



SUNGAI WATCH:

# RIVER PLASTIC REPORT 001

AUGUST - SEPTEMBER 2020

# Table of Contents

03

Introduction:  
From the Rivers

05

Methodology

06

Recyclables vs.  
Residual Waste

07

Sampling Location

09

Recyclable:  
FMCG Waste

14

Recyclable:  
Unbranded Waste

15

Residual Waste

16

Solutions

17

Conclusion

18

Acknowledgements

# INTRODUCTION: FROM THE RIVERS

Sungai Watch is a community river cleanup organization that has the mission to protect our waterways, starting in Indonesia. At Sungai Watch we believe that simple TrashBarriers can serve as a way to stop the leakage of plastic pollution into our ocean. Rivers are the perfect connection point between life on land and the ocean.

We truly believe in the power of data to start a conversation with corporations (regarding their extended producer responsibility), distributors, governments and consumers. Although river cleanup is essentially a bandage solution, it serves as an engagement tool to prevent the flow of plastics into our ocean.

With this in mind, we couldn't be more excited to share our first **River Plastic Report**. This River Plastic Report features data from the months of August and September 2020, where we collected 5.2 tons of plastics. Most of the total amount collected came from our voluntary Friday river cleanups series.

2020 was the year of disruption and for us in the early days of COVID-19,

our work was completely altered. We started the year off at the World Economic Forum in Davos, where we officially launched Sungai Watch as well as declared our goal of setting up 100 TrashBarriers on the island of Bali by the end of 2020. This highly optimistic goal was thwarted when lockdowns began to be implemented around the island in March/April and consequently, much available funding was postponed.

After a few months of social isolation, we turned to our lovely community in May to re-activate our river cleanups. We were beyond impressed by the numbers of people showing up and the community engagement. Week by week, our movement grew from 22 people attending our first cleanup on the river on August 2nd 2020 to present day where anywhere between 60-200 people attend each cleanup. This River Plastic Report includes data from 9 cleanups in 8 specific locations with a total of 512 volunteers involved.

As our cleanups progressed week by week, so did the overall amount of plastics we collected and we quickly realized one fundamental problem - we had nowhere to put it! Our sorting operation literally

moved from river banks, to my parent's garage, to an empty villa and finally to our newly launched 350m<sup>2</sup> Research Station all within the span of 2 months. With the Research Station in place and operating 7 days a week, we soon came to our second realization: sorting takes a lot of time. We started sorting on the floor with bamboo buckets and quickly upgraded to a table. Together with our community of volunteers, we sorted all of our waste collected into different types of plastics, brands, colors and its conditions.



The biggest type of plastic found in Bali rivers are **plastic bags, which represent 18.5% of all the collected waste** we have found through our cleanups. **The biggest polluter of branded plastics found in Bali rivers is Danone AQUA.** We hope this report will provide more insight as to what types of waste end up in our rivers and help to provide real solutions on how to properly clean our precious waterways as well as how to start rethinking our packaging.



We cannot end this introduction without thanking our community of “Sungai Warriors” - each and everyone of you who showed up and dove into the rivers with us. All of this would not be possible without you. We hope you will find this report interesting and we cannot wait to continue to share more from the rivers of Bali on a regular basis

From the rivers,  
Gary Benchehib  
Founder of Sungai Watch

# METHODOLOGY:

All of the data in this River Plastic Report has been **collected manually**. We organized volunteer sessions and now have a full time team to help us document all waste collected. After each clean up, all waste collected is brought to our Research station and sorted by our team.

River  
Clean Up

Phase 1:  
Pre-sorting

Phase 2:  
Brand Audit

Once all of the waste has been collected from our river cleanups, our first phase of sorting is **Pre-sorting**: this is where we separate between residual waste and recyclables. Our partners ecoBali Waste Management have helped us verify each category based on the current Indonesian standards. During this pre-sorting phase, recyclables are sorted directly into different categories, which include **plastic bottles, straws, plastic bags, sachets, glass, metals, plastic cups, tires, sandals, paper/cardboard, styrofoam and hard plastics/HDPE**.

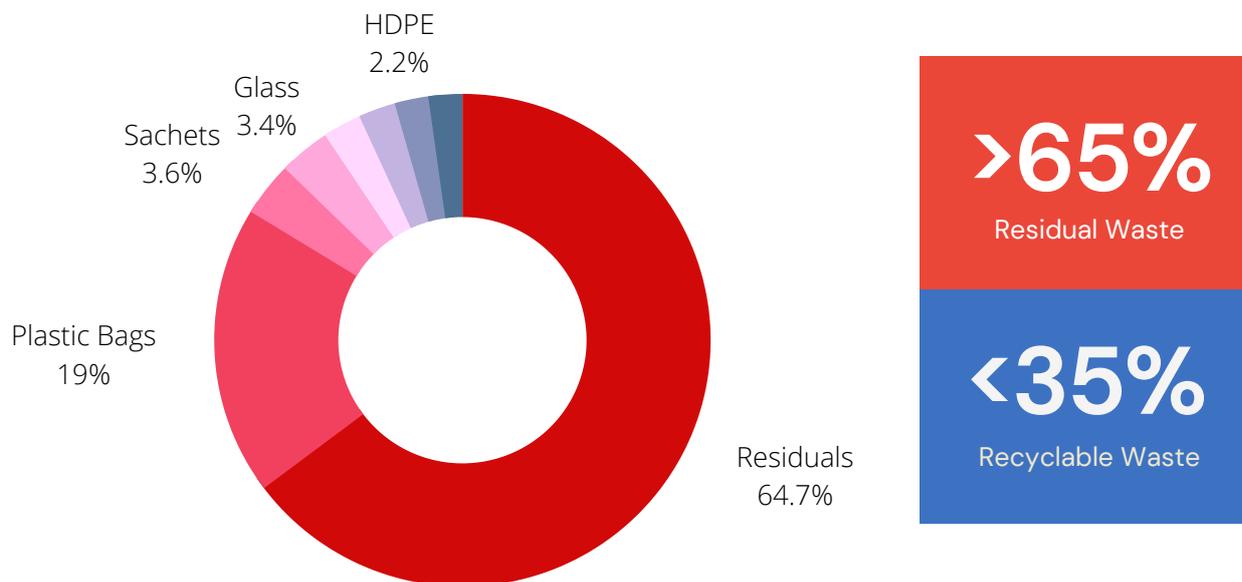
Once all of our recyclables have been sorted, we then move to our second phase of sorting: **Brand Auditing**. This is where the real work begins. For each distinct category, we sort and document each single piece of plastic as to better understand which brands are the biggest polluters. Each brand profiled on this report will be notified and we hope this data can serve to start an open dialogue as well as to increase collection points with the goal of preventing plastic pollution in our rivers and to rethink product packaging altogether.



# RECYCLABLES vs. RESIDUAL WASTE

When dealing with river waste, we are dealing with the lowest grade of recyclables possible. Often times, the plastics we collect have been piling up on river banks and illegal dumpsites for many years. Large amounts of sand and soil are mixed in with them - making recycling a challenge. In this report, we have identified two main types of Recyclable waste categories:

- **Fast Moving Consumer Goods “FMCG” Waste:** branded inorganic waste from plastic bottles, plastic cups, metals and glass that have a clear brand name on the packaging. Although not recyclable, we have included sachets in this category as they are the most prevalent FMCG out there. We have identified over 400 brands in this report.
- **Unbranded Waste:** single-use plastics that do not have a visible brand logo on it - for instance plastic bags, styrofoam, some HDPE Hard Plastics, tires or plastic straws.



Residual Waste contributes to more than 65% of all waste collected. This includes textile waste, construction waste, sanitary waste and organic waste. It is important to note that almost 30% of all residual waste comprises sand and soil. So much of the plastics we have collected during these cleanups have been sitting on river banks for many years and are full of sand and often quite deteriorated.

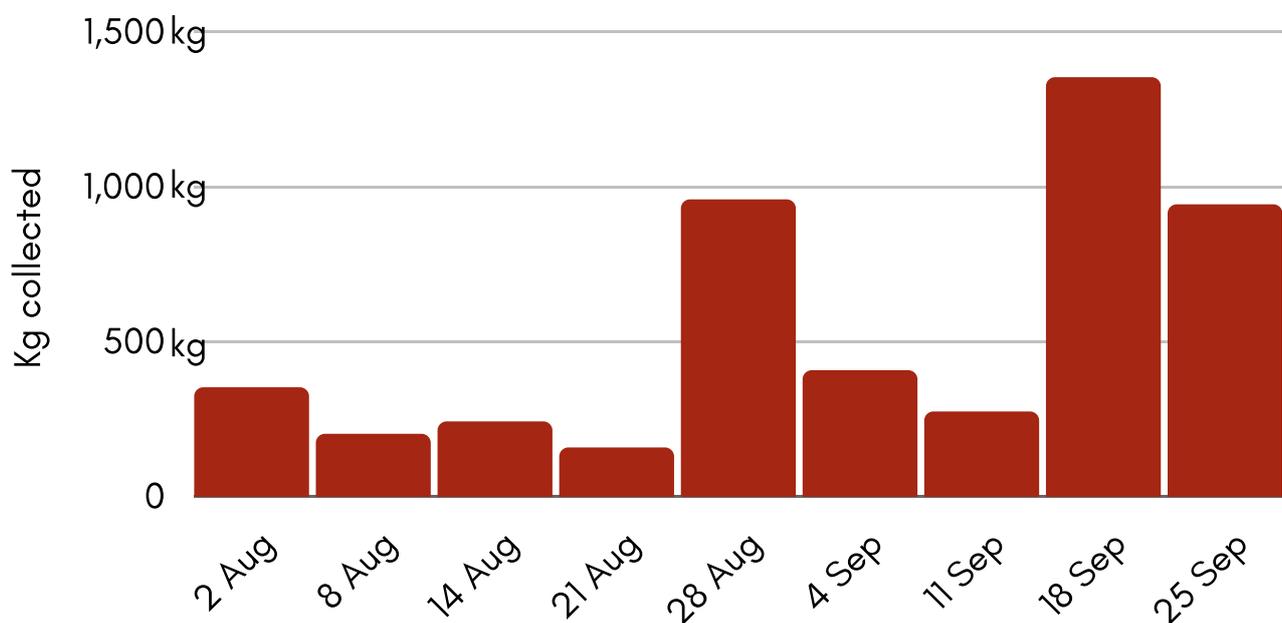
# SAMPLE LOCATION:

This River Plastic Report includes data from 9 cleanups located in 8 distinct locations. Each location is located in South Bali, between Badung and Tabanan. Each location has been chosen due to its emergency state, typically reported by a member of our team or community. Cleanups were held weekly from August 2nd through September 28th 2020.

Locations included Tukad Yeh Penet in Kaba Kaba and in Nyanyi, one of Bali's most polluted rivers, as well as subak (traditional irrigation) lines in the middle of the ricefields in Cemagi and Munggu, Sungai Yeh Poh which divides Umalas and Berawa as well as Tukad Yeh Miah, which runs through the heart of Desa Cangu in Jl. Padang Linjong.



Below is a chart of the total amount of trash collected (in kg) week by week.





# RECYCLABLE: FMCG WASTE

To begin our brand audit, we dove into the world of Fast Moving Consumer Goods (FMCG). These are goods that are created to be consumed instantly that have single-use plastic packaging. They are sold at low prices and are not made to last. In many ways, when looking at the bigger waste bracket, FMCG waste is one of the only products that has a clear brand image on it and can include packaged foods, beverages, toiletries, candies or cosmetics.

Through this report, we analyzed more than 400 brands representing over 100 parent companies. It is important to note the different structures of brands and companies. A company such as Unilever owns over 400 distinct individual brands. **The biggest polluting company in this report is Danone AQUA with 2,834 pieces of plastics**, followed by Wings Corp with 1,928 pieces and Unilever with 1,625 pieces.





# PET: PLASTIC BOTTLES

One of the most symbolic plastic items is the Plastic PET Bottle. Most of the PET bottles found on the rivers were water bottles. To examine further, each batch was manually sorted by brand and size. PET Bottles contributed to 2.3% of the total waste collected, equating to 3,775 individual bottles.

**The most polluting PET Plastic Bottle brand is Danone AQUA with 1,456 bottles (38% of all bottles)**

The most polluting type are the 600ml bottles, followed by the 350ml bottles.



**For PET Bottles alone, we identified 48 different brands.** Over 15% of all bottles found were unbranded and 8% were damaged or found in pieces.

## Most Polluting Brands

AQUA: 1,394

Teh Pucuk Harum: 392

Sprite: 247

Coca Cola: 184

Pocari Sweat: 121

## Most Polluting Parent Company

1. Danone: 1,456

2. Coca Cola: 618

3. Mayora: 392

4. PT. Sinar Sosro: 159

5. PT. Amerta Indah Otsuka: 121

Teh Pucuk Harum owned by Mayora, an iconic Indonesian iced tea drink made it to #2 in our report of Branded Plastic Bottles. We don't understand how a company can sell these 3 different types of bottles: 250ml, 350ml and their 480ml at very little price difference. In fact, after doing some additional research, their smallest format is more expensive than their medium-sized bottle.



# PP: PLASTIC CUPS

In Bali, plastic cups are seen as one of the worst types of plastic pollution. Single-use cups are composed of Polypropylene Plastic as its main component or "PP" in recycling terms, as well as another type of plastic at the top of the cups and they are often supplemented by plastic straws.



**Out of the 5,117 cups we processed, there were only 4 brands identified, with the leading polluter being AQUA (Danone) with 27% of the total cups.**

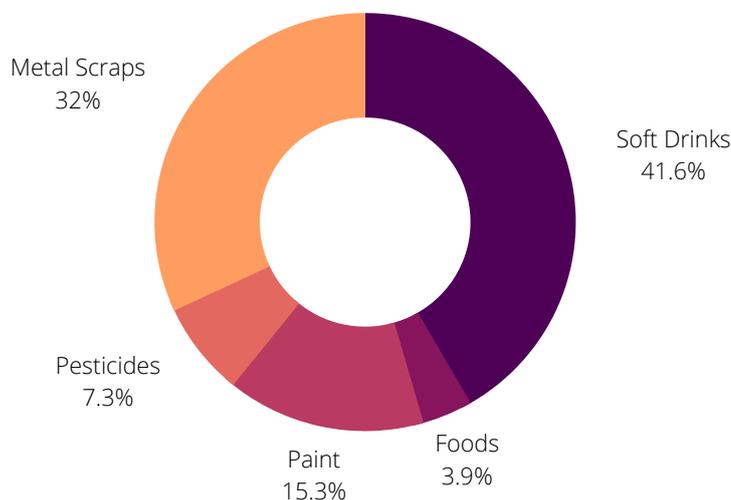
### Most Polluting Brands

1. AQUA (Danone): 1,378
2. Teh Gelas (Orang Tua): 921
3. Okay Jelly Drink (Suntory): 682
4. Ale Ale (Wings Surya): 157



# CANS + METALS

Cans and metals are known to be the most recyclable type of FMCG packaging and therefore the most valuable. In the data set analyzed, they contributed to 1.2% of the total weight with a total of 417 items. In this chart, we look at the different categories of cans collected with "Soft Drinks" taking the lead.



The dominating brands leading the report all fall under the "Drink" category.

### Most Polluting Brands:

1. Larutan (Sinde Budi Sentosa): 39
2. Sensacools (Enesis): 37
3. Nestle Bear Brand (Nestle): 35
4. Schweppes (Coca Cola): 15
5. Coca Cola (Coca Cola): 13



# MULTILAYERED SACHETS

Multilayered Sachets are ultimately the worst enemy of any recyclers. They are composed of multiple layers of packaging and often not recyclable. With no regulations for packaging in Indonesia, FMCG packagers often look for the most colorful packaging to drive sales and do not follow any recycling principles. In this first batch, we sorted a total of **15,856 individual sachets**, of which we identified a total of 336 different brands which are owned by 86 parent companies.

**The most sachets found was ABC Kopi with 1,180 individual sachets, followed by Mie Sedaap at 977.**

### Most Polluting Brands:

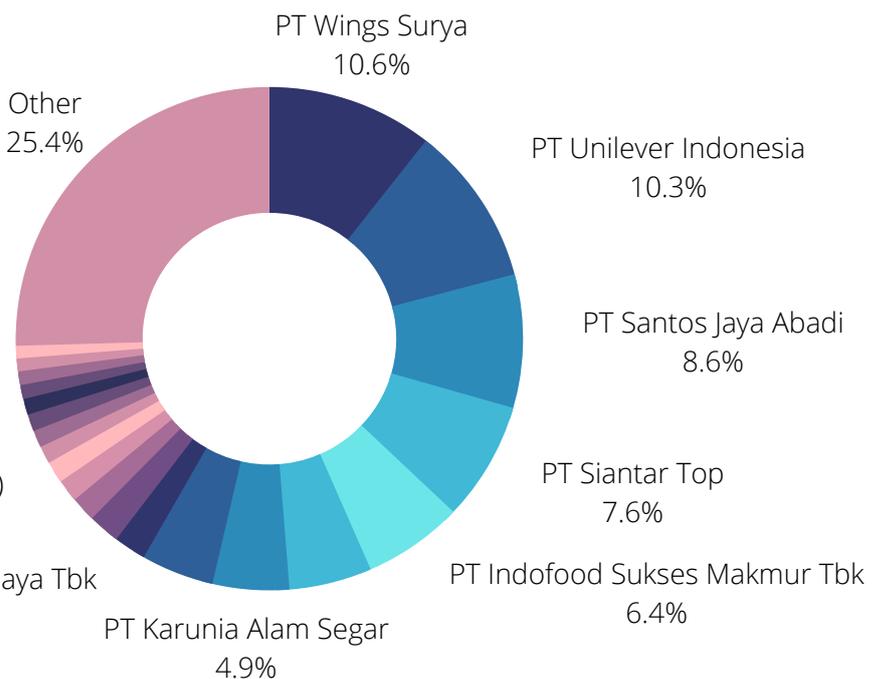
- ABC Kopi (Santos Jaya Abadi): 1180
- Mie Sedaap (Wings Surya): 977
- Rinso (Unilever): 738
- Masako (Ajinomoto): 720
- Spix Mi Goreng (Siantar Top): 536

### Most Polluting Parent Company

- Wings Surya: 1,665
- Unilever: 1,618
- Santos Jaya Abadi: 1,347
- Siantar Top: 1,202
- Indofood: 1,004
- PT Garudafood Putra Putri Jaya Tbk: 2.1%
- PT Karunia Alam Segar: 4.9%
- PT Mega Global Food Industri (Kokola Biskuit): 1.4%
- PT Kalbe Farma Tbk (Bintang Toedjoe): 1%



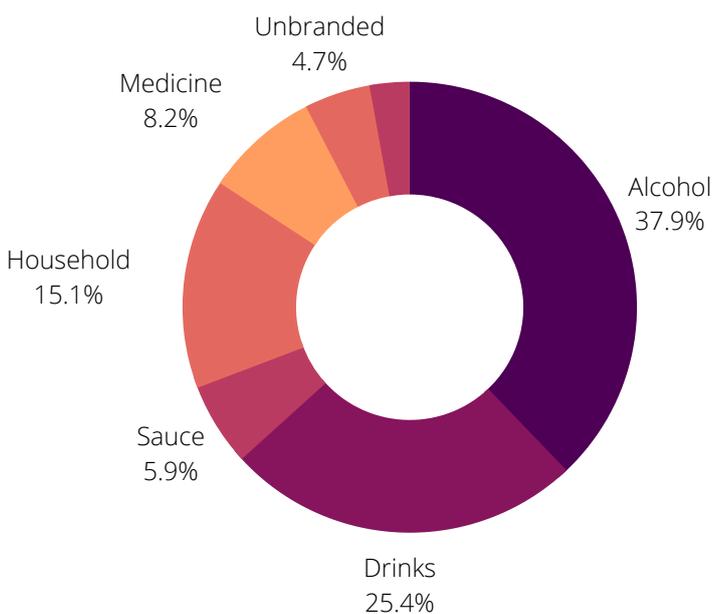
The #1 category of sachets found was instant noodles, followed by coffee, cleaning supplies and snacks.





# GLASS

Even in rivers, we find glass. We found a total of 528 glass bottles of which 9 brands were identifiable. The great majority of the glass found on the river were lightbulbs as well as unbranded bottles. In Bali, there is no proper recycling for lightbulbs- they are ultimately considered toxic and hazardous waste. **The biggest glass polluter in this report was AQUA Danone with a total of 221 bottles.**



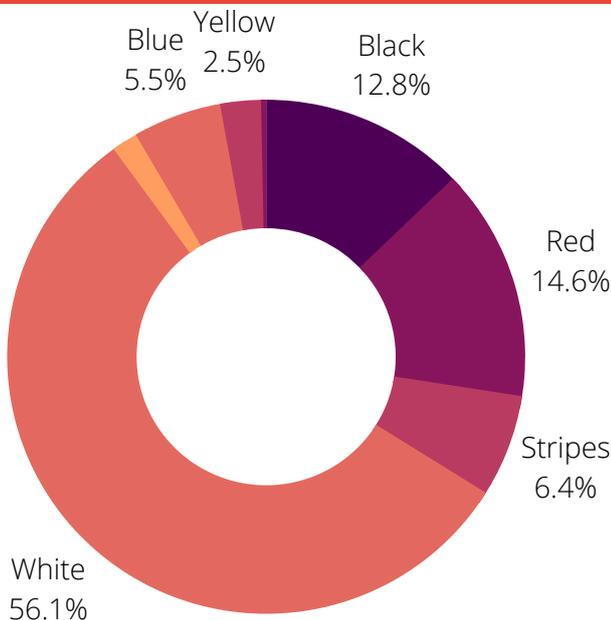
## Most Polluting Parent Company:

1. AQUA Danone: 221
2. ABC Holding: 158
3. MultiBintang: 132
4. Djojonegoro: 63
5. PT Dima Indonesia: 43

# RECYCLABLES: UNBRANDED WASTE

For our Unbranded categories, we used weight in Kg to compare overall amounts. For plastic bags and sandals we dove deeper to understand which colors are most popular by examining the colors of products collected.

## Plastic Bags



Plastic Bags are the most common type of plastic that we find in rivers with a total of 18.1% of the total waste collected. The most common color found was white bags that have a higher recycling value than colored bags.

## Sandals



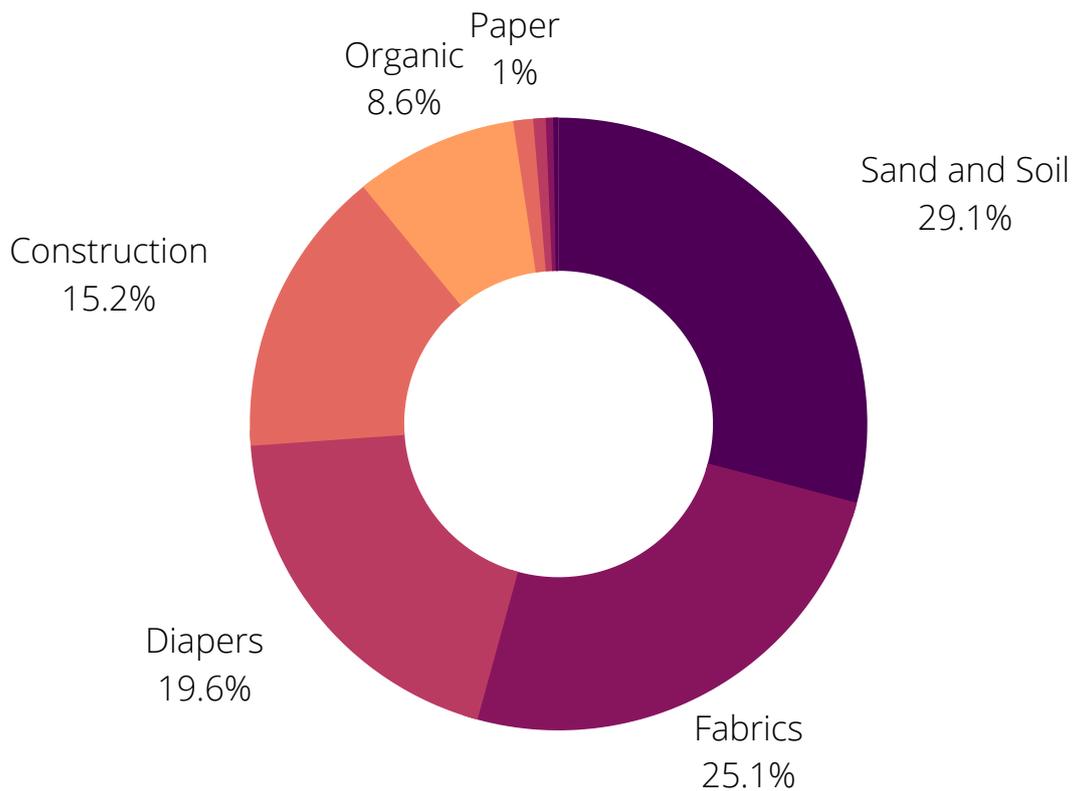
In this report, we found a total of 586 sandals of which the most common color was black, followed by blue, green and pink. We also looked at whether there were more left or right side sandals. Left sandals led in with 315 sandals, with 271 right sandals.

## Styrofoam and Hard Plastics

Styrofoam counted for 0.7% of the total weight with 36kg. In Indonesia there is still no recycling market yet for any food packaging related styrofoam. Our Hard Plastics in this report contributed to 2.1% of the total weight collected or 108kg.

# RESIDUAL:

In order to better understand the content of our residuals after the Pre-sorting phase, we examined a sample size of 200kg out of the 3.2 tons that we collected. Our Residuals include everything that we cannot recycle or that has been too damaged to have a second life. This included things like sand and soil, as well as shredded pieces of fabrics, diapers, construction bags, branches and twigs that were recovered in our collected bags.



In an ideal world, all of this would be recyclable or composted as best as possible, but the true cost of sorting and washing is currently too expensive to allow for it to be re-purposed.

# SOLUTIONS

When looking at the scale of this problem, we are truly a tiny drop in the water in comparison to the global reality that plastic pollution is. One of the main reasons for this Plastic Report is to determine the types of plastics that are polluting our rivers and better understand the ways in which we can start cleaning our rivers and in turn prevent plastics from entering our oceans.

But where does the true solution lie? If we want to see less polluted beaches and rivers, we need a major shift in the way we produce, package and consume. Obviously the plastic problem is complicated, but here is how we think we can tackle it:

- Increase collection and cleanups at a massive rate
- Call on all corporations responsible for this packaging to start implementing recovery schemes to offset the plastic they are creating. We need to get them to rethink their plastic packaging.
- The government needs to set proper regulations and standards to ban unrecyclable packaging. We need to move towards a circular economy and without their lead, packagers will never change.

- We need real scalable solutions to deal with waste. We need to find ways to upcycle river waste that will otherwise make its way to the ocean.
- We need a radical shift in the way waste is regarded on a local level. It can no longer be seen as "garbage", but all waste should be seen as value. Socialization campaigns and education need to be the top priority.

These are very general solution points to this massive problem. The truth is that this starts with you and I. It is exciting to discover new solutions as well as deciding how we wish to consume. Options for living a plastic free life exist and now more than ever, we need to make it the norm.

# CONCLUSION

By now, you probably have realized that plastic pollution is everywhere and our rivers are one of the main areas affected. In this River Plastic Report, we looked at voluntary based cleanups, a great engagement tool to start addressing the problem. But this is not the solution. At our current rate of consumption, much more plastics are produced (and not discarded properly) than we can sustainably manage.

Over the next year our goal is to install 100 TrashBarriers around the island of Bali and we need you to be a part of it. We believe TrashBarriers are a great way to localize the problem to a village level and create engagement, while collecting as much data as possible to better understand waste management systems in Indonesia.

This is our first report. It is naturally very general and not as detailed as we would like. We will strive over the next few months to conduct finer analysis to bring you an even more precise and accurate view of what is really happening in our rivers in Bali. We sincerely believe that the actions we are taking should allow us to see more clearly and above all, allow us to establish contact with all the necessary stakeholders to make drastic change: governments, industry, communities and schools.

We aim to create as much awareness about the challenges of safeguarding our oceans and to reduce pollution starting in our rivers. This requires daily attention and we thank you in advance for any help you can provide. Our wish is to do the best for our community by sharing and seeking the greatest levels of synergy and cohesion between all parties to allow us to restore our planet to its natural beauty.

We are taking on a massive problem and any help is beyond appreciated. River Cleanups are a full-time commitment whether it rains or shines and we are just getting started.

From the rivers,  
The Sungai Watch Team

Gary, Nola, Ray, Armini, Cedric, Gede, Made, Aldo, Landa, Primus, Vincen, Mia, Sudi, Wayan, Yohanes and Digta



We thank you sincerely  
for your ongoing support  
to keep our rivers clean

## Acknowledgements

A huge thank you to everyone who have supported us to make this River Plastic Report come to life.

A report by:  
**Sungai Watch** a project by Make A Change World

Written and Presented by:  
Gary Benchehib

With the generous support of:  
WWF Indonesia  
Natural Light Candle Company  
Lodge In The Woods  
Kura Kura Beer  
Secret Spot Bali  
Mark Donovan  
Daniel Rachmat

**PT Jaga Sungai Kita**  
**Sungai Watch, a project by**  
**makeachange.world**  
+62-8123-6666-188  
gary@makeachange.world