This is a template to support the analysis and assurance of the Data Quality. It is divided into three different parts: a first section providing guidance for identification of low-quality data causes, a second section supporting the creation of Data Quality Indicators (DQI), and a third section to support the definition of actions to be done to improve the data quality. Once you filled your template, please upload it to your NextCloud project folder.

Project name

Project lead contact

Cause-effect diagram (optional)

Starting from the question "what are the main variables that affect the quality of my data?" try to fill the table inserting different points for each of the "6M" characteristics: man, machine, material, method, mother nature, measurement.
This activity is optional, but it can be very helpful to investigate in depth the causes which leads to low-quality data. If such causes are already very clear, this section can be skipped.

The operational and/or functional labor of people engaged	Facilities, systems, tools, and equipment employed, etc.	Raw materials, components, consumables used, etc.	Processes and services	Environmental uncontrollable and/or predictable events	physical measurement, automatic sensor readings, and inspections
Man	***Machine***	***Material***	***Method***	***Mother nature***	***Measurement***
Eg: volunteers training level, missing communication	*Eg: devices*	*Eg: consumables needed for measures*	*Eg: training process, is your methodology based on scientific evidence?*	*Eg: weather conditions to collect data*	*Eg: subjective evaluation scales*

Data Quality Indicators

Select the relevant dimensions from the ones listed below, and for each of them find one or more Data Quality Indicators (quantifiable) related to your project (see examples). Then, for each indicator define at least one quality control activity (used to assess the indicator), a goal (which

would define the minimum quality acceptable for that indicator). In the last column, insert the last measure collected from the activity (or your best estimation of the status of the indicator), to see if the goal is satisfied or further actions are needed.

The table lists a complete set of dimensions, with the first five in bold as they are the most relevant from literature. Depending on your pilot, some dimensions could have the same meaning, and some others could be not applicable in your case. Feel free to use only the ones representative for your project.

Data Quality Indicators can be properly defined also considering the previous table of the 6M (e.g., "volunteers training level" listed above, inspires the indicator "Percentage of volunteers with a sufficient knowledge", under the dimension "Consistency"). Please note that not all the causes impact on Data Quality with the same weight: in the analysis try to address those causes which have the main impact.

Data quality dimensions	***Data Quality Indicators***	***Quality control activities and checks***	***DQI goal***	***Current/last quantification***
Completeness	*Eg: Percentage of data coming from the different areas of the Region (north, south, east, west)*	*Eg: Monthly check of measurements locations*	*Eg: > 15% of data from each Region*	*Eg: 10% from south, 50% from north, 20% from east, 20% from west*
Accuracy	*Eg: Calibration vs measurements ratio*	*Eg: Periodic control of calibrations and measurements (monthly?)*	*Eg: > 80%*	*Eg: Only 75% of the measurements happens after a calibration*
Timeliness	*Eg: Percentage of sampling stations with latest data older than 2 weeks*	*Eg: periodic check of data coming from sampling stations*	*Eg: < 10%*	*Eg: 5% of the sampling stations do not have updated data*
Consistency	*Eg: Percentage of volunteers with a sufficient knowledge*	*Eg: Evaluation of volunteers' knowledge*	*Eg: 80%*	*Eg: 90% well executed the test*
Accessibility				

Amount of data				
Believability				
Concise representation				
Consistent representation				
Currency				
Free-of-error				
Interpretability				
Objectivity				
Precision				
Relevance				
Reputation				
Security				
Understandability				
Validity				
Value-added				

Improvement activities

For each DQI indicated in the first table (especially those for which the goal is not reached), try to imagine one or more activities to improve the DQI. One activity might involve more than one DQI, as well as it is possible that multiple actions are needed for a single DQI. For each activity, indicate a deadline and a responsible to guarantee that the action will be taken into account and it will be concluded.

Improvement activity	***Timeline***	***Responsible***	***Involved DQI***
E.g.: Implement automatic measurements rejection if the measurement tool has not been calibrated in the last 4 times.	*E.g.: 3 months (within June 2021)*	*E.g.: IT department*	*E.g.: Calibration vs measurements ratio*
E.g.: Training of the volunteers	*E.g.: 2 months (within May 2021)*	*E.g.: Pilot manager*	*E.g.: Volunteers' skill level measurement*

Notes

In this space personalize your Data Quality Assessment plan.