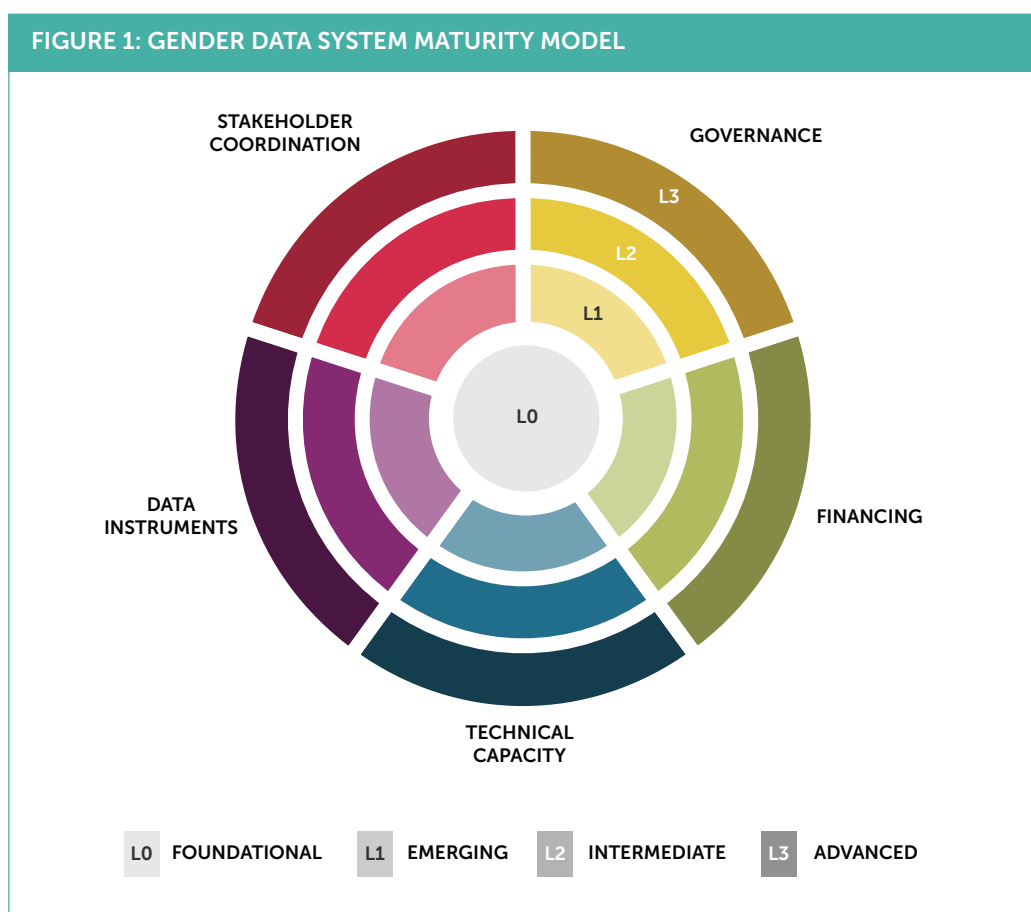
# Proposed Gender Data System Maturity Model

Figure 1 illustrates the proposed gender data system maturity model. The system is made up of five dimensions:

- **Governance**, such as statistical decrees and laws, statistical strategies, gender statistics strategies and gender policies that create the enabling environment for gender data.
- **Financing** for gender data produced by the NSS from all sources, including domestic and external funding.
- **Technical capacity**, such as staff expertise and technology needed to publish and promote the use of gender data.
- **Data instruments**, such as the processes and tools, including surveys and administrative data, that generate gender data.
- **Stakeholder coordination**, such as the mechanisms and structures within a national gender data system that enable engagement from all relevant actors.

The gender data system maturity model is visualized as concentric circles to demonstrate that the dimensions are part of a whole gender data system, and that the capacity of the gender data system is expanding as it progresses to higher levels of maturity.

Each dimension has four maturity levels. Foundational national statistical systems represent the minimum needed to support gender data systems: statistical instruments, institutional governance mechanisms and existing partnerships. Although the capacity to produce gender data may exist in a foundational system, there is no intent to produce gender



data. At successively higher maturity levels – emerging, intermediate, and advanced – a gender data system emerges as a prioritized and integral component of the national statistical system. For example, an emerging data system has capacity to produce statistics with sex-disaggregation and the beginnings of a systematic way of producing gender data. Intermediate gender data systems are intentional about gender data by incorporating gender data into governance frameworks, budgetary plans and capacity building and stakeholder coordination. And finally, advanced statistical systems have a robust gender data system where gender data are mainstreamed in governance frameworks, short and long-term budgetary plans, capacity development and stakeholder coordination.

Progress to an advanced gender data system is not linear, as countries’ gender data systems may have different starting points in each dimension and progress from one level to the next may represent a step-change, requiring significant resources and changes in organizational goals and structure. In the maturity model, each step to the next level is identified by measurable indicators of gender data outcomes and processes.

The following sections detail the maturity model’s dimensions and levels.

## Dimension 1 – Governance

Governance includes institutional governance structures and the policies, strategies, political support, and statistical laws needed to cultivate and support gender data. All countries have policies in place to drive development and govern the collection and publication of data. Gender data is often embedded in such governance instruments and gives a mandate for the NSO and its partners to collect and disseminate gender data. The Gender Data Systems Maturity Model evaluates a country’s statistical laws, its planning and development policies, as well as a qualitative assessment of its political will.

Table 1 summarizes the levels of maturity within the governance dimension.

**TABLE 1: EVALUATION OF THE GOVERNANCE DIMENSION**

Maturity Level	Metrics
<b>Foundational</b>	A decree or law exists authorizing data collection and the production of official statistics.
<b>Emerging</b>	National strategies exist with at least one mention of gender-related topics. Additional development plans exist and mention gender data. Superficial political support exists for gender data.
<b>Intermediate</b>	Current national strategies exist with an in-depth section on gender data-related issues. Gender equality policy exists with mention of gender data. National development plans include an in-depth section of open gender data-related issues. High-level political support exists for gender data with limited impacts.
<b>Advanced</b>	A decree or law authorizes data collection and production and includes the production of gender data and use. A current statistical plan incorporates substantive topics on gender data-related topics. A stand-alone gender data plan incorporates open access to gender data. Additional national development plans exist and incorporate substantive content on gender-data related topics. Gender equality policies include the importance of gender data. High-level support for gender data exists with meaningful impacts.

# Dimension 2 – Financing

This dimension focuses on the budget, sources of financing, and the financial stability and independence of a gender data system. Gender data is difficult to finance through a central funding stream as it cuts across statistical activities by definition. Nevertheless, financing for gender data must be coordinated across statistical activities and work streams. The financing dimension of the Gender Data System Maturity Model evaluates a data system's budgets, whether needs are being met and where funding is drawn from.

Table 2 summarizes the levels of maturity within the financing dimension.

**TABLE 2: EVALUATION OF THE FINANCING DIMENSION**

<b>Maturity Level</b>	<b>Metrics</b>
<b>Foundational</b>	A national-level budget exists to fund statistical activities.
<b>Emerging</b>	Budget for statistical activities includes limited funding for strengthening gender data. Funding for gender data has been included irregularly. Some funds to meet the needs of gender-related statistical activities are received. Financial support for gender data draws on external financing.
<b>Intermediate</b>	Budget for statistical activities includes funding for specific gender data programs. Funding for gender data has been included in recent and current budgets. More than half of the funds are received to meet the needs of gender-related statistical activities. Financial support for gender data draws on a mix of external and domestic financing.
<b>Advanced</b>	Financing for gender data is incorporated throughout all statistical activities in addition to specific gender-related programs funded by the budget. Gender data are planned and funded on a regular, long-term basis. Full scope of funds to meet the needs of gender-related statistical activities are received. Financial support for gender data draws on domestic resources.



## Dimension 3 – Technical Capacity

Technical capacity of a gender data system refers to the capacity of staff to collect and produce gender data, along with the necessary technological capabilities needed to produce gender data and to promote greater gender data use. This includes analyzing, synthesizing, interpreting, and presenting data for use by policymakers, journalists, researchers, and other identified users. The Gender Data System Maturity Model evaluates a country’s information and communications technology (ICT) and human resources with respect to gender data, as well as trainings for statisticians on gender biases and how the NSO pursues innovations and open data.

Table 3 summarizes the levels of maturity within the technical capacity dimension.

**TABLE 3: EVALUATION OF THE TECHNICAL CAPACITY DIMENSION**

<b>Maturity Level</b>	<b>Metrics</b>
<b>Foundational</b>	Sufficient staff within the NSO and in other ministries with adequate training to support broad statistical activities.
<b>Emerging</b>	Capacity exists within the NSO and in other ministries to collect and publish sex-disaggregated data and some data reflecting gender issues. Gender data bias issues are acknowledged.
<b>Intermediate</b>	Statistical capacity exists within the NSO to manage databases with gender data and provide gender data analysis. Capacity exists in other ministries to provide sex-disaggregation on most relevant indicators and collect data on most gender-specific issues, with an establishment of a key gender data contact. Sources of gender data bias issues are identified and discussed. ICT capacity exists to support gender data production in open formats (refer to ODIN 2023).
<b>Advanced</b>	Capacity exists within the NSO to manage gender data systems effectively and to promote use of gender data. Gender data staff in other ministries exist to collect and publish all sex-disaggregated and gender-specific indicators. Steps are taken to address gender bias in collection and publication practices. There is a demonstrated capacity to explore, analyze and present methodological innovations. ICT capacity exists to support all gender activities in open formats and continuously improve interoperability for gender data.

# Dimension 4 – Data Instruments

Data instruments are the tools and processes for collecting data. They include administrative data systems such as civil registration and vital statistics (CRVS), education management information systems (EMIS), health management information systems (HMIS), and the censuses and surveys used to collect information on households and individuals. Figure 2 illustrates the principal instruments contributing to a core gender data system. (See [State of Gender Data Financing 2021](#) for the core survey and administrative data instruments.)

A gender data system relies on the existing components of the national statistical system. These core data include administrative systems like CRVS, HMIS, EMIS, and censuses and surveys such as household health, income and expenditure, and labor force surveys. Since these core data instruments typically collect biographical information such as age or sex, the production of gender data is a byproduct of the general output of the statistical system, but they may be produced irregularly and do not include specialized data collection activities for gender data-relevant topics. The Gender Data System Maturity Model evaluates the completeness of administrative systems, the frequency of instruments needed to regularly produce gender data and whether outputs from these instruments have been effectively converted to official statistics on gender equality.

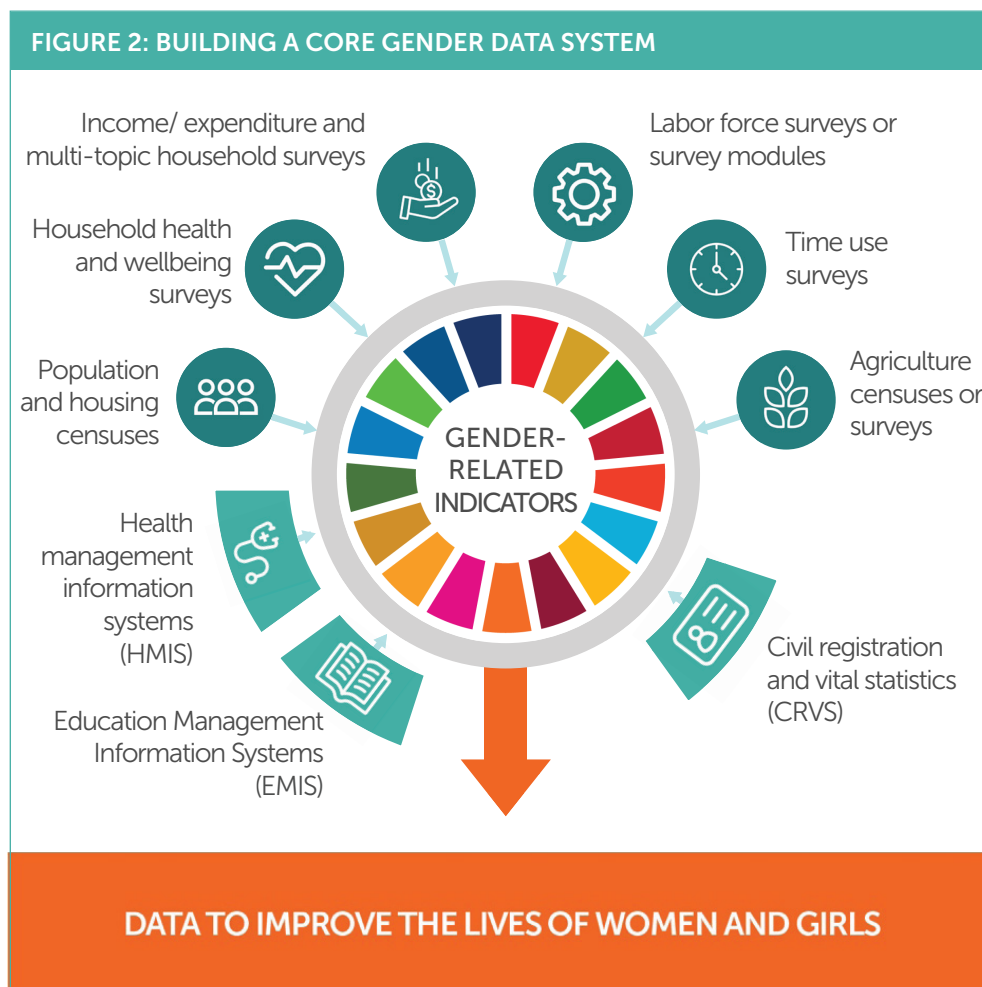




Table 4 summarizes the levels of maturity within the data instruments dimension.

<b>TABLE 4: EVALUATION OF THE DATA INSTRUMENTS DIMENSION</b>	
<b>Maturity Level</b>	<b>Metrics</b>
<b>Foundational</b>	<p>A household health survey has been conducted in the last ten years.</p> <p>CRVS systems exist with minimal coverage (at least a quarter of the population).</p> <p>HMIS exists to collect data on health and EMIS exists to collect data on education.</p>
<b>Emerging</b>	<p>A census has been conducted or is planned for the 2020 round (2015-2024 and collects demographic data such as sex.</p> <p>At least one household health survey has been conducted in the last five years, collecting demographic data (sex/age) of all members.</p> <p>At least one labor force survey has been conducted in the last five years, collecting demographic data (sex/age) of all members.</p>
<b>Intermediate</b>	<p>A recent census for the 2010 or 2020 round has produced population indicators by sex.</p> <p>A household health survey is conducted every other year (or four in the last five years) and has produced sex-disaggregated indicators.</p> <p>A labor force survey is conducted every other year and has produced sex-disaggregated data.</p> <p>A time use survey has been conducted and has produced sex-disaggregated indicators.</p> <p>An agriculture survey has been conducted and has produced sex-disaggregated indicators.</p> <p>CRVS system produces sex-disaggregated indicators on birth and death covering at least 75% of the population, with data produced annually.</p> <p>EMIS produces sex-disaggregated indicators on disease incidence and prevalence annually.</p> <p>HMIS produces sex-disaggregated indicators on enrollment and completion annually.</p>
<b>Advanced</b>	<p>A time use survey has been conducted in the last five years, producing gender-relevant analysis for decision-making.</p> <p>At least two agriculture surveys have been conducted in the last five years, producing gender-relevant analysis for decision-making.</p> <p>A gender-based violence (GBV) survey has been conducted in the last five years, producing gender-relevant analysis for decision-making.</p> <p>Gender-relevant analysis to inform decision-making has been produced based on sex-disaggregated CRVS data on all aspects of life, covering 90% of the population, and on an annual basis.</p> <p>Gender-relevant analysis to inform decision-making has been produced based on sex-disaggregated HMIS data on disease prevalence and incidence, and on an annual basis.</p> <p>Gender-relevant analysis to inform decision-making has been produced based on sex-disaggregated EMIS data on enrollment, completion, and exam results, and on an annual basis.</p> <p>Innovative data sources are in use to close gender data gaps.</p>

## Dimension 5 – Stakeholder Coordination

Stakeholder coordination involves mechanisms set in place for gender data producers and users to coordinate and communicate, with the NSO acting as a data steward in the center. The goal is to unify activities of all stakeholders engaged with gender data from production to use along the Data Value Chain. Gender data producers are ministries, agencies and other offices of the national statistical system that are responsible for producing sex-disaggregated data or data that reflect gender issues. Gender data users should ideally be part of this coordination although they are more diffuse and include academia, policymakers, donors, civil society organizations, private sector, or development practitioners, as well as citizens and everyday users. The Gender Data System Maturity Model evaluates how these producers and users within and outside of government work together to build the national gender data system.

Table 5 summarizes the levels of maturity within the stakeholder coordination dimension.

**TABLE 5: EVALUATION OF THE STAKEHOLDER COORDINATION DIMENSION**

<b>Maturity Level</b>	<b>Metrics</b>
<b>Foundational</b>	Different producers of statistics within the national statistical system have some coordination mechanism.
<b>Emerging</b>	Gender data needs of users are understood and addressed through some instance of direct engagement. Some producers of gender statistics communicate and coordinate with each other.
<b>Intermediate</b>	Engagement with gender data users occurs on a regular basis to understand needs. All producers of gender statistics communicate and coordinate with each other. Initial engagement has occurred with non-traditional gender data producers such as civil society groups and the private sector. Gender data intermediaries are identified and involved.
<b>Advanced</b>	Systematic involvement of gender data users informs data production. All gender data stakeholders are consulted to identify new gender data demands and methods for production and coordination. Regular involvement of traditional and innovative gender data producers. Support for gender data intermediaries results in use and impact. Development partners have long-standing projects on gender equality and gender data, coordinating with relevant national bodies.

# Applications: How the Gender Data System Maturity Model Can Be Used

When used by NSOs to evaluate their own capacities for producing and using gender data, the maturity model will yield both quantitative and qualitative assessments of the state of gender data in the context of the national statistical system. By identifying the weakest and strongest dimensions of the gender data system, the maturity model contributes to the development of a self-assessment tool that will help to build a case and yield necessary information to improve gender data financing. This tool is both descriptive and tactical by assessing the current gender data system in terms of capabilities, behaviors, and performance, as well as defining actions that allow an NSO to gradually move from the current to the desired maturity level. Furthermore, the measurement of gender data system maturity will contribute to global efforts to assess the statistical capacity of countries, such as PARIS21's [Statistical Capacity Monitor](#) and the World Bank's [Statistical Performance Indicators](#), neither of which has a specific focus on gender data capacity measures.

The Gender Data System Maturity Model will also be a rich resource to inform advocacy efforts around gender data collection, dissemination, use and financing. It provides insights into the evolution of gender data systems and enables government authorities, statistical offices, and donors to focus on the most important obstacles to reaching an effective gender data system. Because it focuses attention on both planning and financing for gender data, it provides a tool and incentives for national authorities and donors to coordinate their actions and set plausible goals to develop their gender data systems.

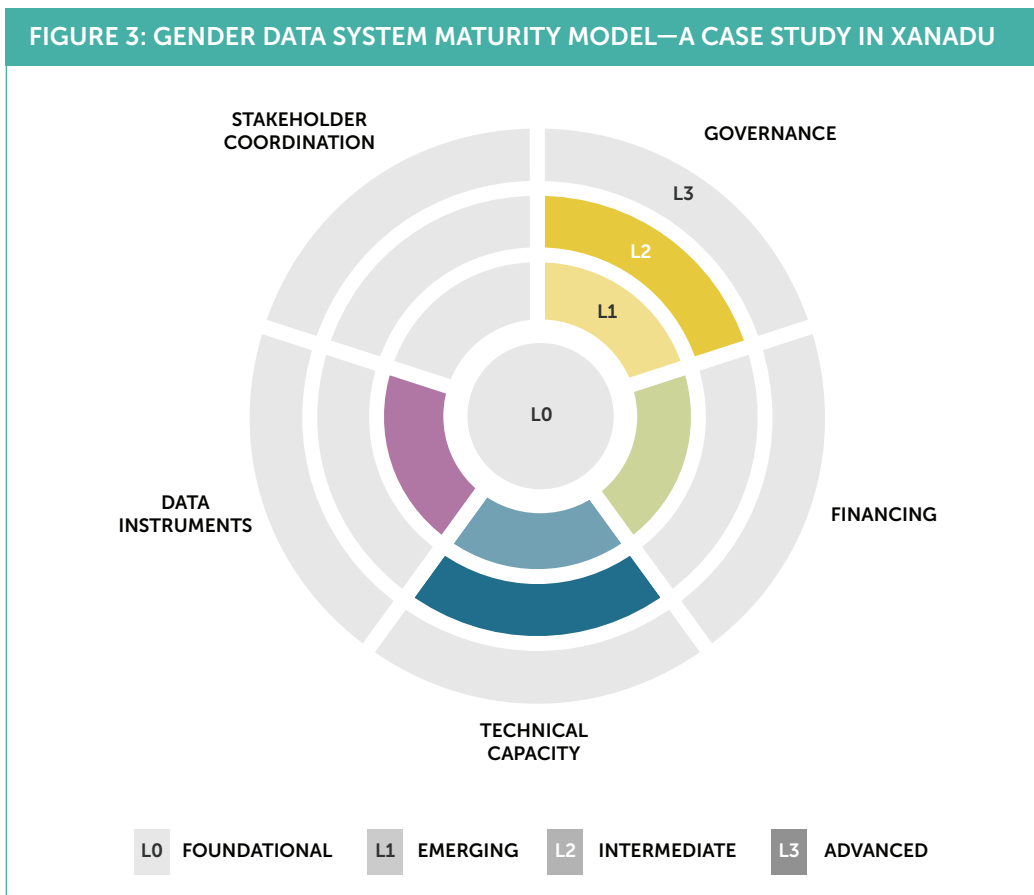
## Xanadu: A Gender Data System Maturity Model Fictionalized Use Case

Imagine Xanadu, a fictional lower-middle-income country. In 2022, the National Statistical Office of Xanadu ("NSO Xanadu") wanted to assess the effectiveness of its gender data system. They evaluated their system using the Gender Data System Maturity Model. The results are shown in Figure 3.

The assessment of the gender data system in Xanadu revealed the following:

- NSO Xanadu found that their data governance is at an intermediate level. Xanadu has an NSDS from the period 2020-2028 that emphasizes the importance of gender data and includes plans to disseminate gender data in open formats. Xanadu's national parliament has also collectively expressed support for gender data.
- Xanadu's financing is at the emerging level as they have a national budget with some allocation to produce reproductive health data, but Xanadu needs to do more to mobilize domestic and international support to strengthen its gender data systems.
- Xanadu's gender data technical capacity is at an intermediate level: they have the capacity to provide sex-disaggregated data for most indicators, along with the capacity to collect data on gender-specific issues. They were encouraged to find that they have the statistical capacity to collect, use, analyze and disseminate most sex-disaggregated or gender-specific indicators. Xanadu's gender data system also has the capacity to support gender data in open formats.
- Xanadu's data instruments are at the emerging level, as these instruments are in place to collect sex-disaggregated and gender-specific indicators. Yet biases within the instruments are not acknowledged and innovative data sources are not used to help close gender data gaps.

- NSO Xanadu also found that its stakeholder coordination is at the foundational level, as producers within Xanadu’s gender data system do not have the mechanisms in place to understand user needs or have any coordination at the production level or between gender data users. However, there is some coordination within the broad national statistical system, although Xanadu’s Central Bank and Ministry of Education are the only bodies that regularly coordinate with NSO Xanadu on the release of their balance of payments and enrollment statistics.
- Xanadu can use the results of this maturity model assessment to set priorities to improve the gender data system in the country. The stakeholder coordination dimension, for example, may need the most work according to this assessment but improving the maturity level of other dimensions may align better with existing plans for improving the statistical system. Regardless of which dimension or dimensions are the focus for future work, the assessment is able to give the country a snapshot in time, one which can also be revisited after changes are implemented.



# Annex: Background Research on Maturity Models and Other Resources

The World Bank's [\*World Development Report 2021\*](#) introduced a maturity model for a hypothetical national data system. The maturity model consists of the following actors: government entities, civil society and individuals, academic institutions, private sector, and international organizations. Depending on the actors, establishing fundamentals is the first level of maturity, which includes policies, laws, human capital, institutions, and incentives. Initiating data flows is the second stage of maturity, which includes data demand, incentives, and infrastructure policies. And finally, optimizing the system is the third stage of maturity, which includes institutions, incentives, and policies.

In collaboration with UN Women, PARIS21's [\*Assessing Data and Statistical Capacity Gaps for Better Gender Statistics: Framework and Implementation Guidelines\*](#) allows countries—in particular, national statistical offices—to assess data and capacity gaps. The assessment process consists of identifying gender data gaps and capacity gaps, which are then presented as a final report that guides countries to integrate gender into national strategies for the development of statistics.

Building on UNICEF's Data for Children Strategy (2018), the [\*Using administrative data for children 2020\*](#) report introduces an administrative data maturity model that is child focused, is built from the community up and recognizes the need for cross-sectoral foundations at the national level. The administrative data maturity model has twenty outcome statements identified with six maturity levels: formation, foundational, functional, flexibility and form, engagement, and integration. Although this is specific to administrative data, elements from UNICEF's maturity model are nonetheless applicable to the development of a gender data system maturity model.

The UN Economic Commission for Europe (UNECE) developed a [\*maturity model\*](#) to assess the capacity of NSOs. The dimensions include people, methods, technology, standards/framework, processes, information, and institutional setting. The maturity levels are defined as initial awareness, pre-implementation, early implementation, corporate implementation, and mature implementation.

The Compliance, Governance and Oversight Council (CGOC) developed the [\*Information Governance Process Maturity Model\*](#), which organizations can use in order to improve their information economics and the disposal of unnecessary data. There are five maturity levels for organizations to understand their current processing capabilities and practices.

Gartner developed a [\*maturity model\*](#) for organizations to identify the level of their business intelligence (BI) and analytics. The maturity model consists of five levels, from being unaware to being transformative. The maturity model also has a roadmap for improvements.

For humanitarian contexts, CARE USA developed the [\*Responsible Data Maturity Model for Development and Humanitarian Organizations\*](#). The maturity model can have multiple uses and outputs, which includes diagnostic tool or planning tool, audit framework, case study tool, evaluation tool, and/or a potential roadmap. The maturity model has five levels of maturity: unaware, ad-hoc, developing, mastering and leading.

In 2015, Open Data Institute developed the [\*Open Data Maturity Model\*](#) for organizations to assess and to understand how they publish and consume open data. The maturity model consists of five maturity levels (initial, repeatable, defined, managed, and optimizing) across five themes (data management processes, knowledge and skills, customer support and engagement, investment and financial performance, and strategic oversight).

The Global Partnerships for Sustainable Development Data and the UN Statistics Division published the [\*Joined Up Data Maturity Assessment\*](#), where the main target of the maturity assessment is for official statisticians and professionals who regularly use or produce datasets relevant to sustainable development. The maturity assessment consists of four layers of interoperability, 19 dimensions that fall under the four layers and five levels of maturity within each dimension.

Open Data Watch and Data2X's joint [\*State of Gender Data Financing\*](#) (2021) publication will be of relevance when developing guidelines for using the maturity model, particularly on the identified set of survey and administrative gender data instruments and the "Way Forward" sections.