



FEED THE FUTURE

The U.S. Government's Global Hunger and Food Security Initiative



Photo: Feed the Future photo contest submission

Session 9: Open Data Policy and Process



USAID's Open Data Policy: ADS 579

- [Development Data Library \(DDL\)](#)
- Defines USAID's Data Governance Structure
- Outlines the Standard Data Clearance Process
- Creates Data Stewards in every USAID Operating Unit ([ADS 579.2.h](#) p.6)



Open Data Process

- Define Open Data - what does it mean to you?
- Why is it important to USAID and you?
- Who is responsible for submitting data?



Data Sharing

- What reasons do you have to share data?
- Why would you not share data?
- What types of data do you think should be public?
- What data should we keep restricted?



Privacy Concerns

Changing the mindset of:

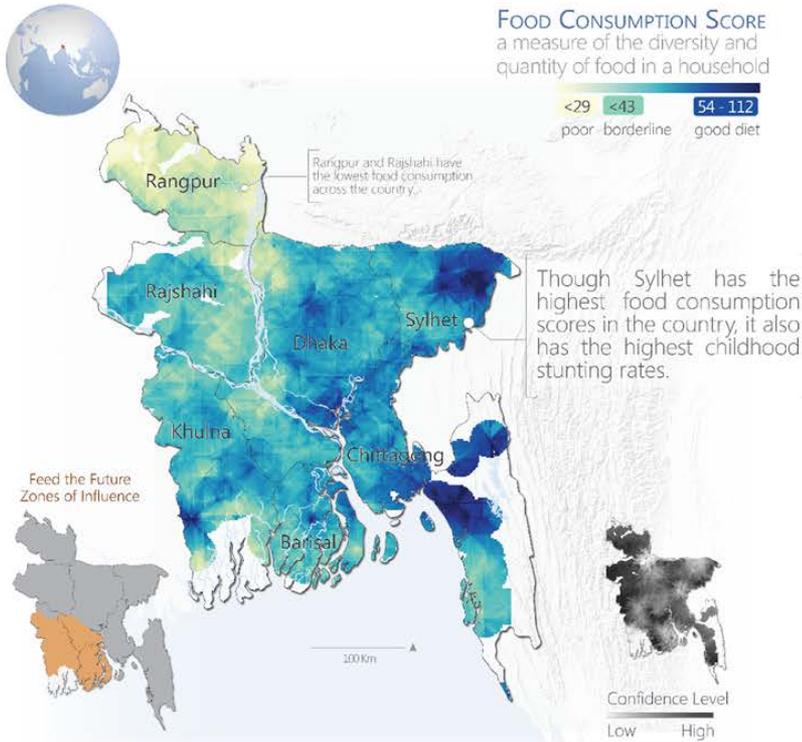
- The alarmed scientist
- The willing (but perplexed) scientist
- The suspicious civil servant
- The poised VP



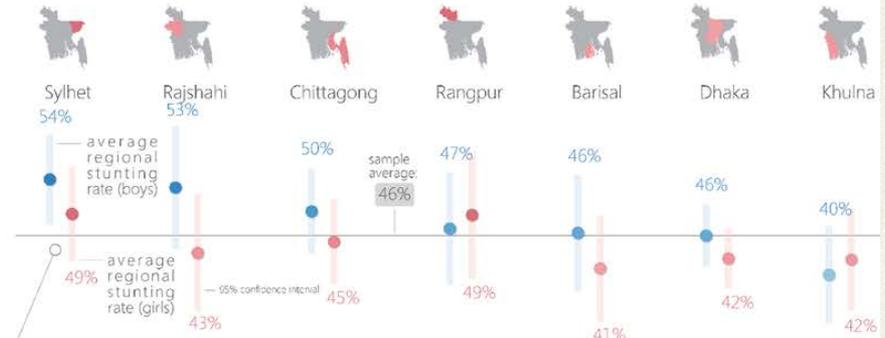


Data sharing is required and useful

Although diets are best in the northeast of Bangladesh...

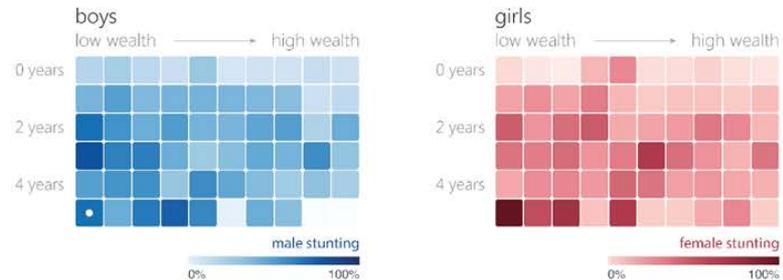


... they also have some of the highest stunting rates



WEALTH, AGE, AND SEX CONTRIBUTE TO STUNTING

Households that are asset-poor (shown at the left) and older children (shown at the bottom) are the most vulnerable to stunting. Boys under 2 have higher stunting rates, but the gap between boys and girls narrows in older children.



HOUSEHOLDS WITH FEWER ASSETS (shown at the left) have significantly higher rates of stunting. Assets associated with reduced stunting include sealed latrines and better home building materials.





Data Types

Structured

- Machine readable
- Highly organized
- Relational databases and language designed to be used with them (JSON, SQL)



Unstructured

- Multi-media
- Photos, Videos
- Emails
- Narrative reports (Word, PDF)





Data Management Plans: Key Elements

Why require a data management plan?

Lead Institution	Datasets Generated by Project	Institution and Contact Person Responsible for data	Description	Data Privacy & Use Restrictions	Pre-submission data processing	Final Data Deliverable	Timeline	Data repository & post-award curation	Responsible Party	Target Submission Date
UC Davis - Geospatial and Farming Systems Consortium	External public data (Generic)./Geospatial datasets to support Sustainable Intensification	Geospatial and Farming Systems Research Consortium at UC Davis (GFC)	Environmental and anthropogenic information at various spatial scale from various sources as needed by various SILL projects.	None	i) Masking to country administrative boundaries; ii) Resampling to ensure consistent spatial resolution; iii) Data compression to facilitate storage and distribution	Either Geotiff (raster), .shp, and Geopackage (Vector), or CSV (tabular). OGC compatible web services as possible.	No embargo, will be made public as soon as cleaning is complete.	gfc.ucdavis.edu/data	Geospatial and Farming Systems Research Consortium at UC Davis (GFC)	As it becomes available.



Open Data Best Practices

Just because the data are open doesn't mean they're useful:

How to make data valuable to yourself and others

1. **Ask the right question** to get data that are useful
(think back to designing survey questions)
2. **Structure:** design it right from the start
3. **Documentation:** help others (and your future self) understand what the data mean and how they were collected

(and then that your data comply with ADS 579)



"Design from beginning to get good data rather than spending a ton of money to cleanse the data."

-Michael Angus





Exercise:

Can you easily get information from a dataset?

- With your group, look at the data you're given.
- Find which IP works in the most places
- Count the number of projects per Admin I (each Region like "Afar")



Which version is easier to use?

Each dataset has *the same* information

What made it easy or hard to use?

Version I

Bureau / Operating unit / Implementing mechanism / Indicator	Prime Partner	Admin1	Admin0
ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Addis Ababa; Amhara; Dire Dawa; Oromia; Southern Nations, Nationalities and Peoples; Tigray	Ethiopia
46551 SmallHolder Horticulture Project (SHH)	Government of Israel - Center for International Cooperation of the Foreign Ministry of Israel	Amhara; Oromia; Southern Nations, Nationalities and Peoples; Tigray	Ethiopia
TEMPORARY ETHIOPIA WATER WATER	International Rescue Committee	Afar; Oromia; Somali	Ethiopia
42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Addis Ababa; Amhara; Oromia; Southern Nations, Nationalities and Peoples; Tigray	Ethiopia
TEMPORARY ETHIOPIA MASHAV MASHAV	Placeholder Inc.		Ethiopia



ID	ImplementingMechanism	ImplementingPartner	admin1	admin0
1	42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Addis Ababa	Ethiopia
2	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Addis Ababa	Ethiopia
3	TEMPORARY ETHIOPIA WATER WATER	International Rescue Committee	Afar	Ethiopia
4	42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Amhara	Ethiopia
5	46551 SmallHolder Horticulture Project (SHH)	Government of Israel - Center for International Cooperation of the Foreign Ministry of Israel	Amhara	Ethiopia
6	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Amhara	Ethiopia
7	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Dire Dawa	Ethiopia
8	42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Oromia	Ethiopia
9	46551 SmallHolder Horticulture Project (SHH)	Government of Israel - Center for International Cooperation of the Foreign Ministry of Israel	Oromia	Ethiopia
10	TEMPORARY ETHIOPIA WATER WATER	International Rescue Committee	Oromia	Ethiopia
11	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Oromia	Ethiopia
12	TEMPORARY ETHIOPIA WATER WATER	International Rescue Committee	Somali	Ethiopia
13	42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Southern Nations, Nationalities and Peoples	Ethiopia
14	46551 SmallHolder Horticulture Project (SHH)	Government of Israel - Center for International Cooperation of the Foreign Ministry of Israel	Southern Nations, Nationalities and Peoples	Ethiopia
15	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Southern Nations, Nationalities and Peoples	Ethiopia
16	42165 Capacity to Improve Agriculture and Food Security (CIAFS)	Fintrac, Inc	Tigray	Ethiopia
17	46551 SmallHolder Horticulture Project (SHH)	Government of Israel - Center for International Cooperation of the Foreign Ministry of Israel	Tigray	Ethiopia
18	ETH04 Ethiopia Sustainable Agriculture Incubator (ESAI)	PCI	Tigray	Ethiopia



Structure your data to be useful

activity	category1	subcategory	id	isActive	Country
Water Supply-Groundwater (e.g., hand-dug or drilled)	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	1	Zimbabwe
Water Supply-Surface Water (e.g., e.g. rivers, lakes,)	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Supply-Rainwater	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Supply-Other	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Distribution-Handpumps and/or Community	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Distribution-Household Taps	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Distribution-Household Plumbing	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Distribution- Other	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Treatment- Disinfection (e.g., chlorine, UV)	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	1	Zimbabwe
Water Treatment- Other (e.g., coagulation/sediment)	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	0	Zimbabwe
Water Quality Monitoring (e.g., pathogen indicators)	Water, Sanitation, and Hygiene (WASH)	Water Supply	67	1	Zimbabwe
Sanitation- Unimproved Latrines (e.g. pit, arborloo)	Water, Sanitation, and Hygiene (WASH)	Sanitation	67	0	Zimbabwe
Sanitation- Improved Latrines (e.g. VIP, pour-flush, c	Water, Sanitation, and Hygiene (WASH)	Sanitation	67	1	Zimbabwe
Sanitation- Flush Toilet or equivalent	Water, Sanitation, and Hygiene (WASH)	Sanitation	67	0	Zimbabwe
Sanitation- Handwashing Stations (e.g., tippy tap, fo	Water, Sanitation, and Hygiene (WASH)	Sanitation	67	1	Zimbabwe
Hygiene & Behavior- Educational or Community part	Water, Sanitation, and Hygiene (WASH)	Hygiene	67	1	Zimbabwe
Operations & Maintenance (O&M) for Systems- Corr	Water, Sanitation, and Hygiene (WASH)	WASH Governance & Capacity	67	1	Zimbabwe
O&M for Systems- External-led (e.g. partner-led O&M	Water, Sanitation, and Hygiene (WASH)	WASH Governance & Capacity	67	0	Zimbabwe
Usage Fees Established for Water/Sanitation	Water, Sanitation, and Hygiene (WASH)	WASH Governance & Capacity	67	0	Zimbabwe
Other (Specify)	Water, Sanitation, and Hygiene (WASH)	Water, Sanitation, and Hygiene (WASH)	67	NA	Zimbabwe
Cost/benefit analyses	Markets, Inputs & Financial Access	Economic analyses	67	1	Zimbabwe
Farm budgeting	Markets, Inputs & Financial Access	Economic analyses	67	1	Zimbabwe
Other (Specify)	Economic analyses	Economic analyses	67	NA	Zimbabwe
Early Warning and Response Systems	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	1	Zimbabwe
Vulnerability Analysis and Mapping	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	1	Zimbabwe
Safety Net Programs	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	0	Zimbabwe
Community Based Preparedness Plans	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	1	Zimbabwe
Climate Change Programming (including but not limi	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	1	Zimbabwe
Conflict Mitigation	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	0	Zimbabwe
Shelters	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	0	Zimbabwe
Strengthened Government Response Capacity	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	1	Zimbabwe
Other (Specify)	Disaster Risk Reduction (DRR)	Disaster Risk Reduction (DRR)	67	NA	Zimbabwe
Roads	Infrastructure & Community Assets	Infrastructure & Community Assets	67	0	Zimbabwe

A	B	C	D	E
Program Number	1	2	3	4
Country Count	1	1	1	2
Program Type	Development	Development	Development	Developp
ARR Year Submitted	2014	2015	2014	2014
Country	Bangladesh	Bangladesh	Bangladesh	Burkina F
Awardee	CARE Bangladesh	CARE Bangladesh	Save the Children	Catholic R Service
Program Name	SHOUHARDO II	SHOUHARDO II	Nobo Jibon	FASO (Fan
Start Date of Award	6/1/10	6/1/10	1/6/10	June 20:
End Date of Award	9/30/15	9/30/15	30/09/2015	May 20:
Maternal Child Health & Nutrition	Works on Topic Area?			
Conditional Food Transfer	--	--	--	--
Cash or food vouchers for nutrition	No	No	No	Yes
Supplementary Feeding P/L Women	No	No	Yes	Yes
Supplementary Feeding Prevention Kids 6-24 mos	No	No	Yes	Yes
Support for local production of specialized nutrition foods (i.e. fortified flours, pastes, etc.)	No	No	No	Yes
Household/Protection Rations	No	No	Yes	Yes
Social and Behavior Change Communication	--	--	--	--
Promotion of optimal breastfeeding during the first six months	Yes	Yes	Yes	Yes
Promotion of optimal complementary feeding starting at 6 months with continued breastfeeding to 2 years of age and beyond	Yes	Yes	Yes	Yes
Promotion of optimal nutritional care of sick children	Yes	Yes	Yes	Yes
Promotion of Optimal Women's Nutrition (15-49)	Yes	Yes	Yes	Yes
Prevention of Vitamin A deficiency in women and children	Yes	Yes	Yes	Yes
Promotion of adequate intake of IFA and prevention and control of anemia	Yes	Yes	Yes	No
Promotion of adequate intake of iodine	No	No	Yes	No
Baby WASH*	Yes	Yes	No	Yes
Essential Hygiene Actions	Yes	Yes	Yes	Yes
Care Group	No	No	Yes	Yes
Peer Support Groups (mothers, mens, grandmothers, etc)	Yes	Yes	Yes	Yes
Positive Deviance Hearth	No	No	No	No
Community conversation/discussion groups	Yes	Yes	No	Yes
Early Childhood Development (ECD)	Yes	Yes	No	No

tidy



machine-readable

easy



hard



messy

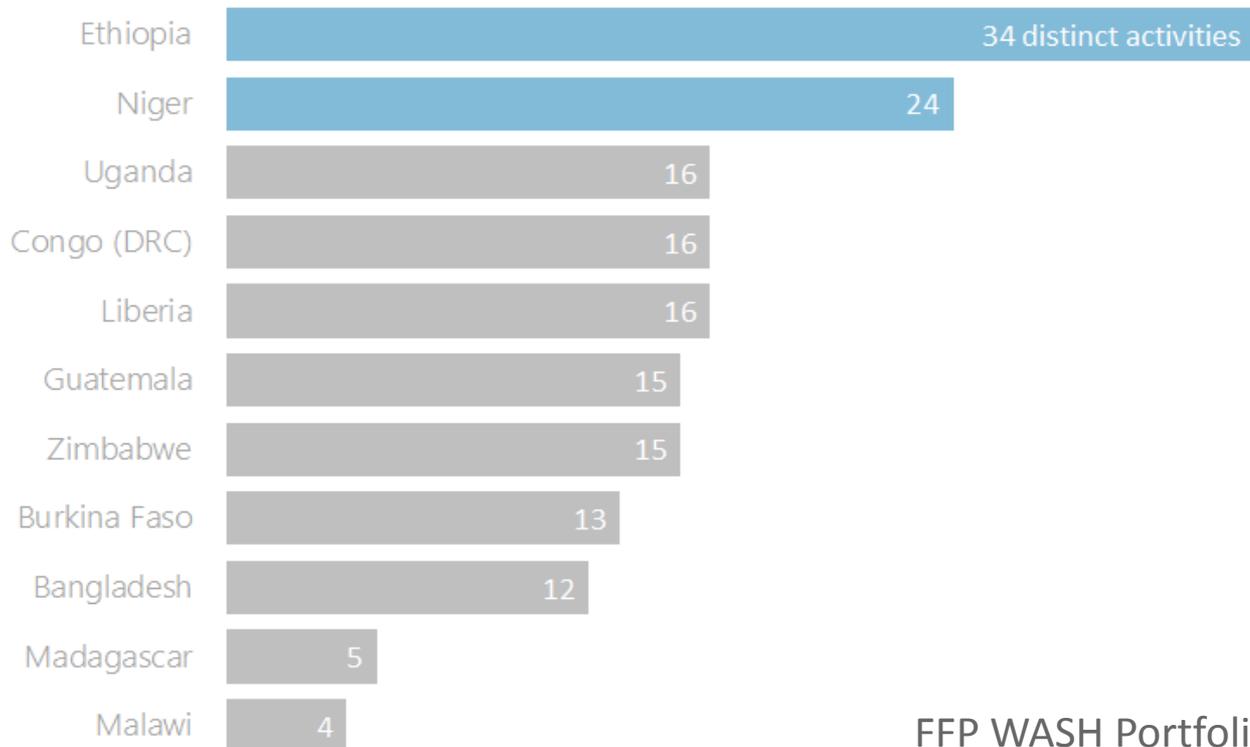


Human (-ish) readable



Once your data is tidy, it's easy to analyze/map:

For FY15 DFAPs, Ethiopia is the largest WASH portfolio as defined by the number of discrete WASH activities.





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**Why should I care about
making a machine-readable
dataset?**



Why should I care about making a machine-readable dataset?

It actually makes ~~your~~ **everybody's** life easier.

- Easy to filter the data
- Easy to create aggregates / summaries:
 - By week, month, quarter, year...
 - By country, province, district, ...
 - Works well with pivot tables
- Easy to manipulate data all at once
 - Convert months to years, dollars to millions, ...
- Pre-requisite to doing any sort of analysis or visualization
- ... and it'll make ADS 579 (Open Data Policy) more effective



Each observation (record) has its own row

Observation →

	A	B	C	D	F	H
1	activNo	activID	activity	category1	subcategory	isActive
2	1	1	Cash or food vouchers for nutrition	Maternal Child Health & Nutrition	Conditional Food Transfer	0
3	2	2	Supplementary Feeding P/L Women	Maternal Child Health & Nutrition	Conditional Food Transfer	0
4	3	3	Supplementary Feeding Prevention Ki	Maternal Child Health & Nutrition	Conditional Food Transfer	0
5	4	4	Support for local production of special	Maternal Child Health & Nutrition	Conditional Food Transfer	0
6	5	5	Household/Protection Rations	Maternal Child Health & Nutrition	Conditional Food Transfer	1
7	6	6	Promotion of optimal breastfeeding d	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
8	7	7	Promotion of optimal complementary	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
9	8	8	Promotion of optimal nutritional care	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
10	9	9	Promotion of Optimal Women's Nutrit	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
11	10	10	Prevention of Vitamin A deficiency in	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
12	11	11	Promotion of adequate intake of IFA a	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
13	12	12	Promotion of adequate intake of iodin	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
14	13	13	Baby WASH*	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
15	14	14	Essential Hygiene Actions	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
16	15	15	Care Group	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
17	16	16	Peer Support Groups (mothers, mens,	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
18	17	17	Positive Deviance Hearth	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
19	18	18	Community conversation/discussion g	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
20	19	19	Early Childhood Development (ECD)	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
21	20	20	Mass communication campaigns	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
22	21	21	Home Visit/Outreach for nutrition cou	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
23	22	22	Home Visit/Outreach for other MCH r	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
24	23	23	Other SBCC	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
25	24	24	Child health days	Maternal Child Health & Nutrition	Health Services	0
26	25	25	Baby Friendly hospital Initiative	Maternal Child Health & Nutrition	Health Services	0



Unique id for each observation



Each variable forms its own column

	A	B	C	D	F	H
1	activNo	activID	activity	category1	subcategory	isActive
2	1	1	Cash or food vouchers for nutrition	Maternal Child Health & Nutrition	Conditional Food Transfer	0
3	2	2	Supplementary Feeding P/L Women	Maternal Child Health & Nutrition	Conditional Food Transfer	0
4	3	3	Supplementary Feeding Prevention Ki	Maternal Child Health & Nutrition	Conditional Food Transfer	0
5	4	4	Support for local production of special	Maternal Child Health & Nutrition	Conditional Food Transfer	0
6	5	5	Household/Protection Rations	Maternal Child Health & Nutrition	Conditional Food Transfer	1
7	6	6	Promotion of optimal breastfeeding d	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
8	7	7	Promotion of optimal complementary	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
9	8	8	Promotion of optimal nutritional care	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
10	9	9	Promotion of Optimal Women's Nutriti	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
11	10	10	Prevention of Vitamin A deficiency in v	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
12	11	11	Promotion of adequate intake of IFA a	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
13	12	12	Promotion of adequate intake of iodin	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
14	13	13	Baby WASH*	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
15	14	14	Essential Hygiene Actions	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
16	15	15	Care Group	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
17	16	16	Peer Support Groups (mothers, mens,	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
18	17	17	Positive Deviance Hearth	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
19	18	18	Community conversation/discussion g	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
20	19	19	Early Childhood Development (ECD)	Maternal Child Health & Nutrition	Social and Behavior Change Communication	0
21	20	20	Mass communication campaigns	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
22	21	21	Home Visit/Outreach for nutrition cou	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
23	22	22	Home Visit/Outreach for other MCH r	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
24	23	23	Other SBCC	Maternal Child Health & Nutrition	Social and Behavior Change Communication	1
25	24	24	Child health days	Maternal Child Health & Nutrition	Health Services	0
26	25	25	Baby Friendly hospital Initiative	Maternal Child Health & Nutrition	Health Services	0



Things to watch out for:

- Merged cells (rows or columns)
- No unique id
- Inconsistent data (names, numbers, codes)
- Variable (column) names not meaningful
- Special characters within numeric variables (\$,*...)
- Variable names contain measurements (quarter1, quarter2)
- Information recorded for human not computer consumption
- Spreadsheet layout designed for human consumption



Document your data to be useful

Codebooks / Data Dictionary

- Documentation of the data collection
- Describes contents of a data set
- Describes data layout and structure of datasets
- Contains descriptions for all codes used
- [Example](#) from ADS 579 Development Data
- ADS 203 Assessing and Learning



Individual Reflection

- What are your key learnings from this session?
- Think about a dataset you are going to be collecting and what you will consider doing differently as a result of this session.



Resources

***Training: USAID University Open Data at USAID ADS 579-USAID Development Data*9 (restricted access - USAID employees only)**

Frequently Asked Questions: www.usaid.gov/data/frequently-asked-questions

Policy Announcement: <http://1.usa.gov/1tF8COg>

Implementing Partner Notices Portal - Acquisition: <http://bit.ly/1zRuKaJ>

Implementing Partner Notices Portal - Assistance: <http://bit.ly/1ud8ndq>

Executive Order on Open Data: <http://1.usa.gov/1hChkTn>

OMB Open Data Policy: <http://1.usa.gov/1iQkPd6>

Project Open Data: <https://project-open-data.cio.gov/>

[ADS 579 Fact Sheet](#)



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