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Source-to-sea stakeholder assessment

Vu Gia-Thu Bon River
Basin: Plastic pollution

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This project followed the guidance provided in “Implementing the Source-to-Sea Approach: A Guide for Practitioners” and “Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins”. Both of these resources as well as many others can be found at www.siwi.org/source-to-sea.

About SIWI

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Founded in 1991, the Stockholm International Water Institute (SIWI) provides and promotes water wise solutions for sustainable development in the areas of water governance, transboundary water management, and through international policy processes.

Foundations for Source-to-Sea Management

The Stockholm International Water Institute (SIWI), funded by the Federal Ministry of Economic Cooperation and Development (BMZ) conducted a project "Foundations for Source-to-Sea Management" to pilot the source-to-sea approach¹ in the Vu Gia Thu (Vu Gia-Thu Bon basin) River Basin, Viet Nam and the Lake Hawassa sub-basin, Ethiopia. By focusing on the first three steps of the source-to-sea approach, the two pilots:

- Increased knowledge of priority local challenges constraining sustainable development;
- strengthened awareness of the linkages between upstream and downstream activities and their impacts;
- built local capacity for taking a holistic approach to natural resource management and economic development; and
- highlighted the opportunities and challenges associated with implementing the source-to-sea approach to management.

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Introduction

The Stockholm International Water Institute (SIWI), funded by the Federal Ministry of Economic Cooperation and Development (BMZ) conducted a project “Foundations for Source-to-Sea Management” to pilot the source-to-sea approach as it is laid out in [Implementing the source-to-sea approach: A guide for practitioners](#) and [Source-to-Sea Framework for Marine Litter Prevention: Preventing Plastic Leakage from River Basins](#). Two specific locations, Vu Gia-Thu Bon River Basin, Viet Nam, and Lake Hawassa sub-basin, Ethiopia, were selected for the implementation of pilot studies that involved the application of the first three steps within the source-to-sea approach (**Error! Reference source not found.**).

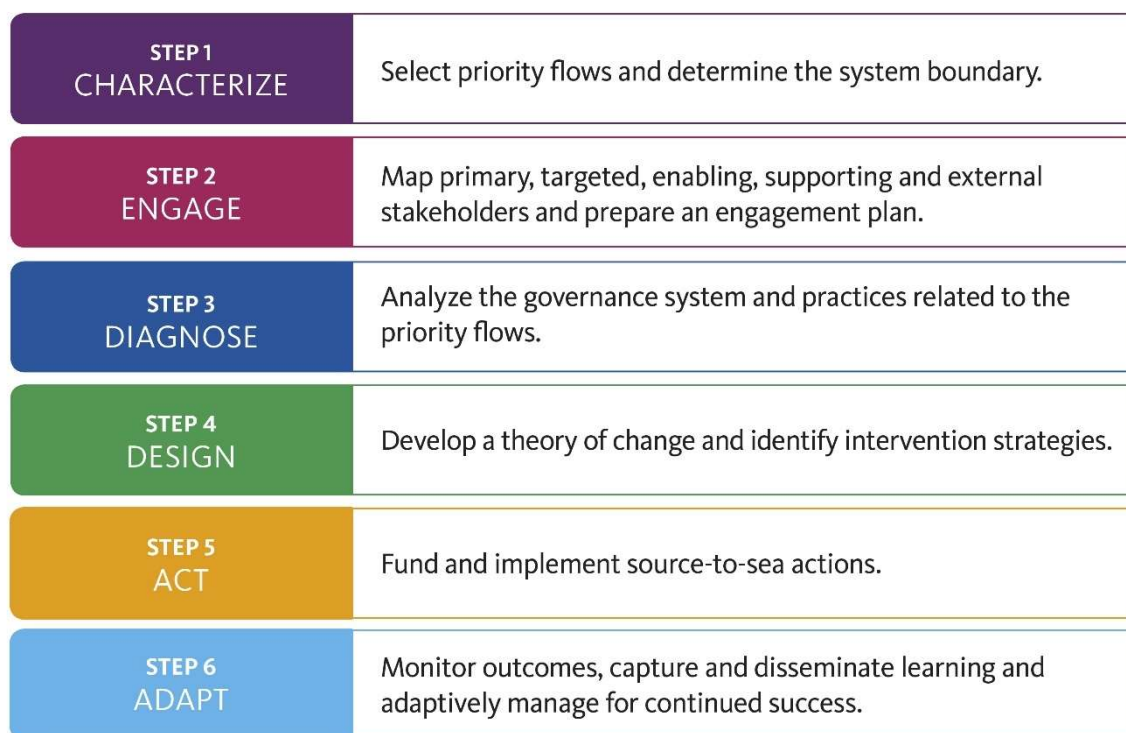


Figure 1: Six Steps of the source-to-sea approach (Source: Mathews, et al. 2019)

In the Lake Hawassa sub-basin, two priority source-to-sea flows were identified as important – sediment from soil erosion and plastic pollution. In the Vu Gia-Thu Bon basin, plastic pollution was selected as the priority source-to-sea flow for this project. These priority flows were chosen following early discussions with local partners. In both Ethiopia and Viet Nam, stakeholder workshops, capacity building workshops and field visits were conducted. Activities in the Lake Hawassa sub-basin were conducted with GIZ, and the Basin Development Authority of Ethiopia (BDA). While activities in the Vu Gia-Thu Bon basin were conducted with IUCN, Department of Natural Resources (DONRE) and Quang Nam Provincial Peoples’ Committee. In the Lake Hawassa sub-basin, the source-to-sea approach was adapted to source-to-lake, recognizing the similarities in characteristics in an endorheic lake basin and as compared to a sea or ocean. Consultants were commissioned to prepare reports characterizing the priority flows as described in Step 1 of the source-to-sea approach. These

reports were used to understand the sources and impacts of the priority flow, and, in turn, provide a basis for undertaking Step 2: Engage and Step 3: Diagnose within the pilot.

The focus of this report is the results from carrying out Step 2: Engage in the Vu Gia-Thu Bon River Basin.

Vu Gia Thu Bon River Basin

The Vu Gia-Thu Bon basin is located in central Viet Nam and covers an area of 10,350 km², including Quang Nam Province and Da Nang City. In 2019, Quang Nam Province had a population of 1,567,890 people while Da Nang City's population was 1,234,310. Important economic activity in the Vu Gia-Thu Bon basin include agriculture, forestry, fishery and handicraft, while the industrial and tourist sectors have grown strongly in recent years. Rice is the dominant staple crop that dominates local agricultural activity and is mainly planted in lowland areas. Hoi An, an Ancient Town, is found near the mouth of the Thu Bon River, with the Cu Lao Cham islands just offshore, and both are important tourist destinations. Da Nang City is known as the 'worth living city'.

Areas of Vu Gia-Thu Bon (VGTB) River Basin in Quang Nam Province and Da Nang City (Figure 2) include:

- Quang Nam Province: Urban area (Hoi An City and Dien Ban town) and rural area (Dai Loc, Duy Xuyen, Que Son, Nong Son, Hiep Duc, Tien Phuoc, Bac Tra Mi, Nam Tra Mi, Dong Giang and Tay Giang district).
- Da Nang City: Urban districts (Cam Le, Hai Chau, Lien Chieu, Ngu Hanh Son, Son Tra and Thanh Khe) and Suburban district of Hoa Vang.

Vu Gia-Thu Bon River Basin is one of the 9 largest river systems in Viet Nam. The basin consists of two main tributaries: 1) Vu Gia River, which is 204 km long until Da Nang City and 2) Thu Bon River, originating from the common border of three provinces of Quang Nam, Kon Tum and Quang Ngai, at an elevation of over 2,000 m and has a length until Giao Thuy of 152 km.

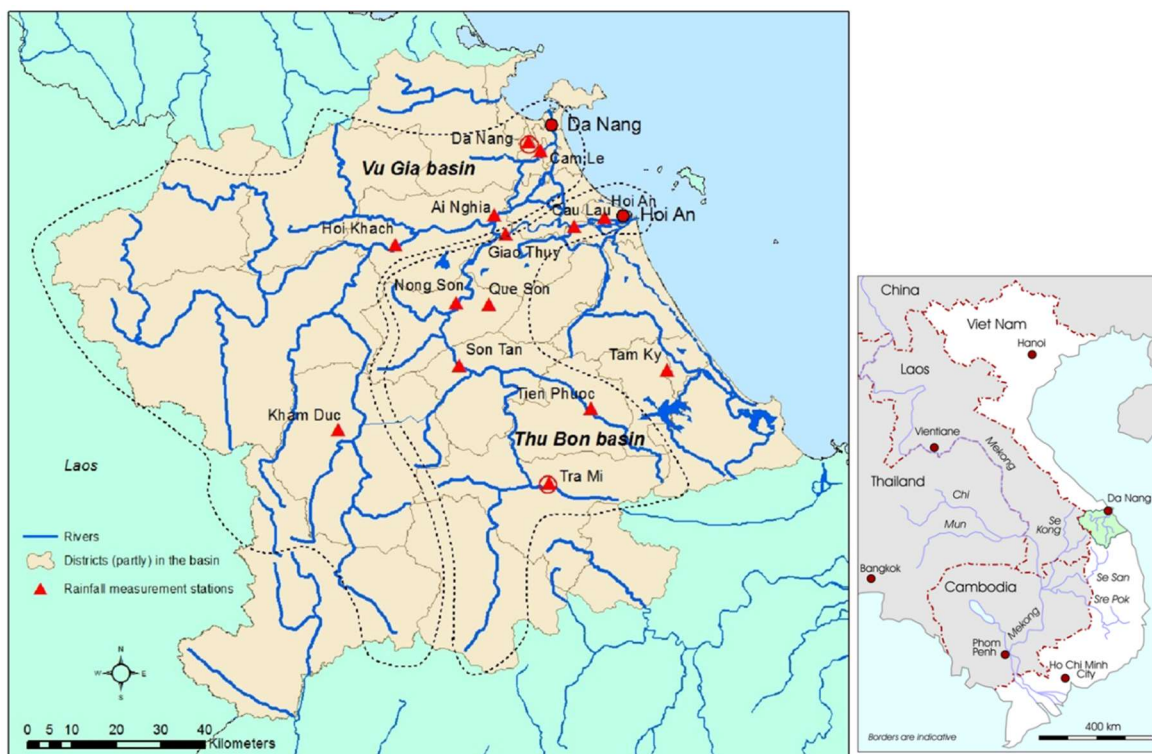


Figure 2: The Vu Gia-Thu Bon River Basin in central Viet Nam (source: https://www.researchgate.net/figure/Overview-of-the-Vu-Gia-Thu-Bon-basin_fig1_288516298)

The Vu Gia-Thu Bon basin has short, steep watersheds with highly variable seasonal flow. This results in rapid runoff events that can carry solid waste from land areas near waterways from the upper to lower basin quickly. The Vu Gia-Thu Bon River Basin is an important source of hydropower with eight large dams and 30 smaller installations with a total installed capacity of 714 MW (2010). The maximum capacity of the Vu Gia-Thu Bon River Basin is estimated to be around 1,500 MW and there continues to be plans for further development of hydropower capacity. The installations are mostly located on the mountainous upstream tributaries of the Vu Gia river.

Plastic pollution has risen on the agenda at the national level as well as in Da Nang City and Quang Nam Province. Plastic leakage from land-based sources has been identified as a critical challenge in the Vu Gia-Thu Bon basin River Basin as well as at the national level, especially given the rise in local plastic use. Local commitments to address this have grown as concern about the volume of plastic entering the marine environment has risen globally.

With more than 5 million visitors to Hoi An and 7.2 million to Da Nang in 2019, plastic waste is both an impact to the tourism sector by making the area less attractive to tourists and a challenge for the municipality to collect and manage. Clean-ups of touristic areas are happening more frequently, but this needs to be maintained regularly. At the same time, landfills are overflowing and will soon be out of room for more waste.

Plastic pollution in the Vu Gia-Thu Bon basin

To estimate the volumes of plastic waste generated in the Vu Gia-Thu Bon basin and their sources, three cluster types were selected that characterize different contexts in which plastic waste occurs.

1. Urban centres:

These are normally the areas with the highest waste generation (in waste per capita and

total amounts), frequently close to rivers, and with available data for waste management services.

2. Low density settlements and rural areas:
Areas with lower waste generation (in waste per capita and total amounts), usually less waste management services and little to no data availability.
3. Coastal and/or touristic areas:
These are areas with proximity to the sea, higher risk of direct leakage and higher sensitivity to impacts.

Representative units of each cluster were used to derive estimates of solid waste, proportions of plastic litter, and estimated leakage.

The main sources of solid waste across the Vu Gia-Thu Bon basin include:

- Household (HH) waste;
- Solid waste from tourist activities;
- Industrial, commercial and institutional waste;
- Solid waste from agricultural activities; and
- Others like street sweeping, drain silt, litter etc.

RWA (2019) estimated that the urban area generates approximately 1189 t/day of municipal solid waste (MSW), from which 17% (206 t) is plastic waste, whereas rural areas and coastal areas produce 338 (55 t/day plastic waste) and 122 (20 t/day plastic waste) tonnes per day, respectively (Table 1). These estimates include domestic and commercial sources and have been calculated based upon a mixture of modelling using internationally accepted methods, augmented by local sampling to verify estimated values.

RWA (2019) observed that collection and management of plastic waste differs considerably between urban, rural and coastal areas. Urban areas are the main potential source of plastic waste, at 73.3% of the total volume generated, followed by rural areas and coastal areas at 19.6% and 7.1%, respectively. However, due to differences in collection and disposal between the three cluster types, rural areas form a much higher proportion of uncollected plastics at 57.3% of the total daily average. Differences in collection are an important consideration in the Vu Gia-Thu Bon basin, as much of the plastic leakage is from uncollected waste.

Table 1: Calculation of plastic waste generation and unmanaged waste (Source: RWA, 2019)

Description	Unit	Urban	Rural	Coastal	Total
Population	inhabitants	1,208,245	699,196	251,697	2,159,138
Total municipal waste generation	tonne/day	1,189	338	122	1,649
Total plastic waste generation	tonne/day	206	55	20	281
Average waste service coverage	%	95%	60%	63%	86%

Estimated reduction of uncollected plastics through separation/recovery efforts	tonne/day	0.7	0.9	0.5	2.1
Total uncollected plastics	tonne/day	9.3	22.1	7.3	38.6
Percentage of unmanaged plastics out of the total plastics	%	4.3%	38.4%	25.9%	13.0%

On average for the whole Vu Gia-Thu Bon basin, an estimated 13% of all plastic waste is not collected. This corresponds to 14,089 tonnes of uncollected plastics per year compared to 102,565 tonnes of plastic waste generated.

In urban areas, much of the plastic leakage is single use plastics or Styrofoam packaging used in the food industry.

Impacts

Inadequate plastic waste management in the Vu Gia-Thu Bon basin has resulted in environmental, economic, ecosystem and public health impacts (Table 2). While plastic waste is generated from most locations in the Vu Gia-Thu Bon basin, the impacts can be felt unequally between stakeholders.

Table 2: Direct and indirect impacts from plastic pollution (Source: RWA 2019)

DIRECT	INDIRECT
Economic losses	
<p>Increase in cost of clean-up: Plastic bags and PET bottles appear in significant proportion in Hoi An and other rivers as well. Littering of plastic baskets used for lamps, packaging of food in thermocol containers (EPS) and PET were significant. The administration every morning sends a boat to pick up plastic lodged at different places.</p> <p>Direct clean-up and opportunity cost for locals: The kayak operator organizes direct clean-up campaign and often more than 20 people contribute through voluntary labour for 3-4 hours, cleaning up plastic along with other waste (candles). He said that foreign tourists often engage in regular clean-ups and pay money to remove the garbage collected. Initially they collected 1000-1200 kg every Saturday and clean up along 4-5 km but more recently it has come down to 500-700 kg. But the clean-up is done only in the patches of kayak range and not further. It can be estimated that considering its monthly cost (4-5 Saturdays a month) 400-500 USD considering USD 20 per person for labour contribution.</p>	
Biota and ecosystems	
<p>Pressure on aquatic species (observation-based potential): MSW debris including significant plastic waste (plastic bags, straws, thermocol pieces, broken small pieces of plastics, abandoned and</p>	Bioaccumulation of toxic substances (potential)

DIRECT	INDIRECT
<p>broken fishing nets) cause entanglement of fish and smothering of aquatic organisms. Though this has not been studied, there are plenty of stories of it. Micro plastic which often goes unnoticed causes much bigger problem for fishes than actually large pieces of plastics which also eventually break down and cause problems. But plastic is not the only material that is being dumped, there are other materials as well which is found during the clean-up campaigns.</p>	
<p>Infrastructure and disaster risk</p>	
<p>Increased risk of flooding due to blockage of storm water drainage: This is a major risk during the rainy season. Hoi An in particular experiences flooding in the city but this is blamed more from small drain sizes than plastic blocking though plastic was cited for clogging the drains here and there. There is no conclusive evidence how much plastic blocking drains is a problem but it constitutes one of the reasons of blockage. Here also thermocool appeared to be a bigger problem than other types of plastics.</p>	<p>Higher maintenance and clean-up costs for storm-water drainage and riverbanks: In Hoi An boats are being used daily to clean up the river particularly of the city stretch and other places of tourist interest.</p>
<p>Human health</p>	
<p>Risk of micro-plastics consumption through the food-chain (potential): The potential risk factors for these are the numerous, flimsy plastic bags that find their way into the river and to the sea, the fishing nets that are directly abandoned in the sea or sea beaches; small plastic pieces that pass through sewage that reportedly finds its way into the river/sea from near-by hotels and resorts. Sewage from the high-end hotels and resorts can be expected to contain micro-plastics resulting from toothpaste, washing machines, cosmetics that eventually find their way into rivers/sea.</p>	<p>Contamination through water-based food (potential): Fish and vegetables grown along the riverbank/seashore can potentially be contaminated by micro-plastics in the water.</p>
<p>Quality of life</p>	
<p>Decreased quality of recreational services: Plastic blight on the riverbank and seashore particularly of tourist areas has the dormant potential to decrease the quality of recreational services. The Tourist Association of Hoi An recognises this as one emerging problem and have taken voluntary action in both clean up and providing alternatives to some of single use plastic products.</p> <p>Open dumping on roadsides, empty plots of land and some open burning of waste (in rural areas to a certain extent) has the potential to blemish the image of these places and reduce quality of life (foul air, etc.).</p>	<p>Reduction of aesthetic value and beauty of the riverbank/sea beaches: The VGTB River Basin is a lush green area but sites of plastic waste and other MSW is gradually creating a bad image. Hoi An which is a World Heritage site and has the threat of losing its touristic value if actions are not taken to contain plastic in particular and other waste in general.</p>

Source-to-sea approach

The source-to-sea approach is a structured process in which the first three steps contribute to the design of an overall theory of change and the selection of a suite of interventions that are tailored to the specific context. Through this structured approach, new insights or perspectives may be gained at each step. By taking a holistic perspective, it is feasible to develop strategies that intervene at important leverage points.

The source-to-sea approach begins with Step 1: Characterization. In this step, the local challenges related to the alteration of the patterns and behaviours of the priority flow (plastic pollution) and the observed biophysical changes to the system are assessed. With this understanding of changes to the priority flow and their impacts, the next step is to identify stakeholders that are either affected by alterations to the priority flow, are contributors to those alterations, or are important for supporting future interventions. Stakeholder assessments differ in the level of granularity required, dependant on the scope and scale of the system boundary, the desired future condition being sought, and the overall purpose of the project.

In this project, the stakeholder assessment was informed by initial identification of stakeholders to engage in project activities by IUCN and was elaborated further through this engagement and as more understanding of the local challenges from the biophysical, social and governance perspectives was gained. Five categories of stakeholders are considered in the source-to-sea approach: primary, targeted, enabling, supporting, and external. The descriptions of each will be found in the next section, but it is important to realise that each type has a role to play in source-to-sea management. It is important to note that some stakeholders can be linked to one or more stakeholder categories. For example, members of governance institutions may also be affected by impacts of plastic pollution in many ways and their own practices may exacerbate the problem.

Further information on the stakeholders can be found in Annex 1.

Conducting the stakeholder assessment

Methods

Three approaches were used in conducting the stakeholder assessment. The first was through the commissioned Step 1: Characterization study (RWA 2019). The main focus of this report was on providing baseline information on the sources, impacts and root causes of plastic pollution as well as an initial identification of stakeholders (Step 2: Engage) and analysis of governance (Step 3: Diagnose). The second approach was through engagement with stakeholders in a consultation workshop and capacity building training held as part of the project in November 2019. IUCN also provided a list of stakeholders and their assessment of their roles and level of influence and interest based on their experiences in the basin. Additional stakeholder engagement workshops were planned; however, these were cancelled due to travel restrictions during the Covid-19 pandemic.

Source-to-sea stakeholder categories

Primary stakeholders

Primary stakeholders (Table 3) are those individuals or groups who are affected by changes in the priority flow, generally negative. These are the stakeholders that are being affected by increased plastic pollution and the impacts this creates. In the Vu Gia-Thu Bon basin, these include urban communities and the authorities where land is subject to flooding or where extra clean-up costs are borne, communities that depend on fisheries whose catch may be affected by plastic pollution, or those who suffer a loss of income associated with a decline in water quality and associated loss of perceived value or attractiveness, such as the tourism sector and water-based tourism operators. As stated in Mathews (2019): *Primary stakeholders are affected by the alteration of priority flows and benefit from the intervention strategies.*

Table 3: Examples of primary stakeholders in the Vu Gia-Thu Bon River Basin

Stakeholder Name	Level	S2S Segment	S2S Sub-segment	Interest	Influence
Fisherman	Basin	Coast, nearshore	Urban/Rural	Low	Low
Fisherman	Local	Freshwater system	Lake	Low	Low
Local tourist businesses	Basin	Coast, freshwater system	Urban	Medium	Low
Local businesses using natural resources	Local	Freshwater system	Rural	Medium	Low
Consumers (households, pedestrians and tourists)	Local	Coast, nearshore		Low	Low
Quang Nam province and municipalities	Basin/local	Land, freshwater system, coast,	Urban	Medium	High
Urban Environment Company (Quang Nam)	State	Coast, nearshore	Urban	High	High
Da Nang City	Local	Land, freshwater, coast	Urban	Medium	High
Da Nang Urban Environment Company (URENCO)	State	Coast, nearshore	Urban	High	High
Local recycling businesses (EverGreen Lab etc.)	Municipal	Coast, nearshore	Urban / Riparian	High	Medium
Ecosystems	Basin	Freshwater system / Coastal	Lake	Strong	Weak

Reducing the impact of practices or behaviours that negatively affect primary stakeholders is often a key objective of a programme or project. Primary stakeholders contribute as they can better contextualise the extent and impact of plastic pollution, identify and prioritize sources of plastic waste and leakage, and may be encouraged to take part in interventions to reduce the impact. They may also provide support for interventions made by enabling or supporting stakeholders. Many indicators that monitor and evaluate the effectiveness of interventions will be based on reducing the

impact of plastic pollution on primary stakeholders. Primary stakeholders build the political will for actions to be taken to address plastic pollution.

Targeted stakeholders

Targeted stakeholders (Table 4) refer to those stakeholders whose practices or behaviours are creating or exacerbating plastic pollution. Stakeholders in this category include e.g., consumers in urban, rural, and coastal communities, urban and coastal waste management operators that provide inadequate or unreliable services, informal waste pickers, markets, fishing dockyards, and the state-owned enterprises that provide waste management services. Other targeted stakeholders include the private sector or state-owned enterprises whose practices help expand plastic usage and/or produce single use plastics that cannot be recycled, etc. As stated in Mathews (2019): *Targeted stakeholders are actors or sectors whose practices are contributing to the alteration of priority flows and whose behaviour intervention strategies are aimed at changing.*

Table 4: Examples of targeted stakeholders in the Vu Gia-Thu Bon River Basin

Stakeholder Name	Level	S2S Segment	S2S Sub-segment	Interest	Influence
Urban Environment Company (Quang Nam)	State	Coast, nearshore	Urban	High	High
Da Nang Urban Environment Company (URENCO)	State	Coast, nearshore	Urban	High	High
Local recycling businesses (EverGreen Lab etc.)	Municipal	Coast, nearshore	Urban / Riparian	High	Medium
Supermarkets (Vu Gia-Thu Bon basin)	Local	Coast, nearshore	Urban	Low	Low
Traditional markets	Multiple	Land system	Urban	Low	Low
Industrial Zone Management Board (Da Nang)	State	Land system	Urban	Low	Low
Au Thuyen Management Board and Tho Quang Fishing Wharf and traders	Local	Coast, nearshore	Urban / Rural	Low	Medium
Waste collectors/transporters	Municipal	Land system	Urban	Low	Low
Informal waste pickers	Local	Land system	Urban / Riparian	Low	Low
Media outlets	National	Multiple	Urban	Medium	Medium
Customers /Consumers	Global	Land system	All	Weak	Weak

Targeted stakeholders contribute to plastic pollution reduction/prevention through source-to-sea management by changing their behaviours such that less plastic waste is created and that which is, is managed to eliminate leakage. Actions undertaken to prevent plastic pollution will need to support these changes in behaviour or practices, thereby reducing the impacts to primary stakeholders.

Enabling stakeholders

Enabling stakeholders (Table 5) are those who have roles in developing the enabling environment related to plastic pollution. These include e.g., institutions granted formal mandates governing the use and disposal of plastic materials at all levels of government, those who can provide capacity building to targeted stakeholders and those that manage budgets supporting the provision of solid waste management services. Many enabling stakeholders are institutions from different tiers of government, including ministries and their provincial and district counterparts that provide direction on the use and disposal of different types of plastic, Provincial, District or Commune Peoples Committees, and other regional or district counterparts that form part of solid waste management administration. In the Vu Gia-Thu Bon it also includes the Interprovincial Joint Coordination Committee, which supports coordination between Da Nang and Quang Nam Province in issues of shared interest. Many enabling stakeholders can also be classified as targeted stakeholders as their own practices and behaviours can contribute to the problem. As stated in Mathews (2019) *Enabling stakeholders provide the enabling conditions for behaviour changes to occur and benefits to be sustained over time.*

Table 5: Examples of enabling stakeholders in the Vu Gia-Thu Bon River Basin

Stakeholder Name	Level	S2S Segment	S2S Sub-segment	Interest	Influence
Viet Nam Administration of Seas and Islands (VASI)/MONRE	National	National	Multiple	High	Medium
Viet Nam Environment Administration (VEA)/MONRE	State	National	Multiple	Medium	Medium
Legal Department/MONRE	National	National	Multiple	High	Medium
Ministry of Construction (MOC)	Municipal	National	Multiple	High	High
Ministry of Planning and Investment (MPI)	Municipal	National	Multiple	Low	Medium
Ministry of Agriculture and Rural Development (MARD)	Basin	National	Rural	Low	Medium
Ministry of Industry and Trade (MOIT)	Basin	National	Multiple	Low	Medium
Ministry of Culture, Sport and Tourism (MOST)	State	National	Multiple	Medium	Medium
Viet Nam Business Council for Sustainable Development (VBCSD)/Viet Nam Chamber of Commerce and Industry (VCCI)	National	National	Multiple	Medium	Medium
Provincial People's Committee in Quang Nam and Da Nang	National	Local	Multiple	Medium	High
DONRE and Sub-DONRE in Quang Nam	National	Local	Multiple	High	High
DONRE and Sub-DONRE in Da Nang	National	Local	Multiple	High	High
Sub-VASI in Quang Nam	National	Local	Multiple	High	Medium
DOST in Quang Nam and Da Nang	National	Local	Multiple	Medium	Medium
DARD in Quang Nam and Da Nang	Local	Multiple	Rural	Medium	Medium
Natural Resources and Environment Unit in Tam Ky, Duy Xuyen, Dien Ban Thang Binh, Nui Thanh communes and Hoi An city, Quang Nam Province	Local	Basin	Multiple	Medium	Medium
Cu Lao Cham MPA	Local	Basin	Multiple	High	Medium

Department of Hydro-meteorological forecasting in Quang Nam	Local	Multiple	Multiple	High	Medium
Quang Nam Tourism Association	Local	Multiple	Multiple	High	Medium
Mineral and Water Resources Unit, DONRE in Da Nang	Local	Multiple	Multiple	High	Medium
District Provincial People's Committee in Hoa Vang, Thanh Khe, Cam Le, Hai Chau, Lien Chieu District in Da Nang Province	Local	Basin	Multiple	Medium	Medium
Women Union, Farmer Union, Veteran Union in Quang Nam and Da Nang	Municipal	Basin	Multiple	Low	Low
Viet Nam Plastic Association	National	All	Multiple	High	Medium
Joint Coordination Committee (JCC) for Vu Gia - Thu Bon River Basin	Local	Basin	Multiple	Medium	Medium
Vu Gia - Thu Bon Information Center, the Central Department of the Viet Nam Academy of Water Resources, Da Nang City	Local	Basin	Multiple	Low	Medium

Enabling stakeholder's implementation of their formal or informal mandates related to plastic pollution is dependent upon how they prioritize expenditures and activities within their mandates. Enabling stakeholders may have conflicting or mis-aligned mandates and there may be gaps that leave holes in the enabling environment for preventing plastic pollution. This is explored more in Step 3 of the source-to-sea approach where the governance baseline is analyzed. Coordination between enabling stakeholders is a cornerstone of source-to-sea management.

Supporting stakeholders

Supporting stakeholders (Table 6) are those who may provide support for addressing plastic leakage and solid waste management but may not have legislative powers or formal mandates. These include stakeholders that build awareness or knowledge about an issue, such as universities, or civil society organisations and international development partners that bring additional resources for addressing plastic pollution. Many supporting stakeholders in the Vu Gia-Thu Bon basin comprise different civil society organisations or development partners who are actively engaged in improving solid waste management through programmed activities. Supporting stakeholders may also include private sector interests who provide finance for solid waste management activities, recycling opportunities, or product development. Identified supporting stakeholders include international entities such as the Asian Development Bank (ADB), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) and Japan International Cooperation Agency (JICA), as well as local entities including Zero Waste Alliance Viet Nam, and the Tourist Association of Hoi An. As stated in Mathews (2019): *Supporting stakeholders include development partners or financiers whose strategies are aligned with and can support the source-to-sea objectives.*

Table 6: Examples of supporting stakeholders in the Vu Gia-Thu Bon River Basin

Stakeholder Name	Level	S2S Segment	S2S Sub-segment	Interest	Influence
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IUCN	National	Land system	Multiple	High	Medium
SIWI	Global	Freshwater system	Multiple	High	Medium
EU	Global	Multiple	Multiple	High	Medium
GIZ	Global	Multiple	Multiple	High	Medium
Expertise France	Global	Multiple	Multiple	High	Medium
Worldwide Fund for Nature (WWF)	Global	Multiple	Multiple	High	Medium
French Institute of Research and Development (IRD)	Global	Multiple	Multiple	High	Medium
PRO Viet Nam	National	Multiple	Multiple	High	Medium
MCD Viet Nam	National	Multiple	Multiple	High	Medium
Greenhub	Local	Multiple	Multiple	High	Medium
CECR	Local	Multiple	Multiple	High	Medium
GreenViet	Local	Multiple	Multiple	High	High
Pacific Environment	Global	Coast, nearshore	Multiple	high	High
Gaia Vietnam	National	Multiple	Multiple	high	High
UNESCO	Global	Multiple	Multiple	high	High
Coca Cola	Global	Multiple	Multiple	high	Medium
East Meet West	Global	Land system	Multiple	medium	Medium
IGES	Global	Multiple	Multiple	high	High
JICA	Global	Multiple	Multiple	high	High
UNDP	Global	Multiple	Multiple	high	High
C4SD	Local	Multiple	Multiple	high	High

Supporting stakeholders contribute to source-to-sea management of plastic waste by bringing in additional resources or capacity that support behaviour change in targeted stakeholders. This can be through knowledge sharing, advocacy and by providing additional financial resources not available through enabling stakeholders.

External stakeholders

The final category is external stakeholders (Table 7). This category includes stakeholders whose interests may be aligned with managing the priority flow but may sit outside the biophysical boundaries or may be unaware of opportunities for their involvement. These include individuals and groups concerned about the issue of plastic pollution but with no direct tie to the Vu Gia-Thu Bon basin. External stakeholders can include private sector actors who may benefit peripherally from improved plastic waste management or reduction, e.g., tourism companies from other countries or airlines that receive business from tourists who visit the area. As stated in Mathews (2019): *External stakeholders are individuals or groups outside of the system boundary who share an interest in the outcomes of the project or programme.*

Table 7: Examples of external stakeholders in the Vu Gia-Thu Bon River Basin

Stakeholder Name	Level	S2S Segment	S2S Sub-segment	Interest	Influence
IUCN	National	Multiple	Multiple	Weak	Moderate
SIWI	Global	Multiple	Multiple	High	Medium

EU	Global	Multiple	Multiple	High	Medium
GIZ	Global	Multiple	Multiple	High	Medium
Expertise France	Global	Multiple	Multiple	High	Medium
Worldwide Fund for Nature (WWF)	Global	Multiple	Multiple	High	Medium
French Institute of Research and Development (IRD)	Global	Multiple	Multiple	High	Medium
PRO Viet Nam	National	Multiple	Multiple	High	Medium
MCD Viet Nam	National	Multiple	Multiple	High	Medium
University of Architecture in Ha Noi	National	Multiple	Multiple	High	Medium
University of Technology Da Nang	National	Multiple	Multiple	Medium	Low
University of Da Nang	National	Multiple	Multiple	Medium	Low
Greenhub	Local	Multiple	Multiple	Medium	Low
CECR	Local	Multiple	Multiple	High	Medium
VUSTA Da Nang	Local	Multiple	Multiple	High	Medium
Hoi An Eco-city Working Group	Local	Multiple	Multiple	Low	Low
GreenViet	Local	Multiple	Multiple	High	High
Pacific Environment	Global	Coast, nearshore	Multiple	high	High
Gaia Vietnam	National	Multiple	Multiple	high	High
UNESCO	Global	Multiple	Multiple	high	High

External stakeholders are less likely to initially contribute to source-to sea-management, as they may be unaware of the opportunities for interventions or normally operate at a scale that precludes active local engagement.

By identifying stakeholders across these five categories a fuller picture of who may be engaged in finding solutions to the existing challenges leading to plastic waste is created. This, then, can be fed into the development of a stakeholder engagement plan that will address plastic leakage from production to consumption, end-of-life disposal and recycling. Each stakeholder contributes to these solutions in their own way and the ultimate goal of reducing plastic waste and preventing plastic pollution will be met through interactions between these different stakeholders. Stakeholders may participate in addressing plastic leakage at the end-of-life disposal, collection and recycling. While others may be more active in production, packaging and materials design and technological advances. Raising awareness of the issue, building capacity and governance systems that gain control of plastic waste and increasing financial resources are other contributions that stakeholders can bring. The solution to plastic pollution will be multi-pronged with the engagement of this full range of stakeholders. The stakeholder assessment serves to ensure that future interventions defined in Step 4: Design and implemented in Step 5: Act account for capacities, roles, resources, and motivations of different stakeholders, resulting in greater success of the interventions.

Stakeholder roles in source-to-sea segments

A unique aspect of a stakeholder assessment undertaken using the source-to-sea approach is that the geographic area that the stakeholder is associated with is identified. This results in a mosaic of stakeholders overlaid on the segments of the source-to-sea system, i.e.: land systems, freshwater systems, deltas and estuaries, coasts and nearshore and the ocean (Figure 3). This becomes important when addressing specific sources of plastic pollution as it can help identify who is being affected by or contributing to plastic pollution locally, who has mandates in this area and who may have ongoing activities to address plastic pollution. It may also highlight that primary stakeholders are located far from the source of the plastic pollution, thereby indicating a need to strengthen cooperation between upstream and downstream parties.

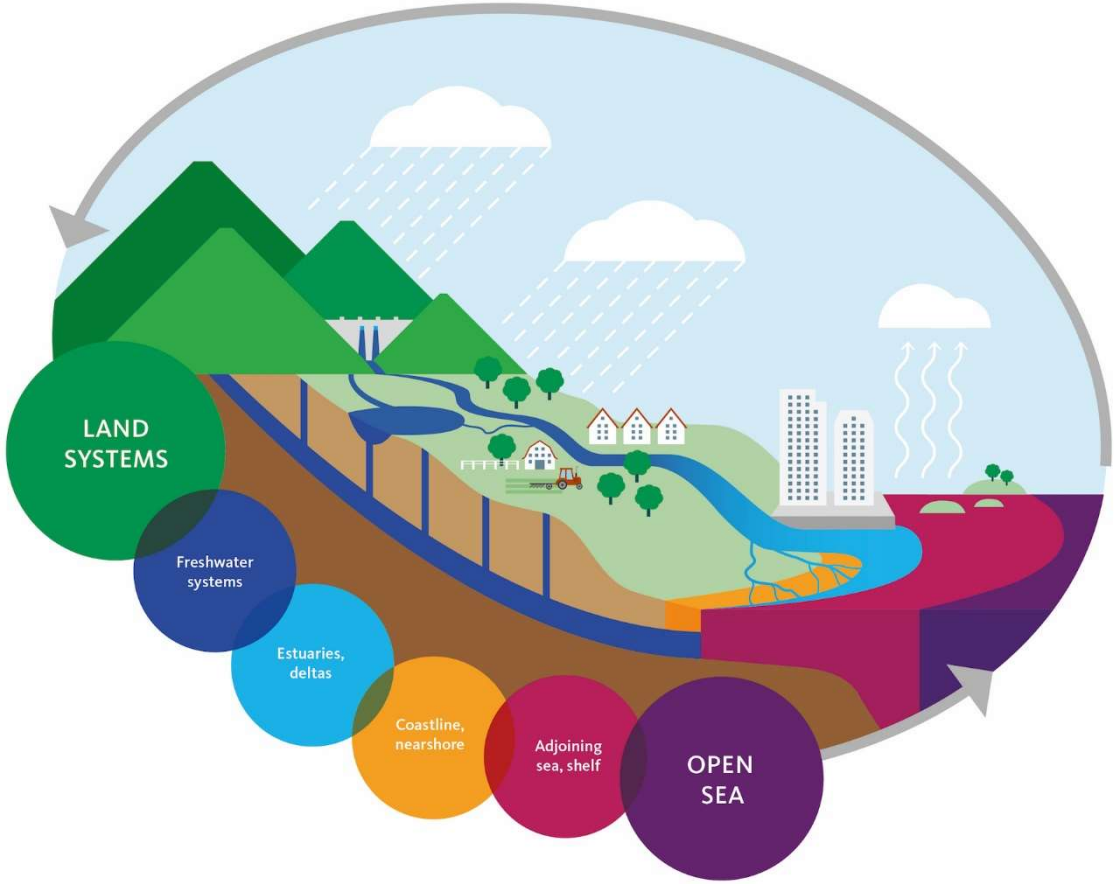


Figure 3: Segments of the source-to-sea system

In the Vu Gia-Thu Bon basin, a lower percentage of waste is collected in rural areas, which are mostly upstream of Hoi An, Da Nang and the coast. This waste can be carried downstream during rains due to the steep slope of much of the upstream areas. This produces a link between the rural, urban and coastal areas that can provide new impetus to address rural waste collection. At the same time, the enabling stakeholders responsible for pollution and solid waste management shift from the Ministry of Natural Resources and Environment in the urban areas to the Ministry of Agriculture and Rural

Development in the rural areas. Understanding this geographic nature of stakeholders is helpful in designing appropriate and effective interventions.

Interest vs influence

Once stakeholders are identified, it is important to understand their level of interest in relation to the issue being addressed and their level of influence in achieving or blocking the hoped-for outcomes. This analysis was shown in Tables 4-8 above. When indicating the level of interest of the stakeholder the measure is to what degree does the stakeholder's own interest align with the desired future condition or long-term outcome. In this case, the assessment is to what extent does the stakeholder wish to have the changes made that are necessary to prevent plastic pollution. The level of interest is high if the stakeholder is fully committed to taking action toward plastic pollution prevention. It is medium if the stakeholder has some level of interest but may also face some conflicting aims when taking action toward preventing plastic pollution. The stakeholder has a low level of interest if that stakeholder would prefer that there is no change toward preventing plastic pollution or is not willing to take the necessary actions to move toward this outcome.

The measure of influence is the degree to which a stakeholder can either make changes in the direction of the desired future condition or long-term outcome on their own or is in the position to support or even compel others to make these changes. Influence can result from several sources including formal or informal mandates, leadership, resource access, or technical capacity and knowledge. Enabling stakeholders often have the most influence, owing to legal mandates, but other parties may also be influential such as knowledge institutions. Depending on stakeholder motivations, influential stakeholders can either enhance or limit changes to practices and behaviours. On the other hand, there may be stakeholders who are very interested in changes being made but have little capacity to influence those changes through a lack of power, resources or capacity.

An example of high level of influence is the ministry with the primary responsibility for pollution and solid waste management, in the case of Viet Nam, the Ministry of Natural Resources and Environment. Some members of the tourism sector, or the sector as a whole, may have a medium level of influence; they can take some actions on their own and are a significant economic sector so can put some pressure for others to make changes, although they have no authority over others themselves. Fishers or local people who are being impacted by plastic pollution have low influence, their ability to make changes in how plastic waste is managed is only at the individual level, with limited influence to change the plastic production and solid waste management systems.

Interest and influence are important considerations within Step 2, as it helps to reveal stakeholder motivations and their capacity to support or impede change. The assessment of stakeholders' levels of interest and influence directly feeds into the stakeholder engagement plan and is useful information when moving to Step 4: Design, where a theory of change will indicate the roles of different stakeholders and the engagement needed to reach the desired future condition and long-term outcome.

Stakeholder engagement plan

The main objectives for stakeholder engagement differ according to the project. In the Vu Gia-Thu Bon, stakeholders were engaged in providing local knowledge about the challenges related to plastic

pollution and to build capacity in the source-to-sea approach to management. Through this engagement process, new stakeholders were identified for future engagement.

Stakeholder roles within source-to-sea segments, interests, and levels of influence impact their engagement in reaching the desired future condition and long-term outcome. The purpose of this analysis of stakeholders is to identify the intent of engagement for each stakeholder. By mapping the relative levels of interest and influence of each stakeholder in relation to the desired future condition, it is possible to characterize the type of engagement strategy to use (Figure 4). For example, if a stakeholder has little interest in change, as they are currently benefitting from the status quo, but has a strong influence on whether changes happen, the stakeholder engagement strategy needs to be designed around raising their interest in change toward the desired future condition or long-term outcome. This may include raising their awareness of the impacts of their behaviours or practices while providing opportunities to change their behaviours or practices to reduce those impacts. Most important will be to remove opposition to change while transforming the stakeholders’ behaviours or practices. These stakeholders may be from the private sector and may operate at the local, regional or multi-national scales.

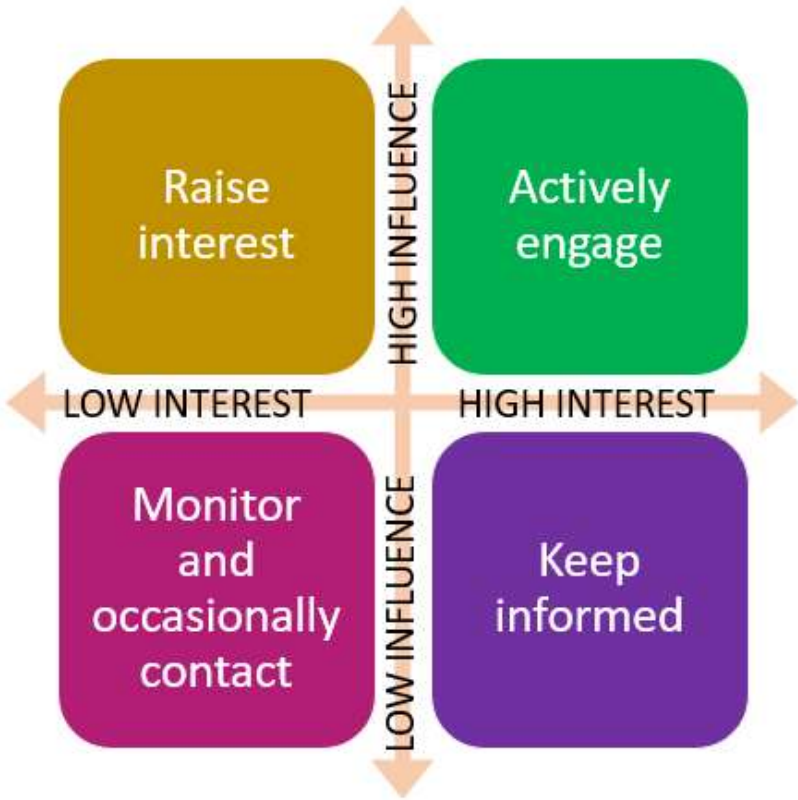


Figure 4: Levels of interest and influence inform the stakeholder engagement strategy

Alternatively, engagement strategies for stakeholders that have a high interest in the desired future condition and a high capacity to influence those changes may be built around active engagement to find solutions that address the issues. These stakeholders are likely to be the main driver of local activities and will be the main proponents of future interventions. Engagement with these stakeholders should form the bulk of activities and interventions as they have an interest in seeing change and the influence to make it happen. For this group, there may be specific barriers to action that need to be addressed. Examples of stakeholders with high interest and high influence are ministries that have mandated responsibility for the management of the priority flow.

For stakeholders with low interest and low influence, engagement is mainly through occasional check-in. Such engagement may increase interest levels, however, with their low influence, these stakeholders will have limited ability to contribute to achieving change beyond their individual actions. These may be individuals who are not directly impacted by plastic pollution or live in areas where plastic waste is well-managed.

The engagement strategy for stakeholders that have a high level of interest but low influence is to keep them involved through information sharing and to create opportunities for their participation with stakeholders that have a high level of interest and influence. Through this participation, the stakeholders empowered to influence change will be able to take into account the perspectives and needs of those without influence. Often, these are the stakeholders being more directly affected by the negative impacts coming from the alterations in the priority flow as well as the ecosystem.

There may also be stakeholders that have either moderate interest in change or moderate influence over where change happens. They will form an important component of future engagement in order to raise their interest in change. There may be more barriers to their involvement, but they can become strong allies, and effort should be made to enlist them.

Discussion

This report represents the initial findings from the stakeholder assessment that was undertaken as part of the Foundations for Source-to-Sea Management project activities (see also Annex 1). Given that some project activities were cancelled due to Covid-19 related travel restrictions, more analysis of the stakeholders' interests and influence will be needed to fully identify the best ways to engage each of the stakeholders. This analysis will be used most primarily when Step 4: Design is undertaken as this is when specific interventions are identified and an action plan is developed.

All five categories of stakeholders – primary, targeted, enabling, supporting and external – will need to be engaged in this process to ensure that the action plan properly reflects the needs of local stakeholders while enlisting the assistance of supporting and external stakeholders. Since the focus of the action plan will be to establish the enabling environment for the required changes in behaviour and practices to occur, having a clear sense of the enabling stakeholders and the barriers to implementation of their mandates is critical. Of equal importance is an understanding of the barriers to change for the targeted stakeholders, i.e., to understand why the current behaviours and practices are used and what is needed to change these. The barriers for implementation of mandates as well as the barriers to changes in behaviours and practices will need to be addressed in the action plan.

Including the linkages of stakeholders to source-to-sea segments anchors stakeholders to specific locations. This becomes important as the sources of plastic pollution are geographically diverse and the impacts are felt differently in different parts of the basin. As was seen in the characterization of the sources of plastic leakage, rural areas produce more unmanaged waste than urban areas. Coastal areas with little or no collection contribute the most directly to marine litter. Stakeholders from rural, urban and coastal areas need to be engaged in different types of actions to address the problem of plastic leakage. Additionally, the enabling stakeholders who have responsibilities for solid waste management and addressing plastic pollution vary between rural, urban and coastal areas.

Impacts are also distributed differently across the basin. Upstream rural communities may use the river as a way to carry their waste away, directly into downstream and coastal communities and ultimately the sea. By understanding these geographic relationships, stakeholder engagement can reflect the social and governance landscape as well as the biophysical.

Devising a stakeholder engagement plan using source-to-sea stakeholder categories and linking them to source-to-sea segments will provide the following benefits.

1. All perspectives are taken into account during the formulation of the action plan and its implementation, leading to a greater likelihood of the actions being implemented and resulting in the intended goals.
2. Stakeholder engagement can be fine-tuned to reflect the specific geography of stakeholder interests and levels of influence. By linking stakeholders, sources and impacts to source-to-sea segments, the appropriate stakeholders can be engaged to address problems locally where they occur.
3. Stakeholders that are often overlooked are brought into the search for solutions, presenting new opportunities for innovation. By expanding the circle of stakeholders to all those who may have an interest or an ability to influence change to the desired future condition and long-term outcome, new resources may be unlocked and more actors can collectively support and advocate for actions to achieve this change.
4. Linkages across different stakeholders, communities and sectors can be built to strengthen upstream-downstream cooperation and coordination to ensure coherence in all activities. Priority actions will be identified holistically rather than being restricted by a single stakeholder or small group of stakeholders.

Next steps and recommendations

The following have been identified as next steps in developing the stakeholder engagement plan and using this stakeholder analysis to develop an action plan for preventing plastic pollution in the Vu Gia-Thu Bon basin.

- Present this stakeholder assessment to stakeholders for verification, attempting to the extent possible to include all stakeholders identified here in the consultation.
- Facilitate information sharing and lessons learned between stakeholders.
- Engage key enabling stakeholders in developing an engagement strategy for primary, targeted, supporting and external stakeholders while clarifying their levels of interest, influence and linkages to source-to-sea segments.
- Discuss and develop cooperation between upstream and downstream stakeholders and coordination mechanisms that open up dialogue between different governance institutions.
- Prepare an action plan for preventing plastic pollution in the Vu Gia-Thu Bon basin through engagement of all relevant stakeholders with mutually agreed upon roles and responsibilities.

References

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Resources and Waste Advisory Group. (2019). Plastic Waste Management in Vu Gia –Thu Bon basin: Quantitative and qualitative assessment characterizing plastic solid waste flows in the Vu Gia –Thu Bon basin from source-to-sea. Report commissioned by the Stockholm International Water Institute, p 1- 64.

Annex: Stakeholder assessment worksheet

Annex: Stakeholder assessment worksheet

STEP 2: Engage

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Local fishers	Living near the river basin or out of the areas	Primary	Basin Local	Coast, nearshore Freshwater system		Low Low	Low Low	Conduct aquaculture activities in VG- TB area	
Local people	Living near VG-TB river basin	Primary	Basin	Coast, nearshore		Low	Low	Live in the area but do not exploit the natural resources in the area	
Local tourist businesses (boat tours, tourist companies, hotels, accommodation services, tourist services's associated companies, etc)	Businesses are conducting tourist activities near the river or nearby the area	Primary	Basin	Freshwater system		Medium	Low	<p>Hoi An Chic Hotel - Passionately lead the way in reducing plastic waste via a variety of means. These are, but not limited to: The use of Eco-friendly biodegradable drink straws; Staff uniforms are made from eco-friendly fabrics; alternatives to plastic are used wherever possible from employees glass water bottles to wooden staff name badges and Our room keys are made from recycled wood https://www.hoianchic.com/chic-environment.html</p> <p>Four Seasons Hotel, Hoi An. With environmental concerns over plastic consumables at an all-time high, Four Seasons Resort The Nam Hai, Hoi An is aiming to be part of the solution this December by launching Project Aqua: an on-site water-bottling facility that will cut an estimated 5.8 tons of plastic waste annually.https://press.fourseasons.com/hoian/hotel-news/2019/plastic-waste-reduction-program/</p> <p>Hoi An Kayak Tours - This kayaking company have began a 'River Clean-Up'. Hoi An Clean up is a non-profit community organization dedicated to the cleaning and preservation of Hoi An environment. https://hoiankayaktours.com/new/hoi-an-clean-up.html</p> <p>We started this campaign in Feb 2017 by organizing River Clean Up every Saturday morning. The event is a good opportunity to make inspiration and encourage the local people and expat community to clean up the Thu Bon river together. Also see: https://e.vnexpress.net/news/travel/places/a-tour-sends-travelers-out-picking-up-trash-in-hoi-an-s-waterways-3554681.html</p>	
Local businesses using natural resources from VG-TB river	Businesses are exploiting aquatic resources from Vu Gia - Thu Bon rivers	Primary	Local	Freshwater system Coast, nearshore		Medium	Low		<p>Aquaculture producing companies in Quang Nam are mainly local businesses as showed in the below list https://quang-nam.congtydoanhnghiep.com/nganh-nghie-che-bien-bao-quan-thuy-san-va-cac-san-pham-tu-thuy-san</p> <p>We cannot find the relevant activities of these companies which are in line with project's outcome but some articles about companies violating environmental standards were found such as Việt Quang company http://www.thuysanvietnam.com.vn/quang-nam-doanh-nghiep-che-bien-thuy-san-gay-o-nhiem-article-5823.tsvn And Quang Nam Aquaculture Import-Export Company https://nongnghiep.vn/quang-nam-mot-cong-ty-bi-phan-vi-gay-o-nhiem-moi-truong-45026.html</p>

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Consumers (households, pedestrians and tourists)	Buying or using single use plastic packages/bottles	Primary	Local Basin	Coast, nearshore Freshwater system Land system		Low	Low	Identify activities of households, consumers aligning with project outcome will need a further research, this analysis cannot provide this information	
Urban Environment Company in Quang Nam	State - owned enterprise, responsible for collecting, transporting waste in Quang Nam, providing tap water for some provinces	Target Primary	Local State	Land system Coast, nearshore		High	High	The responsibilities of the company is related to waste collection and recycling so their activities are in line with outcome of the project	
Da Nang Urban Environment Company (URENCO)	State-owned enterprise, responsible for collecting and transporting waste in Da Nang	Target Primary	State Local	Coast, nearshore		High	High	The responsibilities of the company is related to waste collection and recycling so their activities are in line with outcome of the project	
Local recycling businesses (EverGreen Lab .etc)	EverGreen Labs mission is to aim to change the perceptions of business, blurring the lines between social good and profitability and focusing on the creation of sustainable impact. EverGreen Labs believe that business no longer needs to solely engage in social causes through defined budgets and activities, but rather impact should be inherently incorporated into company structures. Their goal is to create and support inclusive businesses that drive lasting growth, development and long-term benefits for future generations.	Target Primary	Local Municipal	Land system Coast, nearshore		High	Medium	Evergreenlab has mission to reduce plastic pollution in marine environments while creating local jobs, businesses, products, and a local circular economy. Thus, all its activities are aligned with project outcome. They have conducted a wide range of activities in Vietnam - Notably with the Mekong Business Initiative to bring about a waste management programme along the Mekong Delta to identify innovative ways to manage marine plastics whilst incorporating local communities. More can be read here: https://evergreenlabs.org/#portfolio For details, please visit: http://evergreenlabs.org/reform/	
Super markets in Vu Gia - Thu Bon areas	Providing food supplies for local people in the area	Target	Local	Coast, nearshore Land system		Low	Low	A quick research was made but cannot find activities of supermarkets in Quang Nam conducted in relation to plastic waste. Instead, an article was found shown that Quang Nam PPC committed by 2021, supermarkets and wet markets in Quang Nam will not use single-use plastic following the instruction of Government PM on 09/6/2019. https://baotainguyenmoitruong.vn/quang-nam-tu-thang-1-2020-cac-co-quan-khong-sudung-san-pham-nhua-dung-mot-lan-795344.html Co,op Mart, BigC, Lotte has green campaign to reduce food wrapping with natural leaves nationally including branches in Da Nang https://haiquanonline.com.vn/sieu-thi-tham-gia-bao-ve-moi-truong-102231.html Vinmart - a big retail chain in Viet Nam - used bio-gradable plastic bags instead of plastic bag, sugar-cane dregs boxes instead of foam boxes including branches in Da Nang https://baodanang.vn/can-biet/201908/2200-sieu-thi-vinmart-amp-vinmart-dong-loat-hanh-dong-3-xanh-bao-ve-moi-truong-	Supermarkets in Quang Nam including tam Ky Co-mart, Mini N-T Mart, Electronics Supermarkets; Supermarkets in Da Nang such as Big C, Lotte, Co,op Mart, Vinmart, Japanese supermarket, mega market, Dien may Xanh, electronics supermarket,...
Traditional markets in Vu Gia - Thu Bon area	Wet markets in the local resident areas nearby Vu Gia- Thu Bon river basin	Target	Multiple	Land system Coast, nearshore		Low	Low	Cannot find activities of wet markets on this topic although traditional markets are normally the main sources of plastic leakage due to poor management (waste are not stored properly, lots of single-use plastic was used by the locals, housewife and traders.	

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Industrial Zone Management Board in Da Nang	Responsible for managing high-tech and industrial zone areas in Da Nang	Target	State Local	Land system		Low	Low	In December, 2019, "Beautiful hands-on basket - Reduce plastic waste immediately" donated 1,000 baskets to the market for workers and workers in Hoa Khanh industrial park, Da Nang. The program was implemented by the Management Board of Da Nang High-Tech Park and Industrial Zones in cooperation with businesses to respond to the Prime Minister's call: "Houses limit plastic waste, people who prevent pollution. plastic waste, society goes to say no to plastic waste". https://laodong.vn/cach-lam-hay-tu-co-so/tang-1000-tui-xach-cho-chi-em-cong-nhan-da-nang-ken-pi-am-rac-thai-770885.htm	
Au Thuyen Management Board and Tho Quang Fishing Quarf in Da Nang fishermen and traders operating in Au Thuyen and Fishing Quarf	Responsible for managing fishing port, fish markets, storm sheltering for fishing boats, ...	Target	Local Municipal	Coast, nearshore Open ocean		Low	Medium	From 2016, the project to upgrade and expand Tho Quang fishing port, TP. Da Nang has been approved by the Ministry of Agriculture and Rural Development, and the Ministry of Agriculture and Rural Development has approved the contractor selection plans; designing construction drawings, construction cost estimates; Adjusting the contractor selection plan during August 2017, February 2018 and November 2018. To combat pollution and plastic pollution, Constructing and renovating electricity supply system, lighting system, water system, oil supply system is a priority, as is constructing waste water treatment plant based on European technology. https://baotainguyenmoitruong.vn/du-an-nang-cap-mo-rong-cang-ca-tho-quang-da-nang-du-von-vi-sao-cham-trien-khai-300510.html	
Waste collectors/transporters at district landfills/dumping sites organized by rural districts	Collecting waste at villages/commune levels and transporting to the landfill/dumping sites. Disposing waste at the dumping areas	Target	Municipal Local	Land system Coast, nearshore		Low	Low		Cannot find the information about this stakeholder, it needs a separate study/research or maybe collect information from the authorised local agencies
Informal waste pickers (along the street and at landfills)	Collect and recover recyclable materials along streets or waste transferring points	Target	Local	Land system		Low	Low		Cannot find the information about this stakeholder, it needs a separate study/research or maybe collect information from the authorised local agencies
Media outlets	Providing knowledge, information about plastic waste pollution, raising awareness of local people and support policy advocacy	Target	National	Multiple		Medium	Medium	Media supported to cover the news about environmental news on plastic waste pollution as well as initiatives to raise awareness of the public and create public pressure on some topics. Some major media outlets in Viet Nam can be named such as Vnexpress, Vietnam News, Thanhnien, Zing.vn, Lao Dong, Dan Tri, VietnamNet, .. (online and printed news) and Viet Nam Television, Nhan Dan Television, Quoc Phong TV, VTC... (television). Main social media channel in Viet Nam is facebook	
Viet Nam Administration of Seas and Islands (VASI)/MONRE	MONRE is responsible for state management on the following areas: land, water resources, mineral resources, geology, environment, meteorology, climate change, mapping, resources	Enabling	National	All		High	Medium	As a government agency, it is mandated to conduct activities aligned with solid waste management and the long term outcome	
Viet Nam Environment Administration (VEA)/MONRE	integrated management, seas and island protection, remote sensor, public services under Ministry's management. VASI, VEA, LED has some specific responsibilities:	Enabling	National	All		Medium	Medium	As a government agency, it is mandated to conduct activities aligned with solid waste management and the long term outcome	

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Legal Department/MONRE	- Develop law, policies in relation to plastic waste management - In cooperation with MOC, adopt strategy for solid waste management - <u>Planning infrastructure for solid waste</u>	Enabling	National	All		High	Medium	As a government agency, it is mandated to conduct activities aligned with solid waste management and the long term outcome	
Ministry of Construction (MOC)	- Develop strategies, programme, national standards on SWM and manage the implementation upon Prime Minister's approval. - Collaborate with MONRE to provide guidelines on restoration, reuse, repurpose and conduct environment monitoring for solid waste treatment companies after closure. - Collaborate with MOST and MONRE to validate and recognize new technology on solid waste disposal and first application in Viet Nam	Enabling	National	All		High	High	As a government agency, it is mandated to conduct activities aligned with solid waste management and the long term outcome	
Ministry of Planning and Investment (MPI)	Responsible for developing strategies, planning, socio-economic development, national public investment plan, economic management policy, domestic investment, foreign investment in Viet Nam and Vietnamese investment to overseas, economic zones, ODA, soft loan, government aids, bidding, entrepreneurship development, collective economy, cooperatives, statistics, public services management in <u>areas under the state management</u>	Enabling	National	All		Low	Medium		
Ministry of Agriculture and Rural Development (MARD)	Responsible for state management of the following areas: agriculture, forestry, aquaculture, natural disaster prevention, agricultural development, state management for public sectors and areas <u>according to the law</u>	Enabling	National	All		Low	Medium		
Ministry of Industry and Trade (MOIT)	MOIT is responsible for state management of industry and commerce including different sectors and areas: electricity, oil and gas, new energy, renewable energy, chemicals, industrial explosive materials, industrial mechanic, mining exploitation industry, mineral resources, food industry, export, import, trade promotion, e-commerce, commerce services, international economy, competitiveness, consumers rights protection,... other sectors under <u>the Ministry's management</u>	Enabling	National	All		Low	Medium		
Ministry of Culture, Sport and Tourism (MOST)	State management on culture, family, sport, tourism in nationwide and manage public services related to Ministry's <u>management</u>	Enabling	National	All		Medium	Medium		
Viet Nam Business Council for Sustainable Development (VBCSD)/Viet Nam Chamber of Commerce and Industry (VCCI)	VBCSD is a business-led organization with the mandate to promote the business community's active role in and strong advocacy for the implementation of the Strategic Orientation for Sustainable Development in Vietnam. VBCSD facilitates and promotes the sharing of experience, solutions and good practices on sustainable development, and strengthens dialogues and close coordination among business community, the Government and civil organizations on this domain.	Enabling	National	All		Medium	Medium	VBCSD is implementing some projects/programme with business members on plastic such as Zero waste to Nature and Viet Nam Materials Marketplace http://en.vbcسد.vn/project.asp	
Provincial People's Committee in Quang Nam and Da Nang	Participate in the implementation of S2S project, responsible for planning, developing strategies,...	Enabling	Local	All		Medium	High		

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
DONRE and Sub-DONRE in Quang Nam	Conducted the responsibility of state management under MONRE and at local level	Enabling	Local	Multiple		High	High		
DONRE and Sub-DONRE in Da Nang	Conducted the responsibility of state management under MONRE and at local level	Enabling	Local	Multiple		High	High		
Sub-VASI in Quang Nam	Conducted the responsibility of state management under MONRE and at local level	Enabling	Local	Multiple		High	Medium		
DOST in Quang Nam and Da Nang	Conducted the responsibility of state management under MOST and at local level	Enabling	Local	Multiple		Medium	Medium		
DARD in Quang Nam and Da Nang	Conducted the responsibility of state management under DARD and at local level	Enabling	Local	Multiple		Medium	Medium		
Natural Resources and Environment Unit in Tam Ky, Duy Xuyen, Dien Ban Thang Binh, Nui Thanh communes and Hoi An city, Quang Nam Province	Conducted the responsibility of state management under MONRE and at communal level	Enabling	Local	Multiple		Medium	Medium		
Cu Lao Cham MPA	Cu Lao Cham MPA has responsibility to provide consultation for Hoi An CPC on state management of sea and island protection, conservation and exploitation and development of values of Protected Area on biodiversity, natural resources, culture, history, science, education and training, eco-tourism, entertainment areas, and implement management regulations of CLC MPA promulgated by the law	Enabling	Local	Multiple		High	Medium	The Cham Islands' Marine Protected Area (MPA) management board, in cooperation with the International Union for Conservation of Nature (IUCN), has launched a new garbage sorting programme as part of efforts to reduce plastic waste in Vietnam. https://en.vietnamplus.vn/cham-islands-acts-to-eliminate-plastic-waste/155662.vnp - For the past eight years, the islanders have led a 'green' lifestyle without plastic bags, thanks to a campaign initiated in 2009 by the administration of Cham Islands, administered by Quang Nam Province, which called on locals to "say no to [the] bags." https://tuoitrenews.vn/lifestyle/39766/in-vietnam-islanders-lead-plastic-bag-free	
Department of Hydro-meteorological forecasting in Quang Nam		Enabling	Local	Multiple		High	Medium		
Quang Nam Tourism Association	Association has responsibility to gather, connect members to support and cooperate for more effective operation and developing tourism sector in Quang Nam to ensure customers' rights and legal benefits of members	Enabling	Local	Multiple		High	Medium	In response to the program, Quang Nam Tourism Association presided over the event "Quang Nam Sustainable Tourism Development 2019 - Plastic-free Tourism" under the auspices of the People's Committee of Quang Nam Province and organized UNESCO in Vietnam at Silk Sense Hoi An River Resort The seminar focuses on discussing the importance of sustainable development for Quang Nam tourism in the future and developing plastic-free tourism. At the same time, the seminar also presents and proposes solutions to develop sustainable products to access in the tourism industry. Besides, they also analyzed the impact of Sustainable Tourism on creative start-up projects. Silk Sense Hoi An River Resort is honored to become a venue and welcome politician Ms. Ton Nu Thi Ninh, as well as speakers, press agencies and many other important guests come to exchange, orient sustainable tourism development for Quang Nam in the upcoming period - Plastic-Free Tourism Development.	
Mineral and Water Resources Unit, DONRE in Da Nang	Conducted the responsibility of state management under MONRE and at local level	Enabling	Local	Multiple		High	Medium	its mandate is aligned with solid waste management and the long term outcome of the project	
District Provincial People's Committee in Hoa Vang, Thanh Khe, Cam Le, Hai Chau, Lien Chieu District in Da Nang Province	Conducted the responsibility of state management under Quang Nam and Da Nang CPC and at local level	Enabling	Local	Multiple		Medium	Medium		

Stakeholder Name	Description	Category	Level	S2S segment	S2S sub-segment	Interest	Influence	Activities	Additional Comments
Women Union, Farmer Union, Veteran Union in Quang Nam and Da Nang		Enabling	Municipal	Multiple		Low	Low		
Viet Nam Plastic Association	VPA is a social professional organization on producing, using, researching and managing plastic directly and indirectly	Enabling	National	All		High	Medium	Its mandate is aligned with solid waste management and the long term outcome of the project	
Joint Coordination Committee (JCC) for Vu Gia - Thu Bon River Basin	The purpose of the joint Coordination Agreement focuses on: (1) enhancing coordination between Quang Nam Province and Da Nang City, between departments, agencies, and relevant parties for the IM of Vu Gia - Thu Bon river basin and Quang Nam - Da Nang coastal area, aimed at harmonizing economic development, social welfare, and ecological and environmental safety (conservation); (2) sharing information, encouraging collaboration between relevant parties (departments, agencies, enterprises in the area; between the government and the local community, and between management boards of nature and heritage conservation zones in the area); and (3) establishing an inter-provincial institution to implement the IM of Vu Gia - Thu Bon river basin and Quang Nam - Da Nang coastal area.	Enabling	Local	Multiple		Medium	Medium	Since 2013, IUCN, through MFF, has been working with local authorities and other partners to promote integrated watershed and coastal management. This has included a series of events such as the Ridge to Reef (R2R) approach inception workshop, a policy brief development, a consultation workshop on policy briefings, and the aforementioned high level round-table discussion. The purposes of the discussion were (i) to strengthen coordination between relevant stakeholders (intersectoral), especially inter-regions between Quang Nam and Da Nang in order to pilot integrated watershed and coastal management; (ii) to share information and lessons learned among local and international scientists; (iii) to discuss the draft Coordination Agreement between Quang Nam Province and Da Nang city, which is a pilot application of the "Integrated watershed and coastal management in Vu Gia - Thu Bon River Basin and Quang Nam - Da Nang coastal areas" for final approval from leaders of both parties.	
Vu Gia - Thu Bon Information Center, the Central Department of the Viet Nam Academy of Water Resources, Da Nang City		Enabling	Local	Multiple		Low	Medium		
IUCN		Supporting/External	National	Multiple		High	Medium		
SIWI		Supporting/External	Global	Multiple		High	Medium		
EU, GIZ, Expertise France		Supporting/External	Global	Multiple		High	Medium		
World Wide Fund for Nature (WWF)		Supporting/External	Global	Multiple		High	Medium		
French Institute of Research and Development (IRD)		Supporting/External	Global	Multiple		High	Medium		
PRO Viet Nam	PROVN is a coalition of nine leading companies from the consumer goods and packaging industry including Coca-Cola Vietnam, FrieslandCampina, La Vie, Nestlé Vietnam, NutiFood, Suntory PepsiCo Vietnam, Tetra Pak Vietnam, TH Group and URC Vietnam. It aims to contribute to a clean, green and beautiful Vietnam by driving the circular economy and making recycling of packaging more accessible and sustainable.	Supporting/External	National	Multiple		High	Medium	PRO Vietnam's four major goals are to spread awareness on recycling and segregation, boost the current packaging collection ecosystem, support recycling programmes of processors and those who recycle, and partner with the government to recycle. The voluntary, public-private partnership will focus on generating jobs for individuals and businesses working on post-consumer packaging. https://www.packaging-gateway.com/news/pro-vietnam-packaging-recycling/	

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MCD Viet Nam	<p>Since 2003 MCD was formed and performed as a Vietnamese non-governmental non-profit organization (VNGO). MCD is a member of IUCN, VUSTA</p> <p>Since its establishment, MCD has been fully devoted to coastal ecosystem conservation and community livelihoods development. From 2008, as climate change emerged as a big challenge internationally and locally, MCD started to embed climate change considerations and responses into its strategies and work. Until now, MCD's focus of works includes environment & natural resources management, community sustainable livelihood development, communications and policy advocacy, in which climate change response, disaster risk reduction, gender equality are the cross-cutting issues</p>	External/Supporting	National	Multiple		High	Medium	<p>MCD has three principal themes:</p> <ol style="list-style-type: none"> Coastal Environment & Resource Management <ul style="list-style-type: none"> Promote and support marine ecosystem conservation and restoration. Enhancing coastal resources management effect through (i) marine reserve model managed by local provinces and enlarging model's impact area; (ii) reinforcing interdisciplinary and interprovincial coordination mechanism in managing protected areas with national and international importance. Sustainable Livelihoods for coastal communities <ul style="list-style-type: none"> Engage with coastal communities to assess their challenges and needs, and empower them by providing information, training and advice. Capacity Building, Communications and Policy Advocacy http://mcdvietnam.org/who-we-are/ 	
University of Architecture in Ha Noi	<p>Provided training on undergraduates, post graduates and scientific research on the area of architecture,</p>	External	National	Multiple		Medium	Low	<p>Week of Workshop and International Workshop at Hanoi Architectural University - Topic "Dynamic in garbage collection and recycling spaces"</p> <p>https://translate.google.com/translate?hl=en&sl=vi&u=http://kientrucvietnam.org.vn/tuan-le-hoi-thao-va-workshop-quoc-te-tai-dai-hoc-kien-truc-ha-noi-chu-de-su-nang-dong-tai-cac-khong-gian-thu-gom-va-tai-che-rac/&prev=search</p>	
University of Technology Da Nang	<p>It is a university member of the University of Đà Nẵng. The polytechnic university was founded in Đà Nẵng in 1976 and then had two divisions: an economic faculty and a technical faculty. When the University of Đà Nẵng was founded by incorporating several colleges in Đà Nẵng, the economic division was split off to establish Đà Nẵng University of Economics.</p>	External	National	Multiple		Medium	Low	<p>With their strong passion and creativity, a group of students from the Da Nang University of Technology and Science has successfully created a mechanical system to turn plastic waste into useful products, proving that discarded waste is not always useless.</p> <p>https://baodanang.vn/english/society/201706/turning-plastic-waste-into-useful-products-2559259/</p>	
University of Da Nang	<p>UD is the largest university in Central Vietnam. It is located close to the UNESCO World Heritage listed ancient city of Hoi An, the My Son holy land and Hue's Imperial City.</p> <p>UD is a multi-level, multi-disciplinary university providing a wide range of courses and training programs for the people of the Central Area and Western Highlands of Vietnam. The University's main strengths are in Engineering, Technology, Economics, Education and Foreign Languages.</p>	External	National	Multiple		Medium	Low	<p>Students of Danang University invent a garbage collection machine on the water and the beach</p> <p>https://translate.google.com/translate?hl=en&sl=vi&u=http://www.udn.vn/posts/view/4671/63&prev=search</p> <p>DUE STUDENTS ENJOY THE CAMPAIGN TO REDUCE THE IMPACT OF PLASTIC WASTE</p> <p>https://translate.google.com/translate?hl=en&sl=vi&u=http://tuoitredhn.udn.vn/doan-dai-hoc-da-nang/he-thong-co-so-doan/sinh-vien-due-huong-ung-chien-dich-giam-tac-hai-cua-rac-thai-nhua-1402.html&prev=search</p>	
Greenhub	<p>Greenhub is a local NGO, member of IUCN and VUSTA</p> <p>GreenHub connects communities and resources to embrace green lifestyle practices, sustainable production and natural conservation.</p>	External/Supporting	Local	Multiple		High	Medium	<p>GreenHub has been working with the Women's Union in Ha Long City to introduce innovative ways to reduce plastic waste and provide new livelihoods for local women by repurposing this plastic waste. GreenHub has been working with these women for some time to produce new plastic products from recycled plastic banners. Recently, they have commenced working with a new product – recycled plastic straps salvaged from construction work. This is the story of how this came about.</p> <p>https://greenhub.org.vn/earning-money-from-trash-story-2-the-story-of-net-packing</p>	

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CECR	Established in 2009 and is dedicated to the long-term protection, restoration and management of all aquatic resources in Vietnam. Its mission is to promote and support organizations, businesses, and community participation in environmental protection and response to climate change effectively. CECR is a member of IUCN and Vietnam Union of Science and Technology Associations (VUSTA).	External/Supporting	Local	Multiple		High	Medium	<p>On 18 May 2019, the conference on “The end of Ocean Without Plastic Project in Danang city Sharing Results and Best Practices with Coastal Provinces in Central Region of Vietnam” was co-organized in Danang by the Center for Environment and Community Research (CECR), Department of Natural Resources and Environment of Da Nang city, Vietnam Union of Science and Technology Associations (VUSTA)</p> <p>The project is a part of the Municipal Waste Recycling Program (MWRP)/ DIG funded by USAID and is ministered by CECR in Da Nang city with an aim to “ raise awareness and encourage recycling plastic at source based on community, protecting the ocean from plastic pollution.”</p> <p>https://cecr.vn/en/uncategorized/ocean-without-plastic-project-in-da-nang-city-end-of-project-dissemination-conference-sharing-results-and-best-practices-with-coastal-provinces-in-central-region-of-vietnam.html</p>	
VUSTA Da Nang	VUSTA Da Nang is socio-political organization operating in the area of science, technology in collaboration with other socio-political organizations and take responsibility for providing advice, feedback, independent and social monitoring on projects, scientific researches, construction work; participated in science and technology development, awareness raising, poverty alleviation. Acting as member of Vietnamese Fatherland Front of Da Nang city, promoting the nation love of the local citizens.	External	Local	Multiple		Low	Low	<p>On November 18 in Hanoi, the Vietnam Union Association organized a seminar: “Suggestions to guide the integration of sustainable development goals into the five-year socio-economic development plan of the Ministry. , industry and locality and Guidelines for Monitoring and Evaluation of the Implementation of Sustainable Development Goals to 2030 “. At the workshop, delegates heard delegate Vu Thi Nguyet Hong, former director of the Central Institute of Economic Management, presented a draft guiding the management and evaluation of the implementation of sustainable development goals by 2030 and Delegate Nguyen Thi Thanh Nga from Department of Science, Technology and Environment, Ministry of Planning and Investment presented the Draft guiding the implementation of integrating the sustainable development goals into the socio-economic development plan.</p> <p>http://vusta.vn/chi-tiet/bao-tac-doi-tac/hoi-an</p>	
Hoi An Eco-city Working Group	coordinates the growing network of local government staff and researchers, hotel & restaurant businesses, social entrepreneurs, educators and schools, artists and community groups, focusing on Hoi An and Danang areas, who are working on sustainable products and services. The key strategy is to reduce the use of single use plastic and to connect for better collaboration among all stakeholders.	External	Local	Multiple		High	Low	<p>Our action plan includes different phases of implementation, kicked off with a range of successful side events collaborated with Hoi An Authority in Earth Hour 30th-31st March 2019. The coming-up activities will be focusing on to strengthen the network through knowledge and skills exchanged, promotion of critically ecological mindset, products and services, training and educational workshops and tours. Hoi An Eco-city Map is one the key contributions of our working group to Hoi An authority and people.</p> <p>https://hoianecocity.jimdofree.com/march-30th-31-st-earth-hour-event/</p>	

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GreenViet	GreenViet acts to help the community understand, respect and shape nature-friendly lifestyles through research, conservation and dissemination of biodiversity values. GreenViet became a prestigious center for research and consultancy, communication and education, policy advocacy in the field of Biodiversity in the Central region - Central Highlands.	External/Supporting	Local			High	Medium	Green Viet have worked on a variety of environmental conservation missions. As an NGO, they work with a variety of other organisations to bring collaborative change for environmental good. On September 24th 2016, in partnership with the Department of Education and Training - GreenViet assisted with the training of 800 students on plastic waste management and the issues associated with it. Included in the day was a fashion show where models displayed clothes made from recycled plastic bags and bottles. This was to educate students on the importance of reusing and recycling to promote better habits. http://en.greenviet.org/articles/view/541	
Pacific Environment	Pacific Environment believe that communities must determine their destinies and that people have a right to meaningfully participate in decisions that affect their lives, their livelihoods and the natural environment. That's why Pacific Environment helps build the global grassroots environmental movement. Pacific Environment achieve this by providing direct financial support, technical and legal expertise, and the know-how to build activist networks. The company also fights for systemic changes that complement and can even transform these local efforts.	External/Supporting	Global	Coast, nearshore		high	Low	Conducted waste and brand audits throughout the world to design tailored zero waste solutions for individual cities and communities. Joined forces with Greenhub and other local Vietnamese partners to conduct a seven-day household waste audit among 60 households in Ha Long, followed in September with another week of audits focused on tourism businesses: hotels, restaurants, and tour boats. https://www.pacificenvironment.org/bringing-zero-waste-to-vietnam/	
Global Alliance for Incinerator Alternatives (GAIA) vietnam	GAIA is a worldwide alliance of more than 800 grassroots groups, non-governmental organizations, and individuals in over 90 countries. GAIA envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped. GAIA see waste and its resulting pollution as a symptom of a larger, profit-driven extractive economy, and therefore promote zero waste as a holistic solution and an economic shift toward justice and sustainability.	External/Supporting	National	Multiple		high	Medium	GAIA works with cities on zero waste systems, secures policies that reduce production and consumption of single-use disposable plastics, and supports powerful grassroots movements to fight plastic pollution at its source. https://www.no-burn.org/what-we-do/	
UNESCO	UNESCO encourages international peace and universal respect for human rights by promoting collaboration among nations.	External/supporting	Global	Multiple		high	High	UNESCO announced a new partnership with Coca Cola Vietnam and its development partners at a ceremony in Hanoi on October 17, with a view to reducing plastics and solid waste in Vietnam for a "World without Waste". https://en.nhandan.com.vn/scitech/environment/item/6732602-first-floating-solar-	

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Coca Cola	The Coca-Cola Company, American corporation founded in 1892 and today engaged primarily in the manufacture and sale of syrup and concentrate for Coca-Cola, a sweetened carbonated beverage that is a cultural institution in the United States and a global symbol of American tastes.	Supporting	Global	Multiple		high	Medium	The "World Without Waste" project, which is carried out by the British Council in collaboration with Coca-Cola Vietnam for the past several years, is a widespread case. With the capacity of education, the British Council has cooperated with local authorities and businesses to aim to equip teachers with coordination skills, knowledge of waste management, and a positive citizenship spirit of creating positive changes in the environment through an innovative training method conducted by the British Council's coordinating team. The project was piloted at three high schools in Thua Thien Hue province in 2018. This was replicated in 2019 in Hanoi, Da Nang, and Ho Chi Minh City with 9 high schools. https://en.coccolavietnam.com/stories/practicing-environmental-social-responsibility-in-vietnam-strong-but-need-to-spread-more	
East Meet West	East Meets West is an international non-governmental organization pioneering evidence-based programs and technologies in health, water and sanitation, and education for underserved populations in Asia and	supporting	Global	Land system		medium	Low		
IGES	IGES focuses on the protection and management of healthy, resilient ecosystems for the wellbeing of current and future generations. Natural resources and ecosystems provide the foundations for a healthy planet and people. IGES work closely with governments, academic institutions and other development organisations to conduct demand-driven policy research, and provide practical solutions on a range of environmental issues, including biodiversity, forest management, resilient livelihoods and water	Supporting	Global	Multiple		high	Low	Starting in April 2020, IGES began its support for "Closing the Loop", a project co-led by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the Japanese government. As a partner agency of ESCAP, IGES is dedicated to preventing and reducing marine plastic pollution in Vietnam, Indonesia, Malaysia, and Thailand. Its contribution to this project will continue until March of next year. https://www.iges.or.jp/en/news/20200513	
JICA	The Japan International Cooperation Agency is a governmental agency that coordinates Official Development Assistance for the government of Japan. It is chartered with assisting economic and social growth in developing countries, and the promotion of international cooperation.	Supporting	Global	Multiple		high	High	JICA conducted a Marine Plastic Waste workshop in Japan in November 2019. At this workshop, 12 persons in charge of handling marine plastic waste were invited from neighbouring countries including Vietnam. At this event participants learn about various initiatives in Japan, through a lecture by professor ISOBE Atsuhiko, who studies marine plastic pollution at Kyushu University, taking part in garbage cleanup in Yokohama City using the social media app PIRIKA, as well as visit to the GUUN Co., Ltd. recycling facilities where plastic is being turned into	
UNDP	The United Nations Development Programme is the United Nations' global development network. It advocates for change and connects countries to knowledge, experience and resources to help people build a better life for themselves.	Supporting	Global	Multiple		high	High	UNDP have implemented a plastic waste project in Vietnam, under the title: To develop integrated, green and fair models to improve domestic waste and plastic management, in five Vietnamese cities. The locations of this plastic reduction project are: Ha Long, Binh Duong, Binh Thuan, Quy Nhon, and Da Nang. Read more here: https://www.vn.undp.org/content/vietnam/en/home/operations/projects/environment_climatechange/scaling-up-a-socialised-model-of-domestic-waste-and-plastic-management.html	

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C4SD	The Centre for Sustainable Development in Vietnam operates as a mechanism to preserve local environment and empower community action against climate change and biodiversity loss. In particular, C4SD focusses on reducing plastic waste. More can be read here: https://www.facebook.com/C4SDinDaNang/	Supporting	Local	Multiple		high	Low		No major activities were implemented by the C4SD found on website. The center mainly shares the news, information, practices about plastic waste pollution and reducing incinerators https://www.facebook.com/C4SDinDaNang/