EXECUTIVE SUMMARY
Evaluation of Piloted Models
Under the Project "Hue – A Plastic Smart City in Central Viet Nam"

Against the backdrop of increasing plastic pollution that continues to place significant pressure on solid waste management systems and the environment, the project “Hue - A Plastic Smart City in Central Viet Nam (TVA Project)”, funded by WWF-Norway through WWF-Viet Nam with the People's Committee of Hue City as the governing agency, has been implemented to reduce plastic waste leakage into the environment and promote good practices in solid waste management.

Building on the achievements to date, the Project is pursuing the replication and expansion of successful practices in satellite areas of Hue City, including Huong Thuy, Phu Vang and Quang Dien, based on the administrative boundaries prior to the merger. To ensure that the pilot models move beyond the demonstration stage and can be sustained, scaled up and integrated into the local solid waste management system, it is necessary to establish a systematic, objective and evidence-based evaluation framework.

The report entitled “Development of an Evaluation Framework for Solid Waste Management and Plastic Waste Reduction Models in Hue City” was prepared to propose appropriate approaches, contents, criteria and methodologies for assessing the effectiveness of the models/interventions implemented under the Hue TVA Project. The report focuses on evaluating the effectiveness of waste reduction, waste segregation, collection, recycling and reuse; communication and behaviour change; scalability; sustainability; and financial self-reliance. It also provides policy, management and technical recommendations to support local authorities in sustaining and scaling up good practices.

1. OVERVIEW OF THE PILOT MODELS

The five pilot models included in this evaluation are classified into three groups according to their primary objectives and the main values/benefits they deliver, as follows:

Table 1. General Information on Pilot Models

No.	Model	Implementation Area	Objective	Key Activities	Stakeholders
Group 1. Models Promoting Waste Reduction, Recovery, Recycling and Reuse					
1	**Fishers Bring Waste Back to Shore**	Thuan An Fishing Port, Hue City	Reduce marine litter; raise fishers’ awareness; increase collection and treatment of waste generated from fishing activities.	Provide waste collection bags; collect waste generated onboard and waste recovered at sea; temporarily store and preliminarily sort waste at the port; transfer waste to environmental	Fishers; Fishing Port Management Board; local authorities; waste collection service providers; WWF-Viet Nam.

No.	Model	Implementation Area	Objective	Key Activities	Stakeholders
				sanitation service providers.	
2	**Plastic Reduction Tourism Model**	Tourism value chain in Hue City, including travel agencies, hotels, restaurants, community-based tourism sites and refill stations.	Reduce single-use plastics in tourism; promote green tourism and enhance the image of a plastic-free destination.	Water refill stations; replacement of plastic bottles with glass bottles; reduction of amenities, plastic straws and foam containers; development of SOPs and plastic-free tours; communication with tourists.	Department of Tourism; travel agencies; hotels; restaurants; community businesses/tourism sites; tourists; WWF-Viet Nam.
	Group 2. Communication and Behaviour Change Models				
3	**Plastic Reduction School Model**	Kindergartens, primary and lower secondary schools in Hue City and expansion areas including Phu Vang, Quang Dien and Huong Thuy.	Reduce SUPs in schools; foster sustainable consumption habits among students, teachers and communities.	Waste segregation at schools; reduction of SUPs; collection of recyclables; recycling and reuse; integration into lessons, extracurricular activities and student movements.	School management boards; teachers; students; parents; education sector; local authorities; WWF-Viet Nam.
4	**Participatory Action-Oriented Training (PAOT)**	Wards/communes in the old Hue City (36 wards, communes) and expansion areas in Phu Vang, Quang Dien and Huong Thuy (9 wards/communes).	Change community awareness and behaviour regarding plastic reduction, waste segregation and solid waste management.	Training of communicators; use of handbooks, checklists and visual materials; guidance for households and businesses on waste segregation, reduction of	Households; businesses; communicators; Women's Union; Veterans Association; People's Committees of wards/communes; WWF-Viet Nam.

No.	Model	Implementation Area	Objective	Key Activities	Stakeholders
				plastic bags and SUPs.	
	Group 3. Models Strengthening Waste Management				
5	**Waste Separation at Source (WSAS)**	Wards and communes in Hue City, expanded from 23 to 36 wards, communes, and the old Hue city to Central-governed Hue city.	Strengthen municipal solid waste management; promote waste segregation at source; recover recyclable waste and reduce pressure on end-of-pipe treatment.	Segregation of waste into three categories; provision of waste bags; installation of public bins, Green Houses and collection vehicles; training, communication and household monitoring.	Households; residential groups; Women's Union; community monitoring groups; HEPCO; Department/Sub-department of Environment; People's Committees of wards/communes; WWF-Viet Nam.

2. EVALUATION METHODOLOGY

The approach, data collection and processing methods, together with the evaluation criteria, were developed in a systematic and objective manner to ensure a comprehensive assessment of the pilot models.

2.1 Survey Methodology

Survey respondents

The survey covered relevant stakeholders and included three main groups:

1. Managers and technical officers in the environmental, tourism and education sectors at local level, such as the Department of Agriculture and Environment, Department of Tourism, and Economic and Urban Infrastructure Divisions under commune- and ward-level People's Committees;
2. Local management officers, including ward and commune officials;
3. Individuals and organisations directly participating in, operating or managing the pilot models.

The number of questionnaires collected varied according to the scale and characteristics of each model, ranging from 20 to 90 questionnaires per model. In total, **274 questionnaires** were collected.

Survey methods

Field surveys were conducted using the following methods:

- Questionnaire-based interviews. The questionnaires consisted of both open-ended and closed-ended questions, with structures and contents tailored to different respondent groups. The questionnaires covered:

    - General information on respondents;
    - Detailed information and data on the models;
    - Respondents' perceptions and assessments of the models;
    - Recommendations and suggestions, where applicable.
- Collection of information and data from local implementation reports and evaluation reports;
- Direct field observations and audits, including photo documentation and collection of supporting materials for analysis and evaluation.

2.2 Data Processing Method

The information and data collected were compiled and statistically analysed according to information categories and respondent groups to identify representative values for each group.

2.3 Evaluation Method

Evaluation Criteria and Scoring System

To assess the effectiveness of the pilot models, the consulting team developed an evaluation framework comprising **six key criteria**. The score of each major criterion is the sum of its sub-criteria. The scoring scale was developed using the expert judgement method and is presented in Table 2.

Table 2. Evaluation Criteria

No.	Main Criterion	Score Range
1	Criterion 1 (C1): Degree of reduction in waste and plastic waste, and prevention of waste leakage into the environment	0-9
2	Criterion 2 (C2): Degree of change in awareness, attitudes and behaviours regarding plastic consumption, alternative solutions and waste segregation practices among model participants	0-10
3	Criterion 3 (C3): Relevance and potential for replication and scaling up (sustainability and maturity)	0-9
4	Criterion 4 (C4): Institutional arrangements and financial self-reliance	0-8
5	Criterion 5 (C5): Environmental pollution reduction and social benefits	0-9
6	Criterion 6 (C6): Technical feasibility of the model	0-9

The score for each criterion was derived from three sources:

- Survey results from model participants;
- Survey results from management and operational groups;
- Expert assessments.

Experts assigned scores based on survey results, field observations, in-depth interviews and document reviews.

The final score was calculated using the following weighting:

- 25% of model participants;
- 25% of model management/operational groups;
- 50% of expert assessment.

This weighting system helps reduce subjectivity and improve the reliability of the evaluation results.

The evaluation of each model consists of two scores:

(i) Objective-based score: Measures the extent to which the model achieves its primary objective. For example, for communication models, the main criterion is communication effectiveness.

(ii) Overall score: Measures the extent to which the model meets all major criteria. Therefore, the overall score reflects the comprehensive effectiveness of the model across all evaluation aspects.

Effectiveness Assessment Matrix

The effectiveness of each model is assessed based on both the objective-based score and the overall score.

Table 3. Effectiveness Rating Scale for the Pilot Models

	≥ 70% of Maximum Score	**50%-70% of Maximum Score**	**< 50% of Maximum Score**
>70% of Maximum Score	Highly effective - recommended for replication	Effective but requires improvement	Ineffective - not recommended for continuation
50%–70% of Maximum Score	Effective but requires improvement	Effective but requires improvement	Ineffective - not recommended for continuation
<50% of Maximum Score	Ineffective - not recommended for continuation	Ineffective - not recommended for continuation	Ineffective - not recommended for continuation

This evaluation framework enables comparison among models, identification of effective models for prioritised replication, and recognition of areas requiring improvement. It also provides evidence to support decision-making in the management and implementation of plastic waste reduction solutions and facilitates the selection of models that are most suitable for local conditions.

3. EVALUATION RESULTS

3.1 Detailed Evaluation Results of the Pilot Models

The evaluation results, together with analyses of strengths, weaknesses and recommendations for each pilot model, are presented in **Table 4**.

Table 4. Detailed Evaluation Results of the Pilot Models

No	Model	Strengths	Weaknesses/Limitations	Recommendations
I. Reduction and Recovery Models (Target Criterion: TC1 – Reduce Plastic Waste/Marine Plastic Waste)				
1	**Fishers Bring Waste Back to Shore** C1: 8.0/9 C2: 9.0/10 C3: 8.3/9 C4: 5.1/8 C5: 8.0/9 C6: 6.5/9 Therefore: Objective-based score: 86.1% Overall score: 82.2% Rating: Highly Effective – Recommended for Replication	- The model directly addresses one of the most difficult-to-control sources of marine plastic pollution and has demonstrated clear effectiveness. - The message is simple, easy to understand and closely linked to fishers' daily activities. - High replication potential because fishing vessels have relatively uniform structures and can be organised through fishing associations. - Significant environmental and social benefits, including reducing marine plastic pollution, enhancing fishers' environmental responsibility and protecting fishing grounds. - Strong alignment with the Fisheries Law 2017, the national	- No specific economic incentive mechanism for fishers; participation still depends largely on voluntary commitment. - Waste reception and treatment infrastructure at fishing ports remains a bottleneck due to insufficient collection points, segregation bins, temporary storage facilities and operational staff. - Risk of "breaking the chain": waste brought back to shore may not be properly segregated, transported or treated, resulting in accumulation, mixing or loss of recycling value. - Lack of effective monitoring, recording or enforcement mechanisms to ensure that all fishing vessels collect and hand over waste properly. - The economic value of recyclable waste is low and unstable, while segregation, storage and transportation costs may exceed recovery value. - Fishers are highly mobile, making communication and regular monitoring challenging.	- The People's Committee of Hue City should issue regulations establishing stable financing mechanisms, such as integrating environmental fees into fishing port service fees, mooring fees or sanitation fees, and establishing environmental funds at the fishing port or fishing community level. The Management Board of Thuan An Fishing Port should take responsibility for operation. - The Department of Agriculture and Environment should lead investments in integrated reception infrastructure, including dedicated collection areas and waste segregation bins for recyclables, domestic waste and hazardous waste. - The waste collection company (HEPCO) should standardise waste reception, segregation and treatment procedures to avoid "breaking the chain". - The Department of Industry and Trade should facilitate contracts between recycling companies and fishers for old fishing nets, nylon ropes and PET bottles. - The model should be integrated into regulations governing fishing ports, fishing teams and marine environmental protection plans, and high-performing

No	Model	Strengths	Weaknesses/Limitations	Recommendations
		strategy on the blue economy and international commitments on marine plastic litter reduction. - Technical operations are simple, requiring no sophisticated technology and can be integrated into the standard procedures before, during and after fishing trips		vessels should be recognised as "environmentally friendly fishing vessels". - Fishing associations should encourage waste reduction from the trip preparation stage, such as using large refillable water containers, reusable food boxes and reducing single-use foam boxes
2	**Plastic Reduction Tourism Model** - TC1: 7.3/9 - TC2: 8.5/10 - TC3: 7.8/9 - TC4: 4,8/8 - TC5: 6.7/9 - TC6: 6.5/9 Therefore: • Objective-based score: 81.1% • Overall score: 77.0% Rating: Highly Effective –	▪ Value chain approach covering travel agencies, hotels, restaurants, destinations and tourists. ▪ Combines practical experience with community communication ▪ Participation of multiple components (communities, destinations, tours and refill stations) creates an integrated intervention ecosystem rather than isolated actions.	• Operating costs of plastic reduction tours are 10-15% higher than conventional tours due to alternative materials. • Financial sustainability remains unclear, especially for community-based tourism models. • No official certification or standards for "plastic reduction destinations" or "plastic reduction tours". • Linkages among tourism actors remain uneven, with hotels and travel agencies being more proactive than restaurants and community tourism operators.	• The Department of Tourism should institutionalise the Hue Green Tourism Criteria (issued in 2026) and integrate them into accommodation and travel agency rating systems, business licensing requirements and international certification schemes such as Green Key, Travelife and ASEAN Green Hotel. • The Department of Tourism should collaborate with the Hue Restaurant Association and community tourism management boards to strengthen weaker components of the tourism value chain. • The Department of Agriculture and Environment should advise on EPR mechanisms, while beverage and

No	Model	Strengths	Weaknesses/Limitations	Recommendations
	Recommended for Replication		• Some domestic tourists still prefer convenience and single-use plastic products.	packaging companies should commit CSR resources to support plastic reduction infrastructure.
	Refill Stations *(Supporting Infrastructure for the Plastic Reduction Tourism Model)* - TC1: 5.6/9 - TC2: 6.8/10 - TC3: 6.3/9 - TC4: 4.0/8 - TC5: 5.5/9 - TC6: 6.3/9 **Therefore:** • Objective-based score: **62.5%** • Overall score: **63.7%** Rating: **Effective – Needs Improvement.**	○ Refill stations provide direct learning experiences that strongly influence users' awareness and behaviour. ○ Integrated with the Hue-S digital platform for locating refill stations and green tourism destinations. ○ Highly compatible with the Plastic Reduction Tourism Model and tourism service providers.	○ Weak self-sustainability once project support ends; maintenance costs, filter replacement and water quality monitoring create financial pressure. ○ Limited geographical coverage and insufficient density to establish regular use habits. ○ Concerns about water quality and hygiene remain a barrier; some stations experience operational problems. ○ Lack of clear signage and English-language information limits access for international visitors.	○ Increase the density of refill stations, prioritising major tourism streets and destinations. ○ Conduct regular water quality testing and publicly disclose results to build user confidence. ○ Install bilingual Vietnamese English signage at refill stations. ○ Integrate refill stations into EPR mechanisms as a solution to reduce single-use plastic packaging and mobilise funding from beverage and packaging companies.
• ***II.*** **Communication and Behaviour Change Models** *(Target Criterion: C2 – Changes in Awareness and Behaviour)*				
2	**Plastic Reduction School Model** - TC1: 5.3/9 - TC2: 7.9/10	○ Has strong potential to improve awareness and behaviour among students and teachers, especially when	○ Educational activities have mainly increased awareness without translating into sustained behavioural change.	○ Redesign the model from isolated extracurricular activities to an integrated school–family–community approach. ○ Pilot the improved model in 3–5 schools before wider replication.

No	Model	Strengths	Weaknesses/Limitations	Recommendations
	- TC3: 6.9/9 - TC4: 4.4/8 - TC5: 6.4/9 - TC6: 5.6/9 Therefore: • Objective-based score: 79.0% • Overall score: 67.4% Rating: Effective – Needs Improvement.	supported by school regulations and local education policies. o Does not require complex infrastructure or advanced technical capacity. o High scalability because schools have relatively uniform institutional structures nationwide. o Generates long-term social benefits because students are the future generation.	o Heavy dependence on project financial and technical support. o Impacts tend to fade after project extracurricular activities end. o Highly dependent on the commitment of school principals and key teachers.	o Integrate plastic reduction into school curricula, STEM activities, local education and student campaigns. o Develop simple behavioural indicators such as waste generation, use of personal water bottles and participation in waste segregation. o Encourage schools to maintain flexible plastic reduction activities and gradually phase out single-use plastics in classrooms, canteens and school events.
7	**Participatory Action-Oriented Training (PAOT)** - TC1: 6.1/9 - TC2: 6.8/10 - TC3: 7/9 - TC4: 5.8/8 - TC5: 7.8/9 - TC6: 6.1/9 **Therefore:** - Objective-based score: **67.5%**	o Strong spillover effects and positive impacts on community awareness and environmental behaviour. o Mobilises a network of trusted local communicators who understand local contexts and can directly engage households o Practical "learning by doing" approach. o Equipped with supporting tools such as	o Behavioural change is not yet sufficiently strong or consistent across households. o Highly dependent on the capacity and voluntary commitment of local communicators. o Household participation tends to decline over time. o Requires substantial human resources, time and effort for household visits, monitoring and reporting.	o Upgrade the Action-Oriented Training approach by integrating technology such as behaviour tracking applications, social media videos and online community groups. o Introduce incentive mechanisms for local communicators, including allowances, training and recognition. o Allocate budgets for regular provision of communication materials and training equipment. o Develop indicators that measure actual household behaviours rather than awareness only.

No	Model	Strengths	Weaknesses/Limitations	Recommendations
	- Overall score: **73.1%** - Rating: **Effective – Needs Improvement**.	handbooks, checklists and visual communication materials.		
Models that did not achieve the expected results are not recommended for continuation				
10	**Waste Separation at Source (WSAS)** - TC1: 6/9 - TC2: 6.6/10 - TC3: 7.6/9 - TC4: 5.6/8 - TC5: 7.1/9 - TC6: 6.5/9 **Therefore:** • Objective-based score: **66.7%** • Overall score: **73.1%** Rating: **Effective – Needs Improvement.**	○ Consistent with local municipal solid waste management orientations and plans. ○ Strong support from the Department of Agriculture and Environmental Protection Sub-department and HEPCO. ○ Initial infrastructure is relatively complete, including: • 292 sets of public waste bins; • 122 Green Houses; • Specialised waste collection vehicles; • 37 monitoring teams with 612 members. ○ High technical feasibility without	○ Requires substantial and sustained daily behavioural changes. ○ Administrative restructuring in July 2025 created institutional gaps and disrupted specialised staff arrangements. ○ No economic incentives for households that properly segregate waste.	○ Implement the "Plastic-Free Ward/Commune" programme with public monitoring and community recognition systems. ○ Integrate WSAS with continuous communication campaigns led by the Women's Union, Veterans Association and PAOT communicators. ○ HEPCO should strengthen regular household waste audits to obtain objective data on waste segregation quality

No	Model	Strengths	Weaknesses/Limitations	Recommendations
		requiring sophisticated technologies. o Green Houses provide initial internal revenue generation.		

3.2. Overall Evaluation Results of the Pilot Models

The consolidated evaluation results indicate that all pilot models achieved a certain degree of effectiveness. Specifically, the models can be classified into two groups as follows (Figure 1):

- Highly effective models recommended for replication (models whose objective-based scores and overall scores both reached 70% or above), including two models: Fishers Bring Waste Back to Shore and the Plastic Reduction Tourism Model.
- Effective models requiring further improvement (models whose objective-based score or overall score falls within the range of 50-70%), including three models: the Plastic Reduction School Model, Participatory Action-Oriented Training (PAOT), and Waste Separation at Source (WSAS).

No model was classified as "Ineffective" (Figure 1). This demonstrates that the interventions implemented under the TVA Project during the 2022-2025 period have established a positive foundation for reducing plastic waste, promoting changes in awareness and behaviour, and enhancing the participation of communities and local authorities.

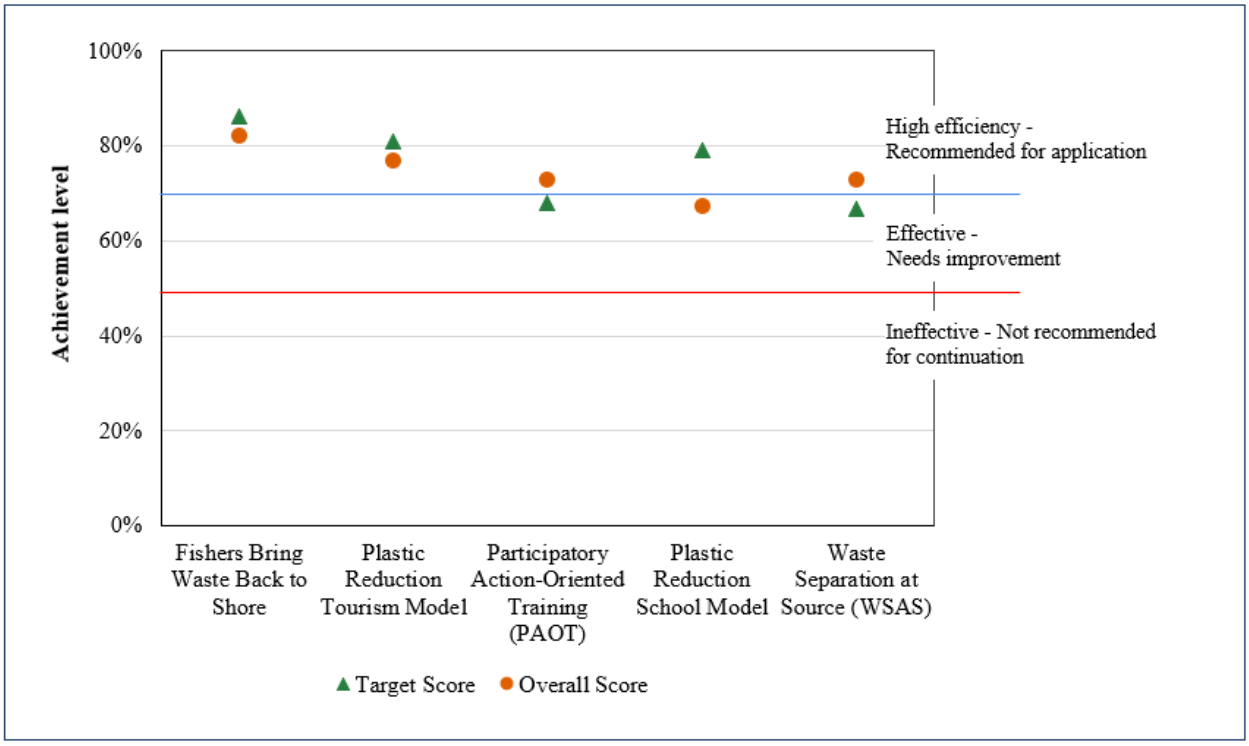

Figure 1. Summary of Evaluation Results of the Pilot Models

3.3. Comparative Analysis of the Pilot Models

In addition to analysing each model individually, the evaluation identified several noteworthy characteristics when comparing the five pilot models. Although all models demonstrated a certain level of relevance to local contexts, their overall effectiveness varied considerably, ranging from 67.6% to 83.1%. These differences are mainly attributable to the quality of intervention design, the adequacy of supporting infrastructure, and the complexity of the behavioral changes required from participants.

(1) Common Characteristics of the Five Models: Weaknesses in C4 and C6, Strength in C3

The comparison shows that Criterion 4 (C4)-Institutional Arrangements and Financial Self-Reliance and Criterion 6 (C6)-Technical Feasibility are the two common weaknesses across all

models, whereas Criterion 3 (C3)-Relevance and Potential for Replication is the most prominent strength.

The Criterion C4 received relatively low average scores, reflecting the fact that the models still rely considerably on project resources, have not yet been fully integrated into local planning and regular budgeting processes, and have not established clear self-financing mechanisms or circular economy elements (Figure 2). This is not an issue of any single model but rather a systemic risk affecting the sustainability of the entire Plastic Smart City Program after the completion of the TVA Project. Therefore, it should be addressed at the program level through comprehensive institutionalization measures.

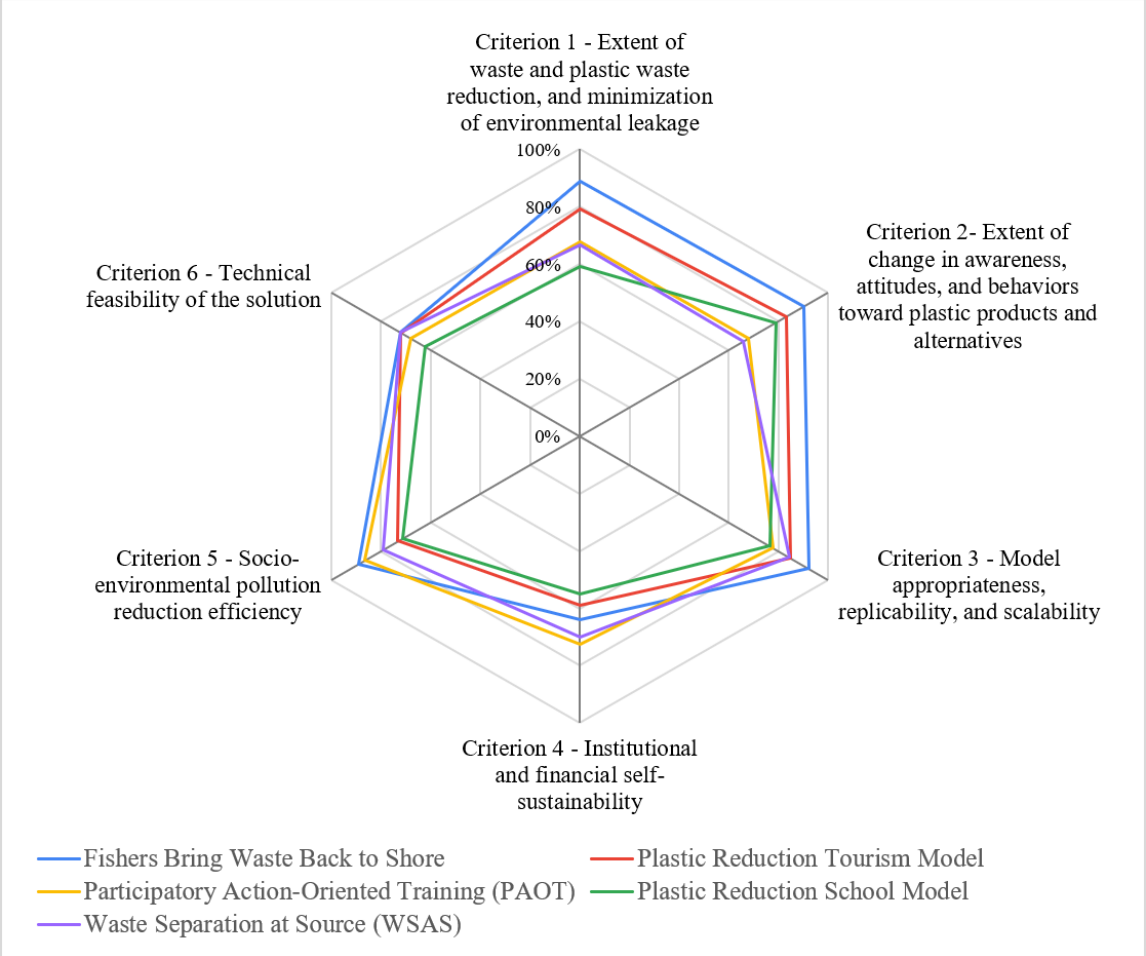

Figure 2. Comparison of the Effectiveness of the Five Models Across Six Evaluation Criteria (Normalised as a Percentage of the Maximum Score for Each Criterion)

C6 is also a common limitation, indicating that the operational feasibility of the models has not yet been firmly established. Common challenges include the lack of infrastructure maintenance mechanisms after project completion, the need for field monitoring beyond the capacity of local officials, and dependence on a few key individuals.

Conversely, C3 scored highly across most models, indicating that the interventions are generally well suited to local conditions and have received strong support from communities and local authorities. However, high scalability does not automatically guarantee successful replication if institutional, financial and operational weaknesses are not adequately addressed.

(2) Key Factors Influencing Model Effectiveness: Intervention Design and Behavioural Complexity

When examining Criterion 1 (C1)-Waste Reduction and Criterion 2 (C2)-Changes in Awareness and Behaviour, the models can be divided into two groups.

The leading group includes Fishers Bring Waste Back to Shore and the Plastic Reduction Tourism Model, both of which achieved strong results in waste reduction as well as behaviour change.

The second group comprises PAOT, WSAS, and the Plastic Reduction School Model, which performed reasonably well but achieved lower scores, particularly regarding actual waste reduction outcomes.

This differentiation is primarily related to intervention design. Highly effective models generally possess four key components:

1. Direct waste reduction solutions at the point of generation;
2. A complete and integrated downstream infrastructure chain for collection, segregation, transportation and treatment;
3. Mechanisms to maintain facilities and equipment over time;
4. Integrated communication and stakeholder engagement enable participants not only to understand why they should act but also to observe the outcomes of their actions.

For example, Fishers Bring Waste Back to Shore equipped for beneficiaries with waste-sorted bags, collection points at fishing ports and active involvement of the Port Management Board. The Plastic Reduction Tourism Model includes refill stations, Standard Operating Procedures (SOPs), alternative products and participation from hotels, restaurants and travel agencies. Therefore, plastic reduction behaviors are supported by practical tools and operational procedures rather than relying solely on awareness campaigns.

A second factor often overlooked in evaluations is the complexity of the target behavior expected from participants.

Fishers Bring Waste Back to Shore requires relatively simple behavior: fishers bring waste generated during fishing trips back to shore. The Plastic Reduction Tourism Model shifts most of the behavioral change efforts to service providers, while tourists mainly follow choices that have already been arranged for them.

In contrast, PAOT and WSAS require households to segregate multiple waste streams, perform the practice daily and maintain it over the long term. Similarly, the Plastic Reduction School Model reveals a gap between general awareness and practical capacity, particularly in correctly identifying waste categories and maintaining facilities such as the Green House.

Therefore, models that require complex behavioral changes are unlikely to achieve high effectiveness if they rely solely on communication activities.

(3) Comparison between PAOT and WSAS

Both PAOT and WSAS aim to reduce plastic waste through waste segregation at source, target households as their main beneficiaries and rely on similar downstream infrastructure.

The principal difference lies in their communication approaches.

- PAOT adopts an Action-Oriented Training Approach, whereby communicators visit households, distribute checklists, provide guidance, conduct inspections and offer periodic feedback.

- WSAS, by contrast, mainly uses traditional communication methods such as leaflets, posters, meetings, public campaigns and community guidance.

The results indicate that PAOT performs slightly better than WSAS in terms of awareness and behavior change as well as waste reduction outcomes; however, the difference is not substantial.

Meanwhile, PAOT requires significantly greater operational resources, depends heavily on a network of community communicators and exhibits lower operational feasibility.

The overall scores of the two models are almost equivalent, suggesting that while Participatory Action-Oriented Training has positive effects, it does not generate a sufficiently significant advantage to justify the additional resources required.

Therefore, PAOT should not be replicated widely as a universal solution. Instead, it should be applied selectively, prioritizing:

- The initial stages of new model development;
- Specific target groups;
- Behaviors that require deep and sustained change.

For large-scale replication, well-designed traditional communication approaches combined with investment in downstream infrastructure, maintenance mechanisms, simplification of target behaviors and provision of practical alternatives may offer greater cost-effectiveness.

4. OVERALL RECOMMENDATIONS

(1) Address Common Weaknesses of C4 and C6 at the Programme Level

As Criterion 4 (Institutional Arrangements and Financial Self-Reliance) and Criterion 6 (Technical Feasibility) are common weaknesses across all models, they should be addressed at the level of the Plastic Smart City Programme rather than by individual models.

For C4: Effective models should be integrated into Hue City's Solid Waste Management and Plastic Waste Reduction Plan for the period 2026-2030, accompanied by regular budget allocations.

At the same time, sustainable financing mechanisms should be established through:

- Commune and ward budgets;
- Extended Producer Responsibility (EPR) schemes;
- Corporate Social Responsibility (CSR) contributions;
- Environmental funds; and
- International development partners.

For specific models such as Fishers Bring Waste Back to Shore, dedicated financing mechanisms could be considered, such as environmental fees at fishing ports or community environmental funds for fishing communities.

The People's Committee of Hue City should also issue coordination regulations among relevant departments to ensure that plastic reduction models receive cross-sectoral resource allocations rather than relying solely on the Department of Agriculture and Environment.

For C6: Standard Operating Procedures (SOPs) should be developed for each model, covering infrastructure maintenance, field monitoring and troubleshooting.

Furthermore, operational staff at the grassroots level including ward and commune authorities, residential groups, fishing port management boards and schools should receive training, and regular budgets should be allocated for repairing Green Houses, maintaining refill stations, waste segregation bins and other environmental infrastructure.

(2) Replication Plan

During the period 2026-2027, replication in other areas of Hue City should be prioritised as follows:

Top Priority – Fishers Bring Waste Back to Shore and the Plastic Reduction Tourism Model

Fishers Bring Waste Back to Shore should be prioritised in Phu Vang and other coastal areas with fishing and aquaculture activities. However, this requires integrated investment in infrastructure for waste reception, segregation and treatment at fishing ports, as well as linkages with recycling and waste purchasing enterprises.

The Plastic Reduction Tourism Model should also be prioritised in the Tam Giang – Cau Hai Lagoon area and community-based ecotourism destinations, based on an integrated tourism chain involving accommodation providers, travel agencies, restaurants and local communities.

A standard or certification label such as "Hue - A Plastic Reduction Destination" should be developed under the leadership of the Department of Tourism and linked to the assessment of accommodation establishments and travel agencies.

Models Requiring Improvement before Replication

For WSAS and PAOT, replication can continue but must be accompanied by investment in waste collection, transportation and treatment infrastructure corresponding to each waste stream, as well as solutions to institutional gaps arising after administrative restructuring.

The Plastic Reduction School Model should not be replicated in its current form. Instead, the intervention should be reviewed and redesigned, damaged infrastructure restored, and objectives and activities tailored to each educational level and implementation phase before expansion.

(3) Directions for Designing Models in the Next Phase

Future models should be designed in a more comprehensive and substantive manner, ensuring four core components:

1. Direct waste reduction solutions at the source;
2. Integrated downstream infrastructure;
3. Mechanisms for maintaining infrastructure and equipment; and
4. Communication and stakeholder engagement tailored to target groups.

The absence of any of these components may reduce effectiveness or disrupt the operational cycle.

Models should also establish behavioural objectives that match the actual complexity of the required behaviours. For complex behaviours such as daily segregation of multiple waste streams, an approach of "less but done correctly" should be adopted, prioritising a few key waste streams before expanding to others.

Participatory Action-Oriented Training should be applied selectively during initial stages, for specific target groups or for behaviours requiring profound change and should not be replicated widely without adequate operational resources.

In addition, interventions should be tailored to the characteristics of each target group:

- Refill systems should provide more bilingual guidance and increase the density of refill stations;
- School models should differentiate approaches according to educational levels;
- Fishers Bring Waste Back to Shore should adopt separate approaches for local fishing vessels and visiting vessels.

Finally, all models should be integrated into the existing political and social systems and incorporate sustainable financing mechanisms from the design stage, rather than attempting to address these issues after project completion.