Resilient Urban Centres and Surrounds (RUCaS)

Independent End of Program Evaluation

Final Report

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Investment summary

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[1] Previously Mekong-Australia Partnership Water, Energy, Climate (MAP-WEC)

Table of contents

Table of acronyms

ADB	Asian Development Bank
AUD	Australian dollars
BCA	Benefit-Cost Analysis
BMA	Bangkok Metropolitan Administration
CSOs	civil society organisations
DAC	Development Assistance Committee
DCCE	Department of Climate Change and Environment
DFAT	Department of Foreign Affairs and Trade
EbA	Ecosystem-based Adaptation
EEC	Eastern Economic Corridor
EOPO	end-of-program outcomes
GEDSI	gender equality, disability and social inclusion
GGGI	Global Green Growth Institute
GRET	Groupe de Recherche et d'Échange Technologique
HUCE	Hanoi University of Civil Engineering
ICEM	International Centre for Environmental Management
ICFMS	Integrated Climate Resilient Flood Management Strategy
IO	intermediate outcomes
IUFM	integrated urban flood management
KEQ	key evaluation question
KII	key informant interview
Lao PDR	People's Democratic Republic of Lao
MAE	Ministry of Agriculture and Environment
MAP	Mekong-Australia Partnership
MEL	monitoring, evaluation and learning
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MoU	memorandum of understanding
NAP	National Action Plan
NbS	Nature-based Solutions
NUOL	National University of Laos
OECD	Organisation for Economic Co-operation and Development
PWDs	people with disabilities
RUCaS	Resilient Urban Centres and Surrounds
RUPP	Royal University of Phnom Penh
TAG	Technical Advisory Group
ToR	Terms of Reference
UCLG ASPAC	United Cities and Local Governments Asia Pacific
WSCA	Water Sensitive Cities Australia

Executive summary

Introduction and Context

This report presents the independent end-of-program evaluation of Phase 1 of the Resilient Urban Centres and Surrounds (RUCaS) program, a regional initiative funded by the Australian Government's Department of Foreign Affairs and Trade (DFAT) under the Mekong-Australia Partnership (MAP) and implemented by Water Sensitive Cities Australia (WSCA) in partnership with the International Centre for Environmental Management (ICEM) across Thailand, Cambodia, Lao PDR, and Viet Nam from 2022 to 2026.

RUCaS was designed to address rapid urbanisation and increasing climate risks such as flooding, heat, and pollution, where traditional grey infrastructure proved insufficient. The program promoted hybrid nature-based solutions (NbS), combining natural and conventional infrastructure to enhance urban climate resilience. Phase 1 focused on increasing the awareness, acceptability and capacity to implement NbS in the Mekong subregion.

Initially planned as a two-year initiative, RUCaS expanded to four years with AUD 7 million in funding, enabling broader activities but introducing design and implementation challenges. This evaluation assessed relevance, effectiveness, GEDSI, efficiency, and sustainability, and identified lessons and recommendations to inform potential future phases.

Method

The evaluation combined primary and secondary data, reviewing key RUCaS documents and relevant literature alongside semi-structured key informant interviews (KIIs) conducted both virtually and in-person. Fieldwork across Thailand, Lao PDR, Cambodia, and Viet Nam (3–14 November 2025) involved roughly 25 hours of in-person interviews with 50 stakeholders, plus 20 hours of virtual interviews with 21 stakeholders. Participants were 44% women and 56% men, including two people with disabilities.

A key challenge to evaluating the RUCaS program were several issues with the program logic (as articulated in the Monitoring and Evaluation (MEL) Framework) including that the end-of-program outcomes (EOPO) were non-conforming with DFAT standards, the targets of some outputs or intermediate outcomes (IO) were poorly defined and there were circularity and implausibility in much of the logic. A further limitation was the short timeframe for data collection across seven sites in four countries. Nevertheless, the active engagement of the RUCaS implementation team enabled the evaluation team to gain a solid understanding of the program.

Overall Assessment

Overall, Phase 1 of RUCaS achieved important and tangible results. The program was highly relevant to addressing regional climate resilience priorities and was widely regarded as professional, technically credible and responsive to an identified knowledge gap. It built a motivated cohort of NbS champions, developed high-quality technical guidance products, and delivered significant learning and exchange opportunities across the region.

However, limitations in the program logic (as described above), assumptions regarding the capacity of local partners to complete case studies that were not borne out in Phase 1 of

RUCaS, and the late integration of GEDSI constrained the program's overall effectiveness and efficiency. This was, in part, due to the fragmented nature of the program which underwent several amendments over its four years. A key lesson learned during this evaluation was that any future phase of RUCaS should be focused on ensuring any gains made are sustainable and integrate GEDSI in meaningful and lasting ways.

Relevance

RUCaS was strongly aligned with partner government priorities and DFAT's regional water resilience strategy. Across all four countries, governments are grappling with climate-related urban challenges and increasingly recognise the importance of NbS. NbS concepts are already referenced in the National Adaptation Plans (NAPs) in Thailand and Lao PDR, and interest in economic appraisal tools and policy guidance for NbS is growing.

The RUCaS program addressed a clear gap: while green infrastructure was conceptually accepted, practical guidance, financial analysis and design standards for NbS in the Mekong subregion were limited. The Benefit-Cost Analysis (BCA) tool and technical guidelines developed under RUCaS were particularly valued by partners seeking to justify NbS investments relative to conventional grey infrastructure.

Effectiveness

EOPO 1 The value of hybrid NbS is accepted

Hybrid NbS gained strong acceptance among Mekong partners, who credited regional momentum as well as the RUCaS program. The concepts for eight case studies were completed, and five progressed towards direct intervention, including a small-scale physical demonstration in Luang Prabang by January 2026 and a stormwater planter box which came about through work done in Makkasan. However, several important lessons were learned in relation to EOPO 1.

The relevance and feasibility of the case studies varied across countries. For example, while Thailand's On Nut site was practical and well-supported, some Lao PDR concepts were viewed as overly ambitious. Barriers to the feasibility of the case studies included a lack of financial viability, lack of co-design, over-ambitious site selection and stakeholder complexity in some sites. Future case study site selection should be demand-driven, budget-aligned, locally co-designed, and realistically implementable.

Furthermore, EOPO 1 assumed that providing concept designs, visualisations and monitoring equipment would motivate partners to independently fund construction. In practice, these inputs were insufficient, and some partners expressed frustration that projects were not advanced further by the RUCaS program. Lessons for a future phase include ensuring designs are locally feasible, progressing at least some projects to full demonstration, and clarifying roles, mandates and expectations between implementers and partners to manage risk and sustain engagement.

EOPO 2 Foundations for upscaling

RUCaS produced a suite of knowledge products, including risk assessment guidelines, a GEDSI NbS guideline, roadmaps for upscaling, and training resources. The BCA tool was widely appreciated and adopted by some academic partners.

These outputs contributed to intellectual and technical foundations for scaling. However, no national and/or local-level urban climate policies and regulations that integrate NbS as a result of RUCaS were in place at the time of the evaluation which suggested that the pathway from knowledge production to regulatory change was more complex and time-consuming than initially assumed.

Several tools required further contextualisation, translation, field-testing and dissemination planning. Whilst the draft roadmaps were intended to be co-designed, the time and resources for the RUCaS program meant that input from local counterparts was limited and they had not yet fully endorsed the plans at the time of the evaluation. Without stronger ownership and integration, their sustainability was uncertain.

EOPO 3 Partnerships and capacity of NbS champions

RUCaS successfully convened a regional cohort of NbS champions and delivered numerous workshops, technical trainings and two regional conferences. Participants consistently praised the quality of events and knowledge exchange. Formal collaboration agreements between WSCA and regional partners were established, and some cross-university collaboration emerged, particularly regarding environmental monitoring.

Nevertheless, regional collaboration remained limited beyond RUCaS-facilitated events. Urban challenges tended to be city-specific rather than transboundary, making sustained regional integration more difficult. Champions across countries rarely collaborated independently, and institutional capacity to implement NbS without further technical support remained uncertain.

GEDSI

The cross-cutting focus on GEDSI was introduced mid-program and further strengthened under Amendment 2. Activities included establishment of a GEDSI Technical Advisory Group (TAG), a regional GEDSI and NbS workshop and development of a dedicated GEDSI NbS guideline. These efforts increased awareness among technically focused partners, many of whom were newly exposed to GEDSI concepts. In some case studies, consultation with women and people with disabilities informed the design of the case studies.

However, transformative GEDSI outcomes were unrealistic within the program's timeframe and capacity constraints. GEDSI was introduced after case study development had commenced, and retrofitting GEDSI was difficult. Responsibilities for GEDSI remained somewhat siloed between GEDSI specialists and technical teams, and neither group felt fully equipped to integrate the other discipline effectively. The uptake of the GEDSI guideline is contingent on it being simplified, field-tested and embedded within broader institutional processes. Any future phase of RUCaS will require earlier planning, stronger in-house expertise and clearer, more feasible objectives regarding GEDSI.

Efficiency

Whilst progress was made toward achieving the EOPO by the end of Phase 1 (including the GEDSI cross-cutting focus), none were fully achieved meaning that the program had much room for improvement in terms of efficiency. This was partly due to an implausible program logic with unclear assumptions.

Some program activities and outputs extended beyond the MEL Framework, such as leveraging resources to integrate NbS in implementation sites outside of RUCaS. While these efforts demonstrated responsiveness and flexibility, they also diverted resources from the focus of RUCaS, affecting efficiency (and any potential future phase of RUCaS should incorporate these types of efforts into the program logic).

Despite these limitations, RUCaS staff and partners effectively utilised available resources, with technical expertise from WSCA, ICEM, and in-country teams being widely valued. The program's partnership model which combined academic rigor, regional knowledge, and local networks enhanced efficiency. Future phases could improve efficiency by strengthening local technical capacity, expanding in-country teams, continuing to leverage local universities, and focusing resources on achievable outcomes while maintaining partnerships that balance technical expertise and contextual knowledge.

Sustainability

While RUCaS achieved important outcomes, the sustainability of its work remained uncertain in four key domains:

Firstly, while the case studies in all four countries moved beyond the concept stage, financing, land availability, and continued reliance on RUCaS support posed major barriers to sustainability.

Secondly, the NbS guidelines and scaling roadmaps produced during Phase 1 required testing, dissemination, training, and government commitment to ensure uptake, which had not yet been fully secured at the time of the evaluation.

Thirdly, RUCaS established local partnerships and networks, but these largely depended on program resourcing. Minimal independent regional collaboration occurred, and networks—including NbS champions and GEDSI TAG members—were not self-sustaining.

Finally, whilst several achievements were made in relation to GEDSI, the sustainability of these was uncertain. The GEDSI TAG indicated they likely would not continue to meet without RUCaS coordination; the GEDSI NbS guideline was not fully field-tested or adapted to the needs of potential users at the time of the evaluation meaning it risked being unused; and none of the NbS champions felt confident to carry on GEDSI activities independently.

Conclusion

The RUCaS program made a significant and timely contribution to advancing NbS for urban climate resilience across Lao PDR, Thailand, Cambodia, and Viet Nam. It responded to strong demand for alternatives to grey infrastructure, filling gaps in knowledge, skills, and expertise. Government agencies, universities, civil society, and DFAT posts consistently valued RUCaS' technical guidance, learning events, and convening role, confirming its relevance.

Whilst RUCaS did not fully achieve its EOPOs—which impacted its effectiveness and efficiency—this could largely be attributed to issues in the articulation of the program logic (including assumptions that were not borne out) and fragmented funding.

Sustainability remained uncertain, as many gains (including steps towards demonstrating NbS, capacity development and knowledge products) were unlikely to continue without further

investment. Future phases should focus on feasible case studies, financial viability, genuine co-design, meaningful GEDSI integration, and enduring results aligned with partner contexts.

Consolidated recommendations

Recommendation 1: DFAT should ensure that the program logic and MEL Framework for any future phase of RUCaS is clear, feasible within the given timeframe and resources (including with respect to GEDSI), and conforms with DFAT MEL standards.

Recommendation 2: The implementers of any future phase of RUCaS should progress at least one case study in each country from concept to a stage where it is fully constructed, commissioned, and monitored to demonstrate the financial costs and benefits of sustainable hybrid NbS (even if this means having smaller case studies, and/or in fewer countries, that are fully-funded by the program). Site selection for the case studies should be driven by local partners, and design should be done collaboratively and in accordance with locally relevant budgets.

Recommendation 3: The implementers of any future phase of RUCaS should ensure that any knowledge products, guidelines and/or roadmaps developed for specific countries or cities should a) be demand-driven by local partners, b) be co-designed with local partners, c) be field-tested and updated where appropriate, and d) include clear dissemination and implementation plans (which define stakeholders who are able to oversee implementation).

Recommendation 4: The implementers of any future phase of RUCaS should facilitate learning events for those involved in funding, planning, designing and constructing NbS in the region that exhibit (either virtually or through in-person site-visits) examples of working NbS in a range of contexts, budgets and scales of impact (in addition to examples from China and Thailand).

Recommendation 5: DFAT and the implementing team should ensure that GEDSI is resourced and included from the very beginning of any future phase of the RUCaS program. This includes the definition of clear and feasible GEDSI-related EOPO/IO in the program design, conducting in-depth GEDSI analysis prior to detailed design, and the development of a clear and feasible GEDSI strategy.

Recommendation 6: The implementing team of any future phase of the RUCaS program should hire staff to be responsible for implementing the program GEDSI outcomes (preferably separate roles for gender equality, disability inclusion and representation of other marginalised groups) who have expertise in GEDSI, community development and technical fields such as engineering (that is, experts who can work across these disciplines).

Recommendation 7: The implementing team of any future phase of the RUCaS program should facilitate GEDSI capacity development, firstly for the implementing team (and implementing partner organisations) and then for NbS champions, planners and implementers in the region.

Recommendation 8: The implementers of any future phase of the RUCaS program should aim to have most of its implementation team based in the target countries and comprise staff who have local language skills and understanding of local culture and political economy as well as NbS technical capacity.

1. Introduction

1.1 Synopsis

This document is an independent end of program evaluation of Phase 1 of the *Resilient Urban Centres and Surrounds* (RUCaS) program—a development investment funded by the Department of Foreign Affairs and Trade (DFAT) Mekong-Australia Partnership (MAP)[2] regional program. RUCaS was implemented by Monash University's Water Sensitive Cities Australia (WSCA) in partnership with the International Centre for Environmental Management (ICEM). The evaluation was undertaken by three independent evaluators[3] (FH Designs Pty Ltd) during September 2025 – January 2026 in line with a Terms of Reference (ToR) developed by WSCA, ICEM and DFAT, and with reference to DFAT's Monitoring, Evaluation and Learning (MEL) Standard 9[4] and Ethical Research and Evaluation Guidance.[5] Support for identifying informants, providing documentation and in-country introductions was provided by the RUCaS team.

1.2 Background and Context

Cities in the Mekong subregion have been experiencing rapid growth over the last decade with rates of 3-5% growth per year: higher than the global average. By 2030, over 40% of the population will live in urban areas.[6] This rapid—and often unplanned—urban development has driven economic growth, but it has also put pressure on environmental systems and has exacerbated climate risks such as heat, flooding, and pollution, notably for vulnerable communities. Traditional infrastructure approaches are insufficient for meeting the social, economic and environmental needs of urban populations. In the future, cities in the region will rely on systems that are more resilient and contribute to climate mitigation and adaptation strategies. Nature-based solutions (NbS) are a sustainable option to ensure improved environmental outcomes whilst also positively contributing to economic and social outcomes. See box below for a more detailed description of NbS, as well as hybrid NbS.

Prior to 2022, when the RUCaS program was proposed, there was limited awareness of and technical capacity to deliver hybrid NbS in the Mekong subregion, particularly in countries such as Cambodia and Lao PDR. WSCA and ICEM had already conducted work that applied NbS and integrated urban flood management (IUFM) approaches in Viet Nam and Thailand as well as China. Building on this work, RUCaS was designed as a program to raise awareness of hybrid NbS as well as build technical capacity to implement in Thailand, Cambodia, Lao PDR, and Viet Nam. This would be done through top-down processes that would demonstrate the local applicability of NbS in the Mekong subregion with the ultimate result being that NbS would be implemented by local partners at scale.

[2] Previously Mekong-Australia Partnership Water, Energy, Climate (MAP-WEC)
[3] The independent evaluation team comprised two Australia-based evaluators and one evaluator based in Lao PDR. The evaluation team was supported Dr Paul Crawford and Mr Paul Tyndale-Biscoe.
[4] DFAT Design and Monitoring, Evaluation and Learning Standards (Australian Government Department of Foreign Affairs and Trade)
[5] Ethical Research and Evaluation Guidance Note (Australian Government Department of Foreign Affairs and Trade)
[6] https://www.adb.org/sites/default/files/publication/185008/urban-development

Nature-based solutions (NbS) were defined at the 5th United Nations Environment Assembly[7] as "actions aimed at protecting, conserving, restoring, and sustainably managing natural or modified terrestrial, freshwater, coastal, and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits."

In the context of RUCaS, the term 'NbS' was broadly used to describe solutions that use nature and natural processes to sustainably manage urban environments. These solutions can support multiple urban systems, including water management and security, urban heat management, disaster risk reduction, and air pollution control. NbS also support healthy ecosystems and biodiversity, yielding benefits for both people and the environment.

The term 'NbS' encompasses other concepts which are, effectively, approaches to put NbS into practice. These include *green infrastructure* and *ecosystem-based adaptation* (EbA). Different countries and different partners vary in their preference of terminology, though they are all broadly encompassed under the umbrella of 'NbS'.

RUCaS also defined '**hybrid NbS**' as solutions that combine both NbS (e.g. wetlands, parks, mangroves) and grey infrastructure (e.g. energy systems, levees and drainage pipes and roads)—in addition to non-structural solutions like planning controls or flood warning systems—to deliver a wider range of benefits for broader overall community gain.

1.3 Investment Overview

RUCaS Phase 1 was a development investment funded by DFAT's MAP regional program and delivered by WSCA with regional support from ICEM to raise awareness of, and build technical capacity to implement, hybrid NbS in Thailand, Cambodia, Lao PDR and Viet Nam. The program received a total of AUD7 million during its four-year duration through multiple amendments:

- In March 2022, the program received AUD3 million and was due to be completed in June 2024.[8]
- In 2023, the program received an additional AUD1 million (Amendment 1).[9]
- In late 2024, the program received an additional AUD3 million (Amendment 2) with extension to December 2025.[10]
- In 2025, the program received a no-cost extension to complete Phase 1 in April 2026.

The staggered nature of the RUCaS program was a major challenge to its design and implementation. What was initially designed as a two-year program[11] became a four-year program, and allocating resources, staffing and defining the scope of the case studies proved to be challenging. As such, the program design as set out in the Monitoring, Evaluation and

[7] https://www.unep.org/topics/nature-action/nature-based-solutions/overview-nature-based-solutions
[8] Activities included engagement training and demonstration of the NbS concept in primary and secondary cities in the four counties as well as international conferences and events.
[9] This was to move from identifying pilot sites to commencing physical activities across those sites; deliver 4 additional trainings; and to move the Scaling Strategies to a more participatory process.
[10] This was to shift activities from capacity building to physical activities; commence implementation of Scaling Strategies; move from sharing information with partners to co-delivery and co-funding; improve operations and performance on cross-cutting priorities (GEDSI and MEL); and to continue to build regional collaboration and sharing.
[11] See Grant Agreement between DFAT and WSCA signed in March 2022.

Learning (MEL) framework went through several iterations, the most recent of which is described below.

The **goal** of RUCaS Phase 1 was '*resilient, sustainable, inclusive and prosperous cities where hybrid NbS drive climate change adaptation and enhance economic, social, and environmental values*'. The **overall aim** was '*Mekong country partners have improved technical capacity, local demonstrations of concept, enhanced institutional buy-in and regional collaboration to support scaling NbS and hybrid solutions for more climate resilient development of urban areas and their surrounds*'. To achieve this overall aim, RUCaS focused on three **end-of-program outcomes (EOPO)** and three corresponding **intermediate outcomes (IO)**. Gender Equality, Disability and Social Inclusion (GEDSI) was included in the RUCaS MEL Framework as part of Amendment 2 in late 2024, and a **cross-cutting focus** and **expected change** for GEDSI was described in the updated MEL framework at the levels of EOPO and IO, respectively. The EOPO, IO and GEDSI focus and expected change were:

- **EOPO 1:** The value of hybrid NbS is accepted.
    - **IO 1:** Mekong subregion partners buy in to the value of hybrid NbS in strengthening economic, social, and environmental resilience.
- **EOPO 2:** The foundations for upscaling are being put in place.
    - **IO 2:** Mekong authorities and partners consider hybrid NbS in policies, regulations, and technical guidance and tools for climate change adaptation.
- **EOPO 3:** Partnerships and capacity for achieving scaling are established.
    - **IO 3:** Inclusive cohort of NbS champions established to promote hybrid NbS. Evidence of strengthened capacity within an inclusive cohort of NbS champions to achieve NbS scaling.
- **GEDSI cross-cutting focus:** GEDSI principles are demonstrated and embedded in the program implementation.
    - **Expected change:** GEDSI principles are embedded in the development of case studies, pilots, and the formulation of policy recommendation in all countries.

Fifteen outputs/targets were outlined in the MEL Framework as contributing to the achievement of the IO, EOPO, and GEDSI focus and expected change (see Appendix A).

RUCaS was administered by the DFAT MAP team at Thailand post. The RUCaS implementing team evolved over time as project activities changed, responding to DFAT and in-country partner feedback. By the end of Phase 1, the implementing team comprised staff based at WSCA (Melbourne) and ICEM (Hanoi) as well as two to three part-time staff members in each of Thailand, Cambodia, Lao PDR and Viet Nam. RUCaS took place in urban centres across the four countries, notably through the development of eight case studies that spanned Thailand (two in Bangkok), Cambodia (one in each of Phnom Penh and Battambang), Lao PDR (one in each of Vientiane and Luang Prabang), and Viet Nam (one in each of Can Tho and Hanoi). The RUCaS team worked with partners and relevant government representatives in each country to develop the case studies, raise awareness of NbS opportunities and to identify NbS champions who participated in a series of workshops, conferences and learning exchanges facilitated by RUCaS to increase their capacity to implement and scale up NbS.[12]

[12] For further detail about the background, context and overview of the RUCaS program, please refer to the Evaluation Plan which includes an Appendix: RUCaS Document Review.

The evaluation team is aware of the possibility that a future phase of RUCaS will be funded under MAP (Phase 2) and this is anticipated to be a four-year investment. For this reason, the recommendations made in this evaluation are focused on what a future phase of an investment that builds on the work of RUCaS could do.

2. Method

A detailed method was outlined in the Evaluation Plan prepared by the evaluation team in October 2025. The evaluation team used both primary and secondary data to triangulate findings. Data collection methods consisted of a document review and key informant interviews (KIIs; both virtual and in-person). The documents reviewed included key documents provided by WSCA relating to RUCaS, as well as relevant literature in relation to the target countries or NbS interventions in the Mekong subregion.

In line with DFAT's MEL Standard 9[13] and established international good practice, the team sought diverse perspectives to contribute to the findings of this evaluation. WSCA provided the initial list of recommended informants, and further informants were identified through snow-ball sampling (i.e. initial informants recommended further informants). While the scope of the evaluation was primarily Phase 1 of RUCaS, some KIIs were conducted with stakeholders who were not direct beneficiaries or partners of the RUCaS program in Phase 1. This was done to gain insights into the status of NbS in the Mekong subregion, and to provide lessons and recommendations for the design of a possible future phase of RUCaS.

KIIs were conducted as semi-structured conversations with informants both virtually and in-person. Approximately 25 hours of in-person interviews were conducted with approximately 50 stakeholders during fieldwork in Thailand, Lao PDR, Cambodia, and Viet Nam from 3-14 November 2025. A further 20 hours of virtual interviews were conducted on Zoom with 21 stakeholders before and after the fieldwork, from 27-31 October and 17 November - 9 December 2025. Approximately 44% percent of the participants were women, 56% percent were men, and among these, 2 participants identified as people with a disability (PWD). A full list of interviewees is provided in Appendix B: Interviewees. All interviews (including in-person interviews) were recorded and transcribed with Zoom, and recorded notes from the evaluation team were used in content analysis based on the six evaluation objectives and corresponding key evaluation questions (KEQs) outlined in Appendix C: Evaluation Matrix. The findings in this evaluation are presented under the headings of the first five objectives: Relevance, Effectiveness, GEDSI, Efficiency and Sustainability. Findings for the sixth objective—Lessons Learned and Recommendations—have been incorporated into the findings for the first five objectives to reduce repetition and for contextualisation.

The primary audiences of this evaluation include: DFAT (specifically the MAP program) for strategic decision-making in relation to future programming; RUCaS implementing partners (WSCA and ICEM) for lessons learned and recommendations for a possible future phase of the program; and local government representatives and stakeholders who were partners of the RUCaS program in Cambodia, Lao PDR, Thailand and Viet Nam. Secondary audiences include regional stakeholders who were not partners of the RUCaS program in Phase 1, such as donors

[13] DFAT Design and Monitoring, Evaluation and Learning Standards (Australian Government Department of Foreign Affairs and Trade)

as well as development practitioners and organisations involved in NbS, urban climate resilience, and inclusive urban development in the Mekong subregion.

As identified in the Evaluation Plan, evaluating the RUCaS program was challenging because of several issues with the program logic as it was outlined in the MEL Framework (see Appendix A). The key issues were 1) that the EOPO were non-conforming with DFAT standards e.g. no actors or evaluands were defined for any of the EOPO, 2) there were several examples of circularity between different levels of the program logic, 3) the targets of some outputs or IO were poorly defined and 4) the progression from output to IO to EOPO to goal was implausible in several cases. (See Appendix D: RUCaS Evaluability Assessment for more detail.) Nevertheless, the evaluation team inferred the implied EOPO from the EOPO, IO and outputs as written, which gave rise to the KEQs as outlined in Appendix C: Evaluation Matrix.

This evaluation was further limited, as are most MEL activities of this kind, by the short time available to enable a deep and rigorous understanding of the context, history and technical detail relevant to the RUCaS program and the Mekong subregion. In particular, a major logistical challenge was that RUCaS was a program implemented in four countries, across seven urban centres, with stakeholders who had many responsibilities and priorities alongside the RUCaS program. This meant that the short period for fieldwork did not enable the team to visit all locations or speak to all relevant informants. However, the documentation provided by RUCaS, as well as the active engagement of RUCaS staff, partners and relevant stakeholders in each country, enabled the evaluation team to gain a solid understanding of the program, sufficient for this evaluation.

3. Findings

3.1 Outline of findings

This section presents the findings of the evaluation of RUCaS. Following an overall assessment below, the findings for RUCaS are presented according to the first five Key Evaluation Criteria[14]

- Relevance
- Effectiveness – progress towards EOPO
- GEDSI
- Efficiency
- Sustainability

As described above (see Section 2), the sixth Key Evaluation Criteria—Lessons Learned and Recommendations—has been integrated into the summary of the findings for the first five criteria rather than standing alone so that these appear in context. Recommendations are highlighted in text boxes and consolidated on page x for convenience. As described in Section 1.3 above, recommendations made in this evaluation are focused on what a future phase of an investment that builds on the work of RUCaS could do (that is, they do not focus on what should be done for the remainder of RUCaS Phase 1).

[14] See Appendix C: Evaluation Matrix

3.2 Overall assessment

Overall, there was much evidence that the RUCaS program made substantial progress towards developing the capacity and motivation of NbS champions in the Mekong subregion. This was done through the expertise and hard work of the RUCaS team as well as the partners they worked with in Thailand, Cambodia, Viet Nam, Lao PDR and beyond. There was an appetite in the Mekong subregion for solutions other than grey infrastructure to strengthen climate resilience in urban environments, and it was clear that RUCaS was a welcome response to this gap in expertise and, therefore, highly relevant. Government, university and civil society organisation (CSO) representatives from all four countries spoke highly of the professionalism of the RUCaS team and indicated they would value future engagement to support their NbS work. In particular, they valued the learning events, including workshops and regional conferences, supported by RUCaS and expressed interest in continuing this learning, as well as receiving technical support from RUCaS staff to implement and scale up NbS (e.g. through the development of policy and guidelines in their countries).

Despite the progress made in the RUCaS program, there were some key lessons learned regarding the performance of RUCaS vis-à-vis its EOPO—particularly for EOPO 1—which meant that there was room for improvement in terms of both effectiveness and efficiency. This was, in large part, due to issues with the program logic (as articulated in the MEL Framework) including where key terms were not clearly defined; weak causality between elements of the program logic; redundancy or circularity in the overall logic and ambiguous or tentative expected changes. The issues in the program logic are outlined in Appendix D: Evaluability Assessment, and the impacts of these issues are detailed under each EOPO in Section 3.4 Effectiveness.

A major factor that has made the RUCaS program particularly challenging to implement—and perhaps contributed, at least in part, to the issues with the program logic—is that funding for RUCaS came in several short phases (as described above in Section 1.3). That is, there was never an opportunity to properly plan for the full scope of the RUCaS program and employ experienced staff to see the program through from start to finish. In light of this, the RUCaS team worked productively with a series of short-term grants.

RUCaS delivered important GEDSI activities, including the integration of GEDSI considerations into selected case studies and the development of the GEDSI NbS guideline, supported by an active GEDSI Technical Advisory Group (TAG). However, the program's overall GEDSI outcomes fell short of expectations for an investment of this size. This was partly due to GEDSI being incorporated late in the program design, an unclear and overly ambitious GEDSI strategy, the absence of a robust GEDSI analysis at inception, and limited GEDSI capacity within a technically focused implementing team.

Another major concern identified in this evaluation was the sustainability of the positive results that the RUCaS program achieved. There was very little evidence to suggest that the case studies, guidelines and other tools, partnerships and networks, and several of the GEDSI achievements would be sustained beyond the support of the RUCaS program (further discussed in Section 3.7).

Overall, the RUCaS program achieved some impressive results despite several challenges. When assessed in full, there were many lessons learned during Phase 1 that should be applied to a possible future phase of RUCaS. Perhaps most importantly—because program logic

provides the necessary foundation for effective implementation—any future phase of RUCaS should be designed to be feasible, realistic, and aligned with DFAT standards.

Recommendation 1: DFAT should ensure that the program logic and MEL Framework for any future phase of RUCaS is clear, feasible within the given timeframe and resources (including with respect to GEDSI), and conforms with DFAT MEL standards.

3.3 Relevance

Overall, the RUCaS program activities were broadly aligned with the priorities of DFAT posts and partner governments in Lao PDR, Thailand, Cambodia and Viet Nam, as well as other actors operating in the Mekong subregion such as the Asian Development Bank (ADB) and United Cities and Local Governments Asia Pacific (UCLG ASPAC). Partner governments in the Mekong subregion were aware of, and prioritised responding to, the negative impacts of climate change particularly in urban areas. Many of the evaluation informants who represented partner governments (at various levels) viewed green infrastructure (a subset of NbS, e.g. wetlands, urban forests, green walls, bioswales) as playing a substantial role in addressing climate change challenges in urban areas, and they saw hybrid NbS as being aligned with this. Many of these government ministries or departments had already supported the construction of green infrastructure and NbS in their jurisdictions and some had incorporated this concept into strategies and action plans. For example, in Lao PDR, the Integrated Climate Resilient Flood Management Strategy (ICFMS) incorporates green infrastructure and NbS. In Thailand, NbS has been integrated into six key development sectors in the National Action Plan (NAP).

"The secretary general of UCLG ASPA noted that NbS is a cost-efficient approach to addressing challenges such as flooding, heat and drinking water. The cities agreed it was a good idea but didn't know enough about what NbS is." (Interested third-party)

"RUCaS very much aligns with the water resilience strategy of the Mekong-Australia Partnership." - DFAT

"Climate financing is not very focused on urban environments but RUCaS addresses this gap. It has taken a while for the world to realise that the Mekong is urban (they think it looks rural, but it is increasingly urban) so this choice is really quite smart on RUCaS' behalf. Also, cities are where decision makers live so this has been part of how RUCaS has been influential." - DFAT

"We need to have more cooperation between the government departments to support green infrastructure and green development. Our tasks now are how to integrate NbS into the national government strategy. We need to do the BCA to evaluate our options." - Cambodia government representative

Similarly, DFAT posts in the region saw RUCaS' role in addressing urban climate resilience challenges as an important contribution to a gap in the Australian Aid program. In Cambodia, RUCaS was the only DFAT program that focused on NbS and was therefore considered an important asset by Phnom Penh post staff. Furthermore, in Cambodia and Lao PDR, DFAT representatives appreciated the relationships RUCaS was strengthening with government ministries that other DFAT programs had less contact with at the time.

Government representatives, DFAT posts and other actors in the Mekong subregion highly appreciated two aspects of the RUCaS program. Firstly, RUCaS brought international NbS expertise and facilitated learning events for NbS champions and actors in the region to learn more about NbS and how to implement it (something several informants identified as lacking in the region). Furthermore, the ADB representatives explained that whilst 10-20-percent of ADB investments in the Mekong subregion in 2025 involved NbS to some extent, they wanted to see this increase. However, what was missing were policies and design standards for implementing and scaling NbS, something they saw RUCaS having expertise in. Secondly, the RUCaS program was valued because it promised to demystify the true financial costs and benefits of NbS through the Benefit-Cost Analysis (BCA) tool. Whilst green infrastructure was well understood and broadly valued by governments in the region, many still prioritised grey infrastructure solutions. This was because the capital, as well as operational and maintenance, costs of grey infrastructure were well known, but the costs of green infrastructure and hybrid NbS were not. This was cited as a major barrier to the implementation and scaling up of NbS.

3.4 Effectiveness – progress towards End-Of-Program Outcomes

This section discusses the evidence of progress toward the three EOPO defined in the program logic as set out in the MEL Framework (see Appendix A). The program logic defined a goal, an aim, three EOPO (plus a cross-cutting focus for GEDSI), three IO (plus an Expected Change for GEDSI) and fifteen outputs. Overall, there are several issues with the program logic (a limitation summarised in Section 2 Method and described in more detail in Appendix D: Evaluability assessment).[15] As such, the evaluation team have relied on the IO, outputs and indicators to construct the 'intent' of each EOPO, progress of which was measured against and discussed below.

EOPO 1 The value of hybrid NbS is accepted

The interpretation of EOPO 1 was challenging from an evaluator's perspective because several of the critical terms in the outputs, IO and EOPO were not clearly defined nor agreed upon among informants, and there was redundancy in the logic between the outputs, IO and the EOPO (see Appendix D for more detail). Nevertheless, the evaluation team broadly interpreted the logic underlying EOPO 1 to be that **if** the RUCaS team developed eight concept studies of NbS examples in urban centres across the Mekong subregion, of which at least four were developed further into 'direct interventions' (e.g. with detailed design, small-scale construction[16], or environmental monitoring) with the support of the RUCaS team and in collaboration with Mekong partners, **then** this would showcase NbS as being locally appropriate **and therefore** 'clear pathways for the RUCaS case studies to be progressed to full

[15] An assessment of the MEL framework and processes was beyond the scope of this evaluation; however, 'Appendix D: Evaluability assessment' was included to a) enable the evaluation team to understand the intention underlying the EOPO and therefore support a nuanced assessment of the overall investment and b) to support the design of a potential future phase of RUCaS. Furthermore, the team recommends that MEL is properly resourced (both with staff time/dedicated personnel as well as MEL expertise) in any potential future phase of RUCaS.

[16] This was not included in the definition of 'pilots/direct interventions' under Output 1.2 in the MEL Framework, but the interviews revealed that the many of the RUCaS implementing team considered 'small-scale construction' an example of 'direct intervention'.

implementation by either local or likeminded partners' would be created[17] (which would indicate that 'the value of hybrid NbS was accepted').

Table 1 summarises the EOPO and IO (with indicators) as well as the outputs for EOPO 1.

Table 1 EOPO 1 – EOPO, IO and Outputs

EOPO	IO	Outputs
The value of hybrid NbS is accepted. **Indicator:** Number and evidence of case studies with integrated GEDSI principles that Mekong subregion partners and like-minded partners have taken from concept to demonstration.	Mekong subregion partners buy in to the value of Hybrid NbS in strengthening economic, social, and environmental resilience. **Indicator:** Number of case studies localised and carried out in close consultation with and guidance from Mekong subregion partners.	1.1 Eight concept studies (in both large and secondary cities) that demonstrate the local relevance and application 1.2 at least four integrated pilots/direct interventions (e.g. design of hybrid NbS, NbS demonstration, environmental monitoring) linked to national and development agency investment projects to accelerate opportunities for technical, social and economic innovations at scale

It was clear that the value of hybrid NbS was accepted by many local partners across the Mekong subregion. This was evidenced by their self-reporting during interviews: informants expressed their support for NbS and attributed this partly to existing momentum in the subregion (towards which several parties contributed) as well as to the RUCaS program. However, as stated above, the indicator for EOPO1—and therefore the measure of whether the 'value of hybrid NbS is accepted' in this evaluation—was that 'clear pathways for the RUCaS case studies to be progressed to full implementation by either local or likeminded partners' had been created. Whilst there was evidence of the *beginnings* of clear pathways to take the NbS case studies from 'concept to demonstration' by local or likeminded partners, there was much work yet to be done at the end of Phase 1.

The two outputs for EOPO 1 were largely achieved. Eight case study reports were produced (two for each country) with visualisations of design concepts for each site/city (output 1.1). Of these eight case studies, five progressed towards direct intervention (examples specified in output 1.2), including the Luang Prabang case study which progressed to a small-scale physical demonstration by January 2026. Further details of these five case studies are as follows:

- Luang Prabang: a constructed wetland pilot was installed at Ban Mano in November 2025, and environmental monitoring sensors[18] were installed.

[17] Note that whilst the indicator for EOPO 1 is the 'Number and evidence of case studies with integrated GEDSI principles that Mekong subregion partners and like-minded partners have taken from concept to demonstration', this was meant to be interpreted as there being 'at least clear pathways for the RUCaS case studies to be progressed to full implementation (by either local or likeminded partners).' This interpretation came about as the program progressed and it was realised by the implementing team and DFAT that expecting partners to take case studies from 'concept to demonstration' was not feasible for Phase 1.

[18] While DFAT Bangkok Post raised their perspective that environmental monitoring should be part of EOPO 2, the evaluation team have proceeded with noting it as progress towards EOPO 1 given it was specified in output 1.2.

- Can Tho: a Vietnamese firm was contracted to complete detailed design of a bioswale for Can Tho University, and environmental monitoring sensors were installed.
- Battambang: the case study concept for Street 2 was adopted for Street 501, and the same Vietnamese firm working on Can Tho was contracted to complete detailed design. Local government still requires funding to construct.
- Hanoi: environmental monitoring sensors were installed at Hanoi University of Civil Engineering (HUCE).
- Bangkok: the designs for stage 2 of the On Nut site (which include detailed technical input from RUCAS) are currently with BMA for approval. Environmental monitoring sensors were installed at On Nut after the evaluation fieldwork; this was in addition to progress made in completing a biodiversity study and support from the private sector funder (PTT Global Chemical).[19]

Though installation of the environmental monitoring sensors contributed to achievement of output 1.2, plans for the maintenance and long-term monitoring of the sensors were not known to all in-country staff, and limited capacity to maintain the sensors may impact their sustainability. For example, informants at the Viet Nam universities as well as at the site in Lao PDR noted that resources were strained, which may impact long-term use and maintenance of their sensors.

With respect to the three remaining case studies, progress towards direct intervention was limited within Phase 1, but several partners were motivated to ensure future progress:

- Phnom Penh: the Akreiy Ksatr case study had a motivated partner in the Ministry of Land Management, Urban Planning and Construction (MLMUPC) who was actively working to progress the concept. Because this case was large-scale and at the stage of developing a master plan for the area, it was likely too early for any design of NbS or other direct intervention in Phase 1. However, development of the Wetland City Typologies Catalogue and on-going partnership with the MLMUPC showed progress in influencing the master plan of Akreiy Ksatr.
- Vientiane: the Nong Loup Ian case study was hindered because both modification (e.g. to the scope of the case) and funding were needed to progress past a concept; however, the implementing partner Global Green Growth Institute (GGGI) was keen to proceed (and has included some of the designs in their Environmental and Social Impact Assessments).
- Bangkok: the Makkasan case study seemed to be blocked with no likely or forthcoming solution due to stakeholder complexity. This was a high profile and complicated site because it was owned by the state railway, had multiple stakeholders, and was managed at the cabinet level. RUCaS only had limited influence on this site (ultimately NbS was demonstrated through a stormwater planter box that was developed through work at the Makkasan site); as such, it was possibly a poorly identified site.[20]

[19] Two stormwater planter boxes were also designed, constructed, and displayed as part of Bangkok Design Week 2026, though not specifically at the On Nut site.
[20] The evaluation team note that the sites were proposed by the government (BMA and DCCE) and agreed to by the RUCaS implementing team.

Despite the progress made toward EOPO 1, there were some limitations that led to lessons to be learned for a future phase of RUCaS regarding NbS case studies and efforts to increase local partners' motivation to value, and therefore adopt, NbS. These are described below.

Variability in the local relevance of case studies

There was variability in the local relevance and application of the case studies across the four countries which affected completion of output 1.1 as well as partner buy-in of hybrid NbS across the countries (IO). Some case studies were highly relevant and applicable: for example, the On Nut site in Thailand was a highly visible site, attracted private sector funding, and included measures that were appropriate to the Thai context. In contrast, several informants in Lao PDR felt that the case study concepts were not practical for the context, though partners noted that the case study reports and concepts were quite 'visionary' and showed innovative examples. Reasons for a lack of local relevance and application of the case study concepts related broadly to:

1) *Lack of financial viability:* several informants in Lao PDR expressed that the case study concepts (notably Vientiane) were too ambitious for the type of budget available in the country. Informants suggested that the case study concepts should have been designed with an idea of the available budget in mind from the beginning.
2) *Lack of contextualisation and/or co-design:* informants in all four countries made similar remarks that the case study concepts required more adaptation and contextualisation to be more practical, notably in Lao PDR where informants felt the concepts were more appropriate for the Chinese or Thai contexts. Informants further noted that RUCaS staff in Australia designed the case studies, highlighting a lack of co-design with local partners (although consultation took place) which appears to have resulted in a lack of contextual understanding and technical feasibility. In some cases, the RUCaS team was aware of these issues, and (to the extent they were able) were further adapting the case studies to the local context.[21]
3) *Lack of feasibility due to stakeholder complexity:* specifically, the Makkasan case study, as previously discussed.

The RUCaS team specified that the intention in Phase 1 (to the extent it was possible with multiple amendments) was to include both obviously feasible case studies as well as ambitious ones to see what was possible. As such, some of the RUCaS team saw the case studies as 'stepping stones', some of which would progress towards implementation, depending on their feasibility. This approach was appropriate for an academic endeavour, or indeed in the exploratory phase of a program to gain necessary insights for future planning. However, this intention needed to be clearly defined in the program logic, both to explain possible failures or limited successes during evaluation activities as well as to manage the expectations of stakeholders. Several informants explained that it would have been better to have case study concepts that were feasible and financially viable from the outset; seemingly because they did not understand the partially exploratory nature of the site selection. The RUCaS team and partners agreed that any future case study site selection should be contextually relevant, and concept design should be practical and based on the design thinking model of ensuring

[21] An example includes discussions between RUCaS and the National University of Laos (NUOL) to showcase existing NbS (e.g. natural wetland systems) with the goal of demonstrating the importance of protecting them (and the cost of destroying them). Furthermore, co-design was taking place in Cambodia and Viet Nam for detailed designs of case studies, at the time of the evaluation.

desirability, feasibility, and viability.[22] Examples for choosing sites that would be more feasible and relevant include sites where: selection is driven by partner governments; land tenure is secure, and perhaps with fewer stakeholders (e.g. universities rather than public spaces); there is a known available budget to work with; and there is known local expertise to carry out detailed design and construction.

> *"It would be good to develop the case studies within the actual budget that's available… It would be good to have realistic ideas."* -RUCaS technical partner
>
> *"To draw on the computer is good, but implementation is another thing. The concepts have been designed based on learnings from other countries, from China or from Thailand. Those countries, they have a lot of budget to do it, but in Laos, we have a limited budget. We need something that is practical."* -RUCaS technical partner

Assumption about local partners' capacity to take case studies from concept to demonstration

Many of the local partners explained that to be able to create 'clear pathways for the RUCaS case studies to be progressed to full implementation by either local or likeminded partners', they needed to convince local decision-makers that the real-world costs and benefits of hybrid NbS outweighed those of the typical grey infrastructure solutions which they trusted. To do this, they needed to be able to showcase fully operating examples of NbS; that is, they needed a demonstration of NbS in a local context to convince local decision makers to fund further NbS demonstrations in their local context. This was particularly true where acceptance and buy-in was needed from partners who had not been in direct contact with the RUCaS program including those in charge of budgets, the private sector, local designers and local contractors.[23]

A key issue is that EOPO 1 depended on the assumption that the provision of visualisations of NbS concepts, installation of environmental monitoring sensors, and/or detailed designs would prompt partners to invest in construction (taking case studies from concept to demonstration). However, provision of these alone did not guarantee that partners had the necessary motivation, skills or resources to progress the case studies from concept to demonstration. Indeed, several of the local partners expressed frustration that the case studies were not progressed further by the RUCaS team. As one government representative put it: it was not realistic of RUCaS to expect to influence local partners to independently resource an NbS case study completely, particularly in the short timeframe and with the limited staff present in-country.

> *"We don't want to see design anymore. We expected that [the money would be spent] on some real examples, and we didn't really see that much."* -DFAT

Some of the RUCaS implementing team explained that the assumption underlying EOPO 1 was ambitious but not impossible as shown by their previous experience implementing a similar program in Kunshan, China. However, the findings of this evaluation showed that in the context of the eight RUCaS case studies during Phase 1, this assumption was largely not borne out. This different outcome might be due to the differing economic and social contexts between China and the Mekong subregion countries. For example, there are far less available resources for

[22] https://www.ideou.com/blogs/inspiration/what-is-design-thinking

[23] Buy-in in Thailand may be most advanced because of existing NbS projects, specifically Benjakitti Forest Park.

public spending in Lao PDR and Cambodia then there are in China, and (as discussed above) the case study concepts presented were in some cases more appropriate for a Chinese context than they were for the Mekong subregion (particularly in Lao PDR). It may also be due to the short timeframe in which these changes were expected to take place during Phase 1 of the RUCaS program.

Integration of GEDSI principles in the case studies

The indicator for EOPO 1 referred to the integration of GEDSI principles in the case studies. There were a few examples of this (e.g. On Nut, Battambang), but they were limited because the case studies preceded the focus of GEDSI within RUCaS. Furthermore, RUCaS in-country staff noted that the inclusion of GEDSI principles in the case studies would not guarantee they be maintained through detailed design and into construction. The lessons learned from this are further discussed in Section 3.5 on GEDSI.

> *"Seeing is believing. I think [this] is super important. You have to demonstrate it in the construction phase, and we don't have that. This is one of the areas where I think it's important to stop engineering designs and construct nature-based solutions."* -RUCaS in-country staff

The key lessons to be learned for a future phase of RUCaS are: a) concepts and designs need to be feasible and appropriate for the local context, b) the implementing team may need to progress the case studies further along the pathway to 'demonstration' than just detailed design/environmental monitoring etc.[24], c) the mandate and expectations of the RUCaS implementing team and the local partners need to be more clearly communicated and understood in order to manage expectations, maintain relationships and limit risk, and d) GEDSI principles need to be incorporated into case study selection and design from the outset.

Recommendation 2: The implementers of any future phase of RUCaS should progress at least one case study in each country from concept to a stage where it is fully constructed, commissioned, and monitored to demonstrate the financial costs and benefits of sustainable hybrid NbS (even if this means having smaller case studies, and/or in fewer countries, that are fully funded by the program). Site selection for the case studies should be driven by local partners, and design should be done collaboratively and in accordance with locally relevant budgets.

EOPO 2 Foundations for upscaling

Based on the elements (EOPO, IO, outputs and indicators) pertaining to EOPO 2, the evaluation team broadly interpreted the underlying logic to be: if the RUCaS team produced resources, tools and databases about NbS in urban environments, as well as strategies to scale up NbS in the Mekong region, this would mean that Mekong subregion partners would adopt these and incorporate NbS into their own policies, regulations, planning documents, standards and tools, which is an important foundation for scaling up NbS. Table 2 summarises the EOPO and IO (with indicators) as well as the outputs for EOPO 2.

[24] This is already taking place to some extent in Can Tho and Battambang, where detailed designs are being supported by the RUCaS program; however, for many informants, 'demonstration' should go beyond 'detailed design'.

Table 2 EOPO 2 – EOPO, IO and Outputs

EOPO	IO	Outputs
The foundations for upscaling are being put in place. **Indicator:** Number and evidence of national and/or local-level urban climate policies, regulations, planning documents, or technical standards and tools that integrate NbS principles supported by RUCaS.	Mekong authorities and partners consider hybrid NbS in policies, regulations, and technical guidance and tools for climate change adaptation. **Indicator:** Number of policies, regulations and technical guidance or tools advocated through policy dialogues with Mekong subregion partners.	2.1 RUCaS framework (Research based, practical framework for climate resilient urban investment decisions) 2.2 Training resources, tools and databases prioritized by Mekong partners to guide urban infrastructure investment 2.3 Four Climate Resilient Development Scaling Strategies for 4 countries providing tangible actions, and broader policy and practice reform recommendations 2.4 NbS enabling policies and technical guidance developed based on RUCaS case studies and integrate GEDSI principles that are adopted by Mekong partners for climate change adaption

Overall, progress was made toward the achievement of EOPO 2 based on the work done towards creating knowledge products and strategies for scaling up NbS (i.e. the outputs). It was evident during this evaluation that RUCaS was considered by partners in the region to be a thought leader in NbS, and numerous partners praised the program for its development of high-quality NbS knowledge products. As such, many of the outputs under EOPO 2 were achieved. For example, RUCaS made progress on developing technical guidance in collaboration with partners (output 2.4). Both the *Guidelines for Risk Assessment of Disused Land*[25] and the *Inclusive and Equitable Urban Nature-based Solutions* practical guide[26] were spoken of highly by numerous partners as artifacts guiding best practice. Additionally, the Ministry of Agriculture and Environment (MAE) in Lao PDR was keen to discuss the *National Urban Ecosystem-based Adaptation (EbA) Guidelines for Flood Risk Reduction*, which RUCaS contributed to as well.[27]

However, there were several limitations that prevented the full achievement of EOPO 2. At the end of Phase 1, there were no 'national and/or local-level urban climate policies and regulations that integrate NbS principles supported by RUCaS'—the indicator for EOPO 2. The key issue that this revealed is that much of the logic of EOPO 2 rested on an assumption that knowledge production by the RUCaS program (e.g. training resources, tools, technical guidance) alone would lead to changes in national policy and regulation. However, this assumption was either implausible or too ambitious within the timeframe of Phase 1.[28]

[25] Co-developed with Kasetsart University.
[26] Development by RUCaS with input from the GEDSI TAG.
[27] The RUCaS 2025 mid-term report listed further developed technical guidance (p. 5), but these were not discussed by informants of the evaluation.
[28] For more details, see Appendix D.

Furthermore, some of the tools (framework, guidelines, software etc.) that were critical to EOPO 2 needed further work to be applicable in the context of the countries in the Mekong subregion (in particular the 'Roadmaps' for upscaling NbS[29]). The RUCaS framework (output 2.1; shown in Appendix E), for example, was developed based on WSCA's previous work on the IUFM approach; however, feedback from some of the informants suggested that there may be ways to make the framework more practical for urban investments in NbS in the Mekong subregion. As discussed for EOPO 1, informants (particularly in Lao PDR) expressed that finances are a persistent barrier to NbS, and designs would be more realistic if they were based on a known available budget at the start of the design process. As such, step 5 of the framework to *'identify appropriate financing and funding'* might be better placed higher in the framework hierarchy, before considering and evaluating options.

With respect to tools, the BCA tool was highly valued by partners (output 2.2), and many aimed to use it themselves or incorporate it into university curriculums (specifically the Royal University of Phnom Penh [RUPP]). However, barriers to uptake of the BCA tool remained, notably that the tool required a lot of data, which informants specified was hard to get across the Mekong subregion. Furthermore, there was no evidence that prioritisation of the tool was widespread amongst partners in Phase 1. No other training resource, tool, or database was noted by informants as being prioritised.

"Yes, we do use the BCA tool, and we also shared that tool to our partner in ministry... For [that ministry], I think RUCaS is the first program to make them aware and know the importance of the BCA." -RUCaS university partner

"The economic benefit analysis...I think it's very interesting to illustrate how NbS can have a long-term benefit for urban development or community development. But we have to admit that the calculation is challenging...because collecting enough data is hard with lack of recorded data." -Cambodia government representative

While the technical guidance produced in Phase 1 was spoken of highly (i.e. the *Guidelines for Risk Assessment of Disused Land* and the *Inclusive and Equitable Urban Nature-based Solutions* practical guide), informants from Kasetsart University and the GEDSI TAG (in addition to DFAT and RUCaS in-country staff) said that these guidelines still needed plans for testing, dissemination and implementation, including commitment from partners to use them. Encouragingly, both Can Tho University and HUCE requested that a toolkit of WSCA/RUCaS materials adapted to the Mekong subregion be made available to universities and governments. This suggested an appetite for more context-specific tools and guidance.

'Roadmaps' for upscaling NbS were drafted for all four countries (output 2.3), and they included four goals based on the Phase 1 EOPO as well as a baseline assessment of the relevance and state of NbS uptake in each of the countries. The roadmaps were to be used by RUCaS partners and potential new partners, and they emphasised the need for collective action; however, their useability and applicability in the form they were in at the time of the evaluation was uncertain because they did not appear to be fully contextualised to the needs of country partners in the respective countries. Furthermore, there remained concerns about their development, notably

[29] Previously referred to in the RUCaS program as the Climate Resilient Development Scaling Strategies.

around a lack of true co-design due to limited time and resources.[30] While consultations took place in each country, few partners had any knowledge of the roadmaps during the evaluation fieldwork. This may have been done to limit the burden on local stakeholders, but it is not a suitable or sustainable approach for ensuring the foundations for upscaling. Furthermore, RUCaS in-country staff and DFAT staff raised concerns that not only would translation of the strategies/roadmaps be required, but they would also need to be adapted to the specific country contexts. The draft 'roadmaps' (current at the time of the evaluation) outlined RUCaS' expected activities for upscaling NbS in each country, and they invited partners to 'align priorities' and 'coordinate contributions' around these activities; however, this did not support the foundations for collective action towards upscaling. A more appropriate method would be to have clear roadmaps developed collaboratively with all relevant stakeholders in each country based on policy analysis, outlining mutually agreed-upon goals that are actionable and contextualised, with timeframes and responsible actors defined.

"It's all dependent on the local context. So, any strategies to be developed should reflect the local context. It needs to be strictly localised." - DFAT

"We hope the national government will make a framework [for NbS], and then we also adapt our framework according to their framework. Without a framework or policy, we can't push local government and contractors to do the job. It is impossible. You can do it only if you have your own money, your own resources like people and equipment. You can do it just for the pilot project. But if you want to replicate it somewhere else, I think you better have a policy." -RUCaS government partner

"Scaling means scaling up from 'something', and we don't have 'something'." -RUCaS technical partner

The indicators for both EOPO 2 and IO 2 included policies and regulations as possible avenues for NbS integration (supported by RUCaS) to demonstrate foundations for upscaling. As stated above, at the time of the evaluation, no country had any policy or regulation that integrated NbS with the support of RUCaS, though NbS had been embedded in the recently developed National Adaptation Plans (NAPs) for Lao PDR (2025) and Thailand (2024). Additionally, the BMA noted that related regulations existed in Thailand that specified '15-minute parks' and green space in new construction. Whilst these plans and regulations integrated NbS independently of RUCaS, partners noted that a potential future phase of RUCaS could play an important role in helping to implement these in the future. Partners in Cambodia's government emphasised that policies and regulations were extremely important to enforce and scale work on NbS and this was something they would like RUCaS' support with; this was similarly noted by Can Tho University and HUCE in Viet Nam (though working with government is typically difficult). Additionally, a new project in Cambodia backed by the European Union (EU) was set to focus on NbS regulations, and a representative from RUPP was keen to engage WSCA for technical assistance with this project.

Overall, whilst progress was made toward achieving EOPO 2, the informants noted a critical barrier to current and future upscaling of NbS in the Mekong subregion: that is, the lack of physical demonstrations of NbS in each country. Informants specified that these would be

[30] The RUCaS annual report from April 2025 specified that the (then) Scaling Strategies were being "co-developed with each country" (p. 6).

paramount for developing future policies and regulations for NbS, and therefore to upscale NbS more broadly: as discussed in previous sections, many stakeholders will remain unable and/or unwilling to invest in NbS without tangible demonstrations.

Recommendation 3: The implementers of any future phase of RUCaS should ensure that any knowledge products, guidelines and/or roadmaps developed for specific countries or cities should a) be demand-driven by local partners, b) be co-designed with local partners, c) be field-tested and updated where appropriate, and d) include clear dissemination and implementation plans (which define stakeholders who are able to oversee implementation).

EOPO 3 Partnerships and capacity of NbS champions

Based on the elements (EOPO, IO, outputs and indicators) pertaining to EOPO 3, the evaluation team broadly interpreted the underlying logic to be: if the RUCaS team established a diverse cohort of NbS champions from the Mekong subregion and provided them with NbS training, then those champions would develop the capacity, and collaborate, to scale up NbS in the subregion independently. Table 3 summarises the EOPO and IO (with indicators) as well as the outputs for EOPO 3.

Table 3 EOPO 3 – EOPO, IO and Outputs

EOPO	IO	Outputs
Partnerships and capacity for achieving scaling are established. **Indicator:** Evidence of an established, inclusive cohort of NbS champions that is maintained and linked to networks across the Mekong to promote and collaborate on hybrid NbS.	Inclusive cohort of NbS champions established to promote hybrid NbS Evidence of strengthened capacity within an inclusive cohort of NbS champions to achieve NbS scaling **Indicators:** Number of NbS champions engaged in the RUCaS program (where "engaged" includes participation in training, networks, or co-delivery of hybrid NbS), disaggregated by countries, sex, disability, organization, and repeat engagements). Number of collaboration agreements or initiatives established with government, universities or civil society actors. Evidence of increased knowledge and capacity to achieve NbS scaling among inclusive cohort of NbS champions.	3.1 A gender diverse and equal opportunity cohort of NbS champions promote environmental resilience and climate adaptation across the Mekong 3.2 At least four Knowledge exchange events (one in each country) and regional conference promote discussion of wider application of NbS 3.3 At least four in-person targeted technical trainings and workshops to build practical capacity to plan, design, monitor, and scale inclusive and climate-resilient NbS. 3.4 formal arrangements for future collaboration and capacity building in place. 3.5 RUCaS contribution to regional sharing and collaboration

Overall, substantial progress was made toward achieving EOPO 3, with important lessons learned regarding the sustainability of regional partnerships and NbS capacity built during the program which could be improved in a possible future phase of RUCaS.

Though partnerships with the purpose of achieving scaling were a key component of EOPO 3, it was not clear in the program logic who the partnerships were between. The reported progress toward output 3.4 in program documentation emphasised partnerships between WSCA and local partners. In this case, establishment of partnerships was achieved: Appendix C of the RUCaS 2025 mid-term report outlined the 22 collaborative agreements and five Memoranda of Understanding (MoUs) that were signed. However, partnerships that were independent of

(though possibly supported by) the RUCaS implementing team needed to be established to ensure sustainability beyond the conclusion of the program.[31]

Indeed, other aspects of the program logic suggested that partnerships between actors in the Mekong subregion were the objective of EOPO 3, notably through a cohort of 'NbS champions' (output 1.1) and regional knowledge sharing and collaboration (output 3.5). It was clear that there were multiple NbS champions amongst RUCaS partners in Phase 1 who were highly motivated and working to promote climate resilience in urban planning across the Mekong subregion. Some of these champions included members of Cambodia's MLMUPC and Battambang local government, Thailand's Department of Climate Change and Environment (DCCE) and the Bangkok Metropolitan Administration (BMA), Lao PDR's MAE, and academics at both universities in Viet Nam and at RUPP.[32] However, most champions, particularly across countries, were not in contact with each other. Regional knowledge sharing did take place, notably through the regional conferences (which received much enthusiasm from partners). Though this was an excellent start to regional knowledge sharing in Phase 1, it was facilitated entirely by RUCaS and future events such as these are unlikely to take place without further external support.

There was minimal evidence of regional collaboration, and informants suggested that this was because of a lack of relevant tasks that required a regional approach. Furthermore, DFAT Bangkok Post staff felt that RUCaS seemed more like a program operating in four different countries than a regional program (apart from the regional conferences). They acknowledged that it was difficult for an urban development program to have regional collaboration given that cities generally do not span boundaries (as water catchments do, for example). However, DFAT Bangkok Post representatives felt that this could be improved by facilitating more of an exchange of knowledge and expertise *between* countries, rather than by WSCA imparting its expertise to beneficiaries (which could also help RUCaS in supporting the development of partnerships between countries). There were positive examples of this type of exchange already:

Souphanouvong University, Kasetsart University, Can Tho University, and HUCE, collaborated to install and analyse the data from the environmental monitoring sensors.[33] Overall, however, it seemed that, given the disconnected nature of urban centres, the pursuit of 'regionality' in a program like RUCaS detracts from the work it could potentially achieve separately in urban centres. The exception to this is the efficiencies that can be achieved through regional learning events (e.g. by inviting partners from multiple countries to one place for a workshop) and through implementation through a single/coalition of partners (although this latter point pertains only to program management and is not related to whether an investment is deemed 'regional').

[31] For example, RUCaS could support (through introductions, shared start-up activities, in-person meetings etc.) the establishment of MoUs between local partners that last beyond the scope of the RUCaS program without being named as one of the signatories.
[32] Informants also highlighted other NbS champions outside of RUCaS who could be beneficial collaborators in the future (e.g. WWF in Viet Nam). Youth were also noted by informants in all countries as being potential NbS champions.
[33] This was further enabled through pre-existing relationships between some of the academics.

"We work in four countries, but each country works separately. They only had a chance to connect at the regional conference, and more recently invited to workshop in Laos. They haven't had a chance to collaborate across countries beforehand."-RUCaS in-country staff

"MAP 2 looked at transboundary issues, but there are no transboundary cities. Instead, you have the same problems in different cities so if there was a solution in one place, then RUCaS could do a roadshow of the solution and then partners could get help to do it in their own city. That way it looks more like partners are helping each other, rather than Monash helping them." -DFAT

"I was very happy to participate in the regional workshops in Phnom Penh and Thailand. I stayed right until the end! Hopefully this will happen again."-RUCaS government partner

"It's a nice park, but it lacks an NbS approach. This is because of lack of awareness." -RUCaS in-country staff

"But there isn't good understanding of what NbS is. There's lots of grey infrastructure in their descriptions of NbS."-Interested third party

EOPO 3 also emphasised capacity as a requirement for scaling, and inclusion of outputs 3.2 and 3.3 suggested that capacity in RUCaS Phase 1 was broadly defined as 'knowledge of NbS'. Numerous knowledge events and technical trainings successfully took place across the region, as outlined in the RUCaS mid-term and annual reports. These included two regional conferences in Bangkok in 2023 and 2025. Nearly all informants praised the program for the knowledge exchange events and trainings. However, a concern raised by several informants (e.g. BMA, MLMUPC) was that whilst they felt they had learned a lot through the RUCaS program knowledge exchange events and training, they did not (yet) feel confident to implement NbS on their own and still needed further training. This indicated that substantial progress was made toward achieving EOPO 3; however, there was still much work to be done to ensure the sustainability of the gains made regarding NbS capacity development. Several informants noted that the RUCaS knowledge events targeted NbS champions, urban planners and decision-makers (which was appropriate), but that actors responsible for *implementing* NbS (such as provincial level government representatives, designers and contractors) often implement NbS incorrectly and therefore were also in need of NbS capacity development.[34]

With respect to inclusivity, there was representation of diverse groups amongst the broader RUCaS cohort (i.e. event participants); however, the cohort of NbS champions themselves were mostly able-bodied men.[35] This may speak more to the lack of representation of women and marginalised groups in government and academia in the Mekong subregion and is therefore out of the control of RUCaS. Meanwhile, women, PWDs, and those representing other minorities involved in RUCaS were typically from organisations focused on GEDSI, and they were therefore

[34] Few partners had a solid understanding of the *definition* of NbS, and those that did were predominantly technical partners. In particular, NbS was often conflated with the concept of *green development* (a broad concept that includes solutions that do not incorporate nature and ecosystems, e.g. energy-efficient buildings), and the understanding that biodiversity is a foundational element of NbS did not appear to be understood by most partners. This is a minor issue when contrasted with other challenges in the RUCaS program; however, the goal of this investment is clearly centred on NbS specifically (and not on green infrastructure etc.) so this observation is noted here.

[35] With the exception of Thailand, where informants from the DCCE and BMA were predominantly women.

not yet part of the cohort of NbS champions (though many GEDSI actors showed interest in learning more about NbS). This is further discussed in Section 3.5.

Recommendation 4: The implementers of any future phase of RUCaS should facilitate learning events for those involved in funding, planning, designing and constructing NbS in the region that exhibit (either virtually or through in-person site-visits) examples of working NbS in a range of contexts, budgets and scales of impact (in addition to examples from China and Thailand).

3.5 GEDSI

Based on the elements pertaining to GEDSI in the MEL Framework, the evaluation team broadly interpreted the underlying logic to be: if the RUCaS team reflected GEDSI principles in the program activities and outputs, and provided GEDSI training to NbS champions in the Mekong subregion, and engaged the support and advice of a GEDSI TAG, and developed a GEDSI NbS guideline, then GEDSI will be embedded in the NbS case studies and broader NbS policies in the region. Table 4 summarises the cross-cutting focus, expected change and outputs for GEDSI.

Table 4 GEDSI – Cross-cutting focus, Expected Change and Outputs

Cross cutting focus	Expected change	Outputs
A cross-cutting focus is: GEDSI principles are demonstrated and embedded in the program implementation.	Expected change: GEDSI principles are embedded in the development of case studies, pilots, and the formulation of policy recommendation in all countries.	Output 4.1 GEDSI principles are reflected in: program analysis, reports and recommendations; policy impact; and capacity building and partnerships. Output 4.2 Regional GEDSI and NbS workshop and training Output 4.3 GEDSI technical advisory group supporting mainstreaming Output 4.4 Development, integration and consideration of GEDSI for urban NbS Guideline

The cross-cutting focus on GEDSI was incorporated into the RUCaS program initially with the GEDSI strategy in April 2023 and then with further funding as part of Amendment 2 in late 2024 (which was more than halfway through the program). The GEDSI strategy stated that '*RUCaS is targeting transformative GEDSI activities (focusing on engagement and co-creation for influencing codes and policy) towards building pathways to achieve empowering and transformative outcomes through NbS*.' Specifically, the updated MEL Framework defined the expected GEDSI changes through RUCaS to be that '*GEDSI principles are embedded in the development of case studies, pilots, and the formulation of policy recommendation in all countries*' and that this would be brought about through activities and outputs such as 1) the engagement of a GEDSI Technical Advisory Group (TAG), 2) a regional GEDSI and NbS workshop, and 3) the development of a GEDSI for urban NbS guideline. Overall, the RUCaS program succeeded in delivering these three activities and outputs, and these contributed to GEDSI principles and considerations being somewhat incorporated into some of the case studies, pilots and other NbS-related guidelines developed through RUCaS. The GEDSI changes

achieved, as well as the challenges to better progress towards improving GEDSI in the RUCaS program, are described below.

The **GEDSI TAG** was engaged in late 2024 and comprised seven members (including six women and two PWDs) representing GEDSI CSOs from across all four countries. The group's main tasks included coordinating the GEDSI training at the regional conference (and other trainings), providing advice for and reviewing the GEDSI NbS guideline, and providing support or advice for various activities to incorporate GEDSI principles into the case studies, pilots or other NbS guidelines developed through RUCaS. As is often the case with GEDSI advocates, many members of the GEDSI TAG were the key focal point in their countries for the group or identity that they represented. This meant that they were highly experienced and knowledgeable (and therefore a great asset for the RUCaS program); however, there were some downsides to this including the risk of burnout, limited time available to dedicate to RUCaS and a missed opportunity to support other GEDSI organisations and advocates (who were perhaps not as prominent) in the region.

As noted in the discussion of EOPO 3, several GEDSI TAG members noted that their inputs into the NbS guidelines were based on a limited understanding of NbS. Whilst they expressed high motivation and interest in learning more about NbS, and that the training they had participated in through RUCaS had been helpful, they did not feel adequately skilled to provide GEDSI advice on NbS projects.

The **GEDSI NbS guideline**[36], led by the GEDSI lead, was put together by the RUCaS team based on a series of consultations with members of the GEDSI TAG (as well as the broader RUCaS partner network during the 2025 Regional Conference in Bangkok). There were also several rounds of feedback on the first drafts of the guideline. A key concern raised by several informants (both within and outside of the GEDSI TAG) was that the guideline was too long and theoretical for their intended audience: implementers of NbS who tend to be from technically focused fields such as engineering with no prior experience of GEDSI. Another concern was that whilst there was a dissemination plan, local partners were not aware of the plan, and there were no intentions to first test the guideline in their intended contexts (for subsequent refinement) at the time of the evaluation. Altogether, this suggested a risk that the guideline would not be applicable or relevant in its intended contexts and remain unused (a similar concern raised in the discussion about EOPO 2 with respect to the other knowledge products developed through the program). Key lessons learned for a potential future phase of RUCaS include a) the need for a more collaborative process for the development or progression of a GEDSI NbS guideline and b) the need to incorporate real-world testing and refinement into the development and dissemination of such a guideline.

Ultimately, the RUCaS program aimed to **incorporate GEDSI into the development of case studies, pilots, and the formulation of policy recommendation in all countries** and there are several examples of this. These included the co-design process for the Battambang Road 501 (Cambodia) case study, the Luang Prabang greywater treatment pilot (Lao PDR), the Can Tho University bioswale design (Viet Nam), and the consultation with PWDs to conduct an access analysis at On Nut Park (Thailand). There are also examples of GEDSI considerations in the NbS guideline and policies being developed through RUCaS e.g. the *Guidelines for Risk Assessment of Disused Land* (Thailand) and the *National Urban EbA Guidelines for Flood Risk Reduction*

[36] Nguyen-Trung, K., Cross, K., Simon, M., Flynn, J., & Furmage, B. (2025). *Inclusive and equitable urban nature-based solutions: A practical guide*. Water Sensitive Cities Australia.

(Lao PDR).[37] Some informants explained how incorporating GEDSI into the BCA tool—one of the most highly valued aspects of RUCaS—had been difficult. The BCA tool was dependent on the findings of previous studies and, as mentioned in the GEDSI strategy, data about the monetised value of GEDSI specific outcomes did not yet exist on a wide enough scale.

> *"For example, does having a green space 200m from the home differ in value for men and women? There's no evidence of monetary value on this. We just don't know. I'm not sure about whether this is going to happen. There is a huge field around valuing intangible things, but it's mostly focused on environmental benefits and health benefits. It doesn't go much into social benefits."*-Australian partner
>
> *"GEDSI is very new for me – I just learned this concept in this project."* -RUCaS university partner

The added GEDSI focus to RUCaS also had some positive impacts beyond the mandate of the program itself. Many of the government representatives were already familiar with GEDSI (and it seemed that this had been largely in response to various donor requirements) and said that the RUCaS program had been a good refresher on the importance of GEDSI principles for their work. Some of the partners who are focused on technical fields, such as engineering, explained that their first exposure to GEDSI had been through the RUCaS program and that this was leading to changes within their own work and organisations. However, they felt that they would need a lot of support to meaningfully incorporate GEDSI principles into their work and that, in general, there was a lack of GEDSI incorporated into the policies and regulations that were relevant to their technical work. Furthermore, there were a small number of partners who felt that GEDSI was not part of their mandate and would be better addressed by those working in other (socially focused) departments/ministries. A positive, perhaps unintended, result was that the RUCaS GEDSI activities had been a 'gateway' for community development approaches such as needs assessment, community consultation etc. to be incorporated in RUCaS, which had not happened previously. That is, the addition of a GEDSI focus provided an avenue for the incorporation of good community development principles into RUCaS, thereby strengthening the entire program.

Overall, RUCaS achieved some progress towards supporting GEDSI as part of its activities; however, the depth and sustainability[38] of this work was uncertain. One of the aims described in the GEDSI strategy (p. 5) was to 'educate those engaging to understand GEDSI as an integrated responsibility and opportunity. Not just the domain of social experts or social agencies.' Yet GEDSI capabilities and responsibility appeared to remain siloed. On one hand, the GEDSI TAG were the major contributors to the GEDSI NbS guideline and facilitated consultations with diverse groups for some of the case studies, but they did not feel confident contributing to the NbS aspects of RUCaS. On the other hand, those responsible for NbS broadly expressed an understanding of the importance of GEDSI, but none were confident that they could take responsibility for coordinating or incorporating GEDSI principles into their work.

The need for more depth and sustainability of GEDSI outcomes in RUCaS can be explained by several factors, and these lessons suggest some of the ways in which a future phase of RUCaS could be improved. Firstly, GEDSI was brought in as an add-on to RUCaS, rather than being fully integrated into the program from the beginning. This had practical implications in that it is

[37] See RUCaS mid-term report (May-Oct 2025)
[38] The sustainability of the GEDSI outcomes will be discussed in the section below.

difficult to retrofit case studies, design processes or tools (such as the BCA) to incorporate considerations of GEDSI. Secondly, it was clear that whilst RUCaS program staff and partners embraced the importance of GEDSI over the course of the program, the value of incorporating GEDSI principles into their technical NbS or design work was not an existing priority or skill for many. Developing GEDSI *capacity* as well as *motivation* among implementing organisations and their staff is a substantial undertaking,[39] and in the case of RUCaS, this needed to take place alongside working towards GEDSI changes in the case studies and partner country contexts. Thirdly, the timeframe for achieving GEDSI '*transformative outcomes through NbS'* (as described in the GEDSI strategy) in the context of a four-year program is too short. Finally, the GEDSI strategy was too ambitious and not sufficiently practical to enable any organisation—let alone an organisation with limited existing GEDSI capacity or motivation—to achieve meaningful GEDSI change. For example, the strategy described RUCaS as aiming to achieve GEDSI '*transformative outcomes through NbS'*, where 'transformative' means to change underlying power structures and norms. Altogether, this presented the RUCaS program with an impossible task: to change power structures and norms through an NbS program, without the required capacity in-house and within four years.

"There was commitment to GEDSI on paper, but it was not really there in reality. It took a year and a half to bring it to a point where the organisation had some internal GEDSI capacity, and then to bring it into the case studies and finally, to get it to the point where it was more overt in communications, as well as who we invited to events."-RUCaS staff

"A key challenge for WSCA going ahead is that they are still coming from an engineering and economic analysis about NbS solutions. If they're going to use DFAT money, GEDSI analysis needs to be woven much more into those disciplines, so it's streamlined and coordinated. There needs to be a far more robust approach to engaging with communities as well."-RUCaS staff

It is positive to see that RUCaS nevertheless achieved some GEDSI results, and this can be largely attributed to the engagement of staff who had experience in community development in the region, as well as the establishment and engagement of the GEDSI Lead and GEDSI TAG members. However, a future phase of RUCaS will need to change its approach to meaningfully incorporate GEDSI through a) inclusion of GEDSI in the beginning of the program design, b) hiring staff responsible for GEDSI who have experience in GEDSI and community development (and, ideally, also in a field such as engineering, economics, or climate resilience),[40] c) conducting an in-depth GEDSI analysis of the program context prior to detailed program design and using this to inform the GEDSI strategy, d) dedicating resources to training program staff to develop their GEDSI capacity and motivation,[41] and e) ensuring that the GEDSI strategy and

[39] So much so, that much work has been done to develop tools that focus on measuring and supporting an organisation's capacity to do meaningful GEDSI work. See for example, 'Inclusive WASH workplaces' (https://waterforwomen.uts.edu.au/inclusive-workplaces/) and the 'GEDSI Self-Assessment Tool' (https://www.waterforwomenfund.org/en/learning-and-resources/resources/KL/Extension-Phase/Water-for-Women_2025_GEDSI-SAT_FINAL_web.pdf)

[40] Engaging experts who can speak the language of GEDSI, community development and engineering etc. helps to ensure that these fields and responsibilities do not end up siloed as they did in RUCaS Phase 1. Ideally, there would be separate staff responsible for gender equality, disability inclusion, indigenous voices and other socially excluded groups, to ensure that none of these issues becomes de-prioritised and in recognition that each of these fields are specific areas of knowledge and expertise.

[41] The aim is not to train all RUCaS program staff to become GEDSI experts; however, some degree of self-reflective work and capacity development is needed to ensure that those working in non-GEDSI fields are

GEDSI components of the program design are feasible and achievable given the capacity of the program staff, resources, time-frame and context.

Recommendation 5: DFAT and the implementing team should ensure that GEDSI is resourced and included from the very beginning of any future phase of the RUCaS program. This includes the definition of clear and feasible GEDSI-related EOPO/IO in the program design, conducting in-depth GEDSI analysis prior to detailed design, and the development of a clear and feasible GEDSI strategy.

Recommendation 6: The implementing team of any future phase of the RUCaS program should hire staff to be responsible for implementing the program GEDSI outcomes (preferably separate roles for gender equality, disability inclusion and representation of other marginalised groups) who have expertise in GEDSI, community development and technical fields such as engineering (that is, experts who can work across these disciplines).

Recommendation 7: The implementing team of any future phase of the RUCaS program should facilitate GEDSI capacity development, firstly for the implementing team (and implementing partner organisations) and then for NbS champions, planners and implementers in the region.

3.6 Efficiency

According to DFAT standards, efficiency is a measure of the extent to which an investment

makes appropriate use of Australia's and other partners' human, financial and time resources to achieve its intended outcomes and includes consideration of the governance and management arrangements for the investment.[42] In the case of RUCaS, whilst progress was made toward achieving the EOPO by the end of the program (including the GEDSI cross-cutting focus), none were fully achieved and this means that there was room for improvement in terms of efficiency. This is unsurprising, given that the program logic (as summarised in the Updated MEL Framework) was broadly implausible, unclear and rested on unreasonable assumptions (as discussed in detail in Appendix D: RUCaS Evaluability Assessment and mentioned elsewhere in this report).

The evaluation team noted—both in RUCaS documentation and through the interviews with informants—that some of the work achieved through the RUCaS program was outside of the program logic as defined in the MEL Framework. The RUCaS mid-term report (2025) detailed several of the 'parallel projects that are integrating NbS approaches' through 'leveraging' by RUCaS in all four countries.[43] Some of this work drew on RUCaS resources and staff time and some was supported by external funding. These extra benefits can be assessed as positive because they reflected the responsiveness and flexibility of the RUCaS program. Put another way: RUCaS was able to support the integration of NbS in implementation activities outside of the RUCaS program. However, this drew resources and focus away from RUCaS' intended outcomes which thus impacted the assessment of the program's efficiency. The key lessons learned here are that any future phase of RUCaS should a) ensure that the program logic for any

able to confidently incorporate GEDSI into their work and know how to engage GEDSI-experts when needed.

[42] https://www.dfat.gov.au/sites/default/files/investment-design-quality-criteria.pdf

[43] See Annual Report – 2025, p 17.

future phase of RUCaS clearly sets out what the program can feasibly achieve with its given resources and b) focus its resources on what it means to achieve.

There were several indications that, in spite of the limitations posed by the program logic, the RUCaS team broadly made the best of the human, financial and time resources they had to be productive. The expertise and experience of the RUCaS and ICEM staff were widely regarded as a major strength of the program. Government representatives and implementing partners across the four countries consistently expressed appreciation for the high level of experience and technical expertise provided by both the Australia-based WSCA team, the ICEM team, and the in-country RUCaS staff.

"There are many organisations who do NbS in the region. RUCaS is a high-quality guarantee. It's done by a university, it's trustworthy." -Interested third party

"RUCaS had to build form scratch in a piece wise way and our entry point in each place was different. e.g. in Vietnam, codes didn't permit anything, so we had to start with the university and bring people in, so they'd hopefully take it outside and do it elsewhere. In other places, e.g. Thailand we could do it more top down. Different entry points – sometimes top down and sometimes bottom up."-RUCaS staff

The decision to implement RUCaS through a partnership between WSCA (and Australian-based academic institute) and ICEM (a Viet Nam-based organisation familiar with implementing development interventions in the Mekong subregion) and, in turn, through NGOs and universities working locally, built efficiencies into the program. Whilst the informants reported tensions that inevitably arise during such partnerships—particularly when there are differing organisational mandates, experience and approaches—each organisation brought its strengths. WSCA brought its technical expertise in NbS, academic rigour and expertise in knowledge sharing. ICEM brought its intimate contextual knowledge of the region (particularly Viet Nam and Cambodia) and networks with locally based designers and contractors. The local NGOs and universities that WSCA and ICEM worked with brought contextual knowledge and expertise in community development. Any future phase of RUCaS should consider an implementation partnership arrangement such as this to leverage and balance the strengths of an academic institution with locally based organisations that have expertise in community development and local networks.

It was also suggested, by several informants, that a future phase of RUCaS would benefit from having larger in-country teams with staff who had more technical capacity. This was to decrease reliance on Australia-based staff who could not always be physically present in the region as well as to improve efficiency of implementation through hiring staff who combine a strong understanding of the local contexts and languages with technical expertise in NbS. Leveraging partnerships with local universities was also seen as an important opportunity to strengthen and localise technical knowledge (something that was taking place in all countries but could be leveraged more in a future phase of RUCaS).

Another approach that proved efficient, was the way in which RUCaS engaged appropriate partners across the four countries—both in government as well as in locally-based implementing organisations. In Lao PDR, Cambodia, and Thailand, the program engaged government ministries that were well positioned to increase the overall acceptability of NbS and to cultivate networks of capable and motivated champions. In Viet Nam, where government

engagement proved particularly complex, RUCaS adapted effectively by working through two local universities as an alternative entry point. The decision to partner with local organisations such as Groupe de Recherche et d'Échange Technologique (GRET) and GGGI for implementation was considered efficient, particularly given the small size of in-country RUCaS teams and the strong contextual knowledge held by these organisations. More broadly, RUCaS selected partner countries and institutions where collaboration was feasible. Existing relationships played a critical role in Thailand and Cambodia, where trusted individuals within government helped convene a steering committee (in Thailand) and facilitate broader engagement.

Recommendation 8: The implementers of any future phase of the RUCaS program should aim to have most of its implementation team based in the target countries and comprise staff who have local language skills and understanding of local culture and political economy as well as NbS technical capacity.

3.7 Sustainability

The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) definition of sustainability is: "*The extent to which the net benefits of the intervention continue, or are likely to continue*".[44] For this evaluation of RUCaS, therefore, the KEQs concerning sustainability focused on the extent to which the **case studies** and **approaches** in RUCaS would be maintained beyond the life of the program and what factors would enable or constrain this. As is common in such evaluations, the program was not yet complete at the time of data collection or report writing, so the assessment of the sustainability of RUCaS was made based on *indications of potential sustainability*.[45]

Case studies

EOPO 1 sought to increase the acceptance of NbS by partners in the Mekong subregion through establishing 'clear pathways for the RUCaS case studies to be progressed to full implementation (by either local or likeminded partners)'. Whilst there was evidence that case studies in all four countries had progressed beyond the 'concept' phase, there were significant barriers to ensuring that this progression would continue without the support of RUCaS. Lessons learned highlighted that available finances were a widespread concern, though some cases had found methods to move forward (e.g. using corporate social responsibility funds in Thailand). However, informants in all countries specified that they did not know the true cost of NbS and/or they considered NbS to be expensive. Though the cost-benefit of NbS had been communicated, estimated costs had predominantly not been, and partners remained uncertain about the amount they would need to invest to see the communicated benefits. Combined with a persistent trust in grey infrastructure and a lack of physical examples of NbS in the region (as discussed in Section 3.4 EOPO 1), many partners remained unable to (or unmotivated to) find the necessary finances. Even the cost of maintaining the environmental monitoring sensors was

[44] https://one.oecd.org/document/DCD/DAC(2019)58/FINAL/en/pdf

[45] Typical indications of sustainability include whether there are resources (money etc.); human resources (people on the ground); skills (that the people on the ground have capacity); motivation (that the people on the ground have sufficient incentives to use their skills); systems (for the efficient coordination of people with skills and motivation); and leadership (to manage the systems and lead the people on the ground).

a concern (see Section 3.4 EOPO 1 for more detail). Land availability was another barrier raised in many of the case studies.

> *"We asked the participants [of the workshop] about concerns, and I think almost every group said the ideas are good, but what about the cost of the prototype and the maintenance? At the end [of the workshop], that was still unknown."* -DFAT

Progress (and sustainability) of the case studies also relies on the availability of skilled and motivated stakeholders. Though progress had been made through capacity building, there remained concerns about partners being unable to use relevant tools on their own (e.g. the BCA tool), and some did not (yet) feel confident to implement NbS on their own. Many partners suggested that capacity building efforts also needed to target more government officials (at both national and sub-national levels) as well as local designers and contractors who are the actors needed to complete the required work. Finally, partners had an expectation that future NbS maintenance would rest with relevant communities; this assumption poses a great deal of risk,[46] and clear management plans would be needed to ensure long-term maintenance of NbS.

As discussed, scaling of NbS (and sustainability of those endeavours) still requires efforts to ensure policies and regulations for NbS are developed and enforced. Some of this was underway, notably in Cambodia and Thailand; however, progress in Viet Nam was constrained by difficulties in working with government. The partnerships with the Vietnamese universities in the respective case studies were a great alternative, and these were likely to continue beyond the scope of RUCaS. The methodology of the scaling 'roadmaps' also required revision to ensure the collective action that will be needed to ensure scaling of NbS in each of the four countries.

Technical Guidelines

As discussed for EOPO 2, the guidelines produced within Phase 1 of RUCaS still required plans for testing, dissemination and implementation, including commitment from partners to use them. In some instances, funding and/or support from government was needed to ensure implementation. Implementation also requires training for the relevant stakeholders who would be expected to use the guidelines.

> *"The guidelines need to be implemented, monitored, enforced, and then reiterated or revised based on the findings."* -RUCaS in-country staff
>
> *"Without government support, the guidelines will just be a book that stays on the shelf. There won't be implementation."* -RUCaS university partner

Partnerships and Networks

While progress was made in establishing partnerships between WSCA and local partners, true sustainability beyond the conclusion of the program will rely on partnerships that are independent of the RUCaS team. These were not yet in place at the time of the evaluation, and only minimal regional collaboration had taken place. Sustainability of partnerships could be

[46] This is a common assumption in international development but has been found to be a reason projects often fail. See Barrington et al. 2025 as an example.

strengthened in a possible future phase by creating more opportunities for shared learning and exchange of expertise between partners within and between countries.

The sustainability of the networks created during RUCaS Phase 1 was uncertain. Firstly, most NbS champions (particularly between different countries) reported that they were not in contact with each other, except through RUCaS-led events. Secondly, the RUCaS network reached nearly 1,500 participants,[47] but there was no evidence that these participants remained connected as a community of practice beyond RUCaS-led events. Finally, few members of the GEDSI TAG reported being in contact with each other about NbS related matters, independent of RUCaS' coordination. As such, none of the networks demonstrated evidence that they would be maintained without direct support from RUCaS (i.e. beyond the end of Phase 1). A future phase of RUCaS could leverage existing network platforms to improve sustainability.

GEDSI

The sustainability of the GEDSI changes achieved through the RUCaS program was uncertain. Firstly, there was no indication that ongoing funds (beyond RUCaS funding) would be dedicated by partners to engaging GEDSI representative groups or advisors for ongoing NbS work in the case studies or other NbS interventions. (This is unsurprising given that a lack of ongoing funding was a barrier to progressing any aspect of most of the case studies as mentioned above.) Secondly, whilst RUCaS has certainly built the capacity and motivation of NbS champions to integrate GEDSI into their work, and of GEDSI advocates to learn more about NbS, neither of these groups felt confident to plan for, design and implement inclusive NbS as of yet. This is a long-term change that likely needed longer than the timeframe of Phase 1 of RUCaS to come about sustainably. Finally, the GEDSI NbS guideline could potentially support a system to ensure that GEDSI is considered in policy recommendations for NbS in the Mekong subregion, but in its state at the time of the evaluation, it was not translated, nor practical for its intended users.[48] Without the guideline being field tested, there was a high risk that its benefit would not be realised beyond the end of Phase 1 of the program.

Overall, whilst the RUCaS program made some important achievements, the sustainability of much of this work remained in question. This was largely due to a lack of guaranteed funding: for progressing the NbS case studies, field testing and implementing NbS policies and guidelines, or paying inclusive NbS experts. RUCaS did leave a legacy of several highly motivated NbS champions across the Mekong subregion, whose capacity to implement NbS improved throughout the program. Nevertheless, a future phase of RUCaS should be more focused on ensuring that whatever positive outcomes it brings about can last beyond the support of the RUCaS team.

4. Conclusion

This evaluation found that the RUCaS program made a valuable and timely contribution to advancing NbS for urban climate resilience in the Mekong subregion, while also revealing important limitations in design, ambition, and sustainability that constrained its overall effectiveness. Across Lao PDR, Thailand, Cambodia, and Viet Nam, RUCaS responded to a clear and well-articulated demand for alternatives to grey infrastructure and filled a gap in NbS

[47] See RUCaS mid-term report (May-Oct 2025).
[48] The RUCaS team plan to write an industry note (approximately 4-page summary) of the guideline before April 2026.

knowledge, skills, and international expertise. Government agencies, universities, civil society organisations, and DFAT posts consistently recognised the professionalism of the RUCaS team and the relevance of its learning events, technical guidance, and convening role. In this sense, RUCaS was highly relevant and widely valued.

The program's strongest achievements lie in capacity building, knowledge generation, and relationship development. RUCaS nurtured a cohort of motivated NbS champions, facilitated regional and national learning, produced innovative concept designs, and developed guidance, tools, and frameworks that have the potential to inform future policy and practice. Its work on benefit–cost analysis, in particular, addressed a core barrier to NbS uptake by beginning to clarify the financial case for hybrid NbS over time.

However, when assessed against its EOPO, RUCaS only partially achieved what it set out to do. Whilst direct interventions (e.g. detailed design and environmental monitoring) took place in five case studies and small-scale construction in two of these (e.g. Luang Prabang), the pathways for the RUCaS case studies to be progressed to full implementation by either local or likeminded partners were only just being established at the conclusion of Phase 1 (indicator for EOPO 1). This undermined the achievement of EOPO 1 and further constrained EOPO 2. These shortfalls are best understood not as a lack of effort or competence, but as a consequence of several limitations in the program logic and assumptions that were not borne out, compounded by fragmented funding, short timeframes, limited in-country staffing, and insufficient attention to feasibility, co-design, and financing from the outset. Greater progress was made toward EOPO 3, but the sustainability of these results beyond the RUCaS program were uncertain.

RUCaS partially delivered its planned GEDSI activities; namely the integration of GEDSI into some of the case studies and the development of the GEDSI NbS guideline, supported by an active GEDSI TAG. However, there was much room for improvement in relation to the GEDSI outcomes for this program. This is partly due to GEDSI being a late add-on to the program, an unclear and unrealistic GEDSI strategy, the lack of a genuine GEDSI analysis at the beginning of the program, and a lack of GEDSI capacity in the context of technically focused development investments among the RUCaS implementing team.

Concerns about sustainability cut across all EOPO, IO and outputs. While RUCaS left behind motivated individuals, conceptual designs, some direct interventions, and high-quality knowledge products, many of these gains (as described above) will not endure without further investment, clearer dissemination and implementation pathways, stronger local capacity, and tangible demonstration sites.

Overall, RUCaS did not fully complete what it set out to do in Phase 1, but progress was made and productive work was done by a highly competent and motivated team, regardless. Any future phase should build on these foundations with a more realistic and feasible program design—one that prioritises completed case studies of NbS in the Mekong subregion, financial feasibility, genuine co-design, meaningful incorporation of GEDSI which begins with building GEDSI competence within the implementing team and partners, and sustainability in line with DFAT standards and partner country contexts.

Appendix A: RUCaS Updated MEL Framework

Program Goal Resilient, sustainable, inclusive and prosperous cities where Hybrid Nature-based Solutions (NbS) drive climate change adaptation and enhance economic, social and environmental values.

Overall aim of RUCaS Mekong country partners have improved technical capacity, local demonstrations of concept, enhanced institutional buy-in and regional collaboration to support scaling NbS and hybrid solutions for more climate resilient development of urban areas and their surrounds.

End of Program Outcomes (EOPOs)	EOPO Indicators	Intermediate outcomes (IOs) Expected changes	IO Indicators How the changes measured	Narratives (how we want to communicate the stories of changes)	Outputs/ Targets
EOPO1. The value of hybrid NbS is accepted.	Number and evidence of case studies with integrated GEDSI principles that Mekong subregion partners and like-minded partners **have taken from concept to demonstration**.	IO1: Mekong subregion partners **buy in** to the value of Hybrid NbS in strengthening economic, social, and environmental resilience.	Number of case studies **localised and carried out in close consultation with** and guidance from Mekong subregion partners.	• RUCaS case studies are taken from concept to demonstration by national partners and likeminded donors. • All cases have integrated GEDSI principles (embedding GEDSI in valuing and scaling hybrid NbS) All cases have been localised and carried out in close consultation with and guidance from local partners.	1.1 Eight concept studies (in both large and secondary cities) that demonstrate the local relevance and application 1.2 At least four integrated pilots/direct interventions (e.g. design of hybrid NbS, NbS demonstration, environmental monitoring) linked to national and development agency investment projects to accelerate opportunities for technical, social and economic innovations at scale
EOPO2. The foundations for upscaling are being put in place.	Number and evidence of national and/or local-level urban climate policies, regulations,	**IO2:** Mekong authorities and partners consider hybrid NbS in policies, regulations, and technical	Number of policies, regulations and technical guidance or tools **advocated through policy dialogues** with	• NbS enabling policies and technical guidance developed based on RUCaS case studies and integrated GEDSI principles have been adopted by Mekong partners	2.1 RUCaS framework (Research based, practical framework for climate resilient urban investment decisions) 2.2 Training resources, tools and databases prioritised by Mekong

End of Program Outcomes (EOPOs)	EOPO Indicators	Intermediate outcomes (IOs) Expected changes	IO Indicators How the changes measured	Narratives (how we want to communicate the stories of changes)	Outputs/ Targets
	planning documents, or technical standards and tools that **integrate NbS principles supported by RUCaS**	guidance and tools for climate change adaptation.	Mekong subregion partners.	for climate change adaptation. ● Australian tools and guidelines translated into Mekong languages, used for training, shared via RUCaS website, and used by Mekong partners for climate change adaptation. ● RUCaS scaling strategies facilitate policy dialogues to promote adoption of hybrid NbS into national/city level policies and plans.	partners to guide urban infrastructure investment 2.3 Four Climate Resilient Development Scaling Strategies for 4 countries providing tangible actions, and broader policy and practice reform recommendations 2.4 NbS enabling policies and technical guidance developed based on RUCaS case studies and integrate GEDSI principles that are adopted by Mekong partners for climate change adaption
EOPO3. Partnerships and capacity for achieving scaling are established.	Evidence of **established, inclusive cohort of NbS champions** that is **maintained** and **linked to networks** across the Mekong to promote and collaborate on hybrid NbS.	IO3: Inclusive cohort of NbS champions **established** to promote hybrid NbS Evidence of **strengthened capacity** within an inclusive cohort of NbS champions to achieve NbS scaling	Number of NbS champions **engaged** in the RUCaS program (where "engaged" includes participation in training, networks, or co-delivery of hybrid NbS), disaggregated by countries, sex, disability, organization, and repeat engagements).	● RUCaS has established a strong, inclusive cohort of NbS champions in each country and linked to networks across the Mekong. Partnerships with RUCaS have been expanded and deepened. New agencies engaged across the subregion while existing partners continues to actively support the program governance. Collaboration agreements have been	3.1 A gender diverse and equal opportunity cohort of NbS champions promote environmental resilience and climate adaptation across the Mekong 3.2 At least four Knowledge exchange events (one in each country) and regional conference promote discussion of wider application of NbS 3.3 At least four in-person targeted technical trainings and

End of Program Outcomes (EOPOs)	EOPO Indicators	Intermediate outcomes (IOs) Expected changes	IO Indicators How the changes measured	Narratives (how we want to communicate the stories of changes)	Outputs/ Targets
			Number of collaboration agreements or initiatives established with government, universities or civil society actors. Evidence **of increased knowledge and capacity** to achieve NbS scaling among inclusive cohort of NbS champions.	developed to deepen the cooperation. ● Knowledge exchanges and trainings were well attended and contributed to building networks and capability. ● Regional collaboration strengthened though regional conference (both under the program and with related programs) and cross-country trainings.	workshops to build practical capacity to plan, design, monitor, and scale inclusive and climate-resilient NbS. 3.4 Formal arrangements for future collaboration and capacity building in place. 3.5 RUCaS contribution to regional sharing and collaboration
Cross cutting focus: GEDSI principles are demonstrated and embedded in the program implementation.	Evidence that GEDSI principles are embedded across case studies, pilots, and policy processes in all countries, demonstrating influence on decision-making and inclusive design outcomes.	GEDSI principles are embedded in the development of case studies, pilots, and the formulation of policy recommendation in all countries.	GEDSI principles are reflected in the three IOs (already integrated in the respective indicators, narratives and outputs). Evidence of meaningful engagement by GEDSI technical advisory groups and GEDSI representative agencies in RUCaS activities supporting	● GEDSI principles are demonstrated and embedded in the case studies and capacity building activities. A clear narrative of the GEDSI cohort's impact on policy reflects take-up of GEDSI advice. ● RUCaS increased diversity of NbS champions. ● Specific GEDSI output (GEDSI for urban NbS Guideline) has been developed in close consultation with GEDSI	4.1 GEDSI principles are reflected in: program analysis, reports and recommendations; policy impact; and capacity building and partnerships. 4.2 Regional GEDSI and NbS workshop and training 4.3 GEDSI technical advisory group supporting mainstreaming 4.4 Development, integration and consideration of GEDSI for urban NbS Guideline

End of Program Outcomes (EOPOs)	EOPO Indicators	Intermediate outcomes (IOs) Expected changes	IO Indicators How the changes measured	Narratives (how we want to communicate the stories of changes)	Outputs/ Targets
			the drive towards transformative change. Evidence that information from the GEDSI for urban NbS Guideline is being used by Mekong subregion partners.	experts and Mekong partners and are applied by Mekong partners to enable integration of GEDSI consideration into the planning, design, implementation and monitoring of urban NbS.	

Appendix B: Interviewees

Program focus	Name	Position, Organisation	Date
Lao PDR	Manivanh Suyavong	Executive Director, GDA Laos	3 Nov 2025
Lao PDR	Maly Inthilathvongsy	Community Development Officer, GDA Laos	3 Nov 2025
Lao PDR	Vanhthone Phonnasane	Deputy Director of Adaptation Division, Department of Environment, Ministry of Agriculture and Environment	3 Nov 2025
Lao PDR	Eva Diaz Ugena	Deputy Country Representative, Lao PDR, Global Green Growth Institute (GGGI)	3 Nov 2025
Lao PDR	Arnaud Vontobel	Country Representative, GRET Laos	4 Nov 2025
Lao PDR	Marie-Pierre Lalaude-Labayle	Regional Program Manager Southeast Asia, GRET Laos	4 Nov 2025
Lao PDR	Souphanny Singsayyachack	Project Manager, GRET Laos	4 Nov 2025
Lao PDR	Thongsavath Somdachit	Project Officer, Water & Wetlands – NATURA Project, Global Green Growth Institute (GGGI)	4 Nov 2025
Lao PDR	Thavone Panmanivong	Head of International Cooperation Division, International Relations Office, Souphanouvong University	4 Nov 2025
Lao PDR	Anousith Vannaphon	Deputy Head of Planning and Project Management Division, Souphanouvong University	4 Nov 2025
Lao PDR	Samnieng Thammavong	Director, LDPA, Laos Disabled People's Association (LDPA)	19 Nov 2025
Thailand	Rosalind Amornpitakpun	Director of Climate Change Adaptation Guideline and Capacity Development Subdivision, Department of Climate Change and Environment (DCCE)	5 Nov 2025
Thailand	Sasiwan Wongsiriprasert	Director of Green Area Strategy Division, Environment Department, BMA	6 Nov 2025
Thailand	Jintana Aiampisanuvong	Head of Sustainable Environment and Climate Change Mobilization Unit, Environment Department, BMA	6 Nov 2025
Thailand	Yanee Kaewprasit	Chief of Sustainable Environmental Strategy Unit, Environment Department, BMA	6 Nov 2025
Thailand	Jidanan Kaosaiphun	Environmentalist, Professional Level, Environment Department, BMA	6 Nov 2025
Thailand	Napatsorn Somkhaoyai	Environmentalist, Practitioner Level, Environment Department, BMA	6 Nov 2025
Thailand	Narongsak Haewprakhon	Environmentalist, Practitioner Level, Environment Department, BMA	6 Nov 2025
Thailand	Chulalack Sitthichoptham	Agricultural Technical Officer, Practitioner Level, Environment Department, BMA	6 Nov 2025
Thailand	Hathairat Suntudprom	Environmentalist, Professional Level, Environment Department, BMA	6 Nov 2025
Thailand	Supanat Lupkittaro	Mechanical Engineer, Practitioner Level, Environment Department, BMA	6 Nov 2025
Thailand	Pongsatorn Kamsaen	Civil Engineer, Drainage and Sewerage Department, BMA	6 Nov 2025
Thailand	Thanakorn Bunlue	Civil Engineer, Drainage and Sewerage Department, BMA	6 Nov 2025
Thailand	Phorsuree Srimeechai	Civil Engineer, Drainage and Sewerage Department, BMA	6 Nov 2025
Thailand	Jarupong Penggglieng	Director of Planning and City Capacity Promotion Division, International Affairs Office	6 Nov 2025
Thailand	Krongtham Neelapaichit	Foreign Relations Officer, Professional Level, International Affairs Office	6 Nov 2025
Thailand	Volranapat Chamluenam	Foreign Relations Officer, Practitioner Level, International Affairs Office	6 Nov 2025
Thailand	Detchphol Chitwatkulsiri	Lecturer, Kasetsart University	6 Nov 2025
Thailand	Thaksina Poyai	Lecturer, Kasetsart University	6 Nov 2025
Thailand	Pakkasem Tongchai	Programme Officer, Water and Wetlands, IUCN	7 Nov 2025
Thailand	Apichart Tonnamning	Senior CSR Officer, PTT Global Chemical	7 Nov 2025
Thailand	Brigitte Hoermann	Cities Alliance	20 Nov 2025

Cambodia	Lim Ymeng	Deputy Chief, Battambang Provincial Government	31 Oct 2025
Cambodia	Kaneka Keo	Oxfam	10 Nov 2025
Cambodia	Vimean Seng	GEDSI officer, WaterAid	10 Nov 2025
Cambodia	H.E. Sareth Boramay	Dep. Gen. Director, Ministry of Land Management, Urban Planning, and Construction (MLMUPC)	11 Nov 2025
Cambodia	Vibol Seom	Urban Planning Specialist, Ministry of Land Management, Urban Planning, and Construction (MLMUPC)	19 Nov 2025
Cambodia	H.E. Pen Sophal	Secretary of State, Ministry of Land Management, Urban Planning, and Construction (MLMUPC)	19 Nov 2025
Cambodia	Panith Chou	Royal Univerity of Phnom Penh	1 Dec 2025
Viet Nam	Dinh Diep Anh Tuan	Chief of Office, Dragon-Mekong Institute, Can Tho University (CTU)	13 Nov 2025
Viet Nam	Nguyen Hieu Trung	Can Tho University (CTU)	13 Nov 2025
Viet Nam	Trinh Thi Thu Thuy	Standing Committee Member, Hanoi Association of Persons with Disabilities (DP Hanoi)	14 Nov 2025
Viet Nam	Nguyen Cao Lanh	Dean of the Faculty of Architecture and Planning, Hanoi University of Civil Engineering	14 Nov 2025
DFAT	Sibella Stern	First Secretary, Development, DFAT Thailand	27 Oct 2025
DFAT	Hannah Lee	Gender Equality Advisor, DFAT Laos	3 Nov 2025
DFAT	James Morschel	First Secretary Water, Energy, Climate and Mekong, DFAT Laos	3 Nov 2025
DFAT	Tatcha Apichaisiri	MEL, DFAT Thailand	4 Nov 2025
DFAT	Rutmanee Ongsakul	Senior Program Manager (Development), DFAT Thailand	4 Nov 2025
DFAT	Sarah Law	Second Secretary, DFAT Cambodia	10 Nov 2025
DFAT	Kang Sin	Senior Program Manager, DFAT Cambodia	10 Nov 2025
DFAT	Linh Nguyen	Senior Aid Policy & Program Manager (Mekong) Development, DFAT Vietnam	14 Nov 2025
DFAT	John Dore	DFAT Lead Specialist, Climate Resilience and Water Security Climate Diplomacy and Development Finance Division; DFAT Lead Advisor, Mekong-Australia Partnership, Water-Energy-Climate Office of Southeast Asia	17 Nov 2025
RUCaS	Kien Nguyen	GEDSI Lead, WSCA	30 Oct 2025
RUCaS	Jianbin Wang	Chief Innovation Officer, WSCA	31 Oct 2025
RUCaS	Lalita Rammont	Partnership Manager, RUCaS Thailand	6 Nov 2025
RUCaS	Teak Seng	Partnership Manager, RUCaS Cambodia	10 Nov 2025
RUCaS	Vuong Thu Huong	National Coordinator, RUCaS Vietnam	14 Nov 2025
RUCaS	Hung Tranviet	Partnership Manager, RUCaS Vietnam	14 Nov 2025
RUCaS	Sam Dickens	RUCaS Regional Coordinator, International Centre for Environmental Management (ICEM)	14 Nov 2025
RUCaS	Ben Furmage	CEO Water Sensitive Cities Australia, WSCA	18 Nov 2025
RUCaS	Nang Nalinthone	Partnership Manager, RUCaS Laos	18 Nov 2025
RUCaS	Tom Chan	Deputy Partnership Manager, RUCaS Laos	19 Nov 2025
RUCaS	Katharine Cross	International Program Lead, WSCA	20 Nov 2025
RUCaS	Michael Simon	(Previous) GEDSI and International Program Lead, WSCA	20 Nov 2025
RUCaS	Hima Chanarithichai	Research Officer, WSCA	28 Nov 2025
Australia and International Partners	David Pannell	Professor, Centre for Environmental Economics and Policy, Department of Agricultural	30 Oct 2025
Australia and International Partners	Jeremy Carew-Reid	Director General, International Centre for Environmental Management (ICEM)	14 Nov 2025
Australia and International Partners	Luke Shi	Lecturer in Sustainable Urban Water Management, Queensland University of Technology	18 Nov 2025

Interested Third Parties	Isao Endo	Senior Environmental Specialist; Asian Development Bank (ADB)	3 Dec 2025
Interested Third Parties	Victor Tumiba	Senior Environmental Specialist; Asian Development Bank (ADB)	3 Dec 2025
Interested Third Parties	Amphavanh Sisouvanh	World Bank, Laos	9 Dec 2025

Appendix C: Evaluation Matrix

Evaluation Objective 1: Relevance

Assess the relevance of RUCaS activities in addressing urban climate resilience challenges and aligning with the priorities of DFAT and partner governments across the Mekong subregion

Key evaluation questions	**DFAT**	**WSCA /ICEM team**	**Other implementing partners**	**GEDSI TAG**	**Government partners**	**University partners**	**NGO/CSO/ private sector partners/ community groups**	**Informed third parties**
To what extent were RUCaS Phase 1 activities aligned with DFAT and national governments urban resilience priorities?	Yes	No	No	No	Yes	No	No	No
How appropriate were the selected pilot interventions in addressing climate, environmental and social challenges in urban areas?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Evaluation Objective 2: Effectiveness

Evaluate the effectiveness of the program in achieving its intended outcomes including acceptance of hybrid NbS value, upscaling, strengthening of partnerships and technical and regional collaboration

Key evaluation questions	DFAT	WSCA /ICEM team	Other implementing partners	GEDSI TAG	Government partners	University partners	NGO/CSO/ private sector partners/ community groups	Informed third parties
To what extent has RUCaS Phase 1 achieved its intended EOPO and IO? EOPO 1: The value of hybrid NbS is accepted. IO 1: Mekong subregion partners buy in to the value of Hybrid NbS in strengthening economic, social, and environmental resilience. EOPO 2: The foundations for upscaling are being put in place. IO 2: Mekong authorities and partners consider hybrid NbS in policies, regulations, and technical guidance and tools for climate change adaptation. EOPO 3: Partnerships and capacity for achieving scaling are established. IO 3: Inclusive cohort of NbS champions established to promote hybrid NbS. Evidence of strengthened capacity within an inclusive cohort of NbS champions to achieve NbS scaling.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What were the barriers if outcomes were achieved in a limited way? If outcomes have been well achieved, what factors support that achievement?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Evaluation Objective 3: Efficiency

Review the efficiency of delivery approaches, including the use of resources, partnership models and coordination mechanisms across countries according to the Value for Money principle

Key evaluation questions	DFAT	WSCA /ICEM team	Other implementing partners	GEDSI TAG	Government partners	University partners	NGO/CSO/ private sector partners/ community groups	Informed third parties
What evidence is there to suggest that resources (finance, human, technical assistance, time) were effectively and adequately allocated to achieve the EOPO?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Were there any resource allocation challenges that impact efficiency of the implementation?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
How effective were the current partnership models (e.g. MoUs, technical groups, codelivery arrangements) in supporting program delivery and increasing overall program impact?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
What evidence is there to suggest that there were adequate management processes to monitor risks and adapt program activities accordingly	No	Yes	Yes	Yes	Yes	Yes	Yes	No

Evaluation Objective 4: Sustainability

Analyse the sustainability of RUCaS approaches and outcomes, identifying factors that supported or hindered uptake of NbS, including the influence of enabling policies, use of tools and guidance, capacity-building efforts and establishment of partnerships that will continue to support future urban NbS implementation

Key evaluation questions	**DFAT**	**WSCA /ICEM team**	**Other implementing partners**	**GEDSI TAG**	**Government partners**	**University partners**	**NGO/CSO/ private sector partners/ community groups**	**Informed third parties**
To what extent or how likely are the pilots and RUCaS approaches to be maintained beyond the life of the project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What factors enabled or constrained how likely the pilots, and RUCaS approaches will be maintained beyond the life of the project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Evaluation Objective 5: GEDSI

Examine GEDSI integration and outcomes, assessing how inclusion principles were embedded and what impacts or influence they had on design, delivery and institutional practice

Key evaluation questions	**DFAT**	**WSCA /ICEM team**	**Other implementing partners**	**GEDSI TAG**	**Government partners**	**University partners**	**NGO/CSO/ private sector partners/ community groups**	**Informed third parties**
How effectively were GEDSI principles embedded across the program and what impacts can be observed?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
What key factors supported or hindered GEDSI integration?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

Evaluation Objective 6: Lessons Learned and Recommendations

Generate lessons and recommendations to guide the strategic focus, delivery model and partnerships for a potential Phase 2, and to support broader regional learning on inclusive, climate-resilient urban development using NbS

Key evaluation questions	**DFAT**	**WSCA /ICEM team**	**Other implementing partners**	**GEDSI TAG**	**Government partners**	**University partners**	**NGO/CSO/ private sector partners/ community groups**	**Informed third parties**
What strategic and operational lessons should inform the scale up or design of future program?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What elements of the delivery model, scaling strategies or partnerships should be retained, adjusted, or strengthened?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix D: RUCaS Evaluability Assessment

Background

- This note is an assessment of the program logic for *Resilient Urban Centres and Surrounds* (RUCaS)—an investment by Australia's Department of Foreign Affairs and Trade (DFAT).
- This note was prepared as part of an independent evaluation of RUCaS commissioned by WSCA/ICEM on behalf of DFAT between September 2025 and February 2026.
- A clear and conforming program logic[49] is a requirement of DFAT design, monitoring and evaluation (MEL standards) and is necessary to articulate the basis for judging the success (i.e. desired 'end-state') of a development investment, and the means/mechanisms adopted to reach the end-state.
    - MEL may then be understood as a set of processes/methods to confirm that intended changes are happening, and to verify the ongoing merit of those changes.
- This assessment refers to a version of the program logic provided in a MEL Framework submitted to DFAT in late 2025 (RUCaS Updated MEL Framework – FINAL). This Framework is an updated version of the original submitted to DFAT.
- This assessment is done on a purely technical basis informed by DFAT's MEL Standards and program theory conventions more broadly.
- The evaluation team respects that RUCaS involved a complicated evolution; namely it consisted of a series of short-term phases (defined by Amendments, with new/changed activities and additional funding), as opposed to being designed as a single program with a total time and budget known from the outset. This meant that the MEL Framework had to evolve with each phase and has made measuring progress over time, complicated.
- A general critique of the MEL Framework is that 'NbS' and 'hybrid NbS' are technical terms that are not defined (nor universally agreed upon in the case of 'hybrid NbS'), which means that it is not possible to convey the intent of RUCaS to a broad audience with this document. The evaluation team note that there are other RUCaS documents that describe these terms in the context of RUCaS but, ideally, the MEL Framework (as a representation of the program logic) should be able to convey the intent of an investment to the broadest possible audience.

Goal and Overall Aim

Goal: *"Resilient, sustainable, inclusive and prosperous cities where Hybrid Nature-based Solutions (NbS) drive climate change adaptation and enhance economic, social, and environmental values."*

End of Investment Outcome/Overall aim of RUCaS: *"Mekong country partners have **improved technical capacity, local demonstrations of concept, enhanced institutional buy-in** and **regional collaboration** to support scaling NbS and hybrid solutions for more climate resilient development of urban areas and their surrounds."*

[49] A 'theory of change' is a form of program logic that sets out the roles of different classes of actor who will influence the intended social changes.

- A goal statement defines the basis for judging the 'relevance'[50] of the development investment and the nature of its intended 'impact'[51]; that is, the 'significant and lasting change' that the investment will contribute towards but not necessarily achieve on its own or during the lifetime of the investment. It is typically framed by the policy/development priorities of Australia and the partner country/countries and reflects key needs of specified beneficiaries.
- The RUCaS goal statement sets out a clear intended significant and lasting change ('*resilient, sustainable, inclusive and prosperous cities'*), though these terms require further definition for the purposes of measurement.
- **Conjugated goal statement:** In addition to the goal of '*resilient, sustainable, inclusive and prosperous cities'* (which would be sufficient as is), there is an additional statement: '*where Hybrid Nature-based Solutions (NbS) drive climate change adaptation and enhance economic, social, and environmental values'*. As written, this goal includes a *goal* as well as a *possible means to achieve that goal*. In program theory convention, each level in a program logic should define a single stage in the overall change. By including a conjunction such as "where", the goal statement adds the *means* to achieving the goal, which should ordinarily be captured in the EOPO below.
- **Undefined target/beneficiaries:** '*cities'* cannot be beneficiaries of an investment (alternate wording could have stated which people, in which cities, in which country were the target of the investment). It is an important principle of Official Development Assistance that the beneficiaries of development investments are explicitly defined.
- The inclusion of an overall aim as well as a goal is confusing from a MEL standpoint. The usual convention for DFAT programming is for a program logic defined on the basis that *outputs* lead to *intermediate outcomes* (IO) which led to end of program outcomes (EOPO, that are plausibly achievable by the end of the investment) which in turn contribute to towards the goal (likely beyond the life of investment).
- As it is written, the overall aim summarises the combined intent of the three EOPO; and is an improvement on the wording of the EOPO because it defines a clear change agent ('*Mekong country partners'*).
- **Ambiguous/tentative change:** in the aim, the phrases '*improved'* and '*enhanced'* are ambiguous and tentative from a progress measurement standpoint. Technically, even a small amount of improvement or enhancement after day 1 of implementation would constitute success in achieving the overall aim of the program (which is obviously not the intent).
- An alternative framework would not include an overall aim; rather it would have a goal with clearly defined beneficiaries and EOPO that clearly define the performance/behaviour change that is expected among a class of counterparts/change agents during the lifetime of the investment.

[50] https://www.oecd-ilibrary.org/sites/543e84ed-en/1/3/4/index.html?itemId=/content/publication/543e84ed-en&_csp_=535d2f2a848b7727d35502d7f36e4885&itemIGO=oecd&itemContentType=book#section-d1e2474

[51] https://www.oecd-ilibrary.org/sites/543e84ed-en/1/3/4/index.html?itemId=/content/publication/543e84ed-en&_csp_=535d2f2a848b7727d35502d7f36e4885&itemIGO=oecd&itemContentType=book#section-d1e4269

End of Program Outcomes

- An EOPO statement defines what can reasonably be expected by the end of investment.
    - More broadly, in program theory an 'outcome' is a change in performance/behaviour expected among a class of counterpart/change agent.
    - The extent to which an outcome is achieved is a measure of 'effectiveness'[52], and whether it is expected to endure is a measure of 'sustainability'[53].
- RUCaS has three EOPO as well as a 'cross-cutting focus' on GEDSI which has been included in the MEL framework at the same level as the EOPO; therefore, it has been included in this critique.

EOPO 1: "The value of hybrid NbS is accepted."

- **Ambiguous/tentative change:** The expected change in this statement is ambiguous because '*value'* and '*accepted'* are undefined and therefore not measurable.
- **Undefined EOPO change agent:** It is unclear who will accept the value of hybrid NbS. This has practical implications for performance evaluation since the 'evaluand' is unspecified.
- **Weak causality between the EOPO and the goal:** Whilst 'valuing' NbS is an important precursor to a situation where NbS would 'drive' climate change adaptation, it is far from sufficient; therefore, the logical step from EOPO to goal seems implausible. Furthermore, it is difficult to measure a change in attitude such as 'valuing' (in a way that would meaningfully indicate progress toward reaching the goal): it would be better to measure a change in behaviour/practice that might arise from a change in attitude.
- The indicator for this EOPO ('*Number and evidence of case studies with integrated GEDSI principles that Mekong subregion partners and like-minded partners* ***have taken from concept to demonstration***.') could be the basis of a more plausible EOPO because it defines a change agent as well as what 'valuing' means in a measurable way. However, it does not include a definition of 'case study', 'concept' or 'demonstration' (in particular how NbS relate to these).

EOPO 2: "The foundations for upscaling are being put in place."

- **Ambiguous/tentative change:** The expected change in this statement is ambiguous because '*foundations for upscaling'* and '*put in place'* are undefined and therefore not measurable. A subject is also missing; that is, it is unclear what exactly is being upscaled, by whom.
- **Undefined EOPO change agent:** It is unclear who will put the foundations for upscaling in place; hence it will not be possible to evaluate the merits of approaches to creating these 'foundations'.
- The indicator for this EOPO (*Number and evidence of national and/or local-level urban climate policies, regulations, planning documents, or technical standards and tools that* ***integrate NbS principles supported by RUCaS'***), again, could be the basis of a more

[52] https://www.oecd-ilibrary.org/sites/543e84ed-en/1/3/4/index.html?itemId=/content/publication/543e84ed-en&_csp_=535d2f2a848b7727d35502d7f36e4885&itemIGO=oecd&itemContentType=book#section-d1e3395

[53] https://www.oecd-ilibrary.org/sites/543e84ed-en/1/3/4/index.html?itemId=/content/publication/543e84ed-en&_csp_=535d2f2a848b7727d35502d7f36e4885&itemIGO=oecd&itemContentType=book#section-d1e4964

plausible EOPO. This is because it defines what 'putting the foundations for upscaling in place' is in a measurable way. However, there is still no clearly defined EOPO change agent (the implementing partner—RUCaS—cannot be the EOPO change agent; RUCaS, as the implementation entity, can only be the actor accountable for delivering *outputs*). It is also unclear whether the intent is that RUCaS supports the development of these policies, regulations etc. or that RUCaS is written into these policies etc. as a supporter of NbS principles.

- **Indicator is a weak representation of the EOPO and therefore suggests weak causality between the EOPO and the goal:** Establishing the foundations for upscaling NbS is a plausible precursor to the RUCaS goal. However, the indicator for EOPO 2—developing policies etc.—is far from sufficient for 'putting in place the foundations for upscaling NbS' in cities in the Mekong region which would require several other important components for upscaling. Put another way, the EOPO, combined with its indicator, implies that developing policy and other tools would be sufficient for laying the foundations to scale up NbS in cities across the Mekong region to the point where climate resilience is driven by NbS, which is implausible.

EOPO 3: "Partnerships and capacity for achieving scaling are established."

- **Ambiguous/tentative change:** It is unclear what is meant by '*partnerships for achieving scaling*' and it is unclear what '*capacity*' is being established. More valuable for performance measurement purposes would be to articulate the change in performance or behavior that might be discernible from an increase in 'capacity'.
- **Undefined EOPO change agent:** It is unclear who will form partnerships with whom and whose capacity will be established. Unlike for the other EOPO (where the implied change agent can be deduced with some confidence), it is unclear in the case of EOPO 3 whether partnerships are between Mekong partners or between Mekong partners and the RUCaS implementing team. Whilst it is inappropriate for an implementing team to be written into an EOPO (because this compromises sustainability of the outcome), it appeared that this EOPO did indeed mean partnerships between the Mekong partners and the RUCaS implementing team (see RUCaS_MTR report - May-Oct2025).
- **Redundancy/circularity in the overall logic:** EOPO 2 is about the 'foundations for scaling' and EOPO 3 is, similarly, about working towards 'scaling', so it is illogical that these two EOPO exist at the same level in the logic.
- The indicator for this EOPO is (*Evidence of* ***established, inclusive cohort of NbS champions*** *that is* ***maintained*** *and* ***linked to networks*** *across the Mekong to promote and collaborate on hybrid NbS.'*) Again, the strengths of this indicator are that it defines a clear (and appropriate) change agent; however, the expected change is vague in that 'established', 'maintained', 'networks', 'linked' and 'collaborate' are all undefined and hence are challenging to verify.

The GEDSI cross-cutting focus is that: "GEDSI principles are demonstrated and embedded in the program implementation."

- **Weak causality between the EOPO and the goal:** This EOPO is focused on a change in the *program implementation*, which means that it is better placed at the level of 'output' in the MEL Framework. An EOPO should define an expected change in behavior or performance by a change agent (which should not be part of the implementing team) and contribute to progress towards the goal. As written, there are several necessary steps missing between 'inclusive program implementation' and the goal (which does not reference inclusivity, but it

can be assumed that 'cities' includes all people, including those who are typically marginalised.)

- **Undefined EOPO change agent:** It is unclear who is responsible for ensuring that GEDSI principles are demonstrated etc.
- The indicator for this cross-cutting focus (*'Evidence that GEDSI principles are embedded across case studies, pilots, and policy processes in all countries, demonstrating influence on decision-making and inclusive design outcomes.'*) clearly defines which aspects of program implementation are the target; that is, 'case studies, pilots and policy processes' which makes it easier to measure. However, expecting to see GEDSI principles embedded in 'policy processes' is implausible without defining which policy processes (depending on the subject of the policies and the level at which they apply, this could be well beyond the capability of RUCaS). 'Demonstrating influence on decision-making' also needs further clarification; that is, who is doing the influencing on whose decision-making and about what.

Intermediate Outcomes

- For some designs it is appropriate/useful to introduce Intermediate Outcomes (IO) that either specify the role of a *different* class of actor who operates between the implementing team (Outputs) and change agents (EOPO); or sometimes to articulate an intermediary change in behaviour of the change agent as a precursor to the behavior specified in the EOPO.
- For RUCaS, three IO have been defined; one for each of the EOPO. There is also an 'expected change' for GEDSI at the same level of IO in the MEL Framework which has been included in this critique.

IO 1: "Mekong subregion partners buy in to the value of hybrid NbS in strengthening economic, social, and environmental resilience."

- IO 1 appropriately identifies the change agent. However, the indicator for IO 1 does not clearly define the change agent: that is, it suggests that case studies are carried out (without defining by whom, but presumably the RUCaS implementing team) with guidance from the Mekong subregion partners. The indicator does not clearly represent IO 1, and the confusion of which actors are responsible for what change/end-state makes both measuring progress as well as implementation difficult.
- **Ambiguous change:** However, buy in' is not defined and therefore measurement of progress toward this IO is not possible.
- **Redundancy in the logic:** IO 1 should precede EOPO 1, but it is not logical that Mekong subregion partners would 'buy in' to NbS before they 'value it'.

IO 2: "Mekong authorities and partners consider hybrid NbS in policies, regulations, and technical guidance and tools for climate change adaptation."

- IO 2 appropriately identifies the change agent.
- **Ambiguous change:** However, consider' is not defined and therefore measurement of progress toward this IO is not possible.
- IO 2 logically precedes the *indicator* for EOPO 2, which is positive, but as discussed above, considering and having policies etc. is a necessary but insufficient component of the foundations for upscaling (EOPO 2).

IO 3: "Inclusive cohort of NbS champions established to promote hybrid NbS. Evidence of strengthened capacity within an inclusive cohort of NbS champions to achieve NbS scaling."

- IO 3 identifies the change agent; however, this could be improved by defining what 'inclusive' means in this context as well as what defines an 'NbS champion'.
- **Combines different changes/end-states:** IO 3 calls for two end-states: 1) the establishment of a cohort and 2) evidence of strengthened capacity. This complicates measuring progress toward this IO 3. An improvement would be to split the IO, or to have one IO that combines the two end-states e.g. 'A cohort of diverse NbS champions are capable of promoting and scaling NbS.'
- **Circular logic:** EOPO 3 is about capacity to achieve scaling, and IO 3 is worded in much the same way, thereby creating a circular logic: 'strengthened capacity [...] to achieve scaling' (IO 3) *in order that* 'capacity for achieving scaling is established' (EOPO 3).

Expected change: "GEDSI principles are embedded in the development of case studies, pilots, and the formulation of policy recommendation in all countries."

- **Circular logic:** This expected change is almost the same as the indicator for the definition of the cross-cutting focus (at the level of the EOPO) which creates a circular logic.

Outputs

- Fifteen broad outputs are defined to influence the above outcomes. These are arranged under each of the EOPO and IO.

Outputs for EOPO 1

- There is no verb or actor defined for any of the outputs pertaining to EOPO 1.
- Output 1.1 does not define what a 'concept study' is.
- Output 1.2 gives examples of what an integrated pilot or direct intervention might be, but these are either vague ('design of hybrid NbS' does not convey whether the design is a concept or detailed design) or tentative (environmental monitoring is a small representation of NbS activities and does not accurately represent an 'integrated pilot' or 'direct intervention' of NbS).
- **Circular logic:** There is an implied assumption that outputs including concept studies and integrated pilots/direct interventions (outputs 1.1 and 1.2) will lead to Mekong subregion partners 'buying in to NbS' as indicated by them guiding an undefined change agent to 'carry out' the case studies (IO 1). It is logical that concept studies (output 1.1) would proceed 'carrying out case studies' (IO 1) but anticipating that 'integrated pilots/direct interventions' (as they are defined in output 1.2) would lead to 'carrying out case studies', is redundant.

Outputs for EOPO 2

- Output 2.1 does not have an actor or verb.
- Output 2.2 defines an actor and a verb but does not define key terms such as 'prioritized' which means that measuring progress is difficult.
- Output 2.3 does not have an actor or verb.
- Output 2.4 is 'Mekong partners adopt NbS enabling policies and technical guidance'. This defines an actor and a verb (although 'adopt' is unclear and therefore difficult to measure). Furthermore, IO 2 states that 'Mekong partners *consider* NbS enabling policies etc.' and it is illogical to suggest that 'adopting' would precede 'considering'.

Outputs for EOPO 3

- Output 3.1 does not describe a change in behaviour or end-state brought about by RUCaS, the implementing partner.
- Outputs 3.2 and 3.3 do not define an actor. They refer to 'knowledge exchange events and trainings and workshops' without defining what these are.
- Output 3.4 is 'Formal arrangements for future collaboration and capacity building in place'. This does not define any actors, nor what 'formal' constitutes, nor what the collaborations should be about.
- Output 3.5 is 'RUCaS contribution to regional sharing and collaboration'. This appropriately identifies RUCaS as the actor but there is no verb and it is unclear what 'regional sharing and collaboration' mean, which makes measuring progress difficult.
- The logical progression from these outputs to IO 3 and EOPO 3 are clear and somewhat plausible.

Outputs for GEDSI

- Output 4.1 is a logical precursor to the expected change for GEDSI; however, it does not define an actor.
- Output 4.2 does not define an actor nor intended participants (or beneficiaries) for the regional GEDSI and NBS workshop and training.
- Output 4.3 defines an actor; however, it does not define what 'supporting mainstreaming' is which makes it difficult to measure.
- Output 4.4 does not define an actor.

Alternative program logic

- Arguably, a simpler more succinct program logic supports easier communication of program intent to a broad audience and hence is better for mobilizing support. It is also easier to operationalise from a MEL standpoint.
- Drawing from the above critique, a simpler and more conforming program logic for RUCaS could be as set out below:

Urban communities in the Mekong region (specifically in Thailand, Lao PDR, Cambodia and Viet Nam) are resilient, sustainable, inclusive and prosperous in the face of climate change impacts.
EOPO 1: Mekong subregion partners have the motivation to use NbS to adapt to the negative impacts of climate change in urban areas.
Outputs: (a) Implementing team creates NbS examples that demonstrate the financial cost and benefit of NbS and (b) Implementing team facilitates tours of NbS examples for urban planners in the Mekong countries.
EOPO 2: Mekong subregion partners have the technical knowledge to use NbS to adapt to the negative impacts of climate change in urban areas.
Outputs: Implementing team facilitates learning events including conferences and workshops where NbS experts share their knowledge with urban planners in Mekong countries.
EOPO 3: Mekong subregion partners have the systems to use NbS to adapt to the negative impacts of climate change in urban areas.
Outputs: Implementing team supports urban planners in Mekong region to integrate NbS into existing policy, develop new NbS policy and/or standards, guidelines to implement NbS.

Appendix E: RUCaS Framework

1. Define your urban system context

Considerations:

- What are the objectives and functions of the urban area of focus from a hydrologic, social, environmental and economic perspective?
- Define GEDSI characteristics, interests and rights for the area of focus
- How do these objectives and functions interact with wider catchment and regional factors? Assess climate variability and degree to which the objectives of the urban system are impacted by different types of climate hazards

2. Consider full range of options

Considerations:

- Identify a selection of context-appropriate management interventions/options, based on the three-tiered strategy: prepare, respond, recover
- Consider full spectrum of green, grey and blue interventions as well as non-structural solutions
- Identify GEDSI interests/needs in each option

3. Identify and value benefits and costs

Considerations:

- The direct and indirect benefits, costs and risks of different options need to be identified and quantified
- Consider the distribution of benefits, costs and risks across time, stakeholders and location, including a particular focus on vulnerable population groups identified through your earlier GEDSI analysis

4. Evaluate and compare options

Considerations:

- Benefit cost analysis provides a rigorous method to compare different options
- Sensitivity testing and transparent assumptions build understanding and support better decisions
- Distributional impacts for both benefits and costs are important considerations
- Independent or peer review and participatory processes enhance confidence in options assessments

5. Identify appropriate financing and funding

Considerations:

- Once you have selected the optimal mix of interventions, principles for fair and efficient financing options need to be identified and options assessed

(Based on RUCaS Annual Report 2025)