An interactive visualisation tool to manage metadata in engaged research projects, track progress, map stakeholders, and evaluate output, outcomes and impacts.

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Increasingly, funded research projects are expected to address critical societal challenges. These challenges require generating and integrating multi-disciplinary and practical knowledge through collaboration among different actors. Correspondingly, many funding agencies demand more insightful planning, reporting and proof of performance, showing how and what the research has achieved against key performance indicators, as well as societal impacts and contributions, such as to the UN Sustainable Development Goals.

Such complex reporting requires accessible data management where researchers and coordinators can manipulate large amounts of data, gathered over time from different sources, and in a broad range of formats. A practical expectation is to inform meaningful and repeated progress reports which list and link deliverables, publications, indicators of performance and social impacts.

This paper presents the research management experience of a multi-disciplinary team and their reflections on how they responded to these challenges and implemented working solutions. As a team from five disciplines, we reflect on this shared experience gained over a 6.5 year-long EU-funded project. Stimulated by the project complexity, we came to recognise that how we managed the data provided us with an opportunity to collaborate meaningfully and to link in novel ways the contributions of research activities to the outcomes and impacts of the project. In brief, we devised a new research data management approach through which we collated and visualised the data so as to facilitate deeper exploration of the interactions among the researchers, tasks and deliverables.

We began by designing an Excel-based matrix to facilitate managing project metadata. Our objective was to demonstrate progress and achievement against key performance indicators, the level of engagement among stakeholders, and the links of tasks to the SDGs. The ideation and design of the original matrix emerged from discussions among task-leaders. Implementation

required contributions from all team members. Given the nature of the project, the matrix was extensive and, so, needed to be interrogated using filters.

Recognising the limitations of data tabulation, we linked the matrix to a powerful visualisation web-based software to create user-friendly visuals, inviting interactive analyses of workflows and stakeholder engagement. The matrix and visualisation tool will be demonstrated during the presentation. This approach enabled visualisation of planned and emergent interactions within the project, underpinned by interconnections among key activities and researchers.

The approach is usable by different stakeholders and useful at different project/programme stages. Research project managers can use it to anticipate and track researcher deployment and work package management at funding application/proposal stage and at project reporting stages. Researchers can use it to manage their workload, share reporting responsibilities, promote discussion with other team members, and reflect on actual and potential collaborations. They can also capture their achievements to support applications for subsequent research or non-academic positions. Finally funding agencies and scientific coordinators can interrogate and visualise project metadata and evaluate them against project aims, objectives and milestones.