



Data for Decisions to Expand  
Nutrition Transformation

## Analysis of User Engagement with Global Nutrition Data Visualization Tools

### B R I E F

#### **Purpose & Approach**

To explore how global and regional nutrition stakeholders are engaging with global nutrition data visualization tools (DVTs), Data for Decisions to Expand Nutrition Transformations (DataDENT) conducted interviews with 31 individuals from 22 global and regional organizations. Study participants were purposively selected if they worked on nutrition issues and with nutrition data across multiple countries. They represented civil society organizations, donors, regional bodies, academia, and United Nations agencies. We conducted one-hour semi-structured interviews with respondents to solicit feedback on: i) experience with specific global nutrition DVTs, ii) aspects liked and disliked in existing global nutrition DVTs, iii) specific contexts in which organizations used global nutrition DVTs, and iv) challenges with and recommendations for the broader nutrition data value chain.

#### **Background**

DVTs are defined as outputs that help people understand the significance of data by placing it in a visual context (e.g. scorecards, dashboards, etc.) and can be easily interpreted and persuasive in conveying key messages (Evergreen, 2016). The data value chain includes the prioritization, collection, curation, analysis, and translation of data (Piwoz et al., 2019). Effective DVTs are essential for a fully developed data value chain by strengthening visualization and interpretation and use for decision-making.







In 2018, DataDENT conducted a [landscaping](#) study of global nutrition DVTs and found that there were at least 22 active global nutrition DVTs at the time of publication. A key conclusion from this analysis was that DVT producers need a strong engagement plan to entice their target audience to use their tools. To date, however, there is little information available on how users engage with data visualization in public health and nutrition (Aung et al., 2019).

#### **Key Findings**

**Finding 1: Respondents consult global nutrition DVTs for a variety of purposes – the most common include to support efforts around advocacy and communication, research, and monitoring & evaluation.**

Through our research, we asked respondents to identify which use-cases of global nutrition DVTs applied not only to their work but also across their organizations. We discovered that respondents had a broad range of use-cases for global nutrition DVTs (Figure 1). The most common were advocacy and communication, research, and monitoring and evaluation purposes.

Figure 1: Types of use-cases

Use Case Types	Description	Number of Orgs (N = 22)
<b>Advocacy and Communication</b> 	Share information or raise awareness regarding an issue or set of issues (i.e. to put it on the agenda of intended audience).	18
<b>Research</b> 	Identify and prioritize research questions (i.e. to generate new concepts and understandings), or to collect background information for proposals and reports.	16
<b>M&amp;E</b> 	Monitor progress of policy or program implementation.	12
<b>Strategic Planning</b> 	Set vision, identify strategic priorities, and allocate non-financial resources or provide technical assistance to other stakeholders for similar activities	10
<b>Program Planning and Implementation</b> 	Coordinate and manage program logistics and implementation as well as management of program financial resources	7
<b>Financing</b> 	Guide investment decisions for a donor, government, or other institution	7

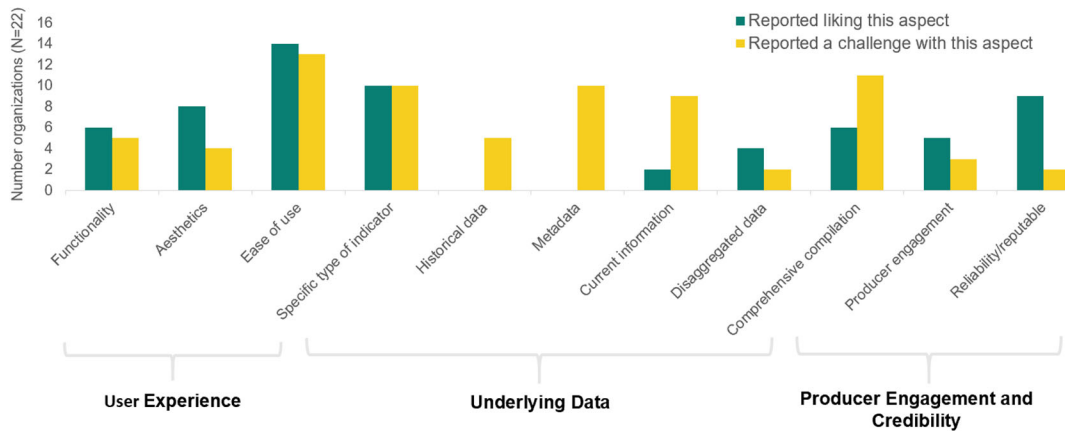
Certain types of organizations were either more or less likely to access global nutrition DVTs for specific use-cases. For example:

- Regional organizations tended to report not using global nutrition DVTs for any purpose. Only 1 of 3 surveyed used a global DVT in the year preceding the interview. The reported use-cases were for advocacy, communications, and monitoring and evaluation.
- More than half of the financing use-cases of global nutrition DVTs were by donor organizations.
- Similarly, strategic planning use-cases were mainly by donor organizations and UN agencies.




**Finding 2: Three sets of factors commonly influence a respondent’s engagement with global nutrition DVTs: 1) design elements and ease of use, 2) the underlying data, and 3) the perceived credibility of and interaction with the DVT producer.**

Respondents reported either liking or having challenges with DVT elements that can be broadly grouped under three dimensions: user experience, underlying data, and producer engagement and credibility (Figure 2).

Figure 2: Likes and challenges with global nutrition DVTs<sup>1</sup>



<sup>1</sup> Responses were collated for all respondents from the same organization – if multiple respondents from an organization cited the same aspect, it was only counted once for that organization.

Dimension	Aspect
 User Experience	<ul style="list-style-type: none"> <li>▪ <b>Functionality:</b> the degree to which a DVT that can be customized by the user</li> <li>▪ <b>Aesthetics:</b> the overall appearance of a DVT, including aesthetically pleasing visualization aspects, such as color schemes and types of visualizations</li> <li>▪ <b>Ease of use:</b> the degree to which a DVT is easy to understand or use, including navigability and clarity of visualizations</li> </ul>
 Underlying Data	<ul style="list-style-type: none"> <li>▪ <b>Specific types of indicator:</b> if a DVT includes specific indicators of interest to the user including indicators of enabling environment, coverage, and financing</li> <li>▪ <b>Historical data:</b> if a DVT includes historical data allowing comparison over time</li> <li>▪ <b>Metadata:</b> if a DVT includes adequate information about data (i.e. details about methodology, explanation and context of data, date of data collection) and/or underlying raw data</li> <li>▪ <b>Current information:</b> if a DVT displays the most updated data available</li> <li>▪ <b>Comprehensive compilation:</b> the degree to which a DVT compiles many indicators and types of data in one location</li> </ul>
 Producer Engagement and Credibility	<ul style="list-style-type: none"> <li>▪ <b>Producer engagement:</b> the degree to which a DVT that has systems for engaging with the DVT producer through feedback or user support</li> <li>▪ <b>Reliability:</b> the degree to which a DVT is perceived by users as being credible</li> </ul>

Within the domain of user experience, respondents reported liking specific DVTs that they considered easy to use and identified lack of simplicity or usability as a major challenge across the current global nutrition DVT landscape.

Aspect of DVT	Quote
<i>Functionality</i>	“It [Countdown Country dashboard] <b>is better than other tools because it is very interactive.</b> ” – Civil society organization/international non-governmental organization (CSO/INGO)
<i>Aesthetics</i>	“For the Joint Child Malnutrition Estimates (JCME), they have these <b>amazing infographics</b> ” - Academia
<i>Ease of Use</i>	“I think <b>the Global Nutrition Report (GNR) is more user friendly</b> for the comms sections, and that’s where they [the communications team] go.” – Donor organization

Users appreciated DVTs that contained specific indicators relevant to their needs and often cited challenges with the timeliness of updates to the DVT and limited accessible metadata.

Aspect of DVT	Quote
<i>Specific type of indicator</i>	“They [WB country profiles] <b>show coverage, which is great</b> ” - CSO/INGO
<i>Comprehensive Compilation</i>	“I like it [SUN MEAL] <b>because it provides a good context and provides a wide range</b> of information” – Donor organization
<i>Metadata</i>	“ <b>What is missing? That metadata</b> is the first thing that I come back to.” – CSO/INGO
<i>Current Information</i>	“For a lot of these DVTs, <b>if you’re going to use it, you want to be sure it is continually updated.</b> ” – Donor organization

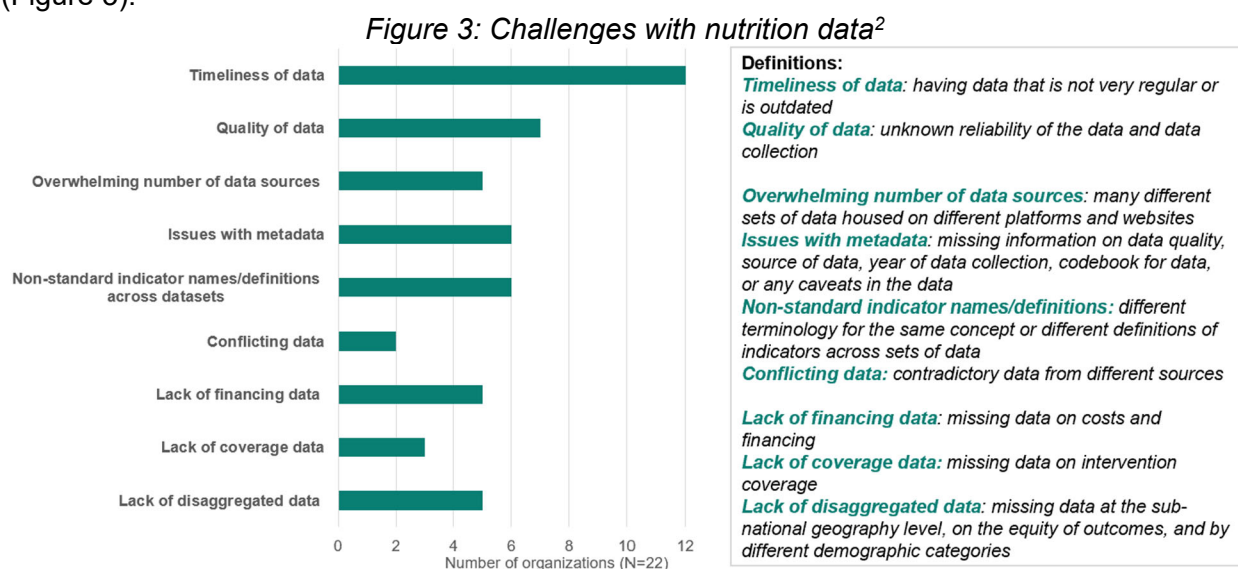
Respondents frequently cited the perceived credibility of the tool and the engagement with producers around the use of the tool as factors they liked in global nutrition DVTs.

Aspect of DVT	Quote
Producer Engagement	“The JCME did this [presentation on key pieces of data] this year and it was really nice.” – CSO/INGO
Reliability	“The GNR I always access whenever there is a launch and it is a reference document because of its credibility.” – CSO/INGO

The GNR and JCME were most frequently cited as being one of the top three DVTs used in the 12 months preceding the interview. Users of the GNR and the JCME cited characteristics across the three domains that they liked in both nutrition DVTs.

### Finding 3: The usefulness of specific global nutrition DVTs is constrained by broader sector-wide issues with data availability and quality.

Respondents reported several challenges with accessing and understanding broader nutrition data not specific to DVTs, the most common of which were the timeliness and quality of data (Figure 3).



They also proposed several recommendations to address these broader challenges with the nutrition data:

- Fund and conduct timely and quality data collection** of key indicators necessary for decision-making
- Include indicators on coverage and financing, and geographically and demographically disaggregated data** that are actionable
- Standardize indicators names, definitions, and geography names** to reduce differences in definitions and conflicting data
- Strengthen capacity of users** by conducting in-person trainings, engaging users, and creating a narrative for non-technical audiences
- Create a data directory** so users have a resource which could direct them to identify where they can find information (whether from specific DVTs or data more generally) by topic area

<sup>2</sup> Responses were collated for all respondents from the same organization – if multiple respondents from an organization cited the same challenge, it was only counted once for that organization.

---

## Recommendations for DVT producers

Based on the findings from our research, we recommend three ways for global nutrition DVT producers to facilitate better engagement with their users:

### Conduct user research for individual DVTs to understand how different users interact with their tool

As users are very different in their engagement with global nutrition DVTs, having a clear theory of change is key to engaging with the relevant audience. Producers need to understand the different needs of the targeted audience and the most effective ways for them to interact with the tool to transmit information and potentially influence decision-making.

Specific recommendations include:

- Test different ways of visualizing data and strengthen the design of the global nutrition DVTs by applying best practices to the specific user context.
- Ask priority user groups about what specific indicators they need to have collated to spur action; these likely include indicators on coverage and financing, as well as disaggregated data.

### Be transparent on where the data has come from, any re-analysis of the data, and assumptions

Quality of data is of paramount importance to the perceived credibility of the visualization tool. Respondents identified steps that producers can take to improve the credibility of the DVT. Producers should ensure that the metadata is available, and any assumptions, caveats, or re-analysis of the data are made transparent. Respondents also appreciated DVTs that included clear links to the underlying source data within the metadata. This transparency improved user confidence in the credibility of the tool.

### Strengthen the capacity of users with training and other engagements, and create a narrative for non-technical audiences

For many users, especially those who are not as familiar with the technical aspects of nutrition data, a complex visualization can be quite daunting. Producers should train users to understand, interpret, and use the data correctly. Respondents were more likely to use tools where they felt more engaged with the producer through training, presentations on key findings, or had contact information for the producer. The level of guidance and approach to training (e.g. help menu; online tutorial; in-person workshops) should depend on the data literacy of the targeted users and align with the DVT's theory of change.

For the full detailed analysis of the user research findings, please visit our full findings.

## Project Note

This user research was led by Results for Development (R4D) as part of the Data for Decisions to Expand Nutrition Transformation (DataDENT) initiative. DataDENT is a four-year initiative (2017-2021) that aims to transform the availability and use of nutrition data by addressing gaps in nutrition measurement and advocating for stronger nutrition data systems. DataDENT is funded by the Bill & Melinda Gates Foundation, and is implemented by three institutions: Institute for International Programs (IIP) at the Johns Hopkins Bloomberg School of Public Health, the International Food Policy Research Institute (IFPRI), and R4D.

---

## Citations

- Aung, T., Niyeha, D., Shagihilu, S., Mpembeni, R., Kaganda, J., Sheffel, A., & Heidkamp, R. (2019). Optimizing data visualization for reproductive, maternal, newborn, child health, and nutrition (RMNCH&N) policymaking: Data visualization preferences and interpretation capacity among decision-makers in Tanzania. *Global Health Research and Policy*, 4, 4. <https://doi.org/10.1186/s41256-019-0095-1>
- Evergreen, S. (2016). *Effective Data Visualization: The Right Chart for the Right Data*. Sage Publications.
- Piwoz, E., Rawat, R., Fracassi, P., & Kim, D. (2019). Strengthening the Nutrition Data Value Chain for Accountability and Action. *Sight and Life Magazine Volume 33*, 6.