

# Building the CARE Water+ Dashboard

How to use this guide:

Below are the primary possible uses and where to go:

Reference Starting with the Right Data if you

Reference 1) Sheets if you

Reference 2) Filters and dashboard actions

In addition, you may be curious about what modifications you can make and which you should be careful about.

Things you should be able to do without any issues (+ Tableau references):

Add calculated fields and adjust calculated fields (with exceptions)

Build additional sheets (but be careful about adding them to dashboard -- see next section)

Add a filter (1) and make it global (2)

Change colors/fonts etc.

Make desired modifications to underlying data source -- once you update the file, just refresh

Things you should be a bit more careful about:

Updating the underlying data source -- for example if you have a new file you'd like to use as the primary data source.

Adding new sheet/visualizations to the dashboard

Changing calculated fields "dev\_category\_combo" and "hum\_category\_combo" and any in "Selectors - Sheet1" or "Selectors - Sheet2 (1)"

Starting with the right data

"Sheet1 (care\_dashboard)": Primary data source description

"Selectors - Sheet1": description

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# How to use this guide:

This is largely a reference guide that details the underlying structure of the data visualizations.

Below are the primary possible uses and where to go:

## Reference Starting with the Right Data if you

- want to hear a bit more about the R processing script
- have any questions about how different fields (such as total participants) are calculated or
- want to make any changes to those determinations or
- want to know how to change the underlying data source
- want to know about a particular parameter

## Reference 1) Sheets if you

- are interested in seeing what a goes into a particular sheet and how things are aggregated

## Reference 2) Filters and dashboard actions

- if you are interested in the interactive aspects of the dashboard or

In addition, you may be curious about what modifications you can make and which you should be careful about.

Things you should be able to do without any issues (+ Tableau references):

- Add calculated fields and adjust calculated fields (with exceptions)
  - with the exceptions of "dev\_category\_combo" and "hum\_category\_combo" and any in "Selectors - Sheet1" or "Selectors - Sheet2 (1)"
  - [https://help.tableau.com/current/pro/desktop/en-us/calculations\\_calculatedfields\\_formulas.htm](https://help.tableau.com/current/pro/desktop/en-us/calculations_calculatedfields_formulas.htm)
- Build additional sheets (but be careful about adding them to dashboard -- see next section)
  - [https://help.tableau.com/current/pro/desktop/en-us/buildmanual\\_dragging.htm](https://help.tableau.com/current/pro/desktop/en-us/buildmanual_dragging.htm)
- Add a filter (1) and make it global (2)
  - (1) <https://help.tableau.com/current/pro/desktop/en-us/filtering.htm>
  - (2) [https://help.tableau.com/current/pro/desktop/en-us/filtering\\_global.htm](https://help.tableau.com/current/pro/desktop/en-us/filtering_global.htm)
- Change colors/fonts etc.
- Make desired modifications to underlying data source -- once you update the file, just refresh
  - ([https://help.tableau.com/current/pro/desktop/en-us/refreshing\\_data.htm](https://help.tableau.com/current/pro/desktop/en-us/refreshing_data.htm))

Things you should be a bit more careful about:

- Updating the underlying data source -- for example if you have a new file you'd like to use as the primary data source.
  - You should replace the data source using this method:  
[https://help.tableau.com/current/pro/desktop/en-us/connect\\_basic\\_replace.htm](https://help.tableau.com/current/pro/desktop/en-us/connect_basic_replace.htm)
  - Something to look out for: make sure you have the expected data fields, otherwise the sheets connected to the original source may reference fields that no longer exist, which will result in a lot of errors. Using the R script to process files first will help you avoid this.
- Adding new sheet/visualizations to the dashboard
  - You'll want to decide what kind of filtering based on dashboard actions you'd like to apply to it. It may do it automatically, but it's good to check.
    - Use this, specifically focusing on, actions for dashboards, and then pay attention to the following below  
[https://help.tableau.com/current/pro/desktop/en-us/actions\\_filter.htm](https://help.tableau.com/current/pro/desktop/en-us/actions_filter.htm)

- If you decide you want it to be visible only when one project is selected, you will need to make sure that it is a target sheet of actions listed under: Dashboard Actions: 2. Filter specific sheets, such that they only appear upon selection and disappear on deselect, and the first two under 1. Filter all of the data. It should not be the target sheet of the third under that header.
  - Otherwise, I should be the target of all three under 1. Filter all of the data. and none under 2. Filter specific sheets, such that they only appear upon selection and disappear on deselect
- You'll also want to decide what kind of filtering you might want it to control
  - [https://help.tableau.com/current/pro/desktop/en-us/actions\\_dashboards.htm](https://help.tableau.com/current/pro/desktop/en-us/actions_dashboards.htm). This is a good reference for some of the most general goals.
- Changing calculated fields "dev\_category\_combo" and "hum\_category\_combo" and any in "Selectors - Sheet1" or "Selectors - Sheet2 (1)"
  - All of the calculated fields related to a particular multi-selector are related and multiple fields, parameters, and actions need to be changed in order to retain the same functionality.
  - You'd want to make this change if you, say, discovered another Humanitarian focus area or another Development focus area. First, familiarize yourself with how the multi-selection filtering works ([How in the world does multiselection work?](#)). Then, ensure you change the following fields accordingly.
    - If you added a Development focus area
      - This area should get a new letter code
      - beware if it gets above 26: you need to make the codes multiple letters long and surround them by ~'s to ensure that two letters next to one and other don't have a different codes
      - dev\_category\_combo: add another IIF(*Additional Focus Area Title, a letter that hasn't been used*, "", "")
      - Action My Parameter:
        - if [Code]== *current string* +(new letter) then  
IIF(len([dev\_group])>=*current limit* +1, "", *current string* + *new letter*) ELSEIF CONTAINS([dev\_group],[Code]) then  
REPLACE([dev\_group],[Code],"") ELSE  
[dev\_group]+[Code] END
      - Menu\_box:
        - IF CONTAINS([dev\_group],[Code]) or  
len([dev\_group])>=*current limit* +1 then "✓" else "☐" end
      - ordering
        - IF [Code]==*current string* +(new letter) then 1 ELSE  
ASCII([Code]) end
    - If you added a Humanitarian focus area
      - beware if it gets to high of a product: you need to make the codes letters or multiple letters long and use the same strategy used with development focus areas

- hum\_category\_combo: multiply by another another IIF(*Additional Focus Area Title, a prime number that hasn't been used*,"","")
- Action My Parameter:
  - if [hum\_group]/[Number]==0 then [hum\_group]/[Number] ELSEIF [Number]==510510\**the new prime number* then 510510\**the new prime number* ELSE [hum\_group]\*[Number] end
- ordering
  - IF [Number]==510510\**the new prime number* then 1 ELSE [Number] end

## Starting with the right data

*This project depends on one primary data source and two secondary data sources that can be derived from any PIRS Data Spreadsheet that has the requisite fields (outlined under "Sheet1 (care\_dashboard))*

- "Sheet1 (care\_dashboard)": Primary data source description
  - Processing/cleaning data: RScript with functions to transform raw data into a source that's compatible with dashboard fields
    - Structure: Required packages are at the top of the script, functions for processing documents are below it.
      - If you want to run script rather than pulling out particular functions, you just need to add a line of script calling the function with proper arguments:
        - i.e. `clean_file("PIRS Data.xlsx","cleaning_guide.csv","01-01-2019","cleaned.xlsx","manual.xlsx")`
    - In order to process/clean, you need to adjust the "cleaning\_guide.csv" document provided by filling in the appropriate equivalents to the fields of interest
    - Note: if you have any trouble parsing any file, try saving or reading it as an excel file rather than a csv. Some of the delimiters may be finicky based on the content of columns. `read.csv` occurs once, but could be replaced with `read_excel` if it's giving you trouble
    - Most useful functions:
      - `clean_file(origin_file,cleaning_guide_file,date_string,cleaned_dest, manual_dest)`
        - Use this function if you'd like to clean/process data from one raw data file. See `initial_processing` and `save_manual_ready_split` in Helper functions for more info on how it's processed

- origin\_file: file containing raw data
  - cleaning\_guide\_file: file mapping column names in origin\_file to Tableau field names
  - date\_string: date ("mm-dd-yyyy") for the spreadsheet data
  - cleaned\_dest: file name and path for your cleaned data
  - manual\_dest: file name and path for data to manually check
- clean\_files(cleaning\_guide\_file,date\_string\_list,cleaned\_dest,manual\_dest)
  - Use this function if you'd like to clean/process data from multiple raw data file, that all have the same column names (and thus the same original column name to Tableau field name mapping)
  - See initial\_processing and save\_manual\_ready\_split in Helper functions for more info on how it's processed.
  - REQUIREMENT: you need to be in a directory with only files that you'd like to process
  - cleaning\_guide\_file: file mapping column names in origin\_file to Tableau field names
  - date\_string\_list: list of dates ("mm-dd-yyyy") for the spreadsheets, with order corresponding to file name order in folder
  - cleaned\_dest: file name and path for your cleaned data
  - manual\_dest: file name and path for data to manually check
- save\_joined\_cleaned(destination)
  - This function joins multiple cleaned sets. This is useful if you have multiple files that have different column names and thus can't be run under clean\_files(), but you'd like to join them.
  - REQUIREMENT: you need to be in a directory with only files that you'd like to join
  - destination: file name and path for combined file
- Helper functions
  - initial\_processing(origin\_file,cleaning\_guide\_file,date\_string)
    - This function processes raw data in order to produce a cleaned spreadsheet with only desired columns (mapping from raw data column names to Tableau field names provided in cleaning\_guide.csv. raw data column names can be altered to adjust for different original raw data column names).
    - It ensures that columns of each intended type follow the expected data format.
    - origin\_file: file containing raw data

- cleaning\_guide\_file: file mapping column names in origin\_file to Tableau field names
  - date\_string: date ("mm-dd-yyyy") for the spreadsheet data
  - save\_manual\_ready\_split(care.df,cleaned\_dest>manual\_dest)
    - It sets aside duplicated rows and rows whose numbers don't add up for manual checking.It saves a spreadsheet of items that do not require manual checking and can go straight into the dashboard.
    - cleaned\_dest: file name and path for your cleaned data
    - manual\_dest: file name and path for data to manually check
- Data Source Dimensions: dimensions that should be columns in your data source after being processed using the provided R script
  - Codes
  - Country
  - Date
  - Region
  - Project/Initiative Name
  - Primary goal
  - Main impact group
  - Direct and indirect participants definitions
  - Level of Advocacy For Year
  - Gender
  - Governance
  - Resilience
  - Humanitarian - Gender equality (other than GBV)
  - Humanitarian - Health (other than SRMH)
  - Humanitarian - Livelihood recovery
  - Humanitarian - Sexual, reproductive and maternal health (SRMH)
  - Humanitarian - Water, sanitation and hygiene (WASH)
  - Humanitarian - Other
  - Development - Agriculture
  - Development - Climate change and resilience
  - Development - Conflict and peace building
  - Development - Disaster risk reduction
  - Development - Economic development (other than WEE)
  - Development - Education
  - Development - Food and nutrition security
  - Development - Gender based violence (GBV)
  - Development - Gender equality (other than GBV)
  - Development - Health (other than SRMH)
  - Development - Infrastructure
  - Development - Natural resource management
  - Development - Participation and good governance

- Development - Sexual, reproductive and maternal health (SRMH)
- Development - Water, sanitation and hygiene (WASH)
- Development - Women's economic empowerment (WEE)
- Development - Other
- Data Source Measurements: measurements that should be columns in your data source after being processed using the provided R script
  - WASH Development Direct Participants For Year
  - WASH Development Indirect Participants For Year
  - WASH Humanitarian Direct Participants For Year
  - WASH Humanitarian Indirect Participants For Year
  - Total Direct Participants For Year
  - Total Indirect Participants For Year
  - % Female Direct Participants For Year
  - % Female Indirect Participants For Year
- Calculated Fields: these **SHOULD NOT** be included in your data source. They're calculated in tableau using the following formulas, which can be edited if you'd like, with the exception of dev\_category\_combo and hum\_category\_combo, which require a set of changes together ([Changing calculated fields](#) ["dev\\_category\\_combo"](#) and ["hum\\_category\\_combo"](#) and any in ["Selectors - Sheet1"](#) or ["Selectors - Sheet2 \(1\)"](#))
  - Constant Value (Clear):
    - ""
  - dev\_category\_combo:
    - IIF([Development - Agriculture],"a","","") +  
 IIF([Development - Climate change and resilience],"b","","") +  
 IIF([Development - Conflict and peace building],"c","","") +  
 IIF([Development - Disaster risk reduction],"d","","") +  
 IIF([Development - Economic development (other than WEE)],"e","","") +  
 IIF([Development - Education],"f","","") +  
 IIF([Development - Food and nutrition security],"g","","") +  
 IIF([Development - Gender based violence (GBV)],"h","","") +  
 IIF([Development - Gender equality (other than GBV)],"i","","") +  
 IIF([Development - Health (other than SRMH)],"j","","") +  
 IIF([Development - Infrastructure],"k","","") +  
 IIF([Development - Natural resource management],"l","","") +  
 IIF([Development - Participation and good governance],"m","","") +  
 IIF([Development - Sexual, reproductive and maternal health (SRMH)],"n","","") +  
 IIF([Development - Water, sanitation and hygiene (WASH)],"o","","") +  
 IIF([Development - Women's economic empowerment (WEE)],"p","","") +  
 IIF([Development - Other],"q","","")



- hum\_category\_combo:
  - IIF([Humanitarian - Gender equality (other than GBV)],2,1,1)\*  
IIF([Humanitarian - Health (other than SRMH)],3,1,1)\*  
IIF([Humanitarian - Livelihood recovery],5,1,1)\*  
IIF([Humanitarian - Sexual, reproductive and maternal health (SRMH)],7,1,1)\*  
IIF([Humanitarian - Water, sanitation and hygiene (WASH)],11,1,1)\*  
IIF([Humanitarian - Other],13,1,1)
- Project/Initiative Name (Copy):
  - [Project/Initiative Name]
- Female Participants For Year:
  - ([% Female Direct Participants For Year] \* ([Total Direct Participants For Year])) +  
([% Female Indirect Participants For Year] \* ([Total Indirect Participants For Year]))
- Male Participants For Year
  - ((1-[% Female Direct Participants For Year]) \* ([Total Direct Participants For Year])) +  
((1-[% Female Indirect Participants For Year]) \* ([Total Indirect Participants For Year]))
- Other Participants For Year (non-WASH):
  - [Total Participants For Year]-[WASH Participants For Year]
- Total Participants For Year:
  - [Total Direct Participants For Year]+[Total Indirect Participants For Year]
- WASH Participants For Year:
  - [WASH Development Direct Participants For Year]+[WASH Development Indirect Participants For Year]+[WASH Humanitarian Direct Participants For Year]+[WASH Humanitarian Indirect Participants For Year]

## ● "Selectors - Sheet1": description

- This sheet enables us to multi-select Development Focus Areas
- Data Source Dimensions: dimensions that are existing columns in the data source
  - Category
  - Code
- Data Source Measurements: measurements that should be columns in your data source
  - Number
- Calculated Fields: these **SHOULD NOT** be included in your data source. They're calculated in tableau using the following formulas, which can be edited if you'd like, with the exception of dev\_category\_combo and hum\_category\_combo, which require a set of changes together ([Changing calculated fields](#))

["dev\\_category\\_combo" and "hum\\_category\\_combo" and any in "Selectors - Sheet1" or "Selectors - Sheet2 \(1\)"](#)

- Action My Parameter:
  - if [Code]== "abcdefghijklmnpqr" then  
IIF(len([dev\_group])>=18,"","abcdefghijklmnpqr") ELSEIF  
CONTAINS([dev\_group],[Code]) then  
REPLACE([dev\_group],[Code],"") ELSE [dev\_group]+[Code] END
- Category (copy):
  - [Category]
- Development Focus Areas: (basically the text for the dropdown button)
  - "Development Focus Areas ▶ "
- Menu\_box
  - IF CONTAINS([dev\_group],[Code]) or len([dev\_group])>=18 then  
"✓" else "☐" end
- ordering
  - IF [Code]== "abcdefghijklmnpqr" then 1 ELSE ASCII([Code]) end

- "Selectors - Sheet2 (1)": description

- This sheet enables us to multi-select Humanitarian Focus Areas
- Data Source Dimensions: dimensions that are existing columns in the data source
  - Category
- Data Source Measurements: measurements that should be columns in your data source
  - Number
- Calculated Fields: these **SHOULD NOT** be included in your data source. They're calculated in tableau using the following formulas, which can be edited if you'd like, with the exception of dev\_category\_combo and hum\_category\_combo, which require a set of changes together ([Changing calculated fields "dev\\_category\\_combo" and "hum\\_category\\_combo" and any in "Selectors - Sheet1" or "Selectors - Sheet2 \(1\)"](#))
  - Action My Parameter:
    - if [hum\_group]%[Number]==0 then [hum\_group]/[Number] ELSEIF  
[Number]==510510 then 510510 ELSE [hum\_group]\*[Number]  
end
  - Category (copy):
    - [Category]
  - Humanitarian Focus Areas: (basically the text for the dropdown button)
    - "Humanitarian Focus Areas ▶ "
  - Menu\_box
    - IF [hum\_group]%[Number]==0 then "✓" else "☐" end
  - ordering
    - IF [Number]==510510 then 1 ELSE [Number] end

## Key Parameters

### dev\_group

- Data type: String
- Current value: changes but when all of the development boxes are checked it will contain all letters a through r once.
- Value when workbook opens: Current value
- Allowable values: all

### hum\_group

- Data type: Integer
- Current value: changes but when all of the development boxes are checked it will be 510510
- Value when workbook opens: Current value
- Display format: automatic
- Allowable values: all

## Modify data sources

These sheets will be downloaded along with the dashboard, but if you want to modify this underlying data, you have a couple of options. If you modify the source spreadsheet itself, all you need to do is refresh the data by "selecting a data source on the Data menu and then selecting Refresh." ([https://help.tableau.com/current/pro/desktop/en-us/refreshing\\_data.htm](https://help.tableau.com/current/pro/desktop/en-us/refreshing_data.htm)). If you have a new spreadsheet that you'd like to use as the underlying data source, you can do that by first adding the new spreadsheet as a data source, and then replacing your desired data source with that one as demonstrated here

[https://help.tableau.com/current/pro/desktop/en-us/connect\\_basic\\_replace.htm](https://help.tableau.com/current/pro/desktop/en-us/connect_basic_replace.htm). In either of these cases make sure that columns are named in the same way, so that Tableau has a reference for every field.

## Building the Dashboard

*The dashboard is composed of 1) multiple different sheets that represent different aspects of the data, 2) filters and dashboard actions that allow users to control the data shown in these sheets, and 3) design elements that pull the dashboard together.*

### 1) Sheets

It's helpful to understand how each individual sheet is built before thinking about it in the context of the entire dashboard.

- At A Glance
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action):

- Measure Names
      - # Countries
      - # Projects
      - WASH Participants
      - Total Participants
  - Columns:
    - Measure Names (as listed above)
  - Rows: NA
  - Marks: Automatic
    - Text: Measure Values
      - Sum of each included row's (i.e. each project's) Total Participants For Year -- Measure Name given alias Total Participants to reflect the aggregation
      - Sum of each included row's (i.e. each project's) WASH Participants For Year -- Measure Name given alias WASH Participants to reflect the aggregation
      - Distinct number of Project/Initiative Names: counts # of different project names, it's distinct to avoid double counting the same project across multiple years
      - Distinct number of Countries: counts # of different countries, it's distinct to avoid double counting the same country across multiple projects
- Total Participants Map
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action): NA
  - Columns:
    - Longitude (automatically generated)
  - Rows:
    - Latitude (automatically generated)
  - Marks: Automatic
    - Color:
      - For a given country, sum of each included row's (i.e. each project's) Total Participants For Year -- Measure Name given alias Total Participants to reflect the aggregation
    - Tooltip:
      - Country
      - Distinct number of Project/Initiative Names: counts # of different project names, in a particular country it's distinct to avoid double counting the same project across multiple years
- Top 10 Participants By Country
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action):
    - Measure Names:
      - WASH Participants

- Non-WASH Participants (alias Other Participants For Year (non-WASH))
  - SUM(Total Participants For Year):[Rank of Total Participants For Year] -- essentially it's a filter applied to the table calculation Rank for Sum(Total Participants For Year)
    - Range of values: 1 to 10, which allows me to select the top 10 total participants in a given context -- this I found was much more reliable than trying to use something like top n, which can sometimes be calculated statically (top n in dataset) rather than dynamically, including the top 10 given other filters.
- Columns:
  - Measure Values:
    - For a given country, sum of each included row's Other Participants for Year (non-WASH)
    - For a given country, sum of each included row's WASH Participants for Year
- Rows:
  - Country
    - Sort By Field, Ascending, Total Participants For Year, Sum
- Marks: Bar
  - Color:
    - Measure names (as shown earlier)
  - Text:
    - Country
  - Tooltip:
    - For a given country, sum of each included row's Other Participants for Year (non-WASH)
    - For a given country, sum of each included row's WASH Participants for Year
    - Distinct number of Project/Initiative Names: counts # of different project names, in a particular country it's distinct to avoid double counting the same project across multiple years
- Direct/Indirect Participant Breakdown
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action):
    - Measure Names:
      - Total Direct Participants For Year
      - Total Indirect Participants For Year
  - Columns: NA
  - Rows: NA
  - Marks: Pie
    - Color:
      - Measure names (as shown earlier)
    - Size:

- Measure Values
    - Sum of each included row's (i.e. each project's) Total Direct Participants For Year
    - Sum of each included row's (i.e. each project's) Total Indirect Participants For Year
  - Tooltip:
    - ATTR(Direct and indirect participants definitions): attribute will show you a \* if there's multiple different values for that columns among the rows, but will show the words if there's only one. This is really useful for giving the user more information on what direct/indirect means for each particular project.
- Participant Gender Breakdown
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action):
    - Measure Names:
      - Female Participants For Year
      - Male Participants For Year
  - Columns: NA
  - Rows: NA
  - Marks: Pie
    - Color:
      - Measure names (as shown earlier)
    - Size:
      - Measure Values
        - Sum of each included row's (i.e. each project's) Female Participants For Year
        - Sum of each included row's (i.e. each project's) Male Participants For Year
- Projects Selector
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Project/Initiative Name
  - Marks: Bar
    - Text:
      - Project/Initiative Name
    - Size:
      - CNTD(Project/Initiative Name) which should be one for every Project/Initiative Name -- which guarantees a nice button selector users can use

- Project Name

- Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
- Data source: "Sheet1 (care\_dashboard)"
- Sheet specific filters (non-action): NA
- Columns: NA
- Rows:
  - Constant Value (Clear): Just allows us to group everything at once into a row
- Marks: Bar
  - Text:
    - ATTR(Project/Initiative Name): attribute will show you a \* if there's multiple different values for that columns among the rows, but will show the words if there's only one. This is really useful for giving the user the name for a particular project.

- Project Country

- Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
- Data source: "Sheet1 (care\_dashboard)"
- Sheet specific filters (non-action): NA
- Columns: NA
- Rows:
  - Constant Value (Clear): Just allows us to group everything at once into a row
- Marks: Bar
  - Text:
    - Country

- Proj Level of Advocacy

- Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
- Data source: "Sheet1 (care\_dashboard)"
- Sheet specific filters (non-action): NA
- Columns: NA
- Rows: NA
- Marks: Bar
  - Color:
    - Level of Advocacy For Year

- Text:
      - Level of Advocacy For Year
- Proj CARE Resilience
  - Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Resilience
  - Marks: Bar
    - Color:
      - Resilience
- Proj CARE Governance
  - Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Governance
  - Marks: Bar
    - Color:
      - Governance
- Proj CARE Gender
  - Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
  - Data source: "Sheet1 (care\_dashboard)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Gender
  - Marks: Bar
    - Color:
      - Gender



- Project Description

- Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
- Data source: "Sheet1 (care\_dashboard)"
- Sheet specific filters (non-action): NA
- Columns: NA
- Rows:
  - Constant Value (Clear): Just allows us to group everything at once into a row
- Marks: Bar
  - Text:
    - ATTR(Primary Goal): attribute will show you a \* if there's multiple different values for that columns among the rows, but will show the words if there's only one. This is really useful for giving the user the primary goal for a particular project.
    - ATTR(Main Impact group): similarly, this is really useful for giving the user the main impact group for a particular project.

- At A Glance (2)

- Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
- Data source: "Sheet1 (care\_dashboard)"
- Sheet specific filters (non-action):
  - Measure Names
    - WASH Participants
    - Total Participants
    - Date
- Columns:
  - Measure Names (as listed above)
- Rows: NA
- Marks: Automatic
  - Text: Measure Values
    - Sum of each included row's (i.e. each project's) Total Participants For Year -- Measure Name given alias Total Participants to reflect the aggregation
    - Sum of each included row's (i.e. each project's) WASH Participants For Year -- Measure Name given alias WASH Participants to reflect the aggregation
    - Distinct number of Years: counts # of years for a particular project

- Hum\_selector\_focus
  - Data source: "Selectors - Sheet2 (1)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Humanitarian Focus Areas
  - Marks: Text
    - Text:
      - Humanitarian Focus Areas
- select\_hum
  - Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.
  - Data source: "Selectors - Sheet2 (1)"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - ordering
      - don't show header (left click and uncheck Show header)
    - Category
      - don't show header (left click and uncheck Show header)
    - Menu\_box
    - Category (copy)
  - Marks: Square
    - Color: (click on it and set opacity to 0)
    - Size: (click on it and set size to 0)
    - Detail:
      - Action My Parameter (left click and uncheck Include in tooltip)
- Dev\_selector\_focus
  - Data source: "Selectors - Sheet1"
  - Sheet specific filters (non-action): NA
  - Columns: NA
  - Rows:
    - Development Focus Areas
  - Marks: Text
    - Text:
      - Development Focus Areas
- select\_dev
  - Note: if you click to this without interacting with the dashboard, chances are you'll see a blank page. Don't freak out, this is because dashboard actions filter the data included here, which is useful, because we'll only want to show a Project Name if we have a particular project selected.

- Data source: "Selectors - Sheet1"
- Sheet specific filters (non-action): NA
- Columns: NA
- Rows:
  - ordering
    - don't show header (left click and uncheck Show header)
  - Category
    - don't show header (left click and uncheck Show header)
  - Menu\_box
  - Category (copy)
- Marks: Square
  - Color: (click on it and set opacity to 0)
  - Size: (click on it and set size to 0)
  - Detail:
    - Action My Parameter (left click and uncheck Include in tooltip)

## 2) Filters and dashboard actions

### Global Filters on main data source "Sheet1 (care\_dashboard)"

When users manipulate filters, we want to make sure that all of our sheets/visual representations are affected. To do this, we can make filters global (indicated by the cylinder icon next to a filter), which means that a filter will apply to every sheet using that data source. You can make a filter global by clicking the dropdown, Apply to worksheets, All using this data source. Below are the global filters which directly appear on the dashboard currently, allowing users to filter data based on their preferences. You can add your own as well.

- Country
- YEAR(Date)
- Region

There are also the global filters below which correspond to the multi-selector filtering. We'll explain how multi-selector filtering works as a whole at the end of this section.

- hum\_category\_combo
- dev\_category\_combo

### Dashboard Actions

These are the key to the dashboard, filtering data based on the way that users click on elements. Here are the key functionalities we want these interactions to perform:

#### 1. Filter all of the data

- Filter 1 (generated)
  - Source Sheets:
    - Dashboard

- Total Participants Map
    - Run action on: select
  - Target Sheets
    - Dashboard
      - Check all sheets
    - Clearing selection will: show all values
  - Target Filters: all fields
- Filter 2 (generated)
  - Source Sheets:
    - Dashboard
      - Top 10 Countries By Participants
    - Run action on: select
  - Target Sheets
    - Dashboard
      - Check all sheets
    - Clearing selection will: show all values
  - Target Filters: all fields
- Filter2
  - Source Sheets:
    - Dashboard
      - Projects Selector
    - Run action on: select
  - Target Sheets
    - Dashboard
      - At A Glance
      - Direct/Indirect Participant Breakdown
      - Participants Gender Breakdown Pie Chart
      - Top 10 Countries By Participants
      - Total Participants Map
    - Clearing selection will: show all values

2. Filter specific sheets, such that they only appear upon selection and disappear on deselect

- Filter1
  - Source Sheets:
    - Dashboard
      - Projects Selector
    - Run action on: select
      - Single-select only
  - Target Sheets
    - Dashboard
      - At A Glance (2)
      - Proj CARE Gender
      - Proj CARE Governance

- Proj CARE Resilience
    - Proj Level of Advocacy
    - Project Country
    - Project Description
    - Project Name
  - Clearing selection will: exclude all values
- Target Filters: all fields
- Filter1 1 2
  - Source Sheets:
    - Dashboard
      - Hum\_selector\_focus
    - Run action on: select
  - Target Sheets
    - Dashboard
      - select\_hum
    - Clearing selection will: exclude all values
  - Target Filters: all fields
- Filter2 1 1 1 1 1
  - Source Sheets:
    - Dashboard
      - Dev\_selector\_focus
    - Run action on: select
  - Target Sheets
    - Dashboard
      - select\_dev
    - Clearing selection will: exclude all values
  - Target Filters: all fields

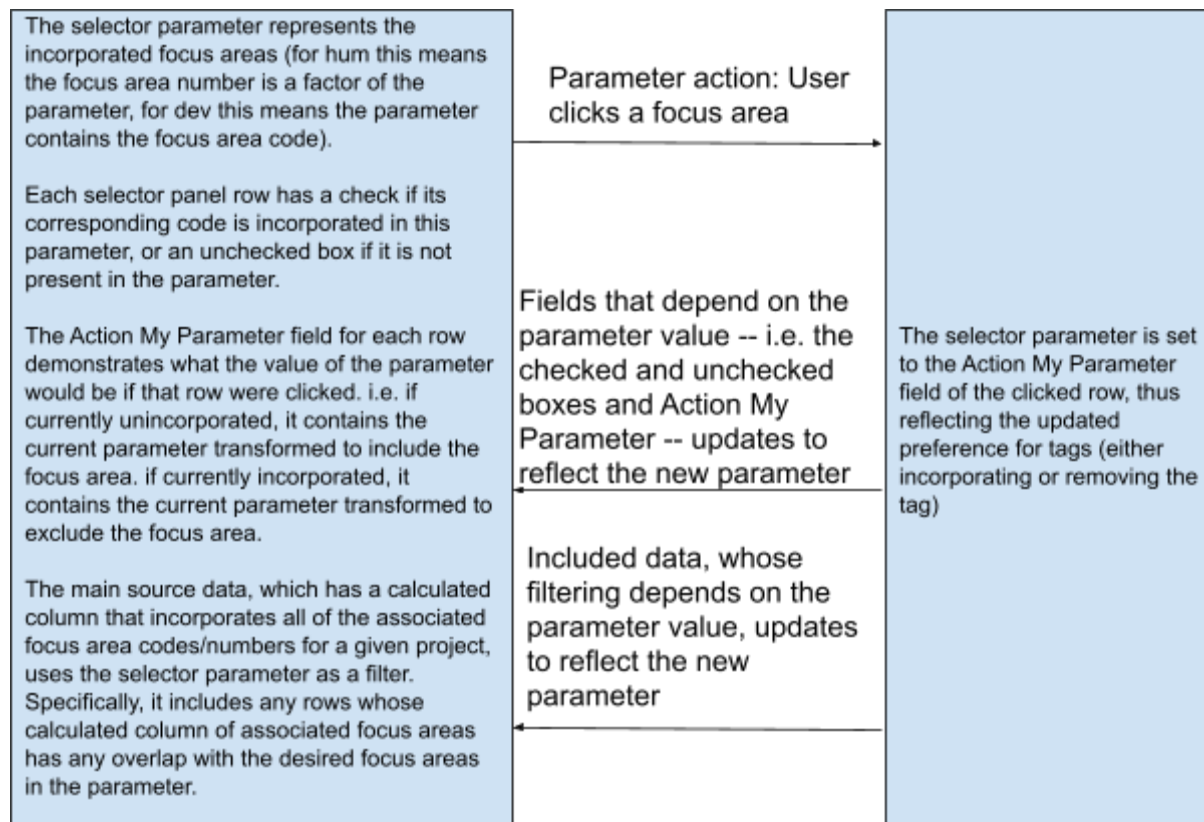
### 3. Change parameters

- Parameter2 1 1 1 1 1 1
  - Source Sheets:
    - Dashboard
      - select\_hum
    - Run action on: select
  - Target
    - Parameter
      - hum\_group
    - Field
      - Action My Parameter
    - Aggregation
      - Sum
    - Clearing the selection will: set value to: 1
- Parameter3 1 1 1 1 1
  - Source Sheets:

- Dashboard
    - select\_dev
  - Run action on: select
- Target
  - Parameter
    - dev\_group
  - Field
    - Action My Parameter
  - Aggregation
    - Concatenate
  - Clearing the selection will: set value to:
    - ^ i.e. set value to an empty string

## How in the world does multiselection work?

- First, what is the multiselection functionality?
  - The best way to think of it is in terms of different tags. Any given project can have a variety of focus area "tags" associated with it, where for that project, that focus area column = TRUE. The multi-selector allows users to choose which tags they're interested in and includes any project that has at least one of these tags.
  - That is, the functionality compares the focus areas associated with a project with the focus areas selected by the user, and if any overlap, it includes the project in the data visualization.
- Diagram visualizing how selector parameters, calculated fields in selector panels, and filtering interact and change



### 3) Design Elements

A Hide/Show Button allows users to reveal and hide the project view, which includes project-specific information. This is made possible by placing all project-view related elements into a floating container (other containers don't allow you to hide/show) ([https://help.tableau.com/current/pro/desktop/en-us/dashboards\\_organize\\_floatingandtiled.htm#Show](https://help.tableau.com/current/pro/desktop/en-us/dashboards_organize_floatingandtiled.htm#Show)). Dashboard actions (specifically type 2, make it so that no project info is revealed in this container unless a particular project is selected). At first glance, the hide/show button, which controls a container that only contains project-specific sheets, and the dashboard action that only shows project information when a specific project is selected may seem redundant. However, I found even when sheets are invisible due to clever dashboard actions, they still exist in the layering, preventing users from interacting with any data beneath, such as the map. The hide/show button allows users to interact with the map when viewing general information because it hides the project specific container completely.

Choose colors and fonts as you wish