

A Research Impact Plan for the COTS Control Innovation Program

Why and how should we plan for research impact?

Over the past decade research institutions and entities across Australia have become increasingly focused on planning for, communicating and demonstrating the environmental, economic and social impacts of publicly-funded research. Indeed, mapping research impact is now widely considered important to achieve greater research quality, engagement and translation of research findings into real-world benefits, beyond contributions to academic knowledge.^{1,2,3}

The Australian Research Council has developed a research impact [glossary](#) in order to support a common understanding of the terminology and concepts related to research impact. They define a research impact pathway as “an analysis or plan which identifies causal links by which research achieves or will achieve its impact. It is used by researchers and research planners to identify hypotheses about the route from research-specific activities, through to uptake and adoption of research outputs, and the realisation of subsequent future intended impact(s).”

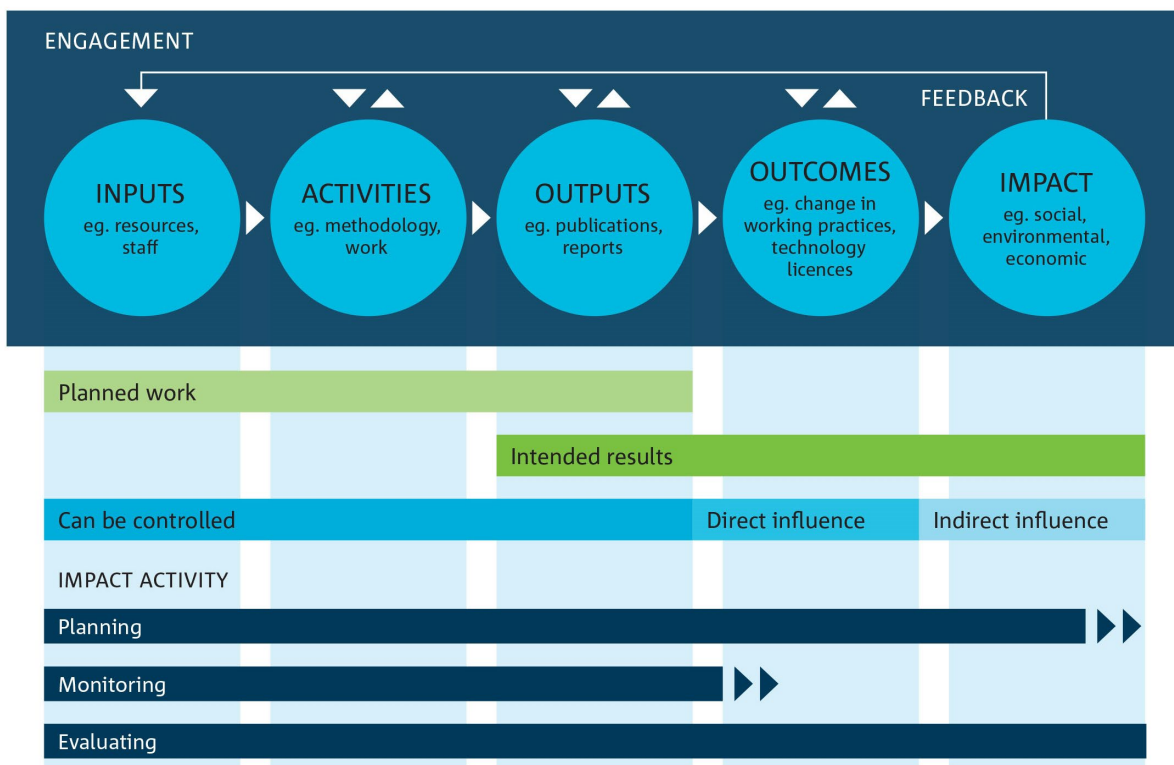


Figure 1. Research Impact Framework developed by the CSIRO, derived from the work of the W.K. Kellogg Foundation

The CSIRO has developed a framework (Figure 1) for planning research impact based on the hypothesis that “*creating impact begins with deploying **inputs**, to conduct research **activities** and produce **outputs**, which themselves are translated through short to medium term **outcomes** into long term **impact**.*” This framework highlights the importance of ongoing engagement and feedback throughout the process.

Planning for CCIP’s impact

The Crown-of-thorns starfish Control Innovation Program (CCIP) is a collaborative research partnership between the Australian Institute of Marine Science (AIMS), CSIRO, James Cook University (JCU), the University of Queensland (UQ), and the Great Barrier Reef Foundation (GBRF). It is publicly-funded by the Australian Government through the Reef Trust Partnership.

The CCIP aims to accelerate the development and uptake of innovative methods that improve the efficacy and efficiency of COTS management on the Great Barrier Reef. The research portfolio includes 21 projects across 3 subprograms—Prediction, Detection and Response.

As a program of research, CCIP is uniquely positioned to plan for and achieve its research impact because it is closely linked to an existing, publicly-funded management program – the [COTS Control Program](#).

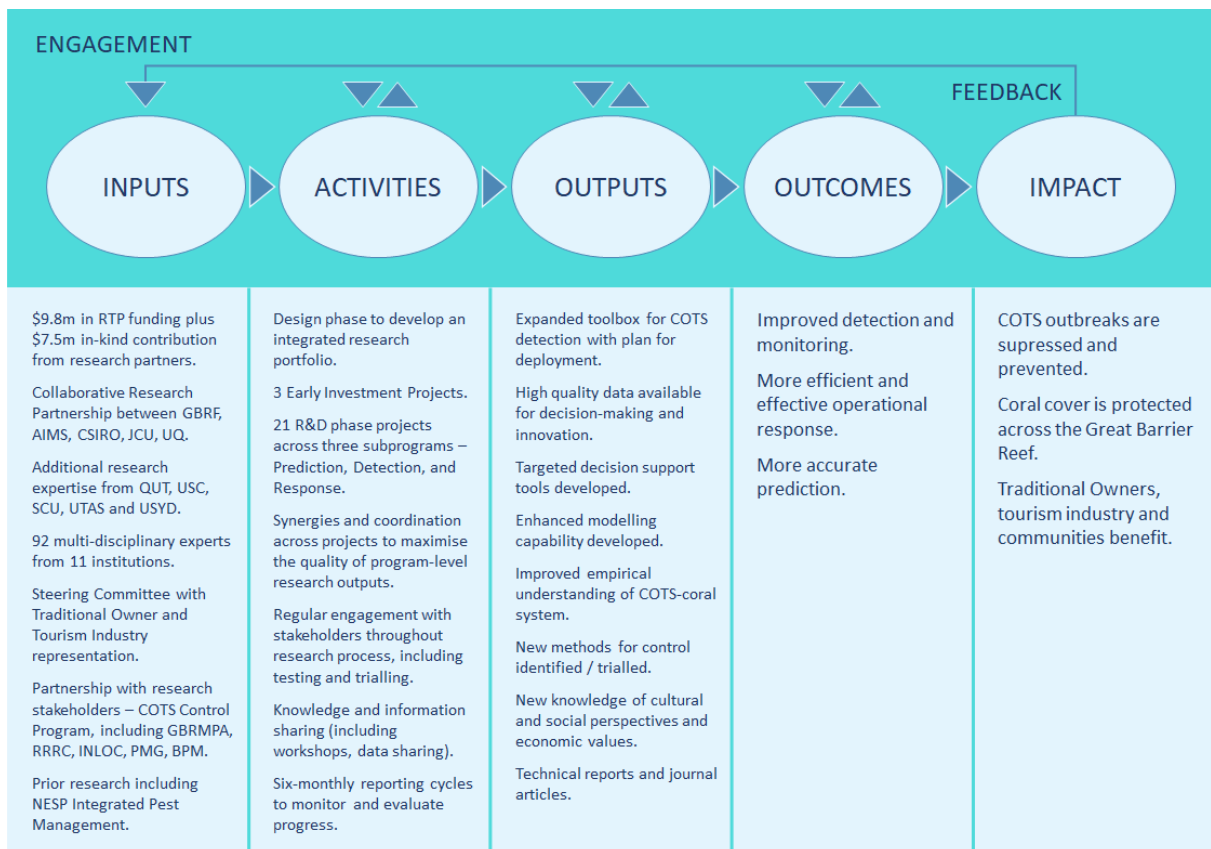


Figure 2. Research impact plan for the COTS Control Innovation Program

The CCIP's *research impact plan* (Figure 2) has been developed by synthesising information from program design, program planning and consultation with stakeholders, including input provided at the CCIP Innovation for Impact workshop in Townsville, October 2022. The key elements of the CCIP *research impact plan* are:

- **Inputs:** the funding, partnerships, expertise, governance, and prior research upon which the CCIP is built.
- **Activities:** the research actions (e.g. scoping, methodologies, experiments, trials, fieldwork), workshops, engagement and reporting conducted during CCIP.
- **Outputs:** the capabilities, knowledge, systems, tools, technologies, reports and publications resulting from the CCIP's activities.
- **Outcomes:** the COTS management outcomes that CCIP research intends to achieve in the short to medium term.
- **Impacts:** the long term benefits to the environment, people and economy that CCIP intends to influence as a result of these inputs, activities, outputs and outcomes.

The *research impact plan* is supported by a *program logic model* (Figure 3) which provides more detailed information on the research impact pathways, including mapping the expected contribution of project-level activities to achieve program-level outputs. The research impact pathways are depicted as the hypothesised causal links between these program outputs and their intended outcomes and impacts.

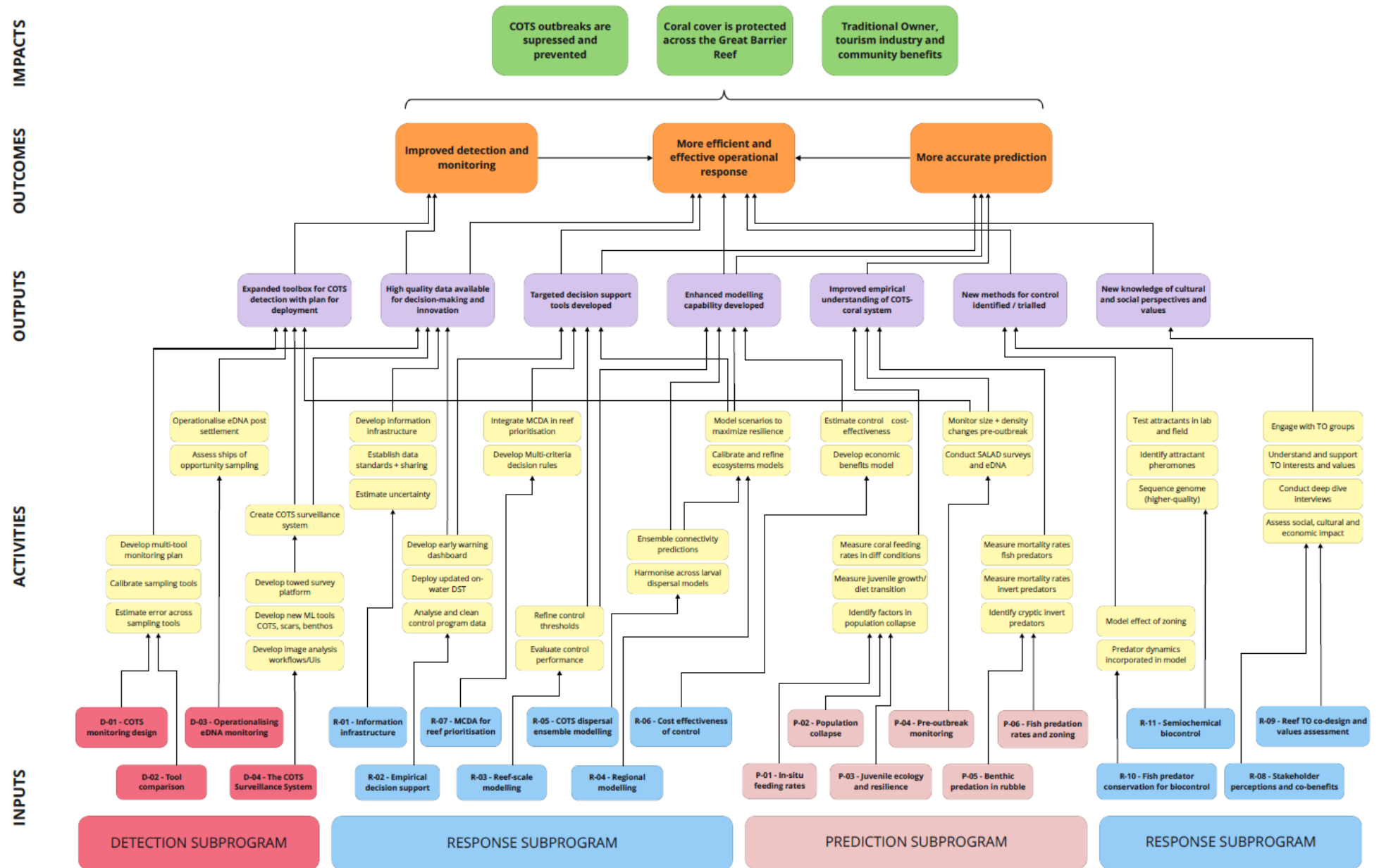


Figure 3. Program logic model for the COTS Control Innovation Program

Delivering on the research impact plan

CCIP research has a strong potential pathway to impact given its close connection to an existing management program, which is a unique situation and opportunity in the Great Barrier Reef research and innovation space.

However, as with all research programs, the intended outcomes and impact of CCIP's research can be influenced but are not under the program's direct control (Figure 1). They rely on uptake and integration of the research outputs into management policy and practice.

Below are some of the key activities that CCIP is taking to support the uptake of the program's outputs and ultimately deliver on the research impact plan:

- *Synergies and coordination* across projects to maximise the quality of program-level research outputs, for example: integration activities are included in project work plans; ongoing subprogram and program leadership and integration; ongoing steering committee support as project and program outcomes emerge.
- *A stakeholder-focused approach* that identifies and works closely with stakeholders that have both strong interest / influence and emphasises the importance of engagement with these stakeholders before, during and after the research.
- *Iterative testing and trialling* of innovations alongside key stakeholders, especially COTS Control Program decision-makers, managers and on-water crews. Regular end-user feedback has been built into project and program delivery to ensure that outputs are fit-for-purpose.
- Continuous focus on *knowledge and information sharing* to further build coordination and understanding among researchers and broader stakeholders, for example: workshops and meetings conducted during CCIP, ongoing data sharing between researchers and managers, and involvement in COTS Control Program planning and decision-making processes.
- Establishing effective *monitoring and evaluation* of the delivery of the research impact plan. This has been built into the CCIP design, including several quantitative and qualitative measures collected during project and program reporting, and the identification and communication of case studies.

There are also opportunities for impact beyond this plan, with CCIP's outputs potentially applicable to other organisations and reef-based programs (e.g. RRAP, RIMReP). While activities to influence these causal links are not included as part of this plan, it is anticipated that CCIP's innovations could prove useful more broadly.

Finally, this research impact plan acknowledges that COTS innovation will continue in some form after CCIP. Some of the research activities and outputs delivered under CCIP will require further development to produce implementation-ready capabilities and tools. Thus the program intends to drive progress while also laying the foundations for the next generation of research commitment and funding.

References and further reading

1. <https://www.arc.gov.au/about-arc/strategies/research-impact-principles-and-framework>
2. <https://www.csiro.au/en/about/Corporate-governance/Ensuring-our-impact/A-CSIRO-wide-approach-to-impact>
3. <https://www.uq.edu.au/research/research-support/research-performance/research-impact/research-impact-toolkit/plan-impact>
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