Data Flow Checklist

Research Methods Support[1], Collaborative Crop Research Program
Updated January 2017

What is it?
A guide to help ensure quality of the flow of information in a research project.

What sort of research and data collection can it be used with?
The checklist is relevant and important for any type of research for development and data collection including;
- Social and participatory research.
- Qualitative research.
- Action research that generates and uses data.
- Activities of a farmer research network (FRN)
- Any scale from a single student project to an international effort.

Most projects require multiple related research activities. The checklist can be used both to help plan the overall project and individual research and data collection activities. The items in the checklist will have differing relevance for different projects. We expect further items of concern to emerge when specific projects assess their own data flow process.

Who is the checklist for?
It is designed for all people involved in a project who may have differing data flow responsibilities. Associated with these responsibilities are competences and training needs. It is therefore, the task of the Project Manager (PI) to identify what skills are needed to perform which tasks, to identify the corresponding training requirements of project staff, to arrange appropriate training, and to ensure it is implemented.

Why a checklist?
There are multiple stages in the flow of information in a project, but some are always overlooked or missed resulting in slower progress and less effective results at the end of the project. We have a responsibility to ensure that quality is considered at each of these steps, contributing to the overall quality of the research, leading to effective knowledge generation and benefits for farmers.

How to use the Checklist?
1. Use it during conception and planning of the project. Scan the steps and make sure you have set appropriate plans and quality requirements for each. Use it in project mid-year meetings for reflection and feedback.
2. Seek assistance with issues that you do not understand, cannot see the relevance of or are unaware of alternatives for.

Dataflow step	Examples of areas for action and quality assurance
Data ownership	Do data access, exchange and sharing agreements exist?
	Is there agreement between all partners on ownership and authorship of any outputs?
Planning the data flow	Have you liaised with partners to understand all data needs and ensure relevance of all data collection?
	Have you determined appropriate research approaches (research designs and methods), including those which are new?
	Does the research protocol (a document detailing how the activities are carried out) exist?
	Has the design of research activities been critically examined?
Planning for data collection	Have you planned and described the outputs, including outline tables and graphs that the data will be used to generate?
	Have you decided what primary and supporting data to measure and designed data collection tools and instruments (forms, questionnaires)?
	Do you have all details (field layout, sampling, training and logistics, piloting…) carefully planned?
	Are you keeping records of changes made in protocols, questionnaires and other documents?
	Is there clear allocation of responsibilities to team members?
	Is there a well-defined calendar of activities?
Data collection	Do you assess field reports to identify errors as they occur and identify gaps and omissions in data collected from actual plan?
	Are you keeping careful records of all activities in the research process?
Data entry and organisation	Have you designed efficient, accurate and well adapted spreadsheets or other tools for data entry?
	Can you use automatic checks during data entry?
	Will you generate initial summary reports as part of data checking and document what you see?
	Have you ensured all staff and collaborators are well trained?
	Have you ensured all the information in electronic form is secure?
Data analysis	Can you plan and describe the analyses that will lead from data to outputs?
	Have you decided on which statistical or other information processing software to use?
	Do you know how to carry out data exploration, summary and statistical analysis, making a trade-off between perfection and practicality?
	Will you keep records of data processing decisions and syntax? Do you know how to keep well organised and documented datasets?
Interpretation and write up	Do you know how to merge new information with what was previously known and work out the implications?
	Will you check and review quality of products before they are released?
	Are outputs realistic in describing complexity and uncertainty, as well as what is known?
Data storage and access	Do you have a clear and defined system for others to request data use?
	Is data stored with metadata (eg. title, date created, name of collector, purpose of data)?
	Is all data securely stored so it cannot get lost but accessed when needed?
Dissemination, and feedback to originators of data	Have research products been generated in a form appropriate for the intended audiences?
	Is there a defined mechanism for receiving feedback from interested parties?
	Have research products been reviewed and accepted by stakeholders?
	Have you updated the plan of activities to reflect the implementation of the research process?

Taking it further

The list is intended to remind project teams of the most common concepts, and make some decisive action. When doing a self-diagnosis on their data flow process, it will be useful for projects to use the Theory of Change ideas. Ask 'What?' to identify Problems, 'So what?' for Targets, and then 'Now what?' for Strategies and Actions. Projects should aim to set targets that meet their overall objectives, are appropriate to their scales and their human and technical resources, and are realistic and achievable while pushing towards higher standards.

Once the targets are set, the actions and strategies can be put in place. They will probably require capacity building based on a blend of formal training, support from specialists and self-learning. It is important that scientists put an effort into broadening their understanding and learning new skills. There are various resources online like books, guides, tools, training courses etc – to support projects on these skills. In CCRP, the Research Methods Support project exists to provide advice on these steps, point you to suitable resources and train scientists on the necessary skills and approaches.