

Terms of Reference

Evaluation of Engineers Without Borders Australia's Engineering Program funded by the Australian NGO Cooperation Program

January 2023

These terms of reference outline the background, purpose, objectives, roles and responsibilities, communication procedures and scope of work to be included in the Evaluation of Engineers Without Borders Australia's Engineering Program funded by the Australian NGO Cooperation Program; for the period June 2020 to December 2022.

1 Background

EWB Australia's vision is that "Everyone has access to the engineering knowledge and resources required to lead a life of opportunity, free from poverty."

Mission: We connect, educate and empower people through humanitarian engineering. Humanitarian engineering uses a people centered, strength-based approach to improve community health, wellbeing and opportunity.

EWB Australia's story began over eighteen years ago, with a small group of engineers in Melbourne and across Australia. Today, the EWB community includes thousands of people and dozens of organisations working together to engineer a better world. EWB is the only dedicated organisation in Australia that connects STEM (science, technology, engineering and mathematics) professionals with local communities, industry, education sector and government to address social and environmental issues.

EWB Australia works towards achieving its vision through three major focus areas:

1. developing technology to alleviate poverty and accelerate inclusive sustainable development in Australia and overseas;
2. redefining engineering as a profession providing stewardship and leadership for a more equitable and sustainable world and;
3. inspiring and mobilising a global community who believe in a world where technology benefits all.

EWB's work is progressed through its Engineering Program and Learning Program.

EWB Engineering Program

By 2030, Engineers Without Borders Australia aims to provide 1,000,000 people living in the Asia-Pacific region with access to equitable technology to live well and pursue their aspirations sustainably. We work

to promote human dignity, thriving ecosystems, diversity, and indigenous wisdom. We are committed to producing technology that is always gender equitable, universally accessible and environmentally sustainable.

In order to ensure the technologies we design and implement are effective and ethical, EWB Australia has developed a rigorous five-stage engineering procedure, which we call our 'Technology Development Approach' (TDA). Synthesising our monitoring, evaluation and learning processes, our community consultation mechanisms and our technical design requirements, the TDA provides a unified strategy to deliver equitable, sustainable technology solutions which meet community needs.

To help us realise our vision for equitable technology, EWB forms partnerships across engineering, international development and tertiary education both within and beyond Australia. Our partners include community advocacy groups, industry leaders, universities, government agencies and many fellow non-governmental and non-for-profit organisations. These partnerships connect EWB with a wide range of stakeholders and provide multiple ways to build the capacities of the communities with work with.

EWB mobilises our network of experienced, motivated professionals, who volunteer their expertise to help deliver equitable technology. Our mobilisation strategy brings specialists in WASH, architecture, construction, project management, planning and leadership development. Working alongside EWB staff in country, our volunteers offer specialised knowledge, and their membership strengthens EWB's link to engineering community.

The **2030 Impact Framework** is EWB's ten-year strategy, including our high-level Theory of Change and goals for achieving impact across our Engineering and Education programs. The progress of this framework is tracked and coordinated in Monday, but all data relating to the Impact Framework is stored in a master excel spreadsheet as the primary tracking tool. Pillar 3) Engineering Technology is the priority area for the Engineering team.

In early 2022, EWB created a **Four-Year Road Map 2022-26** to strategise our organisational development. Separate roadmaps are in place for the Engineering team, and each of the four Engineering sub-teams. EWB has begun a process to create country strategic plans for each of countries-of-work. As of September 2022, the only finalised strategy in place related to Timor-Leste. Plans are in place to develop a country strategy for Cambodia and Vanuatu later in 2023.

The evaluation will focus on the International Program that is currently implemented in Cambodia, Timor-Leste and Vanuatu.

Cambodia Program Description

Assistive Technology:

The program aims to increase access to sustainable, appropriate assistive technology development solutions for poor farmers who have disabilities to support their agricultural livelihoods, enable them to travel independently and undertake plastic recycling; and to improve capacities for partners, rural manufactures and the disability sector.

WASH:

EWB Cambodia's WASH program aims to increase access to water and sanitation infrastructure for communities living in challenging environments. This is achieved through capacity strengthening initiatives (with partners and the sector), advocacy and appropriate technology development.



Timor-Leste Program Description

The program operates alongside engineering networks and partner organizations in Timor-Leste to facilitate a community planning process that will allow EWB to develop, prototype, pilot and implement appropriate technologies in target communities with the aim to sustainably scale impactful technologies across Timor-Leste.

The program aims to ensure that appropriate technology benefits Timorese citizens sustainably and mitigates the adverse effects of climate change. It focuses on vulnerable rural communities and marginalized communities, especially women, girls and people with disabilities. The program also aims to strengthen the capacity of our partners, including government institutions, NGOs, private sector organisations and community groups.

Currently, the country program focuses on Water and Sanitation with an aim to improve and increase equitable access to safe, sustainable, and resilient drinking water for vulnerable Timorese citizens.

Vanuatu Program Description

The program aims to develop disaster and climate resilient locally appropriate technologies to improve the livelihoods of communities and protect environmental resources, through knowledge and skills building, and effective coordination with the government, other stakeholders and community groups. This includes: protecting natural resources and catchment management through improving community members' skills, improving regulations, developing specific new technologies and effectively coordinating with Government, partner organizations and community representatives, improving livelihoods through developing climate change and disaster resilient technologies, which enable communities to adapt better to the impacts of climate change on their islands.

2 Scope of work

The purpose of this consultancy is to recruit a skilled evaluation consultant to perform an evaluation of EWB's Engineering Program, including 12 country-level projects (see Annex 1). for the period June 2020 to December 2022 (2.5 years). Whilst the Engineering Program manages many projects, only ANCP funded engineering projects will be in scope for this review.

The purpose of the evaluation is to:

- Assess the effectiveness of EWB engineering program in achieving intended short and medium-term outcomes;
- Determine likelihood that long-term outcomes and impact will be achieved;
- Review EWB's approach and strategies to achieve outcomes & impact.

This evaluation will provide EWB with an independent assessment about the performance and impact of the Engineering Program through the achievements of the funded country-projects. Key findings, lessons learnt, and recommendations will help influence the design and operations of the Program.

The primary audience of the evaluation is EWB Australia's Engineering team and the EWB Country teams. The secondary evaluation audience includes EWB Australia more broadly and the DFAT ANCP team.



The evaluator will explore the Program through the evaluation criteria of **effectiveness** and **impact**. Recommendations should focus on how the Program can be improved to better achieve impact.

The evaluation will respond to the following key evaluation questions:

1. To what extent is EWB achieving its short and medium-term outcomes?
2. To what extent are existing processes to select, develop and pilot technologies and projects working well?
3. What barriers prevent the successful development, piloting and scale-up of technologies and projects?
4. How can existing processes be improved to select, develop, pilot and scale-up technologies and projects?
5. To what extent are engineering projects embedding Climate Change, Gender and Environmental protection considerations in their design and implementation?
6. What impact have EWB engineering projects achieved?
 - a. What were the key achievements of all projects in scope for review?
 - b. What impact has the Sanitation in Challenging Environments (SCE) guidelines had in Vanuatu and Cambodia?
 - c. What factors enabled EWB and ATEC to scale up the biodigester technology in Cambodia and what challenges were faced?
7. What is the likelihood that past or existing EWB engineering projects will result in impact being achieved at scale in the near future (1 – 3 years)?

When exploring impact, the evaluation will report against three existing EWB Impact Framework indicators:

- Proportion of technologies demonstrating positive impact
- Evidence technologies have demonstrated positive outcomes for women and girls
- Evidence technologies have demonstrated positive outcomes for persons with disabilities

The specific project activities to be completed include:

1. Contract signing.
2. Planning. Preparation of an evaluation plan, including methodology and data collection tools.
3. Desktop review. Complete a desktop review of key documents. See Annex 3 for a sample of the types of documents that will be available.
4. Stakeholder consultation. Conduct up to 3 key informant interviews with EWB Engineering Program staff from Australia and the Timor-Leste country offices.
5. Complete two in-country visits to Cambodia and Vanuatu EWB country offices where the Consultant will:
 - a. Interview EWB office staff
 - b. Interview up to two local government and in-country NGO partners
 - c. Interview a selection of beneficiary community members
 - d. Host gender segregated focus group in one beneficiary community
 - e. Observe EWB's technology solutions in the field



6. Analyse data collected.
7. Draft an evaluation report, no longer than 30 pages (plus annexes), following the outline presented in Annex 4.
8. Finalise the evaluation report, incorporating feedback from EWB Australia.
9. Prepare and present a short 30-minute presentation of findings and recommendations to EWB Australia and partners.

3 Expected deliverables:

1. Signed contract
2. Evaluation plan including planned methodology and data collection tools
3. Draft evaluation report
4. Final evaluation report
5. Presentation of findings and recommendations to EWB

4 Evaluation informants and methods

As a guide, EWB are suggesting that the following methods be applied to collect data from the key stakeholder groups outlined in Table 1 below. The consultant's proposal can recommend changes to the proposed methods and stakeholder group.

Table 1. Proposed evaluation methods and stakeholders.

Methods	EWB Australia Engineering team	EWB Country teams	Country partners (Govt. Civil society)	Community beneficiaries	Project outputs and solutions	Plans, reports, MEL Framework, Partnership documentation
Desktop review						✓
Interview	✓	✓	✓	✓		
Focus Group				✓		
Observation				✓	✓	

5 Institutional arrangements

The Consultant(s) will report directly to the **International Program Manager** located in Dili, Timor-Leste.

The International Program Manager will provide all the project documents and required contacts in each country to arrange interviews. EWB Australia will also assist the consultant with travel and accommodation arrangements for the in-country visit.

The consultant will be responsible for scheduling all interviews and meetings with assistance provided for country partners and beneficiary communities.



The Consultant will work primarily from their home office. Travel to two participating countries to conduct stakeholder consultations and field observations is planned.

In the event of a COVID-19 infection in either the evaluator or the EWB in-country office or community targeted for inclusion in the evaluation, the in-country component of the evaluation will be cancelled, or cut-short and remote monitoring and evaluation methods will need to be substituted.

6 Duration of work

Table 2 outlines an initial estimate of the work effort to undertake the evaluation. The consultant can propose an alternative allocation of days with explain given for proposed changes.

Table 2 Work effort

Task	Work effort (days)
Planning	3
Desktop review	5
Tools	2
Interviews	2
Travel	2
In-country work	8
Analysis	4
Draft report	5
Finalise & present	1
Total	32

The consultancy will be conducted over a period of two months between February 1st 2023 and March 31st 2023.

Draft timeline

Output	Delivery by
1. Signed contract	1/2/2023
2. Evaluation plan including planned methodology and data collection tools	15/2/2023
3. Draft evaluation report	15/3/2023
4. Final evaluation report	29/3/2023
5. Presentation of findings	31/3/2023



7 Resources/financial contributions

The consultant will invoice EWB Australia for services provided. EWB will cover consultant's airfares, in-country accommodation and in-country transport costs. A daily in-country per diem is allocated to cover in-country meals and incidental expenses. The consultant is required to cover all other costs.

A milestone payment schedule is outlined in Table 3 below.

Table 3 Milestone payment schedule

Amount	Milestone
Payment 1 - 50%	Evaluation Plan
Payment 2 - 50%	Submission of final report

8 Reporting, Communications and Decision Making

Both parties agree to provide each other with regular, accurate, timely and transparent communication and reporting on matters of common interest and activity.

EWB and the consultant will meet fortnightly where the consultant will provide EWB with updates on progress made, issues and challenges and next steps.

9 Qualifications, professional experience and key skills

The evaluation will be undertaken by a consultant with the following profile and experience. Essential:

- 8+ years leading evaluation work, including one or more multi-country program evaluations in the Asia-Pacific region
- Must be able to demonstrate some experience in WASH project design, monitoring or evaluation in a developing country context
- Must have experience working with or collecting data from remote/rural communities
- Excellent verbal and written communication skills in English
- Minimum Masters or equivalent qualification in monitoring and evaluation or related discipline

Desirable:

- Background or experience in engineering, human centred design or community development an advantage
- Experience working Cambodia, Timor-Leste or Vanuatu an advantage



10 How to apply

Before 5pm AEST on 31 January 2023 please submit via email to engineering@ewb.org.au your application inclusive of:

- a) A cover letter addressing the evaluator qualifications, professional experience and key skills outlined in this Terms of Reference.
- b) Current CV(s).
- c) A brief (up to 2 pages) outline of the proposed process to complete the evaluation including:
 - Proposed methodology and approach
 - Timeframe
 - Financial proposal in AUD, itemised with daily rate and travel costs
- d) Example of previous evaluation report.

11 Annex 1. List of EWB Engineering Projects

Country	Name	In-country visit
Vanuatu	Tumble Drum - Prototype 1. done. # 2 in development in Melb	N
Vanuatu	SCE - composting toilet - 1 community toilet	Y
Vanuatu	Vertical Gardens - Mini pilot x 4 users	Y
Vanuatu	SCE - Guidelines -	N
Cambodia	SCE project s- Flood affected sanitation solutions in Kampong Chhnang & SCE Guiding principles & Hard-Ground sanitation solutions	Y
Cambodia	School drinking water in Siem Reap (Hand washing station for COVID-19 response and schools)	N
Cambodia	Upgraded Low-Cost Water Pump Cart	N
Cambodia	Accessible Moto	Y
Cambodia	ATEC Biodigester (Desktop review only)	N
Cambodia	Jumbo Jar	N
Timor-Leste	WASH Recovery Activities	N
Timor-Leste	Dalau Water Access for HHs Livelihood activities (new Permatil)	N

12 Annex 2. Program Outcomes

This Annex lists the current short, medium and long-term outcomes of the Engineering Program.

Short-term Outcomes:

- Relationship with community partners & communities strengthened
- Improved capacity of community partners and communities in community engagement, problem solving and monitoring
- Pilot beneficiaries experience immediate benefits (e.g. water, sanitation, food, accessible transport, energy) from EWB solutions.
- Implementation partners plan for scale-up

Medium-term Outcomes:

- Communities and community partners apply new knowledge and skills in engagement, problem solving and monitoring



- State of environment improved (e.g. less pollution)
- Lives of beneficiaries improved (e.g. health, education, economic)
- EWB's solution adopted by others in pilot community

Long-term outcomes and goal:

- Communities are better able to identify and solve their own problems
- Increased community resilience
- EWB solution is adopted by other communities
- EWB's solution is implemented at scale
- The lives of more than 1,000,000 people have been improved through equitable, sustainable and scalable technology

13 Annex 3 – Sample documents

A sample of the types of documents that will be available to inform the evaluation include:

Program-level:

- 2030 EWB strategy
- Engineering Program Capability Statement
- EWB MEL Plan and Impact Framework
- ANCP annual reports

Country-level:

- ANCP Annual Plan and list all projects
- Quarterly project reports (small sample only)
- End-of-year report

Project-level:

- Project Plan/Project brief
- Project baseline & endline and evaluation reports (where they exist)

14 Annex 4 - Final Evaluation Report layout.

1. Executive summary
2. Introduction
3. Methodology
 - a. Limitations
4. Findings responding to the key evaluation questions
 - a. Country specific findings
5. Conclusion
6. Recommendations
 - a. Country specific recommendations
7. Annexes
 - a. ToR
 - b. Stakeholders consulted
 - c. Others as required.