CASE STUDY

An assessment of data management and FAIR data principles across the ACIAR research portfolio

How an effective 'enabling learning environment' can impact at an investment, individual and organizational level and beyond – the ACIAR Case Study

Program Manager	James Quilty
Funders	ACIAR
Dates	December 2021–September 2023

Interviewee	James Quilty
	Research Program Manager for Soil and Land Management
Organization	ACIAR, Austrailia

As a follow-up to a Small Research Activity, carrying out 'An assessment of data management and FAIR data principles across the ACIAR research portfolio', between Dec 2021 – September 2022, which utilized tools and learnings from EDA2, ACIAR awarded CABI a follow up contract. This follow up was to develop a FAIR data strategy for the Soil and Land Management (SLAM) program, a key research program under ACIAR.

This study looks specifically at how CABI interventions with a donor organization have led to ongoing mainstreaming of FAIR-practices.

By engaging ACIAR Research Program Managers, management teams and partners during 2022, CABI could better understand fair data management, practice and sharing, challenges across a range of geographies and domains in Asia. ACIAR Senior Research Program Manager (and acting ACIAR Chief Scientist) James Quilty worked with CABI to focus its intervention on knowledge building, data ecosystem mapping, and embedding good management and sharing practices from the start of investments. CABI is now working with James on a FAIR Research Data Management Strategy for the ACIAR SLAM Portfolio.

James already championed FAIR, but CABI support provided "a new set of skills... and I guess a new confidence". He can now cascade advice to other Program Managers on helping grantees in data-rich research investments. Implementation of FAIR across wider investment portfolios is under discussion.

Replicable tools, methodologies and FAIR practices helped program managers scale projects, and CABI's expert recommendations encourage data literacy and trigger "lightbulb moments".

Many of the frameworks, tools and methodologies used – including the Data Sharing Toolkit – were developed in EDA with the Bill & Melinda Gates Foundation and offer replicable use cases.

Via its SLAM Portfolio, ACIAR plans to implement the FAIR RDM Strategy for all pipeline projects dealing with high-value data assets. Major improvements are anticipated on an organizational and individual research program manager level.

Ecosystem mapping has enabled program managers and grantees to home-in on existing best practices that can be utilized in different geographies and sectors. Early analyses encouraged helps program managers to scale projects effectively, and to consider wider and even national goals:

> “It’s really important for us to understand from the farmer through… to the President. What information are they actually after, and how are we going to get it to them within that ecosystem?”

One-to-one engagement with senior teams, and “coming to talk to ACIAR collectively”, and enabling and learning environment increased CABI’s influence, and despite challenges, including structural changes, James has perceived culture change. New tools and approaches, such as using the ODI Data Spectrum, adapted with CABI for agriculture contexts, provided “lightbulb moment(s)” and reduced duplicate conversations.

Project proposal templates now have a data management section. James notes: “I’m confident that this has come about because of the investments we’ve made and the continuous communications we’ve had.” James describes increased “recognition” of FAIR practices, with RPMs from different programs now asking for support and eagerly awaiting the new strategy.

What are the institutional and organizational benefits of FAIR practices?

Institutional benefits include increased trust, and “more confidence in investments because they are built on sound data”. This has potential long-term benefits. FAIR data practices now mean more will be possible in the future - for example, “impact assessment in 20 years will be able to do statistical analysis... [when currently they are] all qualitative surveys”.

The biggest challenge in fully implementing a FAIR strategy remains the differences and complexities of working with partner countries. As James notes, “in developing nations, [there is] so much uncertainty about policy and ownership,” which goes all the way down to a farmer level, where land tenure and properties may not be fully or comprehensively recorded or defined, creating “really big hurdles”.

CABI’s reputation for bringing “value to partner countries”, and its staff’s ability to educate teams and individuals on FAIR best practice, gave James the skills and knowledge to successfully articulate how FAIR can transcend challenges, benefit grantees and improve outcomes. Even locations with extensive sensitivities around publishing data in-country, for example Indonesia, there are opportunities to bring in FAIR practice, e.g., around improving metadata quality and data management.

FAIR also offers pathways to improving data quality and governance agreements to ensure equity and inspire grantee trust and confidence: “We can start on improving metadata and data management and even getting to the point of sharing internally or aggregating data,” says James.

Examples of replicable or adaptable data governance and best practice, for example in the Pacific Community (SPC), could offer new opportunities. James adds that when agreements and procedures are already in place there are options to look more widely across investments and replicate them. The Pacific example of Papua New Guinea, “where different partners are really sharing data”, and improvements in Cambodia, are examples of developing enthusiasm and awareness from stakeholders around the potential of data sharing agreements and collaborations. "Other countries are asking them if they can join”.

> The Commonwealth Scientific and Industrial Research Organization (CSIRO) is a “gold standard” that has already operationalized FAIR data in its soil team. James notes “all the metadata geotagged and barcoded, so samples are kept down to the soil archives" and a library informed by a newly harmonized and digitized dataset in a single repository, including legacy data [up to 40-50 years old] discovered on the ground everywhere "from under desks” to previously unaggregated paper “maps and theses and datasets”. By introducing "minimum standards” of metadata, the organization has overcome historical data-hoarding challenges and enabled ministries to sign governance agreements “so data is accessible in sheets and maps”.

Helping build a data culture where FAIR is valued has a positive effect on data champions...

James is already “less isolated” and senses relief amongst his network as “finally someone is helping with this [FAIR implementation]”. Next steps include building internal capacity, though James notes that not everyone needs all the most complex data analysis skills or methods. His role, he says, is largely having “enough confidence to talk about it” and support stakeholders to make “their own contribution” to a FAIR-informed culture.

…but also contributes to big picture change

James hopes the future will mean a shift in perspective that looks at long-term impact studies, and shows the benefits of FAIR practice, meaning AgDev moves away from excuses like investment in FAIR is “too much work” and “costs too much” towards understanding that “capacity... saves you money”.
The value of data is “to get it to a point where it is operationalized [and we can] build capacity with partners” which doesn’t require “millions of AUS dollars”, but rather building and cascading knowledge. But only immediate action will guarantee the potential increases in ROI are seen: “If we stop now... value for money is not going to be seen. If we push though, for FAIR data strategy and tools and an implementation plan, the return on investment will be extraordinary.”

Investing in people's capacity and behavioral change will eventually pay off. James's ability to confidently apply FAIR in investments has contributed to embedding FAIR in ACIAR investments which will be part of the Memorandum of Understanding (MOU) between Australia and the Philippines on the development of the National Soil Health Strategy. The MOU was signed recently (September 2023) and has the aim of improving soil health and thereby increasing agricultural productivity. Collaboration between the Philippines, ACIAR and CABI is already underway to support the development and implementation of the strategy.

Further Reading

- Philippines, Australia ink MOUs on visa arrangements, soil strategy | GMA News Online
- An assessment of data management and FAIR data principles across the ACIAR research portfolio | ACIAR
- Assessment of FAIR data principles across the ACIAR research portfolio - CABI.org

/ Last updated: September 13, 2023