



# BURKINA FASO

## DATA ECOSYSTEM MAPPING

Developed under the 50x2030 Initiative

This Data Ecosystem Mapping report examines the current and the desired status of the agricultural Data Ecosystem in Burkina Faso. It focuses on how agricultural and rural data are currently used and in the existing constraints to data use. It also maps key stakeholders and their communication flows using a network mapping tool, to better understand their relationships and data-related practices.

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The report was carried out under the direction of Dr. Bidisha Barooah (Technical Lead - 50x2030 Data Use Team), who provided expert guidance and feedback. The report was led by Mariano Pidal (Economist - 50x2030) who performed report writing, survey data analysis and data visualization. Christian Chihababo (Consultant - 50x2030) provided valuable inputs and support.

## Acronyms

<b>CIRAD</b>	Centre de Coopération Internationale en Recherche Agronomique pour le Développement - Agricultural Research Centre for International Development
<b>DEM</b>	Data Ecosystem Mapping
<b>FAO</b>	Food and Agriculture Organization
<b>IFAD</b>	International Fund for Agricultural Development
<b>ICO</b>	IFAD Country Office
<b>INERA</b>	<i>Institut de l'Environnement et de Recherches Agricoles</i> - Institute of Environment and Agricultural Research
<b>INSD</b>	<i>Institut National de la Statistique et de la Démographie</i> - National Institute of Statistics and Demography
<b>MARAH</b>	<i>Ministère de l'Agriculture et des Ressources Animales et Halieutiques</i> - Ministry of Agriculture, Animal Resources and Fisheries
<b>RNA</b>	Rapid Needs Assessment

# Executive Summary

The Burkina Faso Data Ecosystem Mapping (DEM) assesses the status of the agricultural data ecosystem of Burkina Faso. It does so by studying how and how much of agricultural data are being used, by mapping the interactions between key stakeholders and by evaluating the main factors that enable and constrain data use for decision making.

As a result, tailored activities can be designed to strengthen the data ecosystem and to improve the use of data. This DEM is the basis upon which the 50x2030 Initiative undertakes a series of discussions and consultations with the key stakeholders in the country, which lead to the design of 50x2030 Data Use activities. It is a useful tool for organisations and practitioners in the field of data and evidence to understand better the existing landscape of data use in the country.

The DEM uses data collected through an online survey of 44 respondents who identified as data producers, data analysts or decision-makers from various sectors. It presents the following main insights:

**Data Use:** There is moderately high use of agricultural data and statistics among respondents, with 82% and 73% reporting having used aggregated data and microdata respectively. Agricultural data are primarily used for academic research, monitoring and evaluation, and project implementation and design. Data use in policy and strategy formulation and investment decisions is much lower, reported by less than 50% of respondents.

**Key stakeholder interactions:** Mapping the data ecosystem provides a useful view of stakeholders' interactions. It shows that the MARAH, the INSD, and the FAO are the key organizations contacted for data access, support on data analysis, and trainings related to research and data interpretation. The important role of local universities as partners for policy-relevant research is highlighted as well.

**Enablers and barriers:** Political support for data-driven decisions and trust in data exists and are the main enablers for more and better data use. The main barriers are limited perceived utility in terms of type of data collected and timeliness of data and challenges in accessing data. Among decision-makers, limited awareness of the potential of data and skills for data interpretation emerged as critical constraints.

The report emphasizes the importance of building on existing capabilities and strengths of key stakeholders, on the collaboration among stakeholders and on the need to strengthen human capacities to promote data use in Burkina Faso. The main recommendations are:

(1) Programs and initiatives that aim to improve data and evidence use are advised to support platforms and networks for advocacy and building consensus around data and evidence at high political levels and further promote collaboration between data stakeholders.

(2) To address the constraints of data utility and access, governments and multilateral organisations should invest in technology and tools that enable ease of access to aggregate data such as data dashboards and repositories. Such tools may already exist, and their utility can be increased by including information that are aligned with country strategic priorities.

(3) To address the constraints of expertise and awareness among decision-makers, the government and donor organisations should invest in the skills of mid-to-senior level civil servants to interpret data and evidence correctly and apply them to decision making processes.

# 1. Introduction

The “[50x2030](#) initiative to close the agricultural data gap” is a multi-agency partnership that seeks to transform data systems in 50 countries by 2030. Policymakers need high quality and relevant agricultural data to make critical decisions that inform the development of the sector and impact the lives of people. The 50x2030 Initiative focuses on improving country agricultural data by developing a fit-for-purpose, integrated, and financially sustainable agricultural and rural survey programme that fosters a culture of data use for decision-making to support agricultural sustainability and rural development, address food crises, and mitigate the impacts of climate change.

The data use component of 50x2030 is implemented by IFAD and seeks to increase and to improve the use of agricultural data to make evidence-informed decisions. It does so through three main pillars: (a) supporting participatory activities to strengthen in-country **capacities** to analyze and use data; (b) promoting **collaboration** among key country stakeholders to foster data and knowledge sharing as well as partnership building; and (c) improving **communication**, policy engagement and raising awareness on data-relevant issues.

The Data Ecosystem Mapping (DEM) has been developed to inform the implementation of first two pillars of data use activities in a partner country. It has two main objectives. First, to assess the strengths and the opportunities for improvement in the data ecosystem in Burkina Faso. Second, to identify the key stakeholders of the data ecosystem and to understand their interactions. This will help in targeting and planning 50x2030’s support to maximize these opportunities. This report will additionally be useful to data practitioners in the field of agriculture in Burkina Faso to target their own activities.

## a. Methodology

This DEM has been conceptualized based on the 50x2030 Data Use Framework<sup>1</sup> and the 50x2030 Data Use Theory of Change. It examines the following questions:

- For which purposes are agricultural data being used and who are the main stakeholders in the data ecosystem?
- Which are the key factors constraining the use of agricultural data in the country?
- Which are the existing incentives to motivate stakeholders to engage or work together to strengthen the ecosystem and their exchanges within it?
- What human and institutional capacities need to be enhanced to improve the use of agricultural data?

These research questions have been addressed through an online questionnaire developed by the 50x2030 team. The sampling frame of respondents for the survey was developed on the basis of key

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<sup>1</sup> The 50x2030 Data Use Framework can be accessed [here](#) . The 50x2030 Data Use Theory of Change can be found in Annex IV.

informant interviews that included representatives of the Ministry of Agriculture, the INSD, the IFAD ICO and local universities. The questionnaire was sent to 77 stakeholders of whom 44 responded (response rate 57%), against a target of 50 responses. It was administered online in July-September 2023. Respondents were identified through focus group discussions with the Ministry of Agriculture (MARAH) of Burkina Faso and included people working in the following sectors: government (48%); research (25%); civil society and media (14%); international organisations (11%); and private sector (2%). Respondents were required to self-identify with one the following three roles<sup>2</sup>: data producers (39%); data analysts (50%); decision makers (11%).

## b. Data Use Framework of 50x2030

The Data Use Framework foresees that within a data ecosystem, there are seven factors that need to be present so that data is used. Inversely, the absence of these factors results in constraints prohibiting data use. Table 1 lists these factors and provides definitions to better understand and identify them.

Table 1: Factors affecting data use as per the 50x2030 Data Use Framework

Factors that lead to Data Use	Definition	Sub-factors
<b>Demand</b>	Decision makers want to use data to make their decisions	Decision makers believe that decisions based on data are beneficial
		Political and cultural beliefs and norms enable data use
<b>Expertise</b>	Decision makers know what data they need and how to use it	
<b>Availability</b>	Data is produced and exists (may not be accessible/available to users)	
<b>Access</b>	Data analysts and decision makers have access to (and can obtain) the data that is produced	
<b>Awareness</b>	Data analysts and decision makers know that the data is available and accessible	
<b>Utility</b>	The data are relevant and useful to the decision makers for the decisions they need to make	Data is of the type needed for targeted decisions (useful variables, disaggregation, periodicity, etc.)
		Data is in the necessary formats and products
		Information (analysed data) is in needed formats and products
<b>Trust</b>	Data Analysts and decision makers believe the data is reliable, useful, and accurate	Data quality based on producer capacity
		Absence of political interference in one or more stages within the data cycle
		Cooperation with other data sources (not competition)

<sup>2</sup> The Data Use Framework defines three roles of stakeholders:

- Data producer: An individual who produces data through the steps of collection, curation/preparation, and dissemination. Data producers work with the raw survey data, generating the data sets and survey reports which can be utilized by data analysts for further analysis or decision makers to answer questions and inform decisions.
- Data analyst: An individual who takes existing summary tables or microdata sets and adds value to them by conducting analyses and interpreting them to answer questions and possibly make recommendations for action.
- Decision maker: An individual who applies the data to answer questions and inform decisions related to programmes, policies, or investments.

These factors must be present to enable an appropriate use of data in a data ecosystem. Identifying the degree to which these factors are present (or absent) in a data ecosystem is essential for the 50x2030 Data Use team. With this information, it is possible to design and implement tailored activities that address the most binding constraints to data use, resulting in stronger data ecosystems as well as improved data sharing and communication practices.

A strong data ecosystem means that:

- Data needs are being met through data assets and collaborative interaction between decision makers, data producers, and data analysts, including good data sharing and communication practices;
- There is strong **demand** for data which is **trusted** by users and producers, who see its **utility** and have the right **expertise** to leverage on it;
- There is easy and comprehensive **access** to the data and decision makers are **aware** that the data is **available**.

## 2. Current use of data

An important characteristic of this survey is that it enquires about the current and the desired status of each factor of the data ecosystem. Consequently, it reveals the existing gap reported by respondents regarding the status of each factor. This facilitates the planning process as it helps to understand the factors on which interventions are most needed.

A hypothetical example regarding Access to data is provided below:

Table 2. Example on data use questions

#	Question	Factor	Status	Score
7	How much is the current level of ease with which you can access existing agricultural and rural data and statistics produced in the country?	Access	Current	3
6	How much should be the level of ease with which you can access existing agricultural and rural data and statistics produced in the country, so that you can do your work effectively?	Access	Desired	5

1 = lowest rating; 5 = highest rating

In this case, the respondent rated with 5 the desired status, meaning that he/she believes that the level of access to rural data and statistics produced in the country should be the maximum to work effectively. However, the respondent rated the current status with 3. This means that his/her perception is that the current situation is not optimal and that the distance between desired-current is 2.

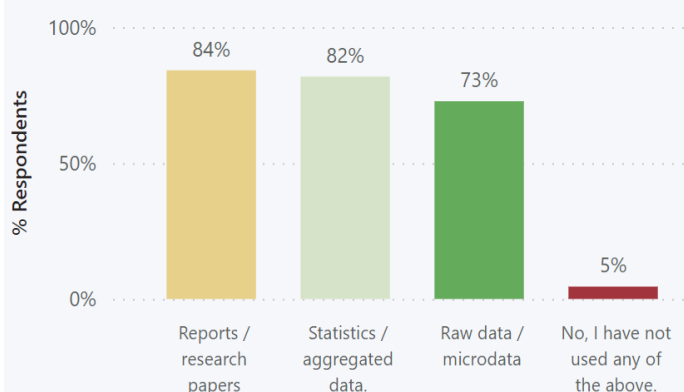


## a. How data are used - Main parameters

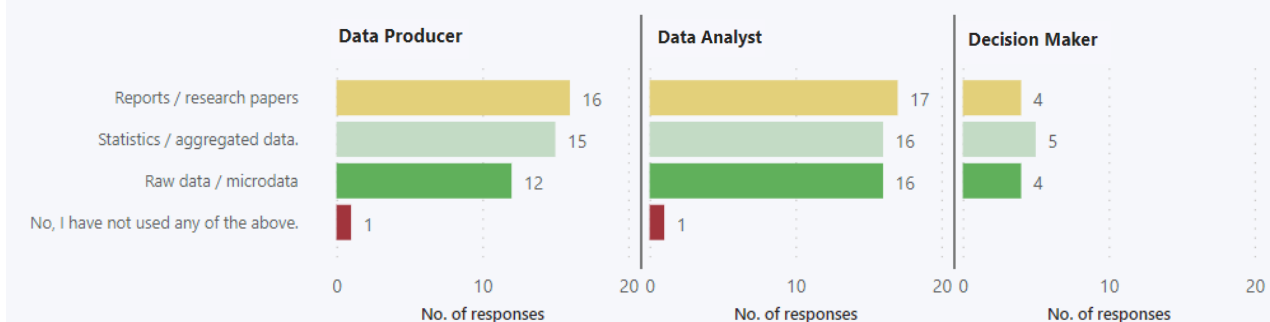
This section provides information on how people use data in Burkina Faso. This includes the type of data being used, the frequency of access to data and the purposes for which these data are used.

Overall, the use of data, statistics and reports is high in the sample of respondents. 84% of respondents used reports or research papers and 82% used statistics or aggregated data to do their jobs. The survey inquired about the use of raw or micro data and found that 73% of respondents have used micro-data. Only 5% reported not having used any of these options in the last three years.

31. In the past three years, have you used agricultural or rural data, statistics or reports for your job?



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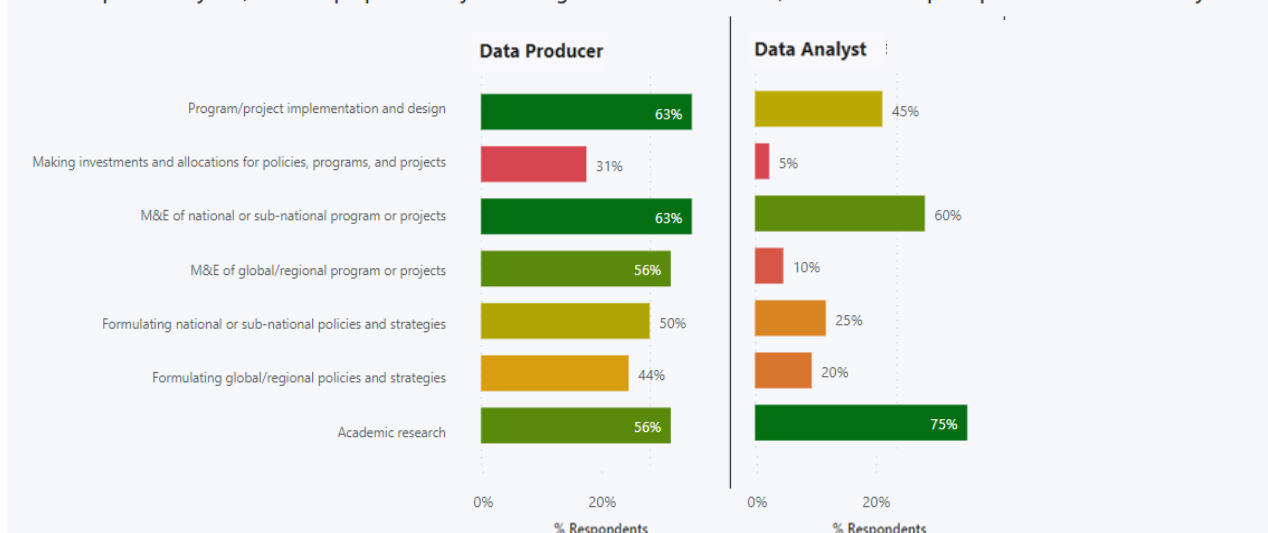
These results can be considered encouraging in comparison with other countries and it would be important to validate them with the qualitative interviews of the Rapid Needs Assessment<sup>3</sup>. When breaking down these data by respondents' role, it emerges that data are consistently used by producers, analysts and decision makers. The use of microdata is quite high across all categories. Note that micro-data in our survey included all types of data- primary, secondary, official statistics and administrative data. In this broad definition, it is not surprising to find high use of micro data.

The DEM also enquires about the purposes for which data are used. Results suggest that data are mostly used for academic research, monitoring and evaluation and for programme/project implementation and design. It should be noted that the use of data for policy and strategy formulation both at national/sub-national and at regional/global level is quite low across all data roles (50% or less).

<sup>3</sup> The Rapid Needs Assessment (RNA) is a complementary study that is conducted before the DEM. The RNA is fully qualitative and aims at collecting information on current data use, data needs, human and institutional capacity needs, priorities and finally support needed in Burkina Faso. It focuses on the Ministère de l'Agriculture et des Aménagements Hydro-agricoles (MARAH).

Interestingly, only a few decision makers and data analysts used data for this purpose, whereas a higher share of data producers have reportedly done so. The same happens regarding monitoring and evaluation, where a higher share of data producers (~56% and 63% respectively) report having used data for this function. One possible reason for this could be ease of access to data that data producers have compared to data analysts and decision makers. Therefore, seeking more clarity on this issue would be beneficial to better understand the distribution of tasks and responsibilities across roles in Burkina Faso. Finally, 5 respondents identified themselves as decision-makers<sup>4</sup>. All 5 reported using data including micro-data in their work. However, they reported that data was primarily used for M&E of national and sub-national programme and projects and independent academic research.

32. In the past three years, for what purpose have you used agricultural and rural data, statistics and reports produced for the country?



## b. Data interactions - Mapping the data ecosystem

As previously stated, one of the objectives of this study is to map the stakeholders of the data ecosystem and their interactions. This is addressed by three questions in the DEM survey, each of them enquiring how often respondents contact organisations for: accessing data; analysing data; receiving data-related trainings and interpreting research results.

Respondents can choose from five categories, such as “never”; “rarely”; “occasionally”; “frequently”; and “very frequently”. These responses were given scores from 0 to 4 (0 = “never” and 4 = “very frequently”). These scores were aggregated by respondents’ role and mapped to the organisation contacted. The thicker lines show stronger contacts from respondents to organisations, which could be

<sup>4</sup> Since the number of decision makers is low (5) these were excluded from the chart as the interpretation of the percentages might be misleading.

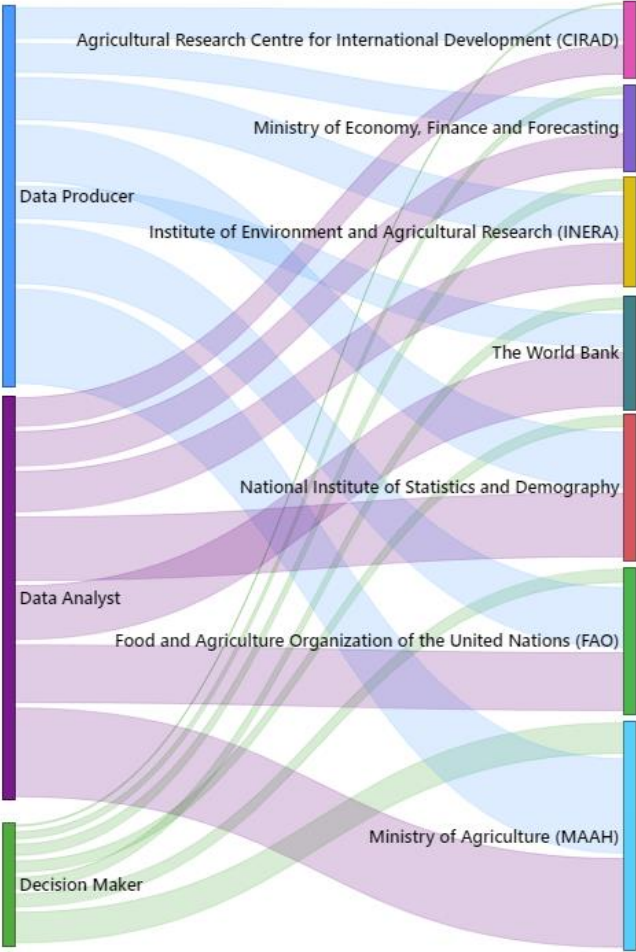
due to a higher number of respondents contacting an institution, to a higher frequency of contact or to both reasons.

As can be appreciated below, the Ministère de l'Agriculture et des Aménagements Hydro-agricoles (MARAH) is the main organisation contacted for accessing data. It is followed by the FAO and by the National Institute of Statistics and Demography (INSD). This is consistent across all categories of stakeholders- data producers, analysts and decision-makers. The World Bank and the Institute of Environment and Agricultural Research (INERA) are also preferred, but to a lesser extent.

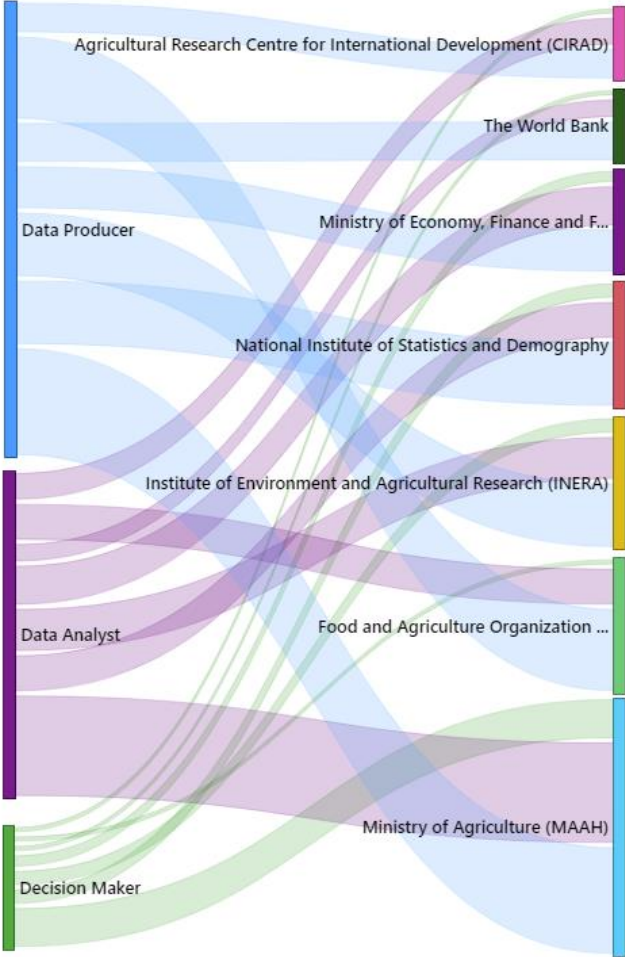
The situation is similar when assessing the organisations contacted to obtain support in analysing data. MARAH and INSD are the preferred partners for data analysis support across all types of stakeholders. A strong network with the Institute of Environment and Agricultural Research (INERA) can also be appreciated. Furthermore, FAO is one of the most important institutions for support on data analysis by data producers and analysts, whereas decision makers report a preference for consulting national institutions. This can be explained by the fact that FAO has a strong track-record of supporting the INSD and MARAH.

Finally, respondents were asked which organisations they reach out to for trainings on research and data interpretation. Once again, the MARAH and the FAO lead in this area, whereas INERA has a more prominent role and overcomes the INSD. In addition, two local universities are listed within the main institutions contacted, which shows certain degree of diversification in the data ecosystem. Here too we see the preference of decision makers to reach out to local institutions over multi-laterals.

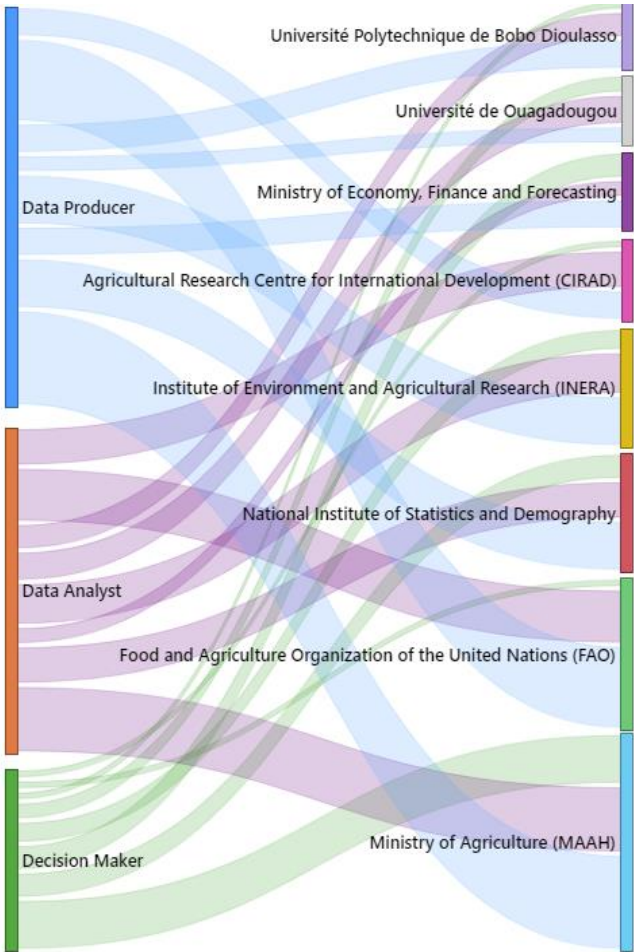
14. In the past three years, how often have you contacted the below organizations for support on accessing data?



15. In the past three years, how often have you contacted the below organizations for support on analysing data?



16. In the past three years, how often have you contacted the below organizations for support regarding trainings on data and research interpretation and use?

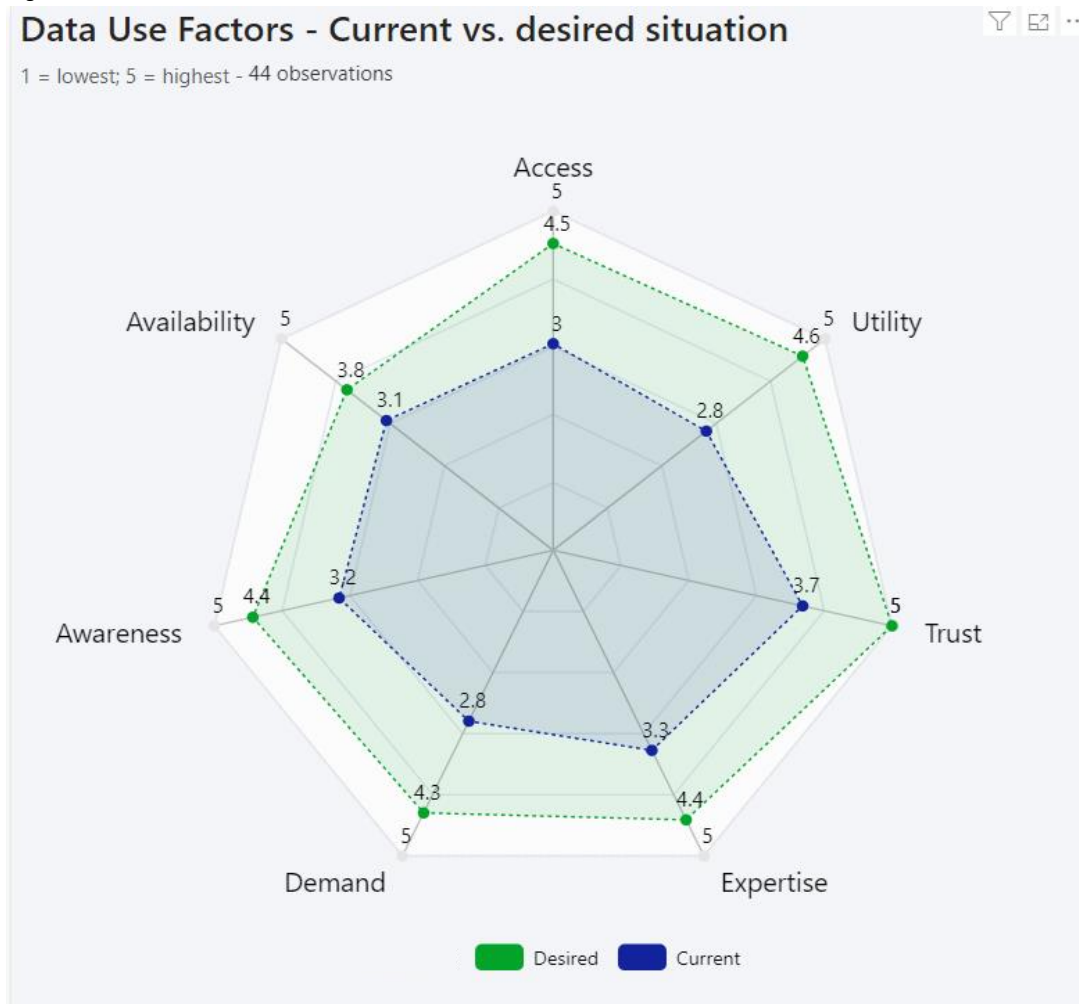


### 3. Factors constraining the use of data

#### a. Overall results

The results of this analysis are presented in the radar chart below. The blue lines represent the *current* average score, and the green lines represent the *desired* average score for each factor.

Figure 1: Data Use Factors – overall scores



Overall, results show strong aspirations (desired) on almost all factors with the highest average score being on Trust (5) and lowest being on Availability (3.8). Respondents placed relatively less importance on data being available compared to the other factors. The low score on current Availability is in line with the Rapid Needs Assessment previously conducted by 50x2030. However, more exploration is needed to understand the reasons behind the low scores on the *desired* Availability.

Looking at the current status of data use constraints, Utility, Demand and Access are rated lowest regarding the *current* status of the data ecosystem. In addition, these show the bigger gaps between *current-desired* (gaps = 1.5, 1.5, 1.8 respectively). The gap between current and desired is smallest for Availability (gap = 0.7), followed by Expertise (gap=1.1) suggesting that -on average- these seem to be less constraining than other factors. However, the result for Availability should be interpreted with caution as the desired level of Availability is also lower than other factors.

These findings are key for planning IFAD's Data Use work in Burkina Faso. Access and Utility seem to be the most constraining factors to data use, which in turn limit Demand. On a positive note, data seem to be trustworthy and there are good foundations of Expertise and Access to build upon.

## b. Results by stakeholders' role

To complement these initial findings, it is worth exploring the results of the survey by the role of stakeholders within the data ecosystem. Indeed, significant differences emerge. As shown in Figure 2, data producers report the biggest gaps on Demand and Utility. A significant gap in Demand suggests that data producers are not required to leverage the available data enough to inform their work. Utility refers to the level of adequacy of the data regarding the types of information provided, the levels of disaggregation, the timeliness and the frequency to ensure effective work. Demand and Utility are interconnected. Low Utility of data may limit Demand as findings from such data may not be perceived as sufficient or relevant. It would be important to validate this reasoning with the qualitative findings of the RNA and with the DEM validation workshop.

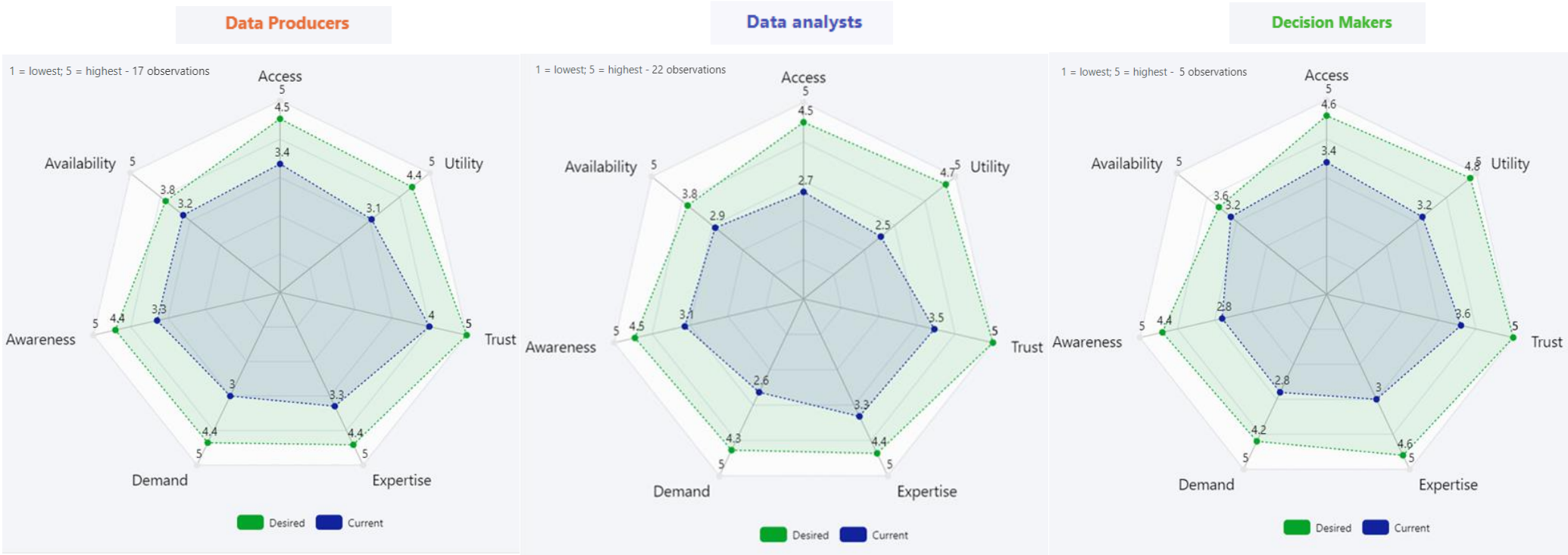
Data analysts report lower ratings than data producers on the current status of the data use factors (-10% on average of all factors). Analysts report the largest gaps for Utility (2.1) and Access (1.8). The former is particularly important as poor perception of data among data analysts is likely to reduce high quality data outputs to inform decision-making. The big gap in Access is noteworthy as it is much bigger (+50%) than for data producers. In light of these findings, it is not surprising that the current use of data among analysts to inform policy is lower than among data producers.

Decision makers report the highest gaps in Awareness, Demand and Expertise (gap = 1.6 for all). The gap on Awareness denotes the need for increasing knowledge about agricultural and rural data among decision makers. Decision makers report that their Expertise or skills to use existing data is currently much lower than desirable, which might be also affecting Demand. Ensuring that decision makers have strong capacities to use data is crucial to stimulate demand and to strengthen the data ecosystem.



Figure 2. Data Use Factors by respondents' role

Data Use Factors - Current vs. desired situation



### c. Results by respondents' sector

To complement the previous findings, responses collected by the DEM survey can also be analysed by looking at the sectors to which respondents belong. Respondents were asked to self-identify on five sectors: Government/Public Sector; Researchers/Academia; Private Sector; Development Sector/International Organisations; Civil Society including Media. The distribution is skewed towards Government/Public Sector and Research/Academic Sector, with 21 and 11 out of 44 responses. 6 responses were received from Civil Society and 5 from the Development Sector, whereas only 1 response corresponds to the Private Sector. Consequently, the three smallest categories have been grouped into 'Others' and the results of the analysis are presented in Figure 3 below.

Respondents from the government report an important gap in terms of Utility and Demand, which implies that they are not considering the data useful enough to inform their work and therefore they are not demanding these data as much as they could. The reasons behind these ratings should be further investigated through qualitative work, but it is important to signal them at this stage. In addition, government respondents show a very high level of trust in the data, which might be explained by the fact that they are in charge of generating these data.

Researchers report a significant gap on Utility, with a striking 2.3 points difference between the current and desired status. It is crucial to further investigate the reasons behind this gap, to design interventions that can address it effectively. If researchers report such a low level of Utility, their Demand for data will continue being low, as the value that they see in using the data will be very weak. Researchers also show low levels of Trust (3.1) in the data, with a significant difference compared to government respondents (4.0). Since researchers are producers of evidence-based knowledge products that can inform policies and decisions, their Trust in the data is of outmost importance. Finally, it is worth noting that Access to the data is also ranked low (2.8) with an important gap (1.8). Ensuring that researchers have an easy and timely Access to data remains key to enable the use of data for decision making.

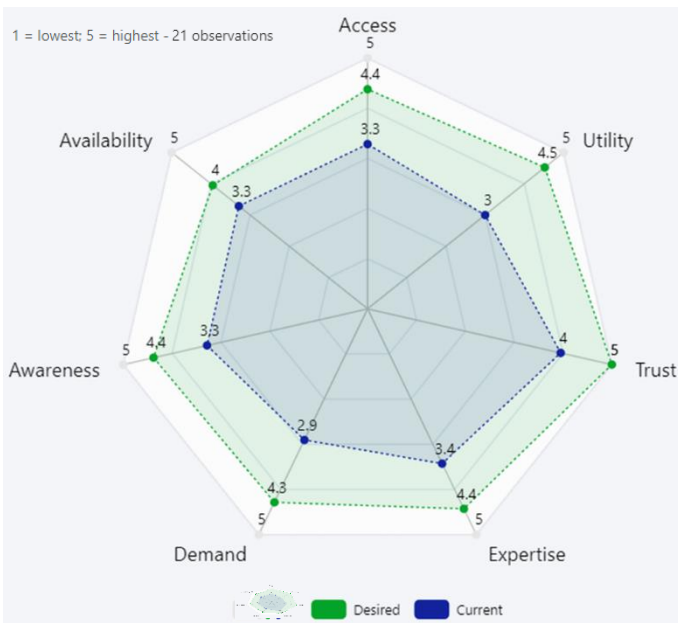
Finally, respondents from the "others" category -comprising private sector; international organisations; civil society and media- report low levels of Expertise and Demand. These two factors are strictly linked: without adequate expertise people will not be able to use the data, even if they had the intention to do so. Whereas expertise in data tends to be higher in the government and research sectors, the other sectors normally receive less support in this area. Building the capacities of these sectors -and especially of the journalists working in the media- could be beneficial to increase the interest of a wider audience in data-driven agricultural analysis. Importantly, respondents from this sector report high levels of Trust (3.8), which is a necessary condition to strengthen the data ecosystem and can also act as an enabler of the required improvements.



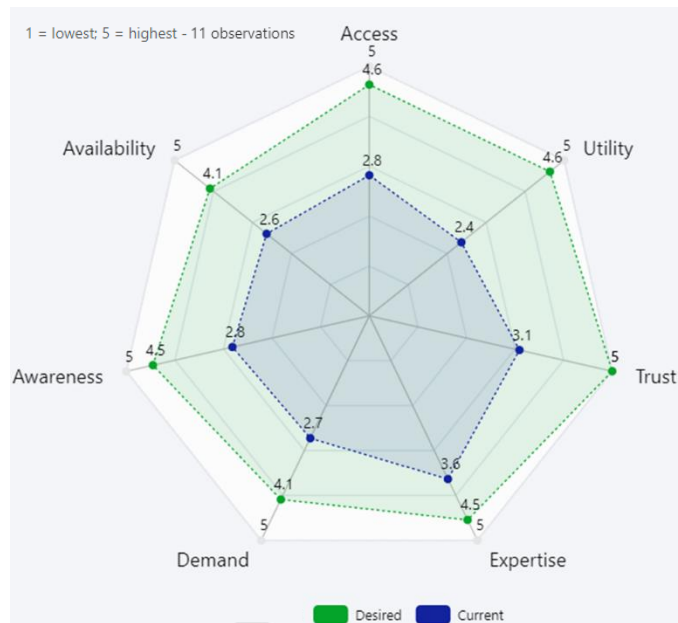
Figure 3. Data Use Factors by respondents' sectors

## Data Use Factors - Current vs. desired situation

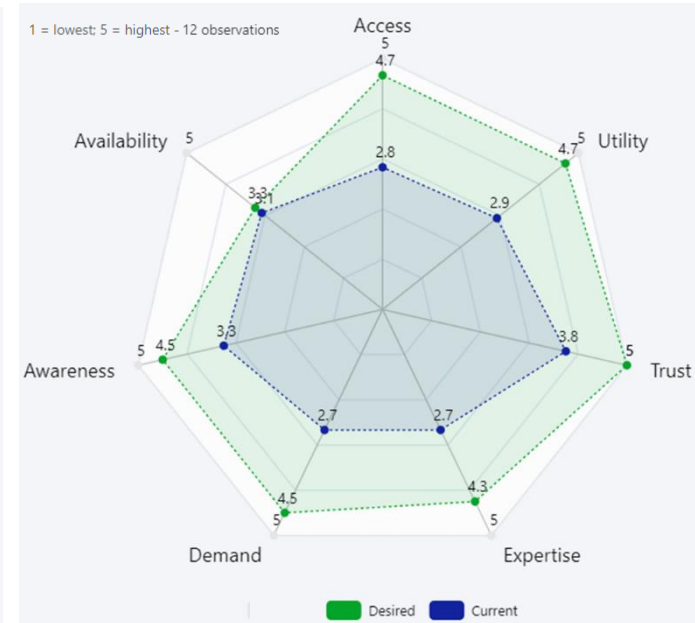
### Government



### Researchers



### Others



## 4. Decision making in the agricultural sector

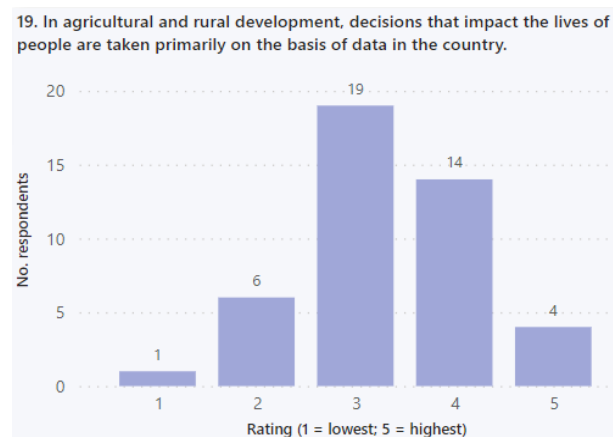
The DEM survey also enquired how decisions are made in the agricultural sector to understand the enabling environment for data driven decision-making. Three questions related to: a) the extent that data are used in decision-making; b) whether data-driven decisions are rewarded; and c) whether there is political support for such decisions. These are rated using a scale from 1 (lowest) to 5 (highest). Thus, a score of above 3 and above may be considered as moderate to high score. The average scores are presented in Figures 4-6 below and the breakdown by sector and role can be found in Annex II.

On average, there appears to be moderate support for data-driven decisions by the government, with a mean score of 3.41 -slightly above the average of the other two questions. Additional insights can be extracted from the data by breaking down this question by data roles and sectors. In Table 4 – Annex II, it is shown that data producers have a more optimistic view of decision making processes (3.94), than data analysts (3.00). It should be noted that data producers are government officials and they do have more positive impressions on the governmental support to data-driven approaches (see breakdown by sector). It can also be appreciated that researchers tend to rate this question lower and have a more critical view of the current situation.

The average score on the question related to rewarding data-informed decision making rating is low (2.91) suggesting that there are limited tangible rewards and incentives associated with data-informed decisions. Data producers are more optimistic than data analysts (3.35 vs. 2.55). With regards to the extent to which decisions that impact peoples' live are taken based on data, respondents report an average rating of 3.32. It is interesting to note, that the score reported for decision-makers (see Table 4 – Annex II) is lower as they might be better informed on how the decisional processes work in Burkina Faso. It is worth noting the lower ratings provided by respondents from the research sector, rating it with 2.8 and 3.0 respectively.

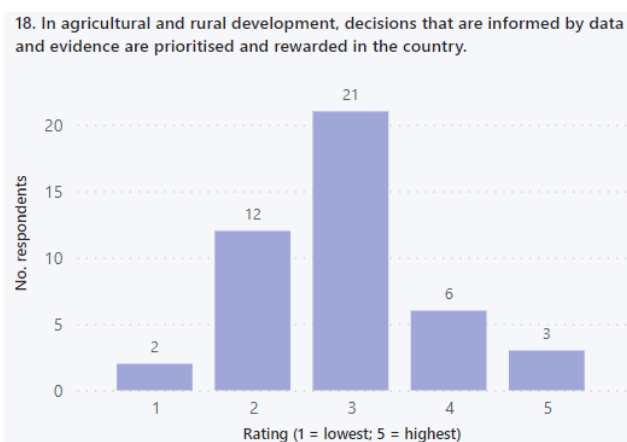
In conclusion, respondents were divided on the extent of data-driven decision making in agricultural sector in the country. While respondents from the government reported a moderate to high enabling environment for data use, those outside the government differed.

Figure 4 – Decisions that impact peoples' lives are taken based on data



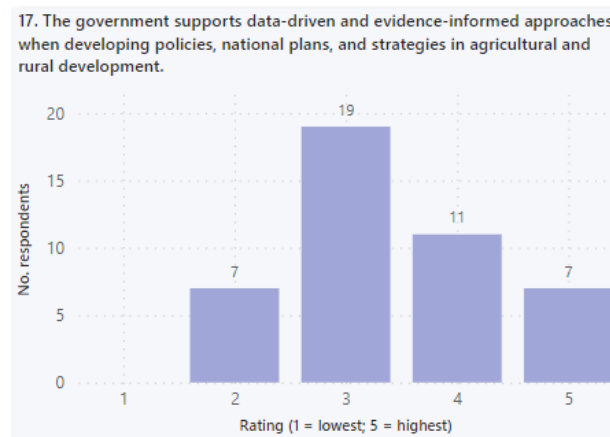
3.32  
Average rating

Figure 5 – Data-driven decisions are prioritised and rewarded



2.91  
Average rating

Figure 6 – Support to data driven and evidence-informed approaches



3.41  
Average rating

## 5. Barriers constraining the use of data

The DEM survey also elicited the barriers that data users face when dealing with six data-related processes. These processes are: identification and prioritization of data needs; data collection; data dissemination; data analysis; access to data; use of data for decision making. The barriers assessed are: technology and tools; clear and efficient administrative processes; coordination and information sharing among stakeholders; financial resources; number of personnel; technical capacity; will and support from superiors. Respondents were able to select multiple answers, as several barriers might exist for each process. The results are presented in the Figure 4 below, in which the bars express the percentage of respondents who selected each option as a barrier for a specific process.

Regarding the identification and prioritization of data needs, financial resources emerge as the main barrier (86%), followed by coordination and information sharing amongst stakeholders (73%) and by clear and efficient administrative processes and technology and tools (50% each).

As it can be expected, financial resources is the major barrier for data collection (93% of respondents), followed by the lack of technology and tools (55%). Coordination and information sharing amongst stakeholders emerges as an important barrier (52%). These results are somehow similar to those for data dissemination -with less preponderance on financial resources. In addition, clear and efficient administrative processes also constitute an important barrier for data dissemination.

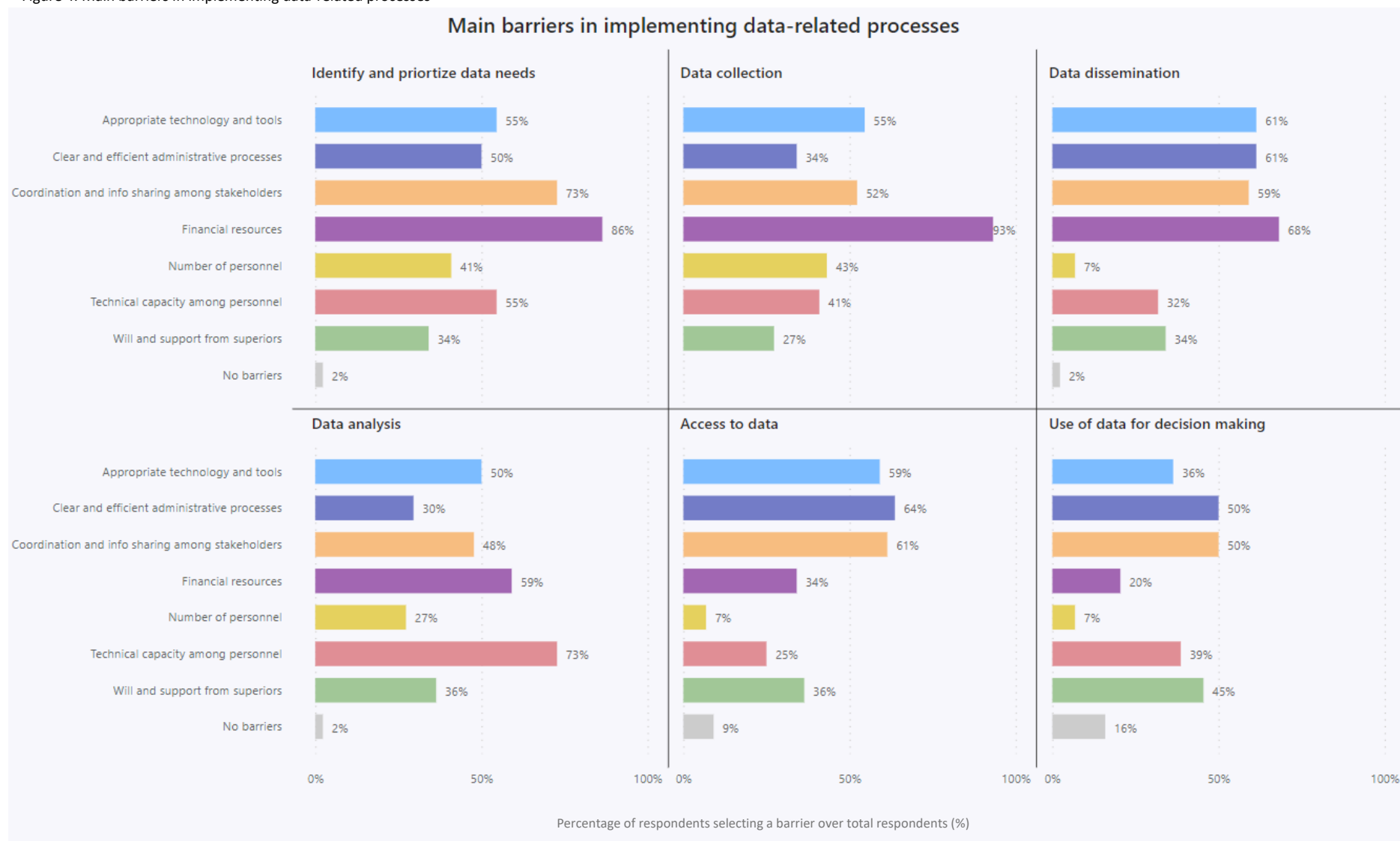
Concerning data analysis, the main barrier is the lack of technical capacity of national staff, followed by the lack of financial resources and technology and tools. Since 73% of respondents report that technical skills are a barrier for performing data analysis, a need for building people's technical and analytical capacities in Burkina Faso emerges clearly. In this regard, 50x2030 is well-positioned to support the country as it has a track-record of providing trainings and technical assistance in several countries.

With regards to accessing data, the major barriers are clear and efficient administrative processes as well as coordination and information sharing amongst stakeholders, whereas more tangible elements like financial resources or the number of personnel do not seem to be a big obstacle. Therefore, improving Access to data seems to be an outcome that requires dedicated in-country workshops, coordination meetings and agreements across stakeholders. This represents a great opportunity for 50x2030 as the initiative works with multiple stakeholders and can play a critical role as an assembler of national and international partners towards a strengthened data ecosystem.

On using data for decision making, coordination and information sharing amongst stakeholders and clear and efficient administrative processes are the most pressing issues, both with 50%. These are followed by will and support from supervisors and by lack of technical capacities (39%). These barriers are strongly interlinked. Interestingly, neither financial resources nor lack of personnel were chosen as

the driving factors that limit data use for decision making. This depicts a very interesting scenario in which behavioural change might be more needed than physical inputs or financial resources to strengthen the Burkinabe Data Ecosystem. This is very well aligned with 50x2030's 3Cs approach, which proposes to design activities around Capacity Development-Collaboration-Communication to improve any Data Ecosystem.

Figure 4. Main barriers in implementing data-related processes



## 6. Conclusions

The agricultural Data Ecosystem Mapping of Burkina Faso was conducted to inform 50x2030 data use activities in the country by examining the current use of agricultural data. It highlights the strengths, the opportunities, and the key stakeholders of the data ecosystem. It used self-reported data obtained through an online survey that reached out to respondents who identified their roles as data producers, data analysts and decision-makers from the government and non-government sector. The main findings are summarized below:

A fairly high level of use of agricultural data is observed among respondents, particularly data producers and data analysts. The primary use of data is for monitoring and reporting on global, national and sub-national strategic goals as well as programmes. Areas where data use can be enhanced are informing investment decisions in agriculture programmes and formulating national policies.

An examination of the enablers to more and better data use suggests the presence of some degree of political support and appreciation for data-driven decisions in agriculture, even though there are no formal incentives and rewards for such decisions. Trust in data is quite high across all stakeholders. These represents a good foundation for improvements and constitute an asset upon which 50x2030 will build to strengthen the data ecosystem in Burkina Faso.

The main constraints to the use of data, across all stakeholders, are data utility and access. Respondents perceived low utility of existing data and reported difficulties in accessing them. These constraints in turn affect the demand for data, which also emerges as an important constraint. A closer analysis by stakeholder role showed that constraints faced by decision-makers in using data are different from data producers and data analysts. Decision makers reported lack of awareness and expertise (skills) to analyze and interpret data as important constraints. Further, lack of up-to-date technical skills among personnel, coordination and knowledge sharing among stakeholders and administrative processes are significant barriers to data analysis, data access and use.

The mapping of key stakeholders in the agricultural data ecosystem in Burkina Faso depicted the presence of few but strong actors. The Ministry of Agriculture (MARA), National Institute of Statistics and Demography (INSD) and FAO come across as preferred partners that provide access to data. For support in data analysis, additionally, respondents reached out to INERA. Finally, we have found healthy links of decision makers to local universities.

Based on these findings, the following suggestions are made for the future course of action:

- (a) Programs and initiatives that aim to improve use of data in decision-making should capitalise on the good foundations of political support and the healthy linkages between decision makers and

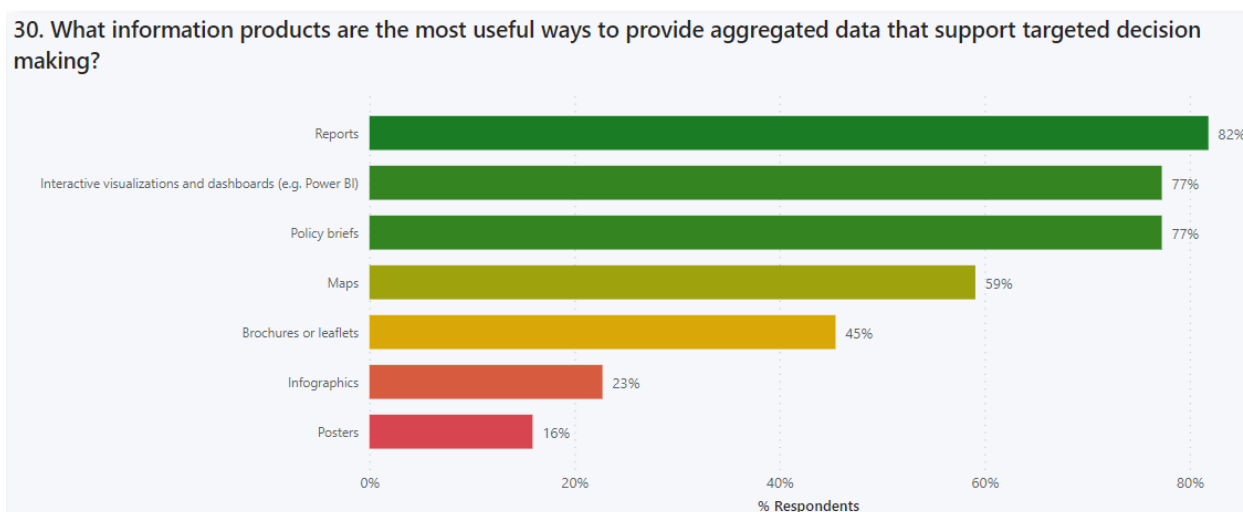
local universities and think-tanks. Support should be provided to advocate and build consensus around data and evidence at higher political levels and further promote collaboration between data stakeholders. The 50x2030 Initiative will address this by organising strategic advocacy and knowledge sharing workshops nationally and regionally that bring together the key actors in the data ecosystem such as the MARAH, NIS, universities, think-tanks and multilateral organisations to foster discussion on the value of data and evidence.

- (b) To address the constraints of data utility and access, governments and multilateral organisations should invest in technology and tools that enable ease of access to aggregate data such as data dashboards and repositories. The 50x2030 Initiative will focus on enhancing the skills of technical staff to use and analyse various forms of data. Specifically, (i) trainings will be provided to staff in key ministries, starting with MARAH, to analyze data using recent methodologies, and software (ii) trainings will be provided to develop data tools that enable visualisation of data to facilitate their interpretation.
- (c) To address the constraint of expertise and awareness among decision-makers, donor organisations should invest in the skills of mid-to-senior level civil servants to interpret data and evidence correctly and apply them to decision making processes. The 50x2030 Initiative will support relevant technical teams in key ministries to develop specialised knowledge products to inform strategic priorities of the ministries. The Initiative will further mobilise resources to sponsor civil servants for regional training courses on evidence use for policy making.



## Annex I – Most useful data products

Regarding the most useful data products to support decision making, there is a clear preference for reports (82%), policy briefs and interactive visualizations and dashboards (77%). On the other hand, respondents report less utility of posters and infographics (23% and 16% respectively). Moderate preference was expressed regarding maps and brochures, with 59% and 45% of respondents considering them useful for decision making.

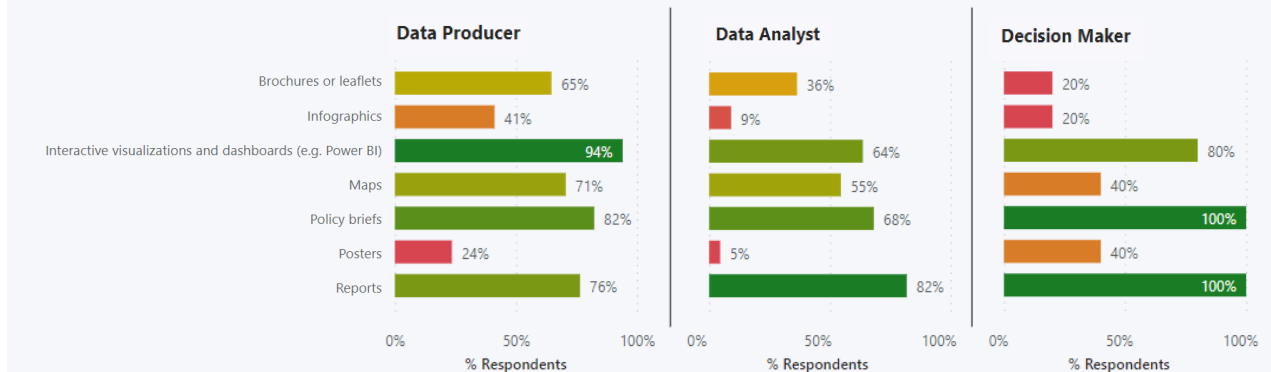


As can be seen in the chart below, decision makers mostly value reports, policy briefs and interactive data visualizations and dashboards. However, data analysts consider these products less useful - especially policy briefs (68%) and interactive data visualizations and dashboards (64%). The reasons behind this might be varied, although the technical complexity of these two products could be a plausible explanation. In other words, if data analysts do not have adequate skills to generate these products it is more likely that they will not consider them useful enough, as they might not be conscious of their full potential and capabilities.

Developing policy briefs is complex in nature and require strong writing skills, capacity of synthesizing large amounts of information and critical thinking. On the other hand, developing interactive visualizations and dashboards require both logical and technical skills, which are quite specific. These are all relevant skills and capacities that -if developed- will strongly benefit the whole data ecosystem of Burkina Faso.

The 50x2030 Data Use team has conducted trainings and capacity building programmes on these topics in several countries and has developed a strong knowledge and expertise in facilitating these learning processes. Hence, support on this front could be provided to Burkina Faso.

30. What information products are the most useful ways to provide aggregated data that support targeted decision making?



In addition, it could be seen that there is also an important difference regarding maps, which are most valued by data producers (71%) but less by data analysts (55%) and decision makers (40%). Given the intrinsic geographical nature of agriculture, it is somehow surprising that these are not highly valued across all categories. Further investigation should be conducted to understand why this is the case and whether promoting the use of maps might be worth in the Burkinabe context.

Finally, the fact that decision makers do not seem to value infographics greatly (only 20% considered them useful) is also surprising. In other 50x2030 countries, this product is greatly appreciated by high-level authorities, as it can be handy in summarizing huge amounts of information in one or two pages and in helping to communicate data in a very conducive manner. However, the quality of infographics can vary enormously, ranging from well-designed products with clear data narratives and much value added to inaccurate aggregations and charts without a logical sequence, in which case the infographics become useless.

Considering this, it should be explored to which type of infographics decision makers have been exposed to. It could well be the case that decision makers have not been provided with high-quality infographics but with inadequate products. In this case, the issue would be more on the quality rather than on the product itself. This hypothesis is reinforced by the fact that only 9% of data analysts -who would normally generate infographics- selected them as a useful product, which is also surprising. To this end, qualitative validation of these findings might be of great help.

## Annex II – Data use factors tables

Table 1 – Data use factors – overall scores

Factor	Current	Desired	Distance
Access	3.0	4.5	1.5
Availability	3.1	3.8	0.7
Awareness	3.2	4.4	1.3
Demand	2.8	4.3	1.5
Expertise	3.3	4.4	1.1
Trust	3.7	5.0	1.3
Utility	2.8	4.6	1.8
<b>Total</b>	<b>3.1</b>	<b>4.4</b>	<b>1.3</b>

Table 2 – Data use factors – scores by role

Data Producers				Data analysts				Decision Makers			
Factor	Current	Desired	Distance	Factor	Current	Desired	Distance	Factor	Current	Desired	Distance
Access	3.4	4.5	1.2	Access	2.7	4.5	1.8	Access	3.4	4.6	1.2
Availability	3.2	3.8	0.6	Availability	2.9	3.8	0.9	Availability	3.2	3.6	0.4
Awareness	3.3	4.4	1.1	Awareness	3.1	4.5	1.3	Awareness	2.8	4.4	1.6
Demand	3.0	4.4	1.4	Demand	2.6	4.3	1.6	Demand	2.8	4.2	1.4
Expertise	3.3	4.4	1.1	Expertise	3.3	4.4	1.0	Expertise	3.0	4.6	1.6
Trust	4.0	5.0	1.0	Trust	3.5	5.0	1.5	Trust	3.6	5.0	1.4
Utility	3.1	4.4	1.4	Utility	2.5	4.7	2.1	Utility	3.2	4.8	1.6
<b>Total</b>	<b>3.3</b>	<b>4.4</b>	<b>1.1</b>	<b>Total</b>	<b>3.0</b>	<b>4.4</b>	<b>1.5</b>	<b>Total</b>	<b>3.1</b>	<b>4.5</b>	<b>1.3</b>

Table 3 – Data use factors – scores by sector

Government				Researchers				Others			
Factor	Current	Desired	Distance	Factor	Current	Desired	Distance	Factor	Current	Desired	Distance
Access	3.3	4.4	1.1	Access	2.8	4.6	1.8	Access	2.8	4.7	1.8
Availability	3.3	4.0	0.7	Availability	2.6	4.1	1.5	Availability	3.1	3.3	0.2
Awareness	3.3	4.4	1.1	Awareness	2.8	4.5	1.6	Awareness	3.3	4.5	1.3
Demand	2.9	4.3	1.4	Demand	2.7	4.1	1.4	Demand	2.7	4.5	1.8
Expertise	3.4	4.4	1.0	Expertise	3.6	4.5	0.9	Expertise	2.7	4.3	1.6
Trust	4.0	5.0	1.0	Trust	3.1	5.0	1.9	Trust	3.8	5.0	1.3
Utility	3.0	4.5	1.5	Utility	2.4	4.6	2.3	Utility	2.9	4.7	1.8
<b>Total</b>	<b>3.3</b>	<b>4.4</b>	<b>1.1</b>	<b>Total</b>	<b>2.9</b>	<b>4.5</b>	<b>1.6</b>	<b>Total</b>	<b>3.0</b>	<b>4.4</b>	<b>1.4</b>

Table 4 – Decisions that impact peoples' lives are taken based on data

Role	Avg score	Sector	Avg score
Data Analyst	3.18	Civil society	3.50
Data Producer	3.59	Government	3.48
Decision Maker	3.00	Int. Development	2.80
<b>Total</b>	<b>3.32</b>	Private sector	5.00
		Research	3.00
		<b>Total</b>	<b>3.32</b>

Table 5 – Data-driven decisions are prioritized and rewarded

Role	Avg score	Sector	Avg score
Data Analyst	2.55	Civil society	3.17
Data Producer	3.35	Government	3.19
Decision Maker	3.00	Int. Development	2.80
<b>Total</b>	<b>2.91</b>	Private sector	3.00
		Research	2.27
		<b>Total</b>	<b>2.91</b>

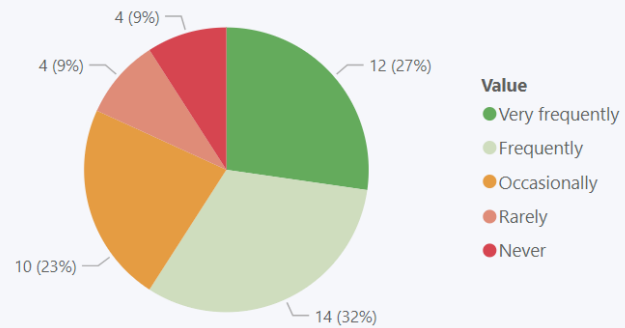
Table 6 – Support to data driven and evidence-informed approaches

Role	Avg score	Sector	Avg score
Data Analyst	3.00	Civil society	3.83
Data Producer	3.94	Government	3.62
Decision Maker	3.40	Int. Development	3.00
<b>Total</b>	<b>3.41</b>	Private sector	3.00
		Research	3.00
		<b>Total</b>	<b>3.41</b>

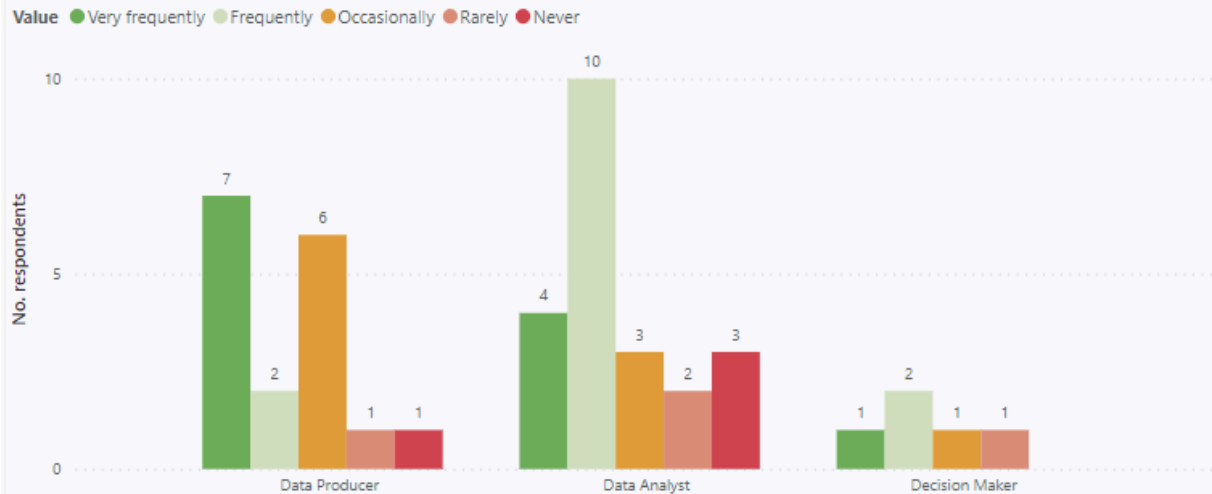
## Annex III – Frequency of access to microdata

Regarding the frequency with which micro-data has been accessed, it can be observed that 59% of the respondents report frequent or very frequent access. These are the most common responses for data analysts (analysts), which is in line with the expectations. Frequently analysts are in charge of developing knowledge products using the microdata generated by the data producers to inform decision makers.

27. In the past three years, how often have you tried to access micro-data (raw data) from the National Institute of Statistics and Demography?



27. In the past three years, how often have you tried to access micro-data (raw data) from the National Institute of Statistics and Demography?



## Annex IV –Theory of Change of 50x2030

The main objective of the 50x2030 Initiative is increased and sustained evidence-based decision-making in agriculture in low and lower-middle income countries (L/LMICs). In support of the main objective, the Data Use component will focus on achieving two outcomes under the 50x2030 Results Framework:

- Key actors using survey data in more and better ways in partner countries
- More sustainable and strategic agricultural data ecosystems in partner countries

The Data Use component will achieve those outcomes by supporting countries to implement activities to strengthen the data ecosystem through improved country capacities for data use, communication about data and collaboration among country stakeholders.

A country data ecosystem is comprised of three types of stakeholders (a) data producers (b) data analysts and (c) decision makers. Data Use activities are primarily targeted at two types of stakeholders within a country- data analysts and decision makers. The main targeted group among decision makers are the officials of the Ministry of Agriculture or allied ministries, while technical staff of the ministry, universities and researchers are the main targeted group among data analysts. Other stakeholders that data use activities will engage with are multilateral organisations, journalists, CSOs and private sector.

Figure 1 depicts the hypothesised pathway through which data use activities are expected to lead to the programme outcomes. The context is set in a country with low levels of data use. As with all theories, the data use hypothesised pathways are based on some critical assumptions, namely:

- a) 50x2030 data have been produced and accessible
- b) 50x2030 data are of good quality and trusted among stakeholders
- c) There is knowledge and buy-in for the programme at higher political levels

Once a partner country is on-boarded and MOU is signed, the Initiative's Data Use activities will begin with an assessment of current levels of data use in the country. Within the first three months, a needs assessment of the Ministry of Agriculture (MoA) will be conducted to understand the status of data demand and use by the Ministry, its strengths, weakness and expressed needs for support towards data use. Based on this, a joint multi-year implementation plan with MoA will be developed. After the needs assessment, a mapping of ecosystem stakeholders will be done through an online survey. The ecosystem maps will be used to identify influential stakeholders and strategic partners. In the first six months, a sensitisation workshop that brings together major data ecosystem stakeholders will be held to raise awareness of existing survey data, where applicable, and to initiate discussions on the importance of data for decision-making. All awareness building workshops will be organised with NSOs (data producers). The outputs in the first six months are a needs assessment report, a data ecosystem mapping report, a joint implementation plan with MoA and a data awareness workshop. These are expected to conceptualise the rationale for data and evidence with the MoA and other stakeholders.

In the second phase, data use activities will focus on trainings on data analysis for technical staff of the MoA to improve their skills to produce policy-relevant knowledge products including operational and strategic documents using 50x2030 data. Advisory support will be provided to MoA on data analysis. Additionally, local researchers will be funded to produce policy relevant research papers using 50x2030 data. These activities are expected to improve the capacity of technical staff and local researchers to analyse 50x2030 data, leading to more and better data inputs in knowledge products to inform programmes and policies. The main outputs in this phase would be trainings, research papers and knowledge products developed by the MoA.

Assuming activities of the second phase are well consolidated, new data use activities will be introduced in the third phase with the objective of engaging more intensively with decision makers and fostering strong linkages with data analysts. Trainings on statistical literacy and interpretation will be organised for practitioners. Outreach to universities and think tanks will be intensified in the form of workshops on advanced methods for data analysis using 50x2030 data and research communication. Data awareness workshops and seminars will be organised between MoA and researchers to encourage dialogue on data and evidence in policy decisions. Grants will be given to universities and research organisations to enhance their research communication activities. Investments in tools that enable easy access and interpretation of data will be done in this phase. These activities are expected to improve decision-makers ability to use data and ensure the effective exchange of evidence, thereby leading to increase in data use for decision-making. The outputs in this phase are trainings for practitioners, seminars and workshops with universities and research organisations and data awareness workshops and seminars for practitioners and data analysts.

Once good quality data-driven knowledge products are produced by technical staff and researchers and being used by the ministry of agriculture (project outcome 1), data use activities will enter the fourth phase. In this phase, stakeholders such as journalists, CSOs and private sector will be targeted with the aim to increase data literacy at the eco-system level. Increased data literacy at the eco-system level is likely to lead to a culture of data and evidence use. This will be attempted through data awareness workshops, seminars and knowledge sharing events that convene the diverse actors for dialogues on data driven decision making. These activities will, further, reach out to other ministries such as finance and planning. Online communities will be started to facilitate exchange of data and knowledge. Establishing a culture of data and evidence use is likely to lead to more investments in agricultural data systems by government as well as by crowding in the private sector, thereby, contributing to a sustainable agricultural data system (project outcome 2).

A few caveats are needed in the reading of the four-phased hypothesised pathway towards improved data use in a country. One, the hypothesised pathway is proposed for a country with low baseline data use. Countries with relatively high levels of data use may already be at phase two or three. In such cases, activities to advance the country to the next phase will be prioritised. Two, the four phases are not compartmentalised and will overlap. Initiation of a phase does not mean the complete cessation of activities in the previous phase. Indeed, activities across phases may be reinforcing although some

activities such as trainings to governments may be phased out as a country reaches higher levels of capacity and strong linkages are established with data analysts. Third, the duration of each phase will vary by country. In Cambodia, a country with low baseline data use, data activities are not expected to move to phase 3 despite activities in the country for one year. On the other hand, Georgia-a country that started with low levels of data use- is ready for phase 3 to be implemented.

**Figure 1: Hypothesised Pathway for Impact**



The activities proposed for promoting data use address five of the seven identify constraints to data use namely (a) Awareness (b) Access (c) Expertise (d) Utility and (e) Demand. The remaining two factors are availability and trust in data which are influenced by the production and quality of data. Table 1 shows the mapping of each activity to the constraining factors they address.

**Table 1: Data use activities and the constraining factors addressed**

Activity	Factor addressed
Awareness workshops	Awareness, Access <sup>3</sup> , Demand
Trainings for technical staff	Expertise, Utility
Workshops for researchers	Expertise, Utility
Funding for researchers/ universities	Expertise, Utility
Trainings for decision makers	Awareness, Demand, Expertise
Data tools	Access, Utility