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IMPLEMENTATION OF PREVENTION  
AND MANAGEMENT TOOLS

## METHODOLOGICAL GUIDE FOR CLEANING A RIVER BARRIER (BIOBARDA)

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## PROLOGUE

The PROMAR Project - Marine Waste Prevention in the Caribbean Sea aims to reduce the flow of plastic waste (mainly plastic packaging and single- use plastics) reaching the Caribbean Sea, promoting Circular Economy solutions in the Dominican Republic, Costa Rica and Colombia. The project is funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and led by the German organization Adelphi.

Within the framework of the project, the PROMAR BlueBox was created, a collection of various tools, guidelines, tutorials and materials that will help you apply circular economy solutions to reduce marine waste in your municipality. This guide for riverbank clean-ups is part of the PROMAR BlueBox

The purpose of the guide is to guide actions for preliminary activities, cleaning and general measures for the health care of the participants.

*Río Urbano Team*

*July 2024*



# Preliminary activities



# 1. Preliminary activities

## 1.1. General Logistics

- Coordinate with your municipality the collection and proper disposal of solid waste to be recovered. With the recyclable or recoverable material (if available), you can coordinate with a company, initiative or community that may be useful to you.
- When calling for participants, indicate the appropriate clothing for the day. (see section 2.4).
- Be aware of the weather in the days leading up to the event, as excess humidity can cause slippery slopes and if it has been raining there is a risk of flooding. If it is raining at the time of the event, stop the clean-up and remove volunteers from risk areas.
- Have a first aid kit and, if possible, someone who knows first aid.
- It is recommended to have at least 5 people participate in various tasks during the day, namely: recovering material from the riverbed; receiving recovered material on the riverbank and separating it into bags as recoverable and non-recoverable; transferring said materials to the characterization and/or weighing area; weighing what was recovered; and making a visual record of the activity.
- Make sure you have the tools and protection necessary (see sections 2.4 and 2.5).
- If possible, provide food and some form of hydration to offset the wear and tear of the participants.

## 1.2. Site recognition

Conduct a visual survey of the condition of the riverbank and the captured waste. Identify key access points, with connection or proximity to a public road to facilitate the removal of the material.

Identify and prepare the areas in which work will be carried out. A defined space is needed to serve participants, a toilet space, a hydration space, a space near the Ríobarda for the work team, a space for the tools needed for the task and space for the mobilization of recovered materials.

Clear the floor of any objects that may impede access. Make sure that passage is smooth and safe. Identify a meeting point and routes to follow in case of an emergency.

## 1.3. Preparation

Once the workspaces have been defined, have everything in order and at hand. Gather the team and give them safety instructions. Tasks will be distributed, so if there are many participants and someone is idle, they will be asked to wait separately until their help is requested.

Hand out gloves and remind participants that they will be dealing with contaminated materials. The manipulation of the same, their arrangement and the subsequent cleaning of the person involved, must be rigorous.

Place tools near the Riverbar for ease of use.

# Cleaning





## 2. Cleaning

### 2.1. Welcome and reflection

Clean-up days are an opportunity to create a community, where diverse people come together for a common good. It is important that those involved feel part of something bigger.

Reinforcing the sense of group also allows for continuity in the processes. It is recommended to provide space for each person to introduce themselves.

Each person has different motivations for being there, it is important to listen to these motivations to reinforce the group's sense of identity, taking advantage of the activity space to make it as brief as possible.

It is recommended to be clear with people about the real situation of our rivers. Although the clean-up day has an immediate impact on the landscape, these spaces receive a constant flow of pollution and improvements will not be seen if the sources of these pollution are not reduced.

### 2.2. Safety instructions

The physical integrity and health of participants is essential for a successful cleaning day, for which the following safety aspects must be discussed:

- Measures in case of falls, contact with contaminated material, exposure to the sun, insect bites or others.
- Use of protective equipment and tools.
- For Handling hazardous waste it is important to always review the safety instructions. The

topic of hygiene is one of the most forgotten, so let's not forget to review it.

If you have food and water for employees, place them away from the cleaning area to avoid contact with contaminated materials. It is recommended to have a snack at the end of the day to avoid cross contamination.

Always have a first aid kit and cleaning materials with you, and indicate where to go in case of emergency and where you can wash yourself once the task is finished.

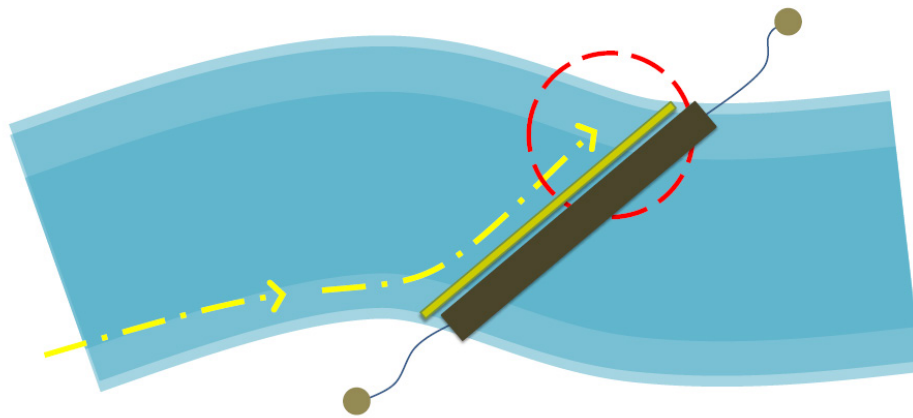
Also indicate evacuation routes and meeting points in case of an emergency.

### 2.3. Work teams and roles

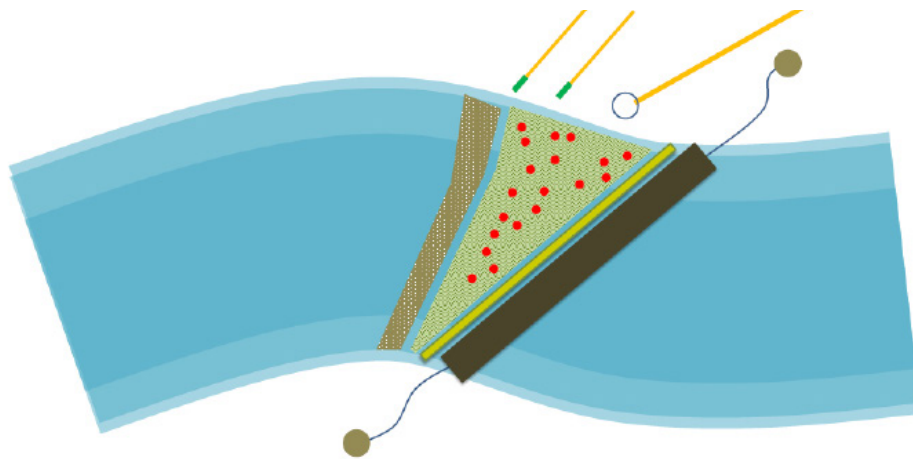
Divide the participants into work groups and place them in the identified areas. Try not to place too many people in the same place, both for safety and comfort, unless the conditions allow it. On steep slopes, work in small groups (3 to 5 people). Keep the exits clear of objects and people to ensure a smooth passage.

Each work team must have a leader who supervises it. His/her role is to give instructions, be aware of the group's safety and provide work materials to his/her team. This person must not leave the team alone. If the leader leaves it needs to be for a short time, announcing his/her temporary departure. Count on one leader for every 15 people.

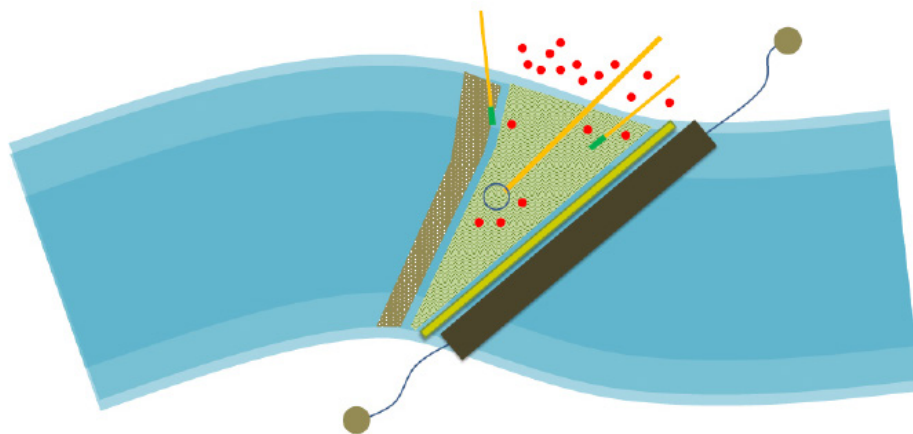
For the handling of extra materials, a person is required to attend to the groups with these needs and remain attentive throughout the day. Leaders should keep in touch with each other. If possible, especially in large groups,



Accumulation of material on the shore



Removing material with hand tools



### Recovery of material from Ríobarda

it is recommended to use walkie-talkie type radios.

## 2.4. Clothing and protective equipment

Both the appropriate clothing and equipment are essential to protect participants, mainly because the workspaces may be highly contaminated. Remember that all kinds of residues may appear.

Recommendations:

- Closed shoes, preferably rubber boots (waterproof) to avoid any contact with contaminated water.
- Wear long, thick trousers, as thick as possible, to provide protection against falls and scrapes from sharp objects. Lycra or shorts are not recommended.
- Protect your skin from sun exposure. Wear a hat or cap, sleeves, and sunscreen.
- If you identify the presence of insects such as mosquitoes or similar, use repellent to protect against bites.
- Gloves should be used to protect against cuts and exposure to contaminated materials by chemical or biological substances. The use of nitrile gloves is recommended, which provide greater protection. "Dishwasher" type gloves are not recommended at all since they can be easily torn. The use of surgical gloves is also NOT recommended; they do not provide any protection against cuts. If a glove tears, replace it.
- As additional protection, it is recommended to use construction-type protective glasses to prevent objects or liquids from entering the eyes.

- It is also recommended to use hygienic safety masks as additional protection to protect the mouth from objects or liquids.

## 2.5. Materials and tools

River banks are placed diagonally to redirect waste to one of its banks and remove it from there with tools and equipment manuals (see page 9).

- Use color coding to differentiate between recyclable, non-recyclable, and hazardous materials.
- Use large, sturdy garden-type bags, especially with non-recyclable material.
- Having shovels and picks can help remove buried material, as well as provide access if necessary.
- Saws and machetes can also be used to help remove buried materials, as well as branches and trunks that obstruct traffic.
- Use of wheelbarrows to facilitate the transfer of full bags and other materials to a common collection point.
- To reach waste at medium distances, poles can be used. Measuring between two or three meters and combined with hooks or baskets at one end of the pole to facilitate harvesting. Poles can be made from bamboo or tree branches.
- Ropes, used as support in complex accesses such as slopes. They also facilitate the removal of heavy materials in these spaces.
- Basic first aid kit, essential for treating simple emergencies such as cuts, scrapes and allergies.
- For personal hygiene at the end of the day



**Clothing and protective equipment**

and when required, personal hygiene materials such as water, liquid soap, alcohol and rolls of paper towels for drying off cannot be missing.

- Scale or Roman scale to perform the final weighing of the collected material.
- It is recommended to have folding tables to serve participants and to keep toiletries and food off the floor. Remember to separate the areas well.
- If possible, have a canopy that serves as a base center for cleaning, where you can assist participants and place materials and tools that are not in use.

## 2.6. Waste separation

- **Recyclable Materials:** Plastics, tetrapack, aluminum and glass should preferably be sent to a collection center or company that uses them. Ideally, each type of material should have its own bag, however, they can be placed in a single bag (as orderly as possible) and separated at their final destination.
- **Non-recyclable materials:** Materials that due to their type do not fit into other categories or due to their condition they cannot be treated and reused. They tend to be heavier and it is therefore recommended not to fill the bags.
- **Dangerous:** They must be handled in separate bags, sometimes reinforced, and with absolute care: medications, syringes, knives, batteries, paints, solvents, poison.
- **Rims and tyres:** They must be sent to a company that can handle them.
- **Scrap:** Depending on its condition, it can be sent to the collection center; otherwise, it is collected as non-recyclable materials.
- **Dead animals:** If this is the case, it is

recommended to remove the animal from the riverbed as soon as possible, with great care and protection. The remains of the animal must be disposed of CORRECTLY. They must be removed from the water and placed in a double or triple bag, to later be taken to the landfill or buried in a safe place.

## 2.7. Removal of materials

Define a point, or several, if necessary, where all the collected material will be concentrated. This should be spacious and easily accessible for the garbage truck with whom you have coordinated its transport to its final destination.

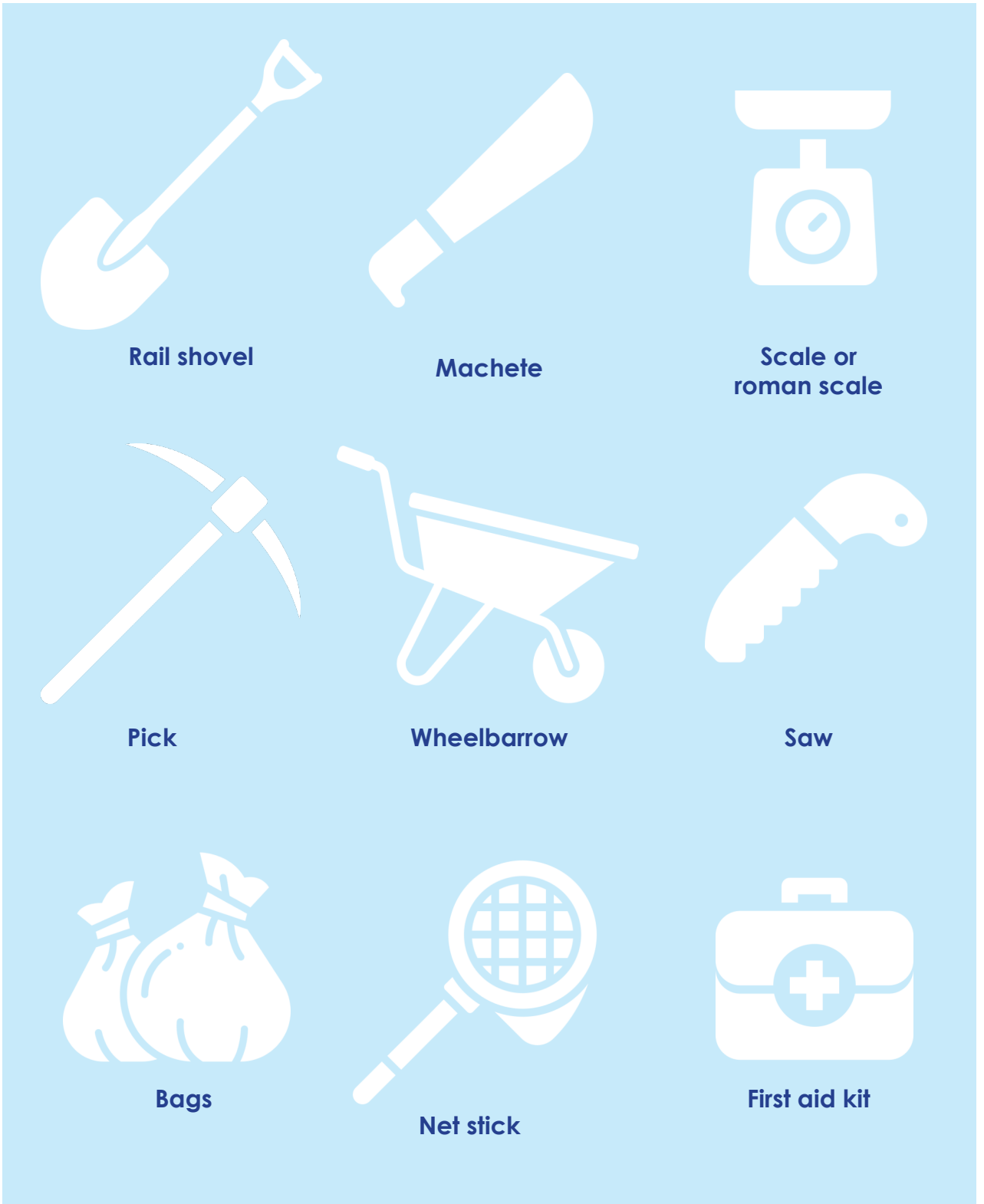
Remove the bags progressively as you fill them. It is recommended to monitor the filling so that they do not overflow. They can be removed manually or with a wheelbarrow. Place them at an intermediate collection point for weighing and correct distribution.

It is NOT recommended to carry bags with wet waste on your back or shoulders as it may present a risk. Those responsible for removing the bags must wear long sleeves to protect their arms in addition to the appropriate gloves.

Keep an eye on the progress of the cleanup and your work teams. Once most of the waste has been collected, the work areas will be closing soon. Participants should go to the initial meeting point or base center once their task is finished.

Once all the material is at its collection point, proceed to categorize the waste if you have not done so and weigh each of the bags. This procedure is important as it allows you to put numbers on the cleaning day.

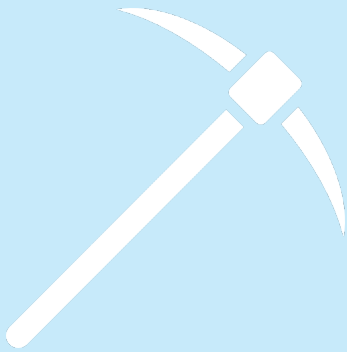
Quantify the collected waste according to the waste separation and add it up in the same way to obtain a final weight per category.



**Rail shovel**

**Machete**

**Scale or  
roman scale**



**Pick**



**Wheelbarrow**



**Saw**



**Bags**



**Net stick**



**First aid kit**

**Materials and tools**

It is recommended to use a digital manual scale or weighing scale for weighing.

Don't forget to take photos and share your clean-up data with the organizations and volunteers involved, as well as with local and national organizations responsible for quantifying clean-up days.

These data allow us to generate graphs and show the magnitude of pollution in bodies of water. Let us remember that data such as this are needed worldwide.

As a reference you can use the excel tool "Solid Waste Beach Data Sampling" in <https://promar.org/en/beach-data-sampling>.

## 2.8. Final Provision

It is essential to have arranged the transfer and final disposal of the collected material. Coordinate with the respective Municipality its shipment to a collection center or sanitary landfill, as appropriate. And/or with companies that treat these materials.

It is necessary that the removal of the materials from the site is done as soon as possible. This is to avoid problems or impacts on the residents of the area due to eventualities that may arise before the respective transport removes the material.

## 2.9 Closing

After a hard day of work, it is necessary to take a break, hydrate, share a meal and bring the activity to a proper close.

At this point, there are many perceptions, emotions and expectations that were generated during the cleanup. Listening to them will provide opportunities for improvement and the possibility of integrating

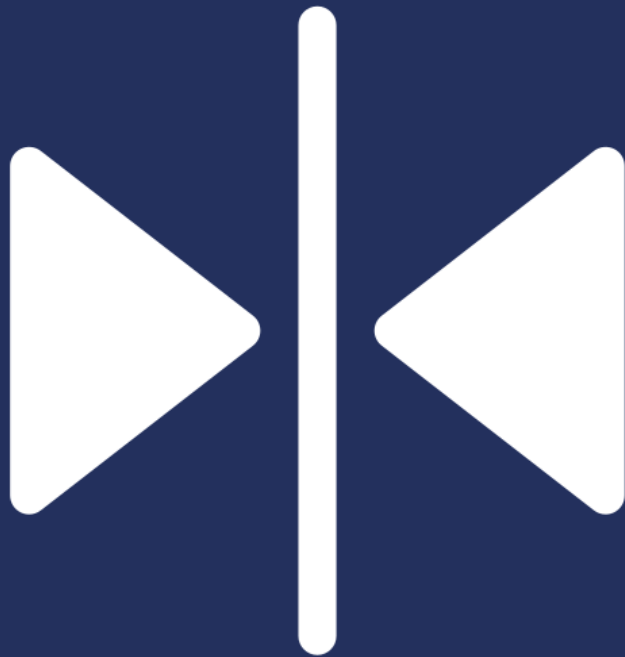
the team and building a community around the mission we have.

Create a space where they can talk about the day and its impact. It is important to pay attention to the participants' perception and reinforce group motivation.

In the same way, the space provided for suggestions and proposals is always of great help for the following days, listen to them. This also strengthens the sense of belonging in the participants.

Make a formal closing by thanking them for the work they have done and send them off with a big smile on your face. They have done an excellent job.

# Final considerations





### 3. Final considerations

Perform constant monitoring to verify that there are no material leaks. Check for damage to the structure due to wear and/or vandalism. Make the necessary repairs as soon as possible. This will allow you to extend the useful life of the river wall.

Be aware that the riverbank is not causing any unexpected impact, such as damage to local biodiversity due to the accumulation of solid waste.

Identify how often cleaning sessions should be carried out. This can vary depending on the time of year as well as the amount and type of solid waste being captured by the structure.

Contact your municipality and assess the support options they can provide for periodic cleaning activities, such as the removal and final disposal of recovered waste.

It is key to invite people from the community to participate in clean-up activities (and solid waste characterization). Provide awareness talks and train people involved in clean-up day dynamics.

Involve local stakeholders in your regular activities, this will allow you to join efforts and increase the type of public that participates in the events. It is important to be consistent in carrying out activities to consolidate a possible local work team.

For the purposes of convening and monitoring recurring participants, it is strategic to have a space for direct communication such

as a WhatsApp group or Facebook group, where announcements and invitations to the conferences can be shared. It is recommended to make announcements to the activities at least 1 week in advance (and if possible 2 weeks).

These same virtual spaces can also be used for people to share photographs and videos of the state of the riverbank, which encourages monitoring participation.

Make visible to the community the weighing data (and, where applicable, detailed characterization) of recovered solid waste, as input for raising awareness about the problems generated by the poor disposal of solid waste.

It is advisable to have the names of the people who will participate in the event in advance. This can be obtained by means of a prior registration. It is also suggested to have an attendance list for the people who attend.

Extraordinary situations that may cause inconvenience or problems to immediate neighbors or by-passers in the area, such as the appearance of dead animals and the presence of bad smells, must be addressed as soon as possible, in order to ensure that the Ríobarda is well accepted by the community.

# References



## 4. References

### 4.1. Bibliographic sources

- Briceño Rodríguez, Alonso. “**Guía básica para jornadas de limpieza en ríos y quebradas.**”. Río Urbano. San José, Costa Rica. 2016.
- Briceño Rodríguez, Alonso. **Taller de Capacitación Básica “Ríobardas, Jornadas de Limpieza y Caracterización de Residuos Sólidos”**. Río Urbano/PROMAR. Realizado en Casa de la Cultura de Limón. Limón, Costa Rica. Abril 2024.

### 4.2. More resources

- Río Urbano Initiative: <https://linktr.ee/RioUrbanoCR>
- Ríobardas Project: <https://linktr.ee/RiobardasCR>
- PROMAR Bluebox: <https://promar.org/es/bluebox>

### 4.3. Contacts

- PROMAR: [www.promar.org](http://www.promar.org)  
[www.instagram.com/promar.project](https://www.instagram.com/promar.project)
- CEGESTI: [www.cegesti.org](http://www.cegesti.org)  
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