Best practices and lessons for data visualization tools in Nutrition

Results for Development
Why visualize data and why are data visualization tools helpful?

1  Why visualize data?
   - Human brains more rapidly process visuals compared to text
   - Data are more persuasive as graphs compared to tables

2  Why are data visualization tools (DVTs) helpful?
   - DVTs are **interfaces between data systems and data users**, making them useful in facilitating decision-making, advocacy, and communication
   - Indicator choices and visuals in DVTs can ensure **focus on key priorities and facilitate data interpretation** to better support decisions
   - Different types of DVTs are usually associated with different types of goals, objectives, and decisions

Notes:
1  Source: Adapted from Evergreen, Stephanie DH. *Effective Data Visualization: The Right Chart for the Right Data*. SAGE Publications, 2016.
The following recommendations stem from several DataDENT workstreams on DVTs in nutrition at the global and country levels:

**Landscaping of Global Nutrition DVTs**
We conducted a review of existing global DVTs in nutrition and examined how they contribute to the nutrition landscape.

**Global Nutrition DVT User Research**
We unpacked the context of use of global DVTs in nutrition and identified strengths and challenges of existing DVTs.

**Online Survey of Nutrition data use and needs**
We assessed the use of nutrition data by stakeholders including their use of global nutrition DVTs.

**Country-Level Work in India and Nigeria**
In India, we completed a landscaping of DVTs and in Nigeria, we developed a nutrition scorecard with the Nigeria Governor’s Forum.

For details of the individual studies, please refer to the links in the descriptions.
Many global nutrition DVTs already exist; ensure that any new or improved DVT has a unique value add
There are a growing number of global data visualization tools in nutrition (22 as of 2019)

For more information, please see the full landscaping report
Our online survey showed that while there are many DVTs, only a select few appear to be accessed by a number of nutrition stakeholders.

% of global nutrition community respondents who report accessing nutrition DVTs
(Number of respondents = 177)

- GNR: 75%
- UNICEF State of the World’s Children: 57%
- JCME Dashboard: 39%
- UNICEF datasets: 38%
- FAO State of Food Security: 36%
- World Bank: 36%

- SUN MEAL: 32%
- WHO Global Targets Tracking Tool: 29%
- Countdown to 2030: 29%
- WHO Global Health Observatory: 24%
- FAO Country Indicators: 20%
- WHO Vitamin & Mineral Nutrition Information Systems: 19%

The report summarizing the full findings from the online survey is forthcoming.
Recommendation #2

Every DVT needs a clear theory of change guiding its design and use
A clear theory of change helps ensure the DVT will lead to the intended action

A strong theory of change means having:

- Target Audience
- Clear decisions/behavior they are trying to influence
- Pathway of how their data/actions lead to change

Notes:
1 A clear theory of change identifies a long-term goal and the pathway(s) needed to achieve that goal, specifically articulating that if the initiative were to perform X action, then Y will change for the following reasons, assuming the right preconditions were in place. (Adapted from USAID’s Learning Lab, “What is this thing called “Theory of Change?””)
While most global nutrition DVTs have a broad or unclear theory of change, there are a few exceptions including the African Leaders Malaria Alliance (ALMA) scorecard.

- **A focused theory of change** with a very targeted set of decision-makers (i.e., African Heads of States)
- **Actionable indicators** that align with their agenda, provide action loops (i.e., color coding; arrows) and recommended actions
- **A strong engagement strategy** with their targeted decision-makers, provide quarterly reports on progress, meet regularly, and facilitate TA

For more information, please see the full landscaping report
An example of a country nutrition DVT with a clear theory of change includes the Nigeria Governors’ Forum (NGF) scorecard

- The NGF’s nutrition scorecard focuses on influencing actions that can be taken by the Governors to **improve the enabling environment for nutrition**
- The Governors meet on a **regular basis to review their states progress** using the scorecard
- The red/green colors of the scorecard are **straightforward and inspire competition among the states**

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Indicator</th>
<th>Abia</th>
<th>Anambra</th>
<th>Ebonyi</th>
<th>Enugu</th>
<th>Imo</th>
</tr>
</thead>
<tbody>
<tr>
<td>To set up/revitalize State Committee on Food &amp; Nutrition</td>
<td>SCFN Quarterly meeting held and chaired by the SCFN Chair</td>
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<td></td>
<td>At least 75% of necessary funding for SCFN workplan released quarterly (% released located to the left of circle if available)</td>
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<tr>
<td>To establish a multisectoral nutrition plan</td>
<td>MSPAN approved</td>
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<tr>
<td>To promote maternity protections</td>
<td>Six months maternity leave with full pay</td>
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<tr>
<td></td>
<td>A functional creche registered in the State Secretariat</td>
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</tbody>
</table>

A case study detailing the scorecard development process and key reflections is forthcoming
Recommendation #3

Include actionable indicators that align with the DVT's theory of change
DVTs should include more actionable indicators for their target audience to influence their behaviors & decisions

Actionable indicators for policy change generally fall within 3 domains:

1. **Enacted Legislations**
   - Example: Indicators about the existence and quality of nutrition policies could help identify gaps and strengthen nutrition policies.

2. **Other Enabling Environment**
   - Example: Indicators about monitoring effectiveness of BMS code legislation can pinpoint areas for improvement of implementation.

3. **Program Coverage**
   - Example: Indicators on food fortification coverage can identify regions for scaling up fortification programs.

Actionable indicators can be short-listed after consulting the target audience on their specific needs.

For more information, please see the full landscaping report.
Recommendation #4

When selecting indicators for a DVT be mindful of how the definitions compare with other indicators in common use.
Some DVTs use different indicator definitions and methodologies for similar measures – which may send mixed messages to users.

For more information, please see the full landscaping report.
DVTs reporting common indicators is especially problematic when they use different definitions that can lead to different conclusions.

As an example, differences in the definition of coverage of interventions can lead to different and confusing results.
Recommendation #5

Be transparent about data source and ensure data are up to date
The four challenges identified in our user researcher were:

**Unknown Metadata**
“*What is missing? That metadata is the first thing that I come back to*...the indicator name, full definition, type of data...is not always clear from other sources” – CSO/INGO

**Lack of Current Information**
“If you’re going to use it, you want to be sure it is continually updated and hosted by something like FAO, WHO, or the WB where you know [they]...will be sustaining it” – Donor

**Lack of Historical Data**
“I would want to look at change over time and what specific changes have been made” – CSO/INGO

**Lack of Disaggregated Data**
“You don’t always get all the extra bits with it, like being able to understand [the data] by different classifications and different levels of disaggregation” – Donor

For more information, please see the user research findings

Note:
1 Few respondents also cited lack of historical and disaggregated data as key challenges with underlying data.
Recommendation #6

Test visualization formats with targeted users to ensure formats align with users' data literacy levels and preferences
For example, in our research, we identified key features liked by users, such as ease of use and interactivity

The visualization is quite good because…\textit{it allows you to modify it a little bit} and do quick comparisons. – UN Agency

I like that rather than having to search in the MEAL, it \textit{gives it to me in an efficient way}…you know where to find things. – CSO/INGO

I like the aesthetics…\textit{It needs to look pretty} and I \textit{think the aesthetic makes a difference}. Clear and simple are my biggest criteria. – CSO/INGO

I like really \textit{clear data points that show a message} in a very obvious way. – CSO/INGO

The \textbf{GNR is more user friendly} for the comms sections, and that’s where they [the comms team] go. – Donor

It’s useful to bring together progress against targets and it’s \textit{clearly presented}. – Donor

They have these \textbf{amazing infographics} that break it down by geographic region. – Academia

\textbf{The JCME is quite clear}. It’s easy to navigate. – CSO/INGO

For more information, please see the user research findings
Recommendation #7

Provide user support to understand, interpret, and use the data correctly.
As an example of user engagement, in our India DVT work, we found that DVT producers are providing support to users in three ways

1. **User Guides**
   - Example: Tata NIN has documentation on their webpage explaining what content is available on each tab of their DVT, how they aggregated data, indicator definitions, and sources

2. **Training**
   - Example: Champions of Change held a two-day training during their launch for District Magistrates and District Information Officers (NIC officers)

3. **WhatsApp Group**
   - Example: Champions of Change said they use WhatsApp groups to follow up and address problems of their team at state and district level

For more information, please see the India DVT findings
Recommendation #8

Finally, address broader sector-wide issues with data availability and quality that can constrain the usefulness of global nutrition DVTs.
The usefulness of specific global nutrition DVTs is constrained by broader sector-wide issues with nutrition data availability and quality

<table>
<thead>
<tr>
<th><strong>Timeliness of Data</strong></th>
<th>“You look for DHS information for one country and the latest information is from 8 years ago. <em>Those kind of gaps make it not as current.</em>” – Academia</th>
</tr>
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<tbody>
<tr>
<td><strong>Quality of Data</strong></td>
<td>“There are challenges with data quality, especially with routine monitoring systems… <em>they may be unreliable</em>” – Donor</td>
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<tr>
<td><strong>Many Sources with Conflicting Data</strong></td>
<td>“Sometimes it can <em>get confusing to figure out what’s the best source if something contradicts</em> something else.” – CSO/INGO</td>
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<tr>
<td><strong>Lack of Specific Indicators</strong></td>
<td>“<em>The financing data has a huge deficit there.</em> You have to piece things together” – UN Agency</td>
</tr>
<tr>
<td><strong>Lack of Disaggregated Data</strong></td>
<td>“[We are missing] <em>having data that’s disaggregated at state</em> or district or province level.” – CSO/INGO</td>
</tr>
</tbody>
</table>

For more information, please see the user research findings