

# FINAL REPORT ON RESEARCH ACTIVITIES ABOUT MARINE LITTER IN THE STUDY AREA

## REPORT

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## Project Partners

N°	Participant name	Short name	Country
LP	National Interuniversity Consortium for Marine Sciences	CoNISMa	Italy
PP2	Municipality of Lecce	ML	Italy
PP3	National Coastal Agency	NCA	Albania
PP4	Polytechnic University of Tirana	F.GJ.M.	Albania
PP5	Public enterprise for coastal zone management of Montenegro	JMDCG	Montenegro
PP6	University of Montenegro	UNIME	Montenegro

## CONTENT

LIST OF TABLES.....	4
LIST OF FIGURES.....	4
Introduction.....	7
1. Final results of the research activities conducted in Italy.....	11
1.1. Sampling methods, the guidelines followed and the selected beaches.....	11
1.2 Summary data of all six surveys conducted in Italy.....	15
1.2.1 Torre Chianca.....	16
1.2.2 Frigole.....	22
1.2.3 San Cataldo.....	28
1.3 Final results of the research activities conducted in Italy.....	34
2. Final results of the research activities conducted in Montenegro.....	43
2.1. Sampling methods, the guidelines followed and the selected beaches.....	43
2.2 Summary data of all six surveys conducted in Montenegro.....	48
2.2.1 Beach Velika plaža - Ulcinj municipality.....	49
2.2.2 Bečićka beach - Budva municipality.....	55
2.2.3 Igalo beach - Herceg Novi municipality.....	61
2.3 Final results of the research activities conducted in Montenegro.....	67
3. Final results of the research activities conducted in Albania.....	75
3.1. Sampling methods, the guidelines followed and the selected beaches.....	75
3.2 Summary data of all six surveys conducted in Albania.....	79
3.2.1 Spille site.....	79
3.2.2 Adriatik site.....	84
3.2.3 Velipoje site.....	89
3.3 Final results of the research activities conducted in Albania.....	94
4. Main results of the research activities conducted in Italy, Albania and Montenegro.....	105

## LIST OF TABLES

- Table 1: Coordinates of the extremities of the transects
- Table 2: Coordinates of selected transects in Montenegro
- Table 3: Geographic location of the selected study sites in Albania
- Table 4: Top 20 ITEMS collected during all the six surveys in the Albanian study sites
- Table 6: Time depending ML accumulations in the selected study sites in the Albanian coasts
- Table 5: Top 20 ITEMS in terms of weight collected during all the six surveys in the Albanian study sites
- Figure 57: Percentage share of ML by items for all six surveys in Montenegro

## LIST OF FIGURES

- Figure 1: Picture from field activities in Montenegro
- Figure 2: The trait of Adriatic coast of the Welcome Project in Italy
- Figure 3: Location of the two transects of Torre Chianca
- Figure 4: Location of the two transects of Frigole
- Figure 5: Location of the two transects of San Cataldo
- Figure 6: Marine litter research activities in Italy
- Figure 7: Percentage of ML composition (weight based) at San Cataldo (all six surveys)
- Figure 8: Percentage of ML composition (item based) at San Cataldo (all six surveys)
- Figure 9: Percentage of ML composition (weight based) at Frigole (all six surveys)
- Figure 10: Percentage of ML composition (item based) at Frigole (all six surveys)
- Figure 11: Percentage of ML composition (weight based) at Torre Chianca (all six surveys)
- Figure 12: Percentage of ML (item based) composition at Torre Chianca (all six surveys)
- Figure 13: Plot of nMDS performed on a Bray Curtis similarity matrix not transformed based on the number of ITEMS. I = time 1; II = time 2; III = time 3; IV= time 4; V = time 5; VI = time 6
- Figure 14: Plot of nMDS performed on a Bray Curtis similarity matrix not transformed based on the WEIGHT. I = time 1; II = time 2; III = time 3; IV= time 4; V = time 5; VI = time 6
- Figure 15: Composition of marine litter removed in Italy in terms of WEIGHT during all the six surveys
- Figure 16: Composition of marine litter removed in Italy in terms of number of ITEMS during all the six surveys
- Figure 17: Top 20 items collected during all the six surveys in Italy
- Figure 18: Top 20 categories (in terms of weight) collected during all the six surveys in Italy

Figure 19: Marine litter accumulation, in term of weight, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 122.51 kg; FR = 262.45 kg; SC= 144.84 kg

Figure 20: Marine litter accumulation, in term of number of ITEMS, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 5078 pcs; FR = 5795 pcs; SC= 3839

Figure 21: Selected transects on Montenegrin coast according to the WELCOME project

Figure 22: Location of the two transects in Herceg Novi Municipality

Figure 23: Location of the two transects in Budva Municipality

Figure 24: Location of transect 1 in Ulcinj Municipality

Figure 25: Location of transect 2 in Ulcinj Municipality

Figure 26: Marine litter research activities in Montenegro

Figure 27: Percentage share of ML by items in Herceg Novi transects (for all six surveys)

Figure 28: Percentage share of ML by weight in Herceg Novi transects (for all six surveys)

Figure 29: Percentage share of ML by items in Budva transects (for all six surveys)

Figure 30: Percentage share of ML by weight in Budva transects (for all six surveys)

Figure 31: Percentage share of ML by items in Ulcinj transects (for all six surveys)

Figure 32: Percentage share of ML by weight in Budva transects (for all six surveys)

Figure 33: Percentage share of ML by weight for all six surveys in Montenegro

Figure 34: Percentage share of ML by items for all six surveys in Montenegro

Figure 35: Top 20 items collected during all the six surveys in Montenegro

Figure 36: Top 20 categories (in terms of weight) collected during all the six surveys in Montenegro

Figure 37: Number of ML items by period during all six surveys in Montenegro

Figure 38: Weight (in kg) of ML by period during all six surveys in Montenegro

Figure 39: Geographic location of SPILLE transects

Figure 40: Geographic location of the Adriatic Transects

Figure 41: Geographic location of Velipoja Transects

Figure 42: Percentage of ML composition (weight based) at Spille (all six surveys)

Figure 43: Percentage of ML composition (item based) at Spille (all six surveys)

Figure 44: Percentage of ML composition (weightbased) at Adriatic (all six surveys)

Figure 45: Percentage of ML composition (item based) at Adriatic (all six surveys)

Figure 46: Percentage of ML composition (weight based) at Velipoje (all six surveys)

Figure 47: Percentage of ML composition (item based) at Velipoje (all six surveys)

Figure 48: Composition of marine litter in terms of weight removed in the Albanian selected study sites (for all beach cleanups operations)

Figure 49: Composition of marine litter in terms of number of items removed in the Albanian selected study sites (for all beach cleanups operations)

Figure 50: Top 20 ITEMS collected during all the six surveys in the Albanian study sites

Figure 51: Top 20 categories (in terms of weight) collected during all the six surveys in the Albanian study sites

Figure 52: Marine litter accumulation, in term of number of ITEMS, measured during the six surveys in the Albanian study sites

Figure 53: Marine litter accumulation, in term of WEIGHT, measured during the six surveys in the Albanian study sites

Figure 54: Composition of marine litter removed in Italy in terms of WEIGHT during all the six surveys

Figure 55: Composition of marine litter removed in Italy in terms of number of ITEMS during all the six surveys

Figure 56: Percentage share of ML by weight for all six surveys in Montenegro

Figure 57: Percentage share of ML by items for all six surveys in Montenegro

Figure 58: Composition of marine litter in terms of weight removed in the Albanian selected study sites (for all beach cleanups operations)

Figure 59: Composition of marine litter in terms of number of items removed in the Albanian selected study sites (for all beach cleanups operations)

Figure 60: Total items of ML collected in Italy, Albania and Montenegro

Figure 61: Total weight of ML collected in Italy, Albania and Montenegro

## **Final report on research activities about marine litter in the study area – in Italy, Albania and Montenegro**

Research activities about marine litter in the study area, within the Interreg IPA CBC project "WELCOME", were carried out in Italy, Albania and Montenegro after each beach clean-ups and garbage management activity. These activities were devoted to the research of marine litter collected from the selected beaches of the Italian, Albanian and Montenegrin areas, during the beach clean-ups activities. Alongside the selected beaches, the marine litter was collected separately so that materials like wood, glass, aluminium and plastic can be recycled. The marine litter collection mainly was done manually, limiting, as much as possible, the use of vehicles and their passage on the beaches. The marine litter collected from these beaches was transferred to the authorized and licensed research centre where marine litter were analysed and categorized, in accordance with adopted methodology.

Marine litter collection and research activities were carried out according to pre-defined transects in accordance with the adopted methodology – “Metodology for monitoring marine litter on beaches” which is developed within the IPA ADRIATIC “DeFishGear” project. The following methodology has been prepared based on the EU MSFD TG10 “Guidance on Monitoring of Marine Litter in European Seas (2013)”, the OSPAR “Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area (2010)” and the NOAA “Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the Marine Environment (2013), taking into consideration the draft “UNEP/MAP MEDPOL Monitoring Guidance Document on Ecological Objective 10: Marine Litter (2014)”.

In detail, these criteria include the conditions that selected beaches should be situated in the vicinity of coastal urban areas and of tourism destinations. Moreover, the selected beaches should: have a minimum length of 100 m; be characterized by a low slope (1.5 – 4.5 °); have clear access to the sea; be accessible to survey operators throughout the year. A further required condition is that the beaches should not be subject to cleaning activities, otherwise the timing of non-survey must be known so that litter flux rates can be determined. This methodology was adopted and used within the Interreg IPA CBC project "WELCOME" for the activities T1 - Marine litter study and removal from the coasts. After the first monitoring the existing methodology has been partially improved and more data has been collected compared to the first monitoring activities, that is, a more detailed measurement

of the weight of the collected waste has been carried out. In the authorized and licensed research centre marine litter was classified according to their respective codes, counted and weighted.

Weighing was done for each identified group:

- artificial polymer materials,
- rubber,
- cloth/textile,
- paper/cardboard,
- processed/worked wood,
- metal,
- glass/ceramics and
- unidentified and/or chemicals.

Natural wood was also collected and selected as small pieces (diameter less than 10 cm) and large pieces (diameter more than 10 cm). The collected woody material is especially separate in order to be reused for dune consolidation and restauration during the project implementation.



*Figure 1: Picture from field activities*



At the beginning of project "WELCOME" partners from Italy, Albania and Montenegro selected 3 beaches in all three countries along the cross-border coasts for the marine litter removal and research activities. These activities were carried out on the following beaches:

**Italy:**

-**Torre Chianca** in Lecce municipality

-**Frigole** in Lecce municipality

-**San Cataldo** in Lecce municipality

**Albania:**

-**Spille** in Durres municipality

-**Adriatik** in Shkoder municipality

-**Velipoja** in Shkoder municipality

**Montenegro:**

-**Velika plaža** in Ulcinj municipality

-**Bečićka beach** in Budva municipality

-**Igalo beach** in Herceg Novi municipality

The fixed sampling unit was transect of 100 m of sandy beach. So, two different transects of 100 m was determine on all three selected beaches of the Italian, Albanian and Montenegrin areas. Two contiguous transects are separated at least by 50 m.

The use of the same methodology by all project partners has enabled more efficient implementation of marine litter removal and research activities, easier comparison of the obtained data and obtaining more complete information on marine litter along the Italian, Albanian and Montenegrin coasts.

Beach clean-ups and marine litter research activities were performed each four months during the project implementation – three times per year during a period of 2 years on 3 selected beaches along the three cross-border coasts. The first activities on beach clean-ups and research activities which included collection, assessment of the quantity, type, distribution, qualitative/quantitative analysis of marine litter on the selected beaches along the coast, within the Interreg IPA CBC project "WELCOME", were carried out during the May 2018 and the last beach clean-ups activities were done during December 2019.

Together with activities of sampling, categorization and monitoring of marine litter on selected beaches, a raising awareness campaigns of the importance of marine litter clean up actions and the impact of marine litter on the environment were conducted through participation of volunteers in beach cleaning activities, publication and announcement, brochures, workshops, lessons at schools etc. In addition to the project staff, volunteers and general public were also involved and had a chance

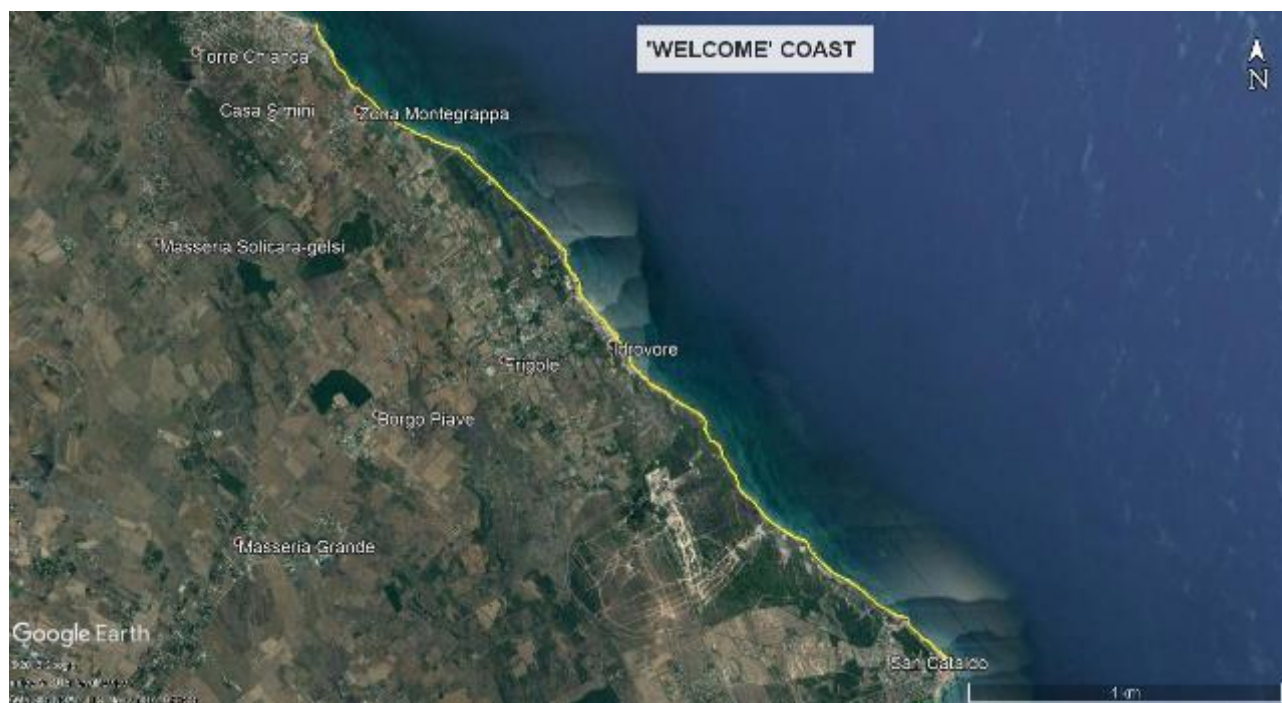
to participate in beach cleaning activities since all beach clean-ups activities are announced on web portals and local media as well as research results. Researchers, external expertise from public authorities and fishery cooperatives was directly involved in the cleaning operations while schools and other training and education centres was informed about the initiative mainly through the local media, workshops organized under work package Communication as well as through publications, lessons at schools and brochures.

Implementation of the beach clean-ups and garbage management as well as marine litter research activities and the results of the survey has enabled the monitoring of marine litter in the period of 2 years as well as the comparison of data and identification of the type and origin of marine litter that comes to the beaches from the sea and the mouth of the river.

## 1. FINAL RESULTS OF THE RESEARCH ACTIVITIES CONDUCTED IN ITALY

### 1.1 Sampling methods, selected beaches and followed guidelines

The Local Research Unit of CoNISMA in Lecce together with the Municipality of Lecce indicated the beaches to be monitored in the framework of the WELCOME Project. All the beaches belong to the municipality of Lecce and they firstly included the marinas of Torre Rinalda, Spiaggiabella, Torre Chianca, Frigole and San Cataldo as indicated in the Part A of the project summary. By following agreements with municipality of Lecce the final selection of the three beaches to be monitored indicated the marinas of **Torre Chianca**, **Frigole** and **San Cataldo** with two transects for each beach. Overall, the coast of the ‘Welcome Project’ is about 12 km long (*Figure 2*). Each transect was parallel to the coast line, 100 meters long and stretched from the shore to the dune vegetation.



*Figure 2: The trait of Adriatic coast of the Welcome Project in Italy*

The followed methodology is largely based on the **DeFishGear Methodology for Monitoring Marine Litter on Beaches (macro-debris > 2.5 cm)**. This methodology include reference to the EU MSFD TG10 “Guidance on Monitoring of Marine Litter in European Seas (2013)”, the OSPAR “Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area (2010)” and the NOAA “Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the Marine Environment (2013)”.

In detail, these criteria include the conditions that the selected beaches should be situated in the vicinity of coastal urban areas and of tourism destinations. Moreover, the selected beaches should: have a minimum length of 100 m; be characterized by a low slope (1.5 – 4.5 °); have clear access to the sea; be accessible to survey operators throughout the year. A further required condition is that the beaches should not be subject to cleaning activities, otherwise the timing of non-survey must be known so that litter flux rates can be determined.

The field operations were carried out every four months for two years and the marine litter was collected preferably manually in order to not compromise the natural shape of the beaches and to not destroy possible nests of marine birds (e.g. *Charadrius alexandrinus*) or of the sea turtles (*Caretta caretta*). The fixed sampling unit was a transect of 100 m of sandy beach. Each one of the three marinas (Torre Chianca, Frigole and San Cataldo) is represented by two different transects of 100 m. Two contiguous transects are separated at least by 50 m.

Finally, the selected transects with the respective coordinates are reported below:

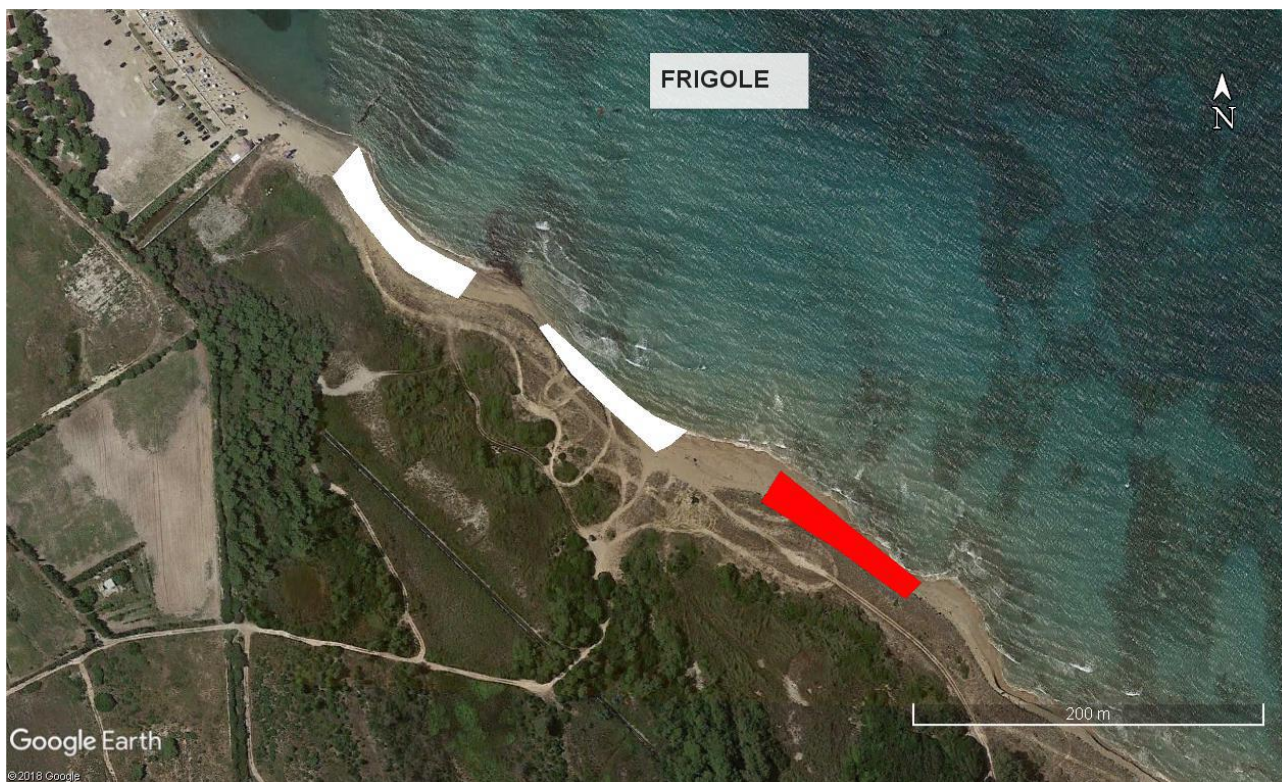
site	code	START North		END South	
		Latitude N	Longitude E	Latitude N	Longitude E
Torre Chianca 1	TC_1	40°27'21.71"	18°13'02.18"	40°27'20.55"	18°13'06.16"
Torre Chianca 2	TC_2	40°27'19.03"	18°13'07.78"	40°27'16.98"	18°13'11.04"
Frigole 1	FR_1	40°25'21.80"	18°15'42.00"	40°25'19.62"	18°15'45.27"
Frigole 2 (old)	FR_2	40°25'18.90"	18°15'47.60"	40°25'16.93"	18°15'51.10"
Frigole 2 (new)	FR_2	40°25'24.72"	18°15'37.18"	40°25'22.44"	18°15'40.23"
San Cataldo 1	SC_1	40°23'54.20"	18°17'39.90"	40°23'51.7"	18°17'42.60"
San Cataldo 2	SC_2	40°23'49.80"	18°17'46.80"	40°23'47.80"	18°17'50.10"

*Table 1: Coordinates of the extremities of the transects in Italy*

In particular, the location of both transects for each selected beach (Torre Chianca, Frigole and San Cataldo) is showed in the **figures 3, 4 and 5** respectively.



*Figure 3: Location of the two transects of Torre Chianca*



*Figure 4: Location of the two transects of Frigole*



*Figure 5: Location of the two transects of San Cataldo*

A **preliminary survey** on the selected beaches has been carried out on **14 may 2018** in order to verify the standard conditions required from the international protocols of the marine litter monitoring while the last beach cleaning operation were carried out during November 2019. Moreover, a better choice of the transects was performed in order to promote the restoration of traits of the nearby dunes consumed by the coastal erosion. Also for these reasons, the transects preliminarily identified on the maps have been better identified *in situ*.

**The field surveys were carried out in the following dates:**

I survey	28/05/2018	TIME I
II survey	06/11/2018	TIME II
III survey	19/03/2019	TIME III
IV survey	22/05/2019	TIME IV
V survey	09/10/2019	TIME V
VI survey	28/11/2019	TIME VI

## 1.2 Summary data of all six surveys conducted in Italy

The data collected in all six surveys conducted on three selected beaches in Italy during 2018 and 2019 have been listed in three matrices (one for each beach) separating data of each one of the two transects of a single beach (Torre Chianca, Frigole and San Cataldo). The matrices list the codes of the specific items collected and their brief descriptions. Each column referring to one transect reports both number of pieces for that specific item and their weight. At the end of each material group (i.e. artificial polymer materials, rubber, cloth/textile, paper/cardboard, processed/worked wood, metal, glass/ceramics, unidentified and/or chemicals) the total number of items and their total weight has been reported.

All the items (> 2.5 cm) inside the selected transects were collected, classified according their respective codes, and finally weighted based on the material group. In addition to the DeFishGear Methodology, the code G74 (referred to the ‘Foam packaging/insulation/polyurethane’ items) was included because there are a lot of items belonging to this code already considered in other protocols (e.g. EU MSFD TG10 and OSPAR). Additional items for each material category has been included in the tables of data followings the integration suggested by all partners involved in the field survey. Finally, two additional lines were added in reference to the beached natural wood SMALL (diameter less than 10 cm) and LARGE (diameter more than 10 cm).



*Figure 6: Marine litter research activities in Italy*

## 1.2.1 Torre Chianca

Code	Items name	ITALY Torre Chianca ITA_TC1		ITALY Torre Chianca ITA_TC2	
		Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G1	4/6-pack yokes, six-pack rings	0	0.00	0	0.00
G3	Shopping bags, incl. pieces	18	0.28	13	0.56
G4	Small plastic bags, e.g. freezer bags, including pieces	0	0.00	0	0.00
G5	Plastic bag collective roll; what remains from rip-off plastic bags	4	0.03	0	0.00
G7	Drink bottles <=0.5l	35	4.05	26	1.60
G8	Drink bottles >0.5l	28	3.60	39	5.29
G9	Cleaner/cleanser bottles & containers	34	2.93	19	1.45
G10	Food containers incl. fast food containers	7	0.07	2	0.00
G11	Beach use related cosmetic bottles and containers, e.g. Sunblocks	0	0.00	0	0.00
G12	Other cosmetics bottles & containers	14	0.35	7	0.28
G13	Other bottles & containers (drums)	0	0.00	0	0.00
G14	Engine oil bottles & containers <50 cm	3	0.27	0	0.00
G15	Engine oil bottles & containers > 50 cm	0	0.00	0	0.00
G16	Jerry cans (square plastic containers with handle)	0	0.00	0	0.00
G17	Injection gun containers	1	0.80	2	0.03
G18	Crates and containers / baskets	5	0.60	0	0.00
G19	Car parts	2	14.55	0	0.00
G21	Plastic caps/lids from drinks	556	1.53	228	0.47
G22	Plastic caps/lids from chemicals, detergents (non-food)	189	1.28	93	0.42
G23	Plastic caps/lids unidentified	0	0.00	5	0.01
G24	Plastic rings from bottle caps/lids	43	0.04	23	0.01
G25	Tobacco pouches / plastic cigarette box packaging	0	0.00	0	0.00
G26	Cigarette lighters	24	0.46	7	0.12
G27	Cigarette butts and filters	2	0.00	0	0.00
G28	Pens and pen lids	6	0.04	8	0.05
G29	Combs/hair brushes/sunglasses	4	0.08	1	0.03
G30	Crisps packets/sweets wrappers	3	0.01	0	0.00
G31	Lolly sticks	2	0.00	2	0.00
G32	Toys and party poppers	24	0.30	19	0.71
G33	Cups and cup lids	27	0.05	36	0.10
G34	Cutlery and trays	18	0.07	6	0.03
G35	Straws and stirrers	93	0.13	72	0.05



G36	Fertilizer/animal feed bags	0	0.00	0	0.00
G37	Mesh vegetable bags	0	0.00	0	0.00
G40	Gloves (washing up)	2	0.07	0	0.00
G41	Gloves (industrial/professional rubber gloves)	0	0.00	2	0.11
G42	Crab/lobster pots and tops	0	0.00	0	0.00
G43	Tags (fishing and industry)	1	0.08	1	0.01
G44	Octopus pots	0	0.00	0	0.00
G45	Mussels nets, Oyster nets	156	2.24	172	3.09
G46	Oyster trays (round from oyster cultures)	0	0.00	0	0.00
G47	Plastic sheeting from mussel culture (Tahitians)	0	0.00	0	0.00
G49	Rope (diameter more than 1cm)	3	20.00	0	0.00
G50	String and cord (diameter less than 1cm)	95	1.77	72	2.42
G53	Nets and pieces of net < 50 cm	0	0.00	0	0.00
G54	Nets and pieces of net > 50 cm	0	0.00	0	0.00
G56	Tangled nets/cord	1	0.01	3	0.05
G57	Fish boxes - plastic	0	0.00	0	0.00
G58	Fish boxes - expanded polystyrene	0	0.00	0	0.00
G59	Fishing line/monofilament (angling)	1	0.03	3	0.02
G60	Light sticks (tubes with fluid) incl. packaging	4	0.06	2	0.02
G62	Floats for fishing nets	0	0.00	3	0.01
G63	Buoys	4	0.03	3	0.01
G64	Fenders	0	0.00	0	0.00
G65	Buckets	0	0.00	0	0.00
G66	Strapping bands	1	0.01	7	0.07
G67	Sheets, industrial packaging, plastic sheeting	8	0.40	0	0.00
G68	Fiberglass/fragments	6	0.21	2	0.18
G69	Hard hats/Helmets	0	0.00	1	0.17
G70	Shotgun cartridges	48	0.12	17	0.05
G71	Shoes/sandals	16	2.83	22	6.34
G72	Traffic cones	0	0.00	0	0.00
G73	Foam sponge	10	0.06	52	0.22
G79	Plastic pieces 2.5 cm > < 50cm	1157	5.89	638	3.37
G80	Plastic pieces > 50 cm	4	2.00	14	0.02
G82	Polystyrene pieces 2.5 cm > < 50cm	84	0.28	70	0.97
G83	Polystyrene pieces > 50 cm	0	0.00	0	0.00
G84	CD, CD-boxes	0	0.00	0	0.00
G85	Salt packaging	0	0.00	0	0.00
G86	Fin trees (from fins for scuba diving)	0	0.00	0	0.00
G87	Masking tape	0	0.00	0	0.00
G88	Telephone (incl. parts)	0	0.00	0	0.00
G89	Plastic construction waste	0	0.00	0	0.00
G90	Plastic flower pots	0	0.00	0	0.00
G91	Biomass holder from sewage treatment plants	0	0.00	0	0.00

G92	Bait containers/packaging	0	0.00	0	0.00
G93	Cable ties	0	0.00	0	0.00
G95	Cotton bud sticks	287	0.15	103	0.06
G96	Sanitary towels/panty liners/backing strips	3	0.03	0	0.00
G97	Toilet fresheners	2	0.04	0	0.00
G98	Diapers/nappies	0	0.00	0	0.00
G99	Syringes/needles	3	0.04	7	0.08
G100	Medical/Pharmaceuticals containers/tubes	16	0.58	8	0.09
G101	Dog faeces bags	0	0.00	0	0.00
G102	Flip-flops	0	0.00	0	0.00
G124	Other plastic/polystyrene items (identifiable)	6	0.10	2	0.04
	<i>animals food packaging</i>	0	0.00	0	0.00
	<i>Beach umbrella end</i>	5	0.04	3	0.01
	<b>Bioballs</b>	15	0.01	1	0.00
	<i>Brooms without handle</i>	2	0.40	2	0.50
	<i>Brush from nailpolish</i>	0	0.00	0	0.00
	<i>Building / hardware / electrical supplies</i>	0	0.00	0	0.00
	<i>Clothes pegs</i>	1	0.02	0	0.00
	<i>Coffe capsule</i>	2	0.02	2	0.02
G18	<i>crate (plastic)</i>	0	0.00	0	0.00
	<i>light sticks (tubes with fluid) incl. packaging</i>	0	0.00	0	0.00
	<i>desk parts (plastic)</i>	0	0.00	0	0.00
	<i>diving mask incl. parts</i>	0	0.00	0	0.00
	<i>Furnishings</i>	1	0.70	1	2.40
	<i>gorse (plastic)</i>	0	0.00	0	0.00
	<i>lure for fish</i>	0	0.00	0	0.00
	<i>Other sanitary / cosmetic items</i>	0	0.00	5	0.02
	<i>plastik lid from big trash cans</i>	0	0.00	0	0.00
	<i>plastic strainer for food</i>	0	0.00	0	0.00
	<i>Pipes</i>	7	0.65	6	0.20
	<i>sanitary napkin</i>	0	0.00	0	0.00
	<i>scratch bag</i>	0	0.00	0	0.00
	<i>Shoes polish containers</i>	1	0.12	0	0.00
	<i>toothpick plastic</i>	0	0.00	0	0.00
	<i>toothbrush</i>	4	0.08	5	0.10
		<b>3098</b>	<b>70.57</b>	<b>1837</b>	<b>31.81</b>
<b>RUBBER</b>					
Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G125	Balloons and balloon sticks	18	0.12	11	0.02
G126	Balls	0	0.00	0	0.00
G127	Rubber boots	0	0.00	3	0.38
G128	Tyres and belts	0	0.00	0	0.00

G129	Inner-tubes and rubber sheets	0	0.00	0	0.00
G130	Wheels	0	0.00	0	0.00
G131	Rubber bands (small, for kitchen/household/post use)	0	0.00	0	0.00
G132	Bobbins (fishing)	0	0.00	0	0.00
G133	Condoms (incl. packaging)	0	0.00	0	0.00
G134	Other rubber pieces	1	0.24	3	0.03
	<i>Car parts</i>	0	0.00	0	0.00
	<i>mattress for beach</i>	0	0.00	0	0.00
	<i>Pacifier</i>	0	0.00	0	0.00
	<i>Pram tyre</i>	0	0.00	0	0.00
	<i>rubber thongs</i>	0	0.00	0	0.00
	<i>sandals</i>	0	0.00	0	0.00
	<i>swimming belt</i>	0	0.00	0	0.00
		<b>19</b>	<b>0.36</b>	<b>17</b>	<b>0.42</b>

CLOTH/TEXTILE

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G137	Clothing / rags (clothes, hats, towels)	0	0.00	1	0.02
G138	Shoes and sandals (e.g. leather, cloth)	0	0.00	0	0.00
G139	Backpacks & bags	0	0.00	0	0.00
G140	Sacking (hessian)	0	0.00	0	0.00
G141	Carpet & furnishing	0	0.00	0	0.00
G142	Rope, string and nets	0	0.00	0	0.00
G143	Sails, canvas	0	0.00	0	0.00
G144	Tampons and tampon applicators	0	0.00	0	0.00
G145	Other textiles (incl. rags)	2	0.03	0	0.00
	<i>blanket</i>	0	0.00	0	0.00
	<i>cotton scraf</i>	0	0.00	0	0.00
	<i>leather belt</i>	0	0.00	0	0.00
	<i>Leather pieces</i>	0	0.00	0	0.00
	<i>Leather + textile toys</i>	0	0.00	0	0.00
		<b>2</b>	<b>0.03</b>	<b>1</b>	<b>0.02</b>

PAPER/CARDBOARD

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G147	Paper bags	0	0.00	0	0.00
G148	Cardboard (boxes & fragments)	0	0.00	0	0.00
G150	Cartons/Tetrapack Milk	0	0.00	0	0.00
G151	Cartons/Tetrapack (others)	0	0.00	0	0.00
G152	Cigarette packets	0	0.00	1	0.01
G153	Cups, food trays, food wrappers, drink containers	0	0.00	0	0.00

<b>G154</b>	Newspapers & magazines	0	0.00	0	0.00
<b>G155</b>	Tubes for fireworks	0	0.00	0	0.00
<b>G156</b>	Paper fragments	0	0.00	0	0.00
<b>G158</b>	Other paper items	0	0.00	0	0.00
		<b>0</b>	<b>0.00</b>	<b>1</b>	<b>0.01</b>

**PROCESSED/WORKED WOOD**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G159</b>	Corks	5	0.01	1	0.02
<b>G160</b>	Pallets	0	0.00	0	0.00
<b>G161</b>	Processed timber	0	0.00	0	0.00
<b>G162</b>	Crates	0	0.00	0	0.00
<b>G163</b>	Crab/lobster pots	0	0.00	0	0.00
<b>G164</b>	Fish boxes	0	0.00	0	0.00
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks	0	0.00	0	0.00
<b>G166</b>	Paint brushes	0	0.00	0	0.00
<b>G167</b>	Matches & fireworks	0	0.00	0	0.00
<b>G171</b>	Other wood < 50 cm	7	6.05	3	0.45
<b>G172</b>	Other wood > 50 cm	0	0.00	1	5.30
		<b>12</b>	<b>6.06</b>	<b>5</b>	<b>5.77</b>

**METAL**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G174</b>	Aerosol/Spray cans	2	0.11	3	0.32
<b>G175</b>	Cans (beverage)	4	0.03	3	0.04
<b>G176</b>	Cans (food)	0	0.00	0	0.00
<b>G177</b>	Foil wrappers, aluminum foil	0	0.00	3	0.04
<b>G178</b>	Bottle caps, lids & pull tabs	0	0.00	1	0.00
<b>G179</b>	Disposable BBQs	0	0.00	0	0.00
<b>G180</b>	Appliances (refrigerators, washers, etc.)	0	0.00	0	0.00
<b>G181</b>	Tableware (plates, cups & cutlery)	0	0.00	0	0.00
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)	0	0.00	0	0.00
<b>G184</b>	Lobster/crab pots	0	0.00	0	0.00
<b>G186</b>	Industrial scrap	0	0.00	0	0.00
<b>G187</b>	Drums, e.g. oil	0	0.00	0	0.00
<b>G188</b>	Other cans (< 4 L)	0	0.00	0	0.00
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)	0	0.00	0	0.00
<b>G190</b>	Paint tins	0	0.00	0	0.00
<b>G191</b>	Wire, wire mesh, barbed wire	0	0.00	0	0.00
<b>G193</b>	Car parts / batteries	0	0.00	1	0.10
<b>G194</b>	Cables	0	0.00	2	0.03
<b>G195</b>	Household Batteries	0	0.00	0	0.00

<b>G198</b>	Other metal pieces < 50 cm	9	0.20	9	0.13
<b>G199</b>	Other metal pieces > 50 cm	0	0.00	1	1.00
	<i>Medical containers</i>	0	0.00	3	0.02
	<i>Milk capsule</i>	0	0.00	0	0.00
	<i>Nails</i>	0	0.00	0	0.00
		<b>15</b>	<b>0.34</b>	<b>26</b>	<b>1.69</b>

**GLASS/CERAMICS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G200</b>	Bottles, including pieces	7	1.80	3	1.31
<b>G201</b>	Jars, including pieces	0	0.00	0	0.00
<b>G202</b>	Light bulbs	1	0.02	1	0.05
<b>G203</b>	Tableware (plates & cups)	0	0.00	0	0.00
<b>G204</b>	Construction material (brick, cement, pipes)	0	0.00	4	0.30
<b>G205</b>	Fluorescent light tubes	0	0.00	0	0.00
<b>G206</b>	Glass buoys	0	0.00	0	0.00
<b>G207</b>	Octopus pots	0	0.00	0	0.00
<b>G208</b>	Glass or ceramic fragments >2.5cm	0	0.00	3	0.03
<b>G210</b>	Other glass items	1	0.25	6	0.07
	<i>broken mercury thermometer</i>	0	0.00	0	0.00
	<i>cosmetic bottles</i>	0	0.00	0	0.00
	<i>medical containers</i>	10	0.59	9	1.01
		<b>19</b>	<b>2.66</b>	<b>26</b>	<b>2.77</b>

**UNIDENTIFIED AND/OR CHEMICALS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G211</b>	Other medical items (swabs, bandaging, adhesive plaster, etc.)	0	0.00	0	0.00
<b>G213</b>	Paraffin/Wax	0	0.00	0	0.00
	TAR (catrame)	0	0.00	0	0.00
		<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>

**TOTAL ML (Kg) 3165 80.02 1913 42.49**

Natural Wood - SMALL (kg) - diameter < 10 cm 363.50 452.00  
 Natural Wood - LARGE (kg) - diameter > 10 cm 52.00 131.00

**TOTAL NATURAL WOOD (kg) 415.50 583.00**

Marine plant leaves yes yes

## 1.2.2 Frigole

Code	Items name	ITALY Frigole ITA_FR1		ITALY Frigole ITA_FR2	
		Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G1	4/6-pack yokes, six-pack rings	0	0.00	0	0.00
G3	Shopping bags, incl. pieces	8	0.61	41	5.89
G4	Small plastic bags, e.g. freezer bags, including pieces	0	0.00	0	0.00
G5	Plastic bag collective roll; what remains from rip-off plastic bags	8	0.41	1	0.02
G7	Drink bottles <=0.5l	34	1.88	17	1.37
G8	Drink bottles >0.5l	48	7.09	46	4.98
G9	Cleaner/cleanser bottles & containers	21	2.14	26	1.95
G10	Food containers incl. fast food containers	4	0.22	41	0.27
G11	Beach use related cosmetic bottles and containers, e.g. Sunblocks	12	0.07	12	0.46
G12	Other cosmetics bottles & containers	5	0.15	3	0.03
G13	Other bottles & containers (drums)	0	0.00	0	0.00
G14	Engine oil bottles & containers <50 cm	1	0.04	1	0.06
G15	Engine oil bottles & containers > 50 cm	0	0.00	0	0.00
G16	Jerry cans (square plastic containers with handle)	0	0.00	1	0.08
G17	Injection gun containers	1	0.09	1	0.01
G18	Crates and containers / baskets	1	0.13	4	2.58
G19	Car parts	0	0.00	0	0.00
G21	Plastic caps/lids from drinks	163	0.70	263	0.85
G22	Plastic caps/lids from chemicals, detergents (non-food)	112	0.60	91	0.61
G23	Plastic caps/lids unidentified	0	0.00	0	0.00
G24	Plastic rings from bottle caps/lids	22	0.02	33	0.02
G25	Tobacco pouches / plastic cigarette box packaging	0	0.00	0	0.00
G26	Cigarette lighters	18	0.25	17	0.25
G27	Cigarette butts and filters	3	0.04	5	0.01
G28	Pens and pen lids	7	0.05	6	0.06
G29	Combs/hair brushes/sunglasses	0	0.00	1	0.01
G30	Crisps packets/sweets wrappers	15	0.04	0	0.00
G31	Lolly sticks	9	0.01	6	0.01
G32	Toys and party poppers	9	0.07	19	0.52
G33	Cups and cup lids	29	0.28	42	0.19
G34	Cutlery and trays	19	0.09	12	0.05
G35	Straws and stirrers	48	0.09	68	0.18

<b>G36</b>	Fertilizer/animal feed bags	0	0.00	0	0.00
<b>G37</b>	Mesh vegetable bags	0	0.00	0	0.00
<b>G40</b>	Gloves (washing up)	0	0.00	0	0.00
<b>G41</b>	Gloves (industrial/professional rubber gloves)	1	0.02	1	0.07
<b>G42</b>	Crab/lobster pots and tops	0	0.00	0	0.00
<b>G43</b>	Tags (fishing and industry)	1	0.00	1	0.01
<b>G44</b>	Octopus pots	0	0.00	0	0.00
<b>G45</b>	Mussels nets, Oyster nets	189	3.09	200	2.55
<b>G46</b>	Oyster trays (round from oyster cultures)	0	0.00	0	0.00
<b>G47</b>	Plastic sheeting from mussel culture (Tahitians)	0	0.00	0	0.00
<b>G49</b>	Rope (diameter more than 1cm)	18	0.10	3	132.52
<b>G50</b>	String and cord (diameter less than 1cm)	77	1.03	107	1.08
<b>G53</b>	Nets and pieces of net < 50 cm	1	0.08	1	0.00
<b>G54</b>	Nets and pieces of net > 50 cm	1	1.20	1	0.35
<b>G56</b>	Tangled nets/cord	1	0.01	2	0.30
<b>G57</b>	Fish boxes - plastic	0	0.00	1	0.65
<b>G58</b>	Fish boxes - expanded polystyrene	0	0.00	1	0.12
<b>G59</b>	Fishing line/monofilament (angling)	8	0.04	2	0.03
<b>G60</b>	Light sticks (tubes with fluid) incl. packaging	6	0.02	2	0.02
<b>G62</b>	Floats for fishing nets	4	0.07	8	0.17
<b>G63</b>	Buoys	7	0.26	7	0.08
<b>G64</b>	Fenders	0	0.00	0	0.00
<b>G65</b>	Buckets	0	0.00	0	0.00
<b>G66</b>	Strapping bands	10	0.19	19	1.29
<b>G67</b>	Sheets, industrial packaging, plastic sheeting	19	0.65	0	0.00
<b>G68</b>	Fiberglass/fragments	2	4.88	0	0.00
<b>G69</b>	Hard hats/Helmets	0	0.00	0	0.00
<b>G70</b>	Shotgun cartridges	30	0.18	52	0.12
<b>G71</b>	Shoes/sandals	12	1.04	9	1.65
<b>G72</b>	Traffic cones	0	0.00	0	0.00
<b>G73</b>	Foam sponge	42	0.15	43	0.35
<b>G79</b>	Plastic pieces 2.5 cm > < 50cm	1028	9.05	859	5.95
<b>G80</b>	Plastic pieces > 50 cm	0	0.00	142	0.89
<b>G82</b>	Polystyrene pieces 2.5 cm > < 50cm	337	1.41	124	1.24
<b>G83</b>	Polystyrene pieces > 50 cm	35	0.13	0	0.00
<b>G84</b>	CD, CD-boxes	0	0.00	0	0.00
<b>G85</b>	Salt packaging	0	0.00	0	0.00
<b>G86</b>	Fin trees (from fins for scuba diving)	0	0.00	0	0.00
<b>G87</b>	Masking tape	0	0.00	0	0.00
<b>G88</b>	Telephone (incl. parts)	0	0.00	0	0.00
<b>G89</b>	Plastic construction waste	0	0.00	0	0.00
<b>G90</b>	Plastic flower pots	0	0.00	0	0.00
<b>G91</b>	Biomass holder from sewage treatment plants	0	0.00	0	0.00

G92	Bait containers/packaging	0	0.00	0	0.00
G93	Cable ties	0	0.00	15	0.01
G95	Cotton bud sticks	378	0.23	290	0.16
G96	Sanitary towels/panty liners/backing strips	1	0.01	0	0.00
G97	Toilet fresheners	0	0.00	3	0.08
G98	Diapers/nappies	0	0.00	0	0.00
G99	Syringes/needles	9	0.06	5	0.04
G100	Medical/Pharmaceuticals containers/tubes	19	0.29	22	0.13
G101	Dog faeces bags	0	0.00	0	0.00
G102	Flip-flops	0	0.00	0	0.00
G124	Other plastic/polystyrene items (identifiable)	3	0.33	1	0.05
	<i>animals food packaging</i>	0	0.00	0	0.00
	<i>Beach umbrella end</i>	6	0.07	18	0.11
	<b>Bioballs</b>	12	0.01	5	0.00
	<i>Brooms without handle</i>	1	0.28	0	0.00
	<i>Brush from nailpolish</i>	0	0.00	0	0.00
	<i>Building / hardware / electrical supplies</i>	0	0.00	0	0.00
	<i>Clothes pegs</i>	0	0.00	4	0.03
	<i>Coffe capsule</i>	1	0.02	1	0.02
G18	<i>crate (plastic)</i>	1	0.50	0	0.00
	<i>light sticks (tubes with fluid) incl. packaging</i>	0	0.00	0	0.00
	<i>desk parts (plastic)</i>	0	0.00	0	0.00
	<i>diving mask incl. parts</i>	0	0.00	0	0.00
	<i>Furnishings</i>	0	0.00	0	0.00
	<i>gorse (plastic)</i>	0	0.00	0	0.00
	<i>lure for fish</i>	0	0.00	0	0.00
	<i>Other sanitary / cosmetic items</i>	1	0.03	13	0.12
	<i>plastik lid from big trash cans</i>	0	0.00	0	0.00
	<i>plastic strainer for food</i>	0	0.00	0	0.00
	<i>Pipes</i>	3	0.58	14	0.30
	<i>sanitary napkin</i>	0	0.00	0	0.00
	<i>scratch bag</i>	0	0.00	0	0.00
	<i>Shoes polish containers</i>	2	0.16	0	0.00
	<i>toothpick plastic</i>	0	0.00	0	0.00
	<i>toothbrush</i>	2	0.01	0	0.00
		<b>2865</b>	<b>41.19</b>	<b>2733</b>	<b>170.90</b>

RUBBER

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G125	Balloons and balloon sticks	21	0.08	25	0.03
G126	Balls	0	0.00	0	0.00
G127	Rubber boots	6	0.86	7	1.57
G128	Tyres and belts	1	16.60	0	0.00



<b>G129</b>	Inner-tubes and rubber sheets	0	0.00	0	0.00
<b>G130</b>	Wheels	0	0.00	0	0.00
<b>G131</b>	Rubber bands (small, for kitchen/household/post use)	0	0.00	0	0.00
<b>G132</b>	Bobbins (fishing)	0	0.00	0	0.00
<b>G133</b>	Condoms (incl. packaging)	0	0.00	1	0.00
<b>G134</b>	Other rubber pieces	3	0.32	0	0.00
	<i>Car parts</i>	0	0.00	0	0.00
	<i>mattress for beach</i>	0	0.00	0	0.00
	<i>Pacifier</i>	0	0.00	1	0.04
	<i>Pram tyre</i>	0	0.00	0	0.00
	<i>rubber thongs</i>	0	0.00	0	0.00
	<i>sandals</i>	0	0.00	0	0.00
	<i>swimming belt</i>	0	0.00	0	0.00
		<b>31</b>	<b>17.86</b>	<b>34</b>	<b>1.64</b>

**CLOTH/TEXTILE**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G137</b>	Clothing / rags (clothes, hats, towels)	0	0.00	2	1.22
<b>G138</b>	Shoes and sandals (e.g. leather, cloth)	0	0.00	0	0.00
<b>G139</b>	Backpacks & bags	0	0.00	0	0.00
<b>G140</b>	Sacking (hessian)	0	0.00	0	0.00
<b>G141</b>	Carpet & furnishing	0	0.00	0	0.00
<b>G142</b>	Rope, string and nets	0	0.00	0	0.00
<b>G143</b>	Sails, canvas	0	0.00	0	0.00
<b>G144</b>	Tampons and tampon applicators	0	0.00	1	0.01
<b>G145</b>	Other textiles (incl. rags)	4	0.32	0	0.00
	<i>blanket</i>	0	0.00	0	0.00
	<i>cotton scraf</i>	0	0.00	0	0.00
	<i>leather belt</i>	0	0.00	0	0.00
	<i>Leather pieces</i>	0	0.00	0	0.00
	<i>Leather + textile toys</i>	0	0.00	0	0.00
		<b>4</b>	<b>0.32</b>	<b>3</b>	<b>1.23</b>

**PAPER/CARDBOARD**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G147</b>	Paper bags	0	0.00	0	0.00
<b>G148</b>	Cardboard (boxes & fragments)	0	0.00	0	0.00
<b>G150</b>	Cartons/Tetrapack Milk	0	0.00	0	0.00
<b>G151</b>	Cartons/Tetrapack (others)	1	0.03	0	0.00
<b>G152</b>	Cigarette packets	9	0.09	1	0.01
<b>G153</b>	Cups, food trays, food wrappers, drink containers	0	0.00	0	0.00

<b>G154</b>	Newspapers & magazines	0	0.00	0	0.00
<b>G155</b>	Tubes for fireworks	0	0.00	0	0.00
<b>G156</b>	Paper fragments	0	0.00	0	0.00
<b>G158</b>	Other paper items	3	0.02	0	0.00
		<b>13</b>	<b>0.13</b>	<b>1</b>	<b>0.01</b>

**PROCESSED/WORKED WOOD**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G159</b>	Corks	2	0.00	2	0.00
<b>G160</b>	Pallets	0	0.00	1	4.95
<b>G161</b>	Processed timber	0	0.00	1	0.20
<b>G162</b>	Crates	0	0.00	0	0.00
<b>G163</b>	Crab/lobster pots	0	0.00	0	0.00
<b>G164</b>	Fish boxes	0	0.00	0	0.00
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks	0	0.00	0	0.00
<b>G166</b>	Paint brushes	0	0.00	0	0.00
<b>G167</b>	Matches & fireworks	0	0.00	0	0.00
<b>G171</b>	Other wood < 50 cm	4	3.01	0	0.00
<b>G172</b>	Other wood > 50 cm	1	1.35	3	8.35
		<b>7</b>	<b>4.36</b>	<b>7</b>	<b>13.50</b>

**METAL**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G174</b>	Aerosol/Spray cans	5	0.78	2	0.08
<b>G175</b>	Cans (beverage)	1	0.02	4	0.14
<b>G176</b>	Cans (food)	0	0.00	0	0.00
<b>G177</b>	Foil wrappers, aluminum foil	10	0.12	4	0.08
<b>G178</b>	Bottle caps, lids & pull tabs	1	0.02	2	0.01
<b>G179</b>	Disposable BBQs	0	0.00	0	0.00
<b>G180</b>	Appliances (refrigerators, washers, etc.)	0	0.00	0	0.00
<b>G181</b>	Tableware (plates, cups & cutlery)	0	0.00	0	0.00
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)	1	0.10	0	0.00
<b>G184</b>	Lobster/crab pots	0	0.00	0	0.00
<b>G186</b>	Industrial scrap	0	0.00	0	0.00
<b>G187</b>	Drums, e.g. oil	0	0.00	0	0.00
<b>G188</b>	Other cans (< 4 L)	0	0.00	0	0.00
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)	0	0.00	0	0.00
<b>G190</b>	Paint tins	1	0.50	0	0.00
<b>G191</b>	Wire, wire mesh, barbed wire	0	0.00	0	0.00
<b>G193</b>	Car parts / batteries	0	0.00	0	0.00
<b>G194</b>	Cables	0	0.00	0	0.00
<b>G195</b>	Household Batteries	0	0.00	0	0.00

G198	Other metal pieces < 50 cm	10	0.91	3	0.18
G199	Other metal pieces > 50 cm	0	0.00	0	0.00
	<i>Medical containers</i>	0	0.00	0	0.00
	<i>Milk capsule</i>	0	0.00	0	0.00
	<i>Nails</i>	0	0.00	0	0.00
		<b>29</b>	<b>2.44</b>	<b>15</b>	<b>0.49</b>

**GLASS/CERAMICS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G200	Bottles, including pieces	11	3.10	12	4.10
G201	Jars, including pieces	0	0.00	0	0.00
G202	Light bulbs	4	0.07	3	0.09
G203	Tableware (plates & cups)	0	0.00	0	0.00
G204	Construction material (brick, cement, pipes)	0	0.00	0	0.00
G205	Fluorescent light tubes	0	0.00	0	0.00
G206	Glass buoys	0	0.00	0	0.00
G207	Octopus pots	0	0.00	0	0.00
G208	Glass or ceramic fragments >2.5cm	0	0.00	0	0.00
G210	Other glass items	0	0.00	1	0.03
	<i>broken mercury thermometer</i>	0	0.00	0	0.00
	<i>cosmetic bottles</i>	0	0.00	0	0.00
	<i>medical containers</i>	11	0.46	5	0.10
		<b>26</b>	<b>3.63</b>	<b>21</b>	<b>4.32</b>

**UNIDENTIFIED AND/OR CHEMICALS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G211	Other medical items (swabs, bandaging, adhesive plaster, etc.)	1	0.08	3	0.08
G213	Paraffin/Wax	1	0.00	0	0.00
	TAR (catrame)	1	0.27	0	0.00
		<b>3</b>	<b>0.35</b>	<b>3</b>	<b>0.08</b>

**TOTAL ML (Kg) 2978 70.29 2187 192.17**

Natural Wood - SMALL (kg) - diameter < 10 cm 89.00 92.00  
 Natural Wood - LARGE (kg) - diameter > 10 cm 845.00 965.00

**TOTAL NATURAL WOOD (kg) 934.00 1057.00**

Marine plant leaves yes yes

### 1.2.3 San Cataldo

Code	Items name	ITALY San Cataldo ITA_SC1		ITALY San Cataldo ITA_SC2	
		Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G1</b>	4/6-pack yokes, six-pack rings	1	0.00	0	0.00
<b>G3</b>	Shopping bags, incl. pieces	32	0.29	15	0.62
<b>G4</b>	Small plastic bags, e.g. freezer bags, including pieces	6	0.01	0	0.00
<b>G5</b>	Plastic bag collective roll; what remains from rip-off plastic bags	2	0.03	2	0.78
<b>G7</b>	Drink bottles <=0.5l	14	1.03	7	0.63
<b>G8</b>	Drink bottles >0.5l	8	0.64	24	3.35
<b>G9</b>	Cleaner/cleanser bottles & containers	4	0.22	3	0.28
<b>G10</b>	Food containers incl. fast food containers	12	0.13	12	0.15
<b>G11</b>	Beach use related cosmetic bottles and containers, e.g. Sunblocks	0	0.00	0	0.00
<b>G12</b>	Other cosmetics bottles & containers	3	0.05	0	0.00
<b>G13</b>	Other bottles & containers (drums)	0	0.00	0	0.00
<b>G14</b>	Engine oil bottles & containers <50 cm	0	0.00	0	0.00
<b>G15</b>	Engine oil bottles & containers > 50 cm	0	0.00	0	0.00
<b>G16</b>	Jerry cans (square plastic containers with handle)	0	0.00	0	0.00
<b>G17</b>	Injection gun containers	5	0.47	1	0.02
<b>G18</b>	Crates and containers / baskets	0	0.00	1	0.88
<b>G19</b>	Car parts	0	0.00	1	0.04
<b>G21</b>	Plastic caps/lids from drinks	172	0.52	168	0.88
<b>G22</b>	Plastic caps/lids from chemicals, detergents (non-food)	110	0.34	88	0.54
<b>G23</b>	Plastic caps/lids unidentified	0	0.00	0	0.00
<b>G24</b>	Plastic rings from bottle caps/lids	26	0.03	33	0.04
<b>G25</b>	Tobacco pouches / plastic cigarette box packaging	0	0.00	0	0.00
<b>G26</b>	Cigarette lighters	7	0.13	8	0.15
<b>G27</b>	Cigarette butts and filters	25	0.03	6	0.01
<b>G28</b>	Pens and pen lids	6	0.16	7	0.04
<b>G29</b>	Combs/hair brushes/sunglasses	5	0.05	1	0.02
<b>G30</b>	Crisps packets/sweets wrappers	10	0.01	0	0.00
<b>G31</b>	Lolly sticks	2	0.00	1	0.00
<b>G32</b>	Toys and party poppers	9	0.30	15	0.14
<b>G33</b>	Cups and cup lids	8	0.07	16	0.05
<b>G34</b>	Cutlery and trays	10	0.05	16	0.09
<b>G35</b>	Straws and stirrers	59	0.09	75	0.09

<b>G36</b>	Fertilizer/animal feed bags	0	0.00	0	0.00
<b>G37</b>	Mesh vegetable bags	0	0.00	0	0.00
<b>G40</b>	Gloves (washing up)	1	0.02	0	0.00
<b>G41</b>	Gloves (industrial/professional rubber gloves)	2	0.21	0	0.00
<b>G42</b>	Crab/lobster pots and tops	0	0.00	0	0.00
<b>G43</b>	Tags (fishing and industry)	0	0.00	2	0.01
<b>G44</b>	Octopus pots	0	0.00	0	0.00
<b>G45</b>	Mussels nets, Oyster nets	112	1.50	154	3.04
<b>G46</b>	Oyster trays (round from oyster cultures)	0	0.00	0	0.00
<b>G47</b>	Plastic sheeting from mussel culture (Tahitians)	0	0.00	0	0.00
<b>G49</b>	Rope (diameter more than 1cm)	1	35.00	4	15.51
<b>G50</b>	String and cord (diameter less than 1cm)	98	2.95	83	1.83
<b>G53</b>	Nets and pieces of net < 50 cm	0	0.00	0	0.00
<b>G54</b>	Nets and pieces of net > 50 cm	0	0.00	0	0.00
<b>G56</b>	Tangled nets/cord	0	0.00	0	0.00
<b>G57</b>	Fish boxes - plastic	0	0.00	2	1.25
<b>G58</b>	Fish boxes - expanded polystyrene	3	0.34	0	0.00
<b>G59</b>	Fishing line/monofilament (angling)	1	0.00	0	0.00
<b>G60</b>	Light sticks (tubes with fluid) incl. packaging	0	0.00	4	0.01
<b>G62</b>	Floats for fishing nets	7	0.03	1	0.01
<b>G63</b>	Buoys	0	0.00	1	9.50
<b>G64</b>	Fenders	0	0.00	0	0.00
<b>G65</b>	Buckets	0	0.00	2	1.10
<b>G66</b>	Strapping bands	4	0.04	2	0.02
<b>G67</b>	Sheets, industrial packaging, plastic sheeting	16	1.93	43	2.73
<b>G68</b>	Fiberglass/fragments	0	0.00	1	17.50
<b>G69</b>	Hard hats/Helmets	0	0.00	1	0.36
<b>G70</b>	Shotgun cartridges	25	0.05	24	0.06
<b>G71</b>	Shoes/sandals	1	0.00	10	4.19
<b>G72</b>	Traffic cones	1	0.01	0	0.00
<b>G73</b>	Foam sponge	31	0.38	24	0.05
<b>G79</b>	Plastic pieces 2.5 cm > < 50cm	354	4.38	417	3.82
<b>G80</b>	Plastic pieces > 50 cm	5	0.01	172	1.13
<b>G82</b>	Polystyrene pieces 2.5 cm > < 50cm	43	0.46	381	0.55
<b>G83</b>	Polystyrene pieces > 50 cm	0	0.00	0	0.00
<b>G84</b>	CD, CD-boxes	0	0.00	0	0.00
<b>G85</b>	Salt packaging	0	0.00	0	0.00
<b>G86</b>	Fin trees (from fins for scuba diving)	0	0.00	0	0.00
<b>G87</b>	Masking tape	0	0.00	0	0.00
<b>G88</b>	Telephone (incl. parts)	0	0.00	0	0.00
<b>G89</b>	Plastic construction waste	0	0.00	0	0.00
<b>G90</b>	Plastic flower pots	1	0.01	0	0.00
<b>G91</b>	Biomass holder from sewage treatment plants	0	0.00	0	0.00

G92	Bait containers/packaging	1	0.08	1	0.01
G93	Cable ties	0	0.00	0	0.00
G95	Cotton bud sticks	209	0.10	209	0.10
G96	Sanitary towels/panty liners/backing strips	1	0.01	0	0.00
G97	Toilet fresheners	0	0.00	0	0.00
G98	Diapers/nappies	0	0.00	0	0.00
G99	Syringes/needles	11	0.03	5	0.06
G100	Medical/Pharmaceuticals containers/tubes	2	0.07	7	0.03
G101	Dog faeces bags	0	0.00	2	0.02
G102	Flip-flops	0	0.00	0	0.00
G124	Other plastic/polystyrene items (identifiable)	2	0.03	1	0.03
	<i>animals food packaging</i>	0	0.00	0	0.00
	<i>Beach umbrella end</i>	2	0.01	2	0.01
	<b>Bioballs</b>	2	0.00	7	0.00
	<i>Brooms without handle</i>	0	0.00	0	0.00
	<i>Brush from nailpolish</i>	0	0.00	0	0.00
	<i>Building / hardware / electrical supplies</i>	0	0.00	0	0.00
	<i>Clothes pegs</i>	10	0.09	1	0.02
	<i>Coffe capsule</i>	1	0.07	1	0.01
G18	<i>crate (plastic)</i>	0	0.00	0	0.00
	<i>light sticks (tubes with fluid) incl. packaging</i>	0	0.00	0	0.00
	<i>desk parts (plastic)</i>	0	0.00	0	0.00
	<i>diving mask incl. parts</i>	0	0.00	0	0.00
	<i>Furnishings</i>	0	0.00	0	0.00
	<i>gorse (plastic)</i>	0	0.00	0	0.00
	<i>lure for fish</i>	0	0.00	0	0.00
	<i>Other sanitary / cosmetic items</i>	10	0.08	3	0.20
	<i>plastik lid from big trash cans</i>	0	0.00	0	0.00
	<i>plastic strainer for food</i>	0	0.00	0	0.00
	<i>Pipes</i>	1	0.02	2	1.03
	<i>sanitary napkin</i>	0	0.00	0	0.00
	<i>scratch bag</i>	0	0.00	0	0.00
	<i>Shoes polish containers</i>	0	0.00	0	0.00
	<i>toothpick plastic</i>	0	0.00	0	0.00
	<i>toothbrush</i>	2	0.04	2	0.04
		<b>1496</b>	<b>52.57</b>	<b>2071</b>	<b>73.02</b>

RUBBER

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
G125	Balloons and balloon sticks	9	0.01	15	0.03
G126	Balls	0	0.00	0	0.00
G127	Rubber boots	7	1.15	0	0.00
G128	Tyres and belts	0	0.00	0	0.00

<b>G129</b>	Inner-tubes and rubber sheets	0	0.00	0	0.00
<b>G130</b>	Wheels	0	0.00	0	0.00
<b>G131</b>	Rubber bands (small, for kitchen/household/post use)	0	0.00	0	0.00
<b>G132</b>	Bobbins (fishing)	0	0.00	0	0.00
<b>G133</b>	Condoms (incl. packaging)	0	0.00	0	0.00
<b>G134</b>	Other rubber pieces	2	0.09	0	0.00
	<i>Car parts</i>	0	0.00	0	0.00
	<i>mattress for beach</i>	0	0.00	0	0.00
	<i>Pacifier</i>	0	0.00	0	0.00
	<i>Pram tyre</i>	0	0.00	0	0.00
	<i>rubber thongs</i>	0	0.00	0	0.00
	<i>sandals</i>	0	0.00	0	0.00
	<i>swimming belt</i>	0	0.00	0	0.00
		<b>18</b>	<b>1.25</b>	<b>15</b>	<b>0.03</b>

CLOTH/TEXTILE

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G137</b>	Clothing / rags (clothes, hats, towels)	0	0.00	0	0.00
<b>G138</b>	Shoes and sandals (e.g. leather, cloth)	0	0.00	0	0.00
<b>G139</b>	Backpacks & bags	0	0.00	0	0.00
<b>G140</b>	Sacking (hessian)	0	0.00	0	0.00
<b>G141</b>	Carpet & furnishing	0	0.00	0	0.00
<b>G142</b>	Rope, string and nets	0	0.00	0	0.00
<b>G143</b>	Sails, canvas	0	0.00	0	0.00
<b>G144</b>	Tampons and tampon applicators	0	0.00	1	0.01
<b>G145</b>	Other textiles (incl. rags)	3	0.12	1	0.02
	<i>blanket</i>	0	0.00	1	2.47
	<i>cotton scraf</i>	0	0.00	0	0.00
	<i>leather belt</i>	0	0.00	0	0.00
	<i>Leather pieces</i>	0	0.00	0	0.00
	<i>Leather + textile toys</i>	0	0.00	0	0.00
		<b>3</b>	<b>0.12</b>	<b>3</b>	<b>2.50</b>

PAPER/CARDBOARD

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G147</b>	Paper bags	0	0.00	0	0.00
<b>G148</b>	Cardboard (boxes & fragments)	0	0.00	0	0.00
<b>G150</b>	Cartons/Tetrapack Milk	1	0.05	2	0.05
<b>G151</b>	Cartons/Tetrapack (others)	1	0.08	0	0.00
<b>G152</b>	Cigarette packets	1	0.02	0	0.00
<b>G153</b>	Cups, food trays, food wrappers, drink containers	0	0.00	0	0.00

<b>G154</b>	Newspapers & magazines	0	0.00	0	0.00
<b>G155</b>	Tubes for fireworks	0	0.00	0	0.00
<b>G156</b>	Paper fragments	0	0.00	0	0.00
<b>G158</b>	Other paper items	12	0.03	1	0.00
		<b>15</b>	<b>0.17</b>	<b>3</b>	<b>0.05</b>

**PROCESSED/WORKED WOOD**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G159</b>	Corks	5	0.01	1	0.00
<b>G160</b>	Pallets	0	0.00	0	0.00
<b>G161</b>	Processed timber	3	0.67	0	0.00
<b>G162</b>	Crates	0	0.00	0	0.00
<b>G163</b>	Crab/lobster pots	0	0.00	0	0.00
<b>G164</b>	Fish boxes	0	0.00	0	0.00
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks	0	0.00	0	0.00
<b>G166</b>	Paint brushes	0	0.00	0	0.00
<b>G167</b>	Matches & fireworks	0	0.00	0	0.00
<b>G171</b>	Other wood < 50 cm	4	3.50	6	2.13
<b>G172</b>	Other wood > 50 cm	0	0.00	6	1.90
		<b>12</b>	<b>4.18</b>	<b>13</b>	<b>4.03</b>

**METAL**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G174</b>	Aerosol/Spray cans	1	0.02	0	0.00
<b>G175</b>	Cans (beverage)	1	0.02	1	0.02
<b>G176</b>	Cans (food)	14	0.08	0	0.00
<b>G177</b>	Foil wrappers, aluminum foil	1	0.01	1	0.03
<b>G178</b>	Bottle caps, lids & pull tabs	0	0.00	2	0.00
<b>G179</b>	Disposable BBQs	0	0.00	0	0.00
<b>G180</b>	Appliances (refrigerators, washers, etc.)	0	0.00	0	0.00
<b>G181</b>	Tableware (plates, cups & cutlery)	0	0.00	0	0.00
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)	0	0.00	0	0.00
<b>G184</b>	Lobster/crab pots	0	0.00	0	0.00
<b>G186</b>	Industrial scrap	0	0.00	0	0.00
<b>G187</b>	Drums, e.g. oil	0	0.00	0	0.00
<b>G188</b>	Other cans (< 4 L)	0	0.00	0	0.00
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)	0	0.00	0	0.00
<b>G190</b>	Paint tins	0	0.00	0	0.00
<b>G191</b>	Wire, wire mesh, barbed wire	0	0.00	0	0.00
<b>G193</b>	Car parts / batteries	0	0.00	2	0.50
<b>G194</b>	Cables	0	0.00	0	0.00
<b>G195</b>	Household Batteries	0	0.00	0	0.00



<b>G198</b>	Other metal pieces < 50 cm	2	0.03	21	0.62
<b>G199</b>	Other metal pieces > 50 cm	0	0.00	0	0.00
	<i>Medical containers</i>	0	0.00	0	0.00
	<i>Milk capsule</i>	0	0.00	0	0.00
	<i>Nails</i>	0	0.00	0	0.00
		<b>19</b>	<b>0.15</b>	<b>27</b>	<b>1.17</b>

**GLASS/CERAMICS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G200</b>	Bottles, including pieces	11	2.29	6	1.78
<b>G201</b>	Jars, including pieces	0	0.00	0	0.00
<b>G202</b>	Light bulbs	2	0.02	0	0.00
<b>G203</b>	Tableware (plates & cups)	0	0.00	0	0.00
<b>G204</b>	Construction material (brick, cement, pipes)	0	0.00	0	0.00
<b>G205</b>	Fluorescent light tubes	0	0.00	0	0.00
<b>G206</b>	Glass buoys	0	0.00	0	0.00
<b>G207</b>	Octopus pots	0	0.00	0	0.00
<b>G208</b>	Glass or ceramic fragments >2.5cm	1	0.10	72	0.56
<b>G210</b>	Other glass items	7	0.12	32	0.12
	<i>broken mercury thermometer</i>	1	0.01	0	0.00
	<i>cosmetic bottles</i>	0	0.00	0	0.00
	<i>medical containers</i>	5	0.06	3	0.37
		<b>27</b>	<b>2.58</b>	<b>113</b>	<b>2.83</b>

**UNIDENTIFIED AND/OR CHEMICALS**

Code	Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
<b>G211</b>	Other medical items (swabs, bandaging, adhesive plaster, etc.)	0	0.00	3	0.17
<b>G213</b>	Paraffin/Wax	0	0.00	0	0.03
	TAR (catrame)	0	0.00	0	0.00
		<b>0</b>	<b>0.00</b>	<b>3</b>	<b>0.20</b>

**TOTAL ML (Kg)** **1590** **61.02** **2248** **83.82**

Natural Wood - SMALL (kg) - diameter < 10 cm 74.50 35.30  
 Natural Wood - LARGE (kg) - diameter > 10 cm 1250.00 850.00

**TOTAL NATURAL WOOD (kg)** **1324.50** **885.30**

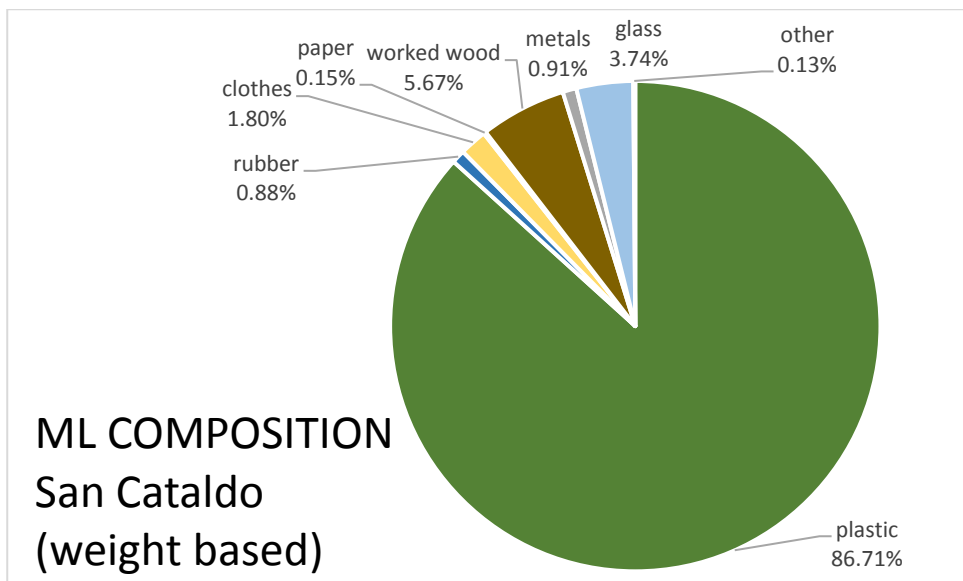
Marine plant leaves yes yes

### 1.3 Final results of the research activities conducted in Italy

Overall, 14712 items were collected and a total amount of 529.81 kg of litter removed from beaches along the Italian coasts of the municipality of Lecce in the beaches of Torre Chianca, Frigole and San Cataldo. In detail, 122.51 kg of marine litter were collected at Torre Chianca, 262.46 kg at Frigole and 144.84 kg at San Cataldo.

The natural wood estimated on the three beaches during surveys was about 5200 kg in total. In detail, about 1000 at Torre Chianca, about 2000 at Frigole kg and more than 2000 kg at San Cataldo.

➤ San Cataldo



*Figure 7: Percentage of ML composition (weight based) at San Cataldo (all six surveys)*

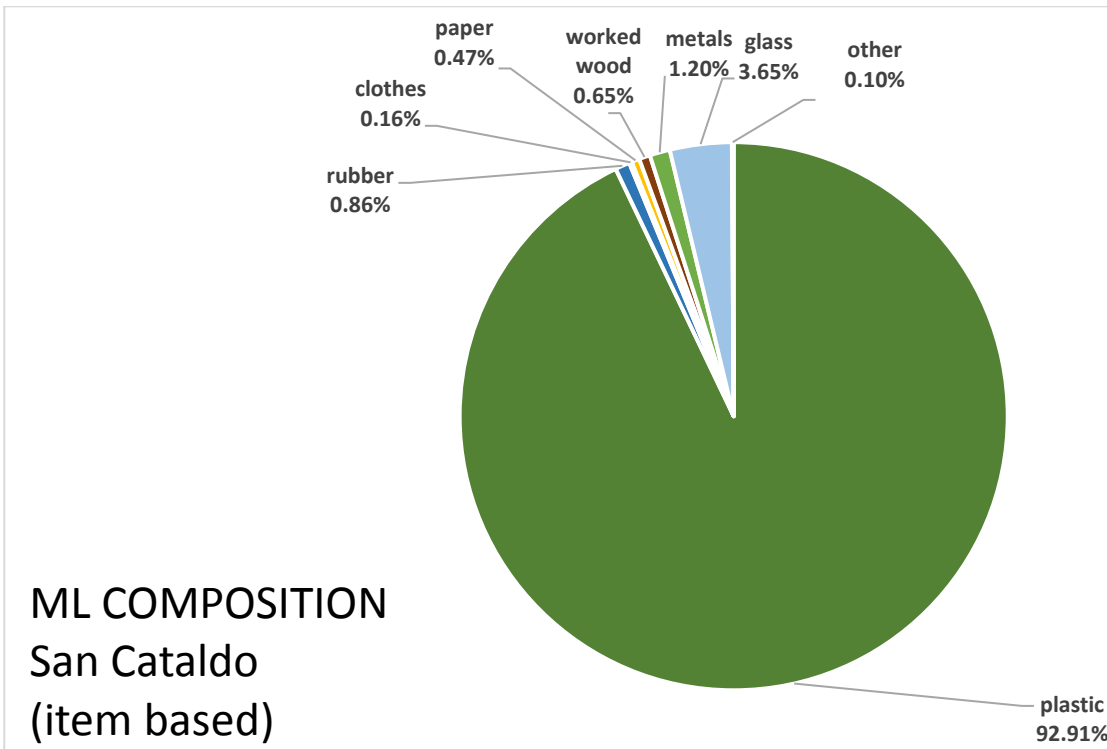


Figure 8: Percentage of ML composition (item based) at San Cataldo (all six surveys)

➤ Frigole

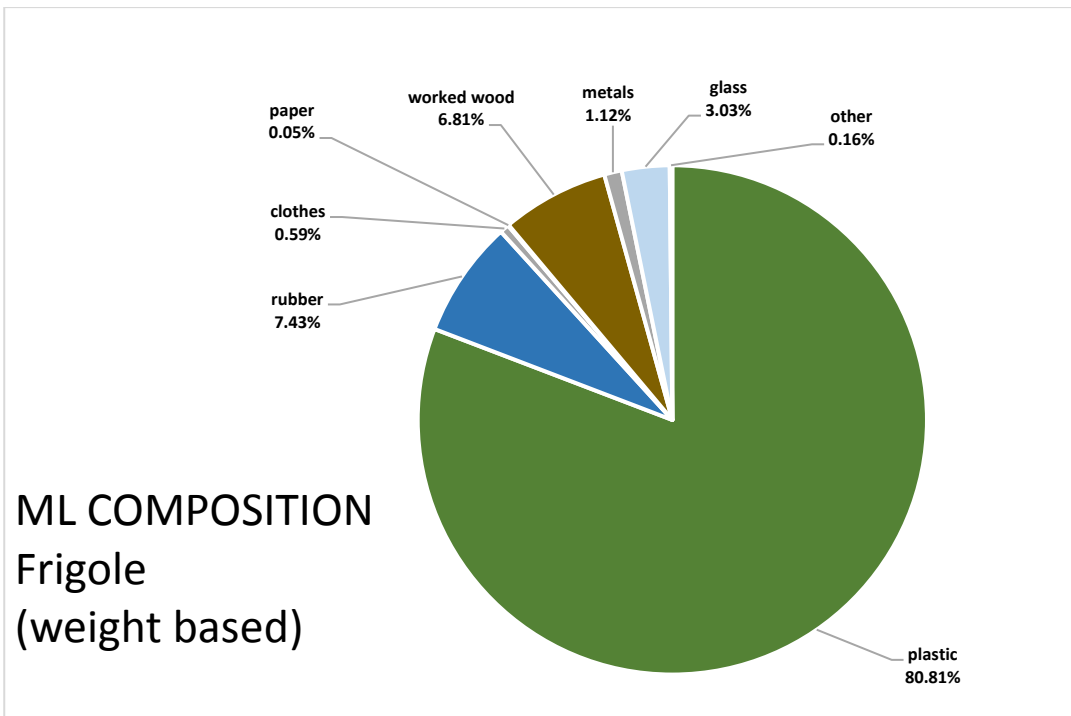


Figure 9: Percentage of ML composition (weight based) at Frigole (all six surveys)

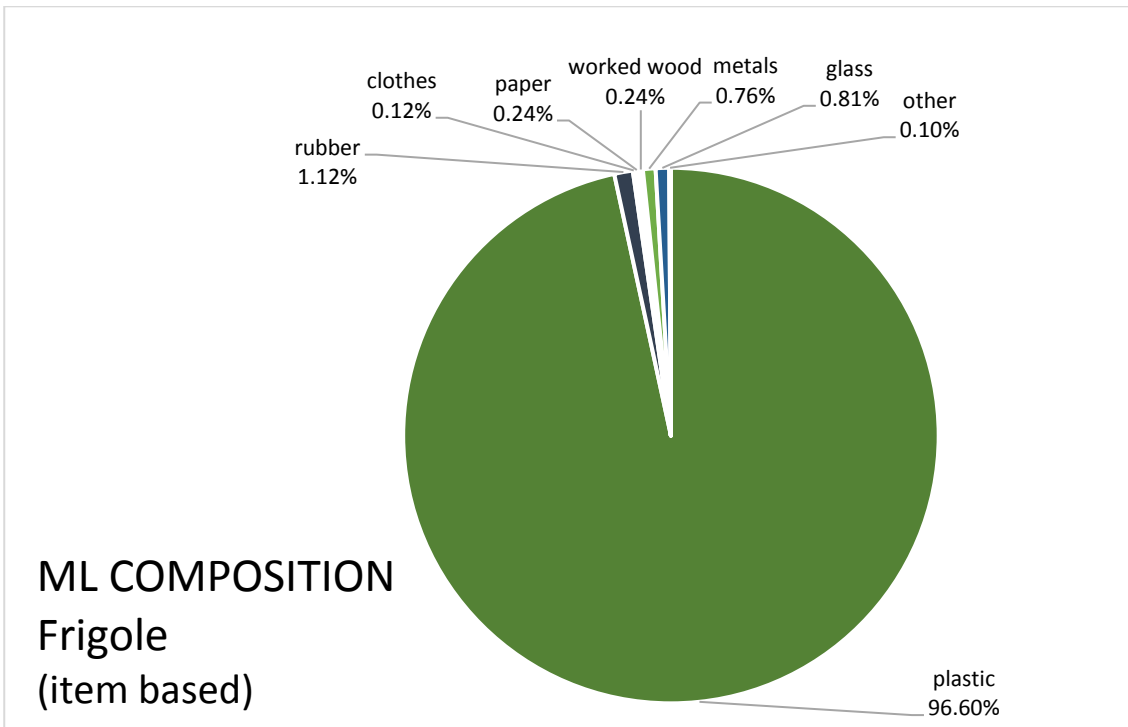


Figure 10: Percentage of ML composition (item based) at Frigole (all six surveys)

➤ Torre Chianca

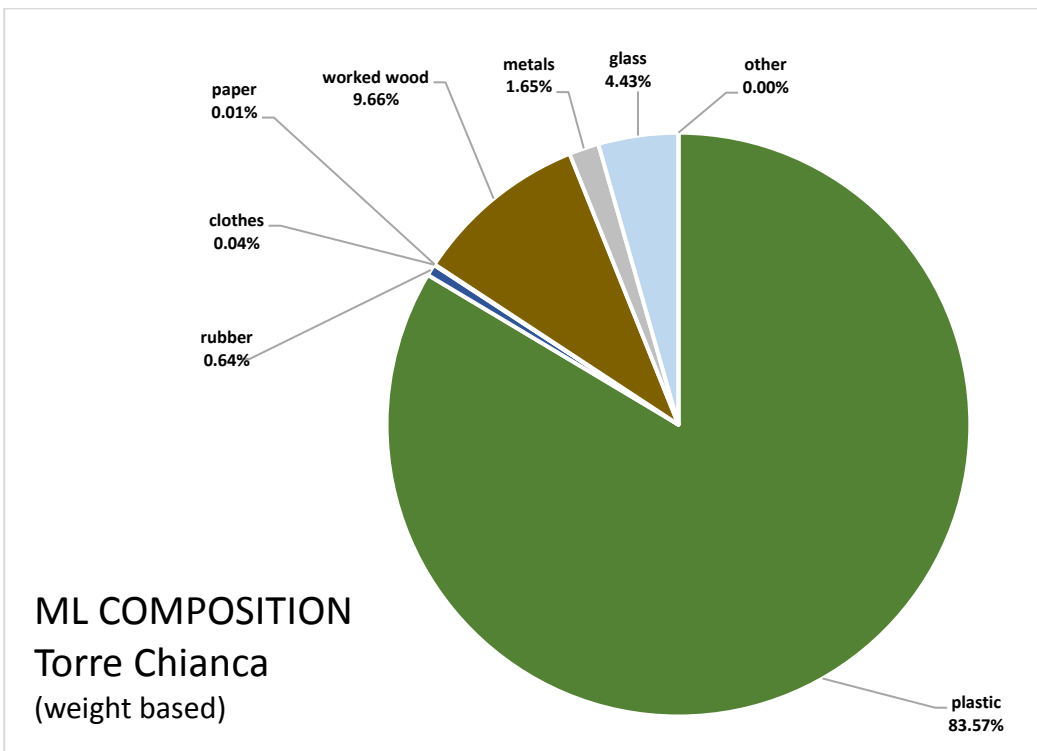
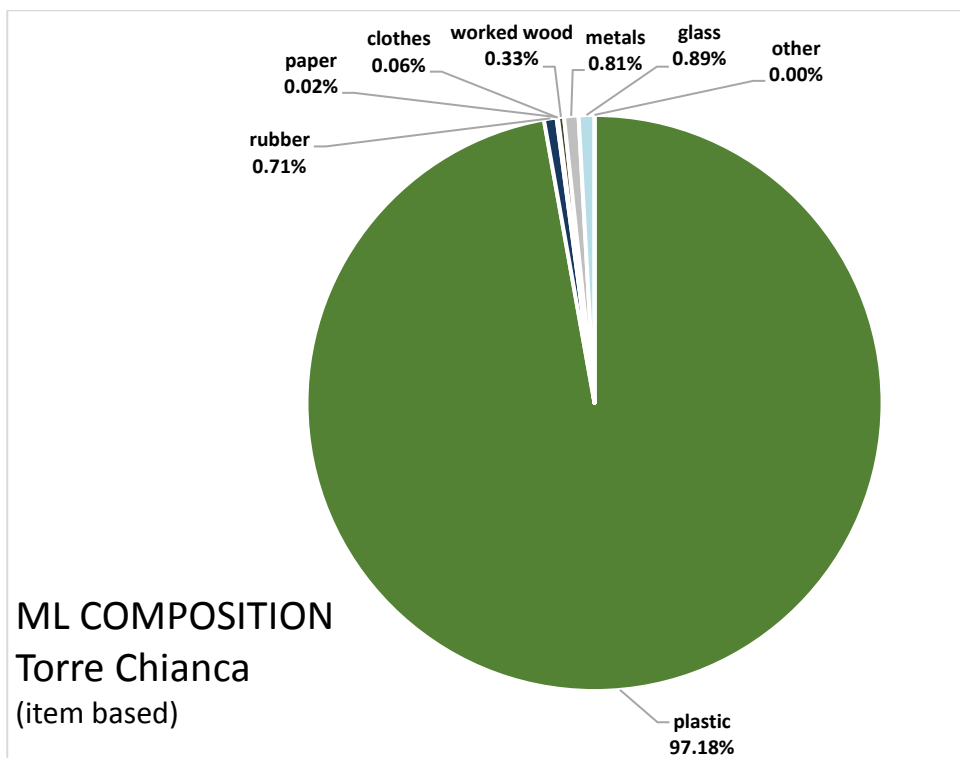


Figure 11: Percentage of ML composition (weight based) at Torre Chianca (all six surveys)



**Figure 12:** Percentage of ML (item based) composition at Torre Chianca (all six surveys)

The composition of marine litter according to their specific material does not allow to separate statically transects monitored on the Municipality of Lecce since they showed a comparable composition both in space and time. These results suggest a strong identity of the dataset on the litter beached on the Italian transects monitored, both considering ITEMS (**FIGURE 13**) or WEIGHT (**FIGURE 14**). In other terms, the disposition of points in the plots indicates a homogenous composition of marine litter in the three Italian beaches with a light difference visible between Torre Chianca and San Cataldo, on the contrary Frigole shows a marked variability.

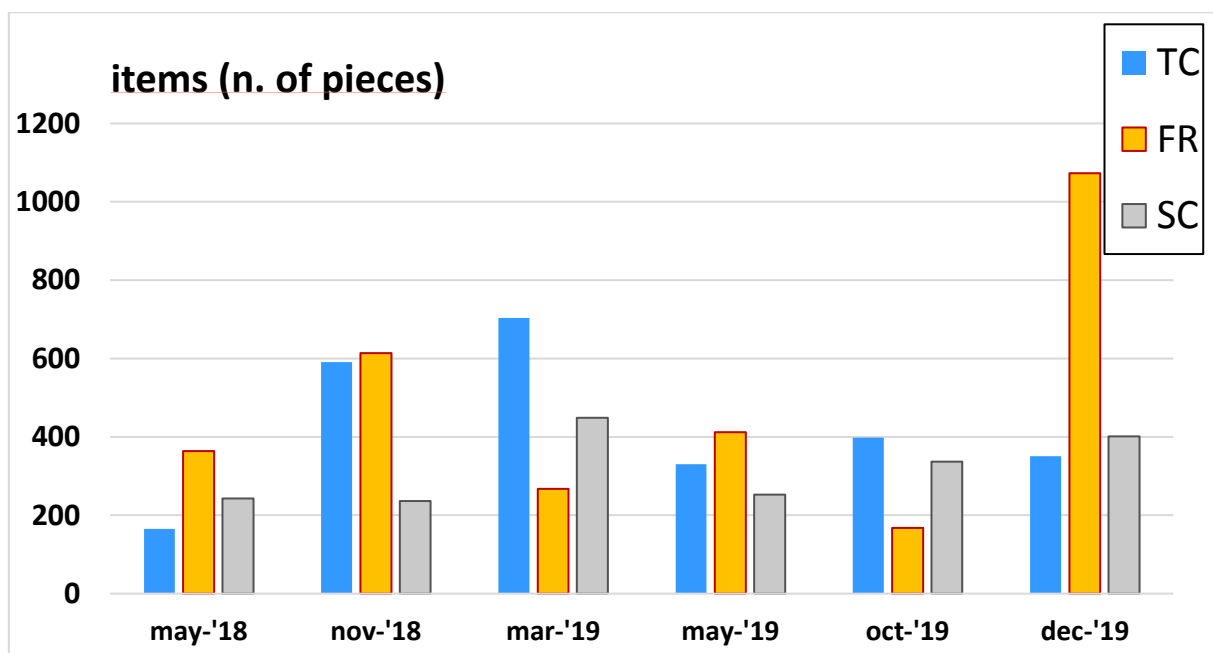
The ‘artificial polymers’ (**FIGURE 15**, **FIGURE 16**) resulted the most abundant material both in terms of weight (83.06% in total on six surveys) and number of items (95.84%). Contribution of ‘Rubber’ was 4.07% (weight) and 0.91% (items); ‘glass’ was 3.54% (weight) and 1.58% (items); ‘metals’ 1.18% (weight) and 0.89% (items); ‘worked wood’ 7.16% (weight) and 0.38% (items); ‘clothes’ 0.79% (weight) and 0.11% (items), ‘other’ 0.12% (weight) and 0.07% (items).

The top 20 items with their description and code are reported in the **FIGURE 17**. They belong all to the group of the ‘artificial polymers’ with the only exception of the code G125, the rubber balloons.

The first 5 are: ‘Plastic pieces 2.5 cm > < 50cm’ with 4453 items, ‘Plastic caps/lids from drinks’ 1550 items, ‘Cotton bud sticks’ 1476 items; ‘Polystyrene pieces 2.5 cm > < 50cm’ 1039 items; ‘Mussels nets’ 983 items in total.

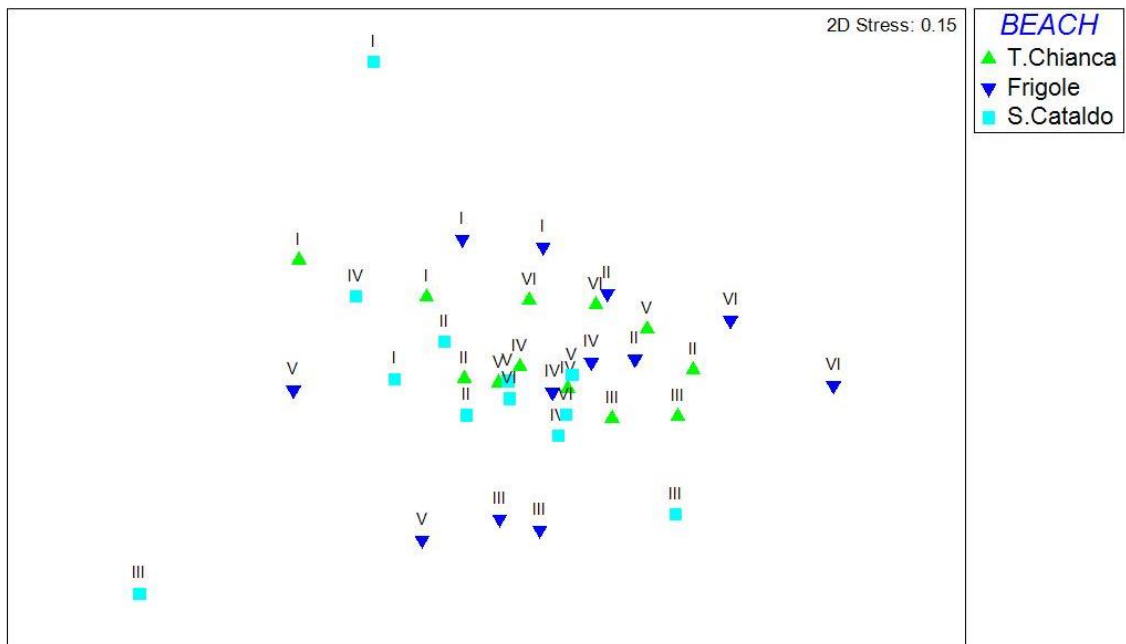
The top 20 most abundant categories in terms of weight, with their description and code, are reported in the **FIGURE 18**. The heaviest categories recorded were: G49\_Rope (diameter more than 1cm), 203 kg; G79\_Plastic pieces 2.5 cm > < 50cm, 32,45 kg; G8\_Drink bottles >0.5l, 24.95 kg; G68\_Fiberglass/fragments, 22,77 kg; G172\_Other wood > 50 cm, 16.9 kg.

The highest abundances, both in terms of weight and number of items, were recorded in winter (**FIGURE 19: Marine litter accumulation, in term of weight, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 122.51 kg; FR = 262.45 kg; SC= 144.84 kg**

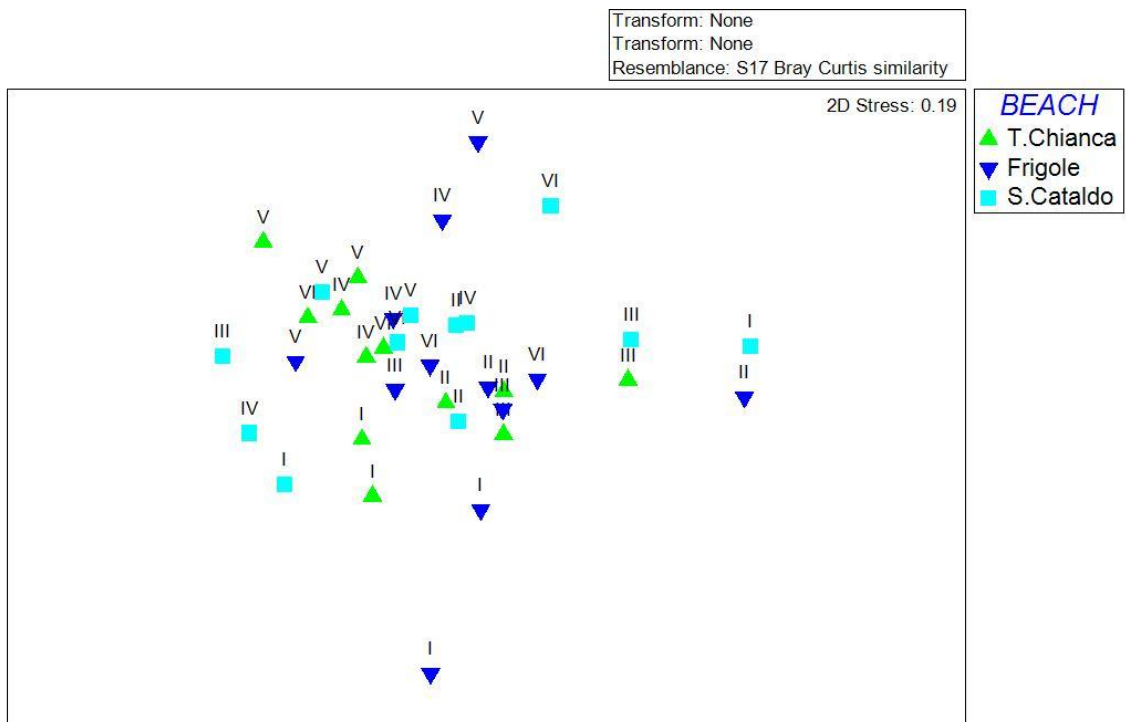


**Figure 20: Marine litter accumulation, in term of number of ITEMS, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 5078 pcs; FR = 5795 pcs; SC= 3839**

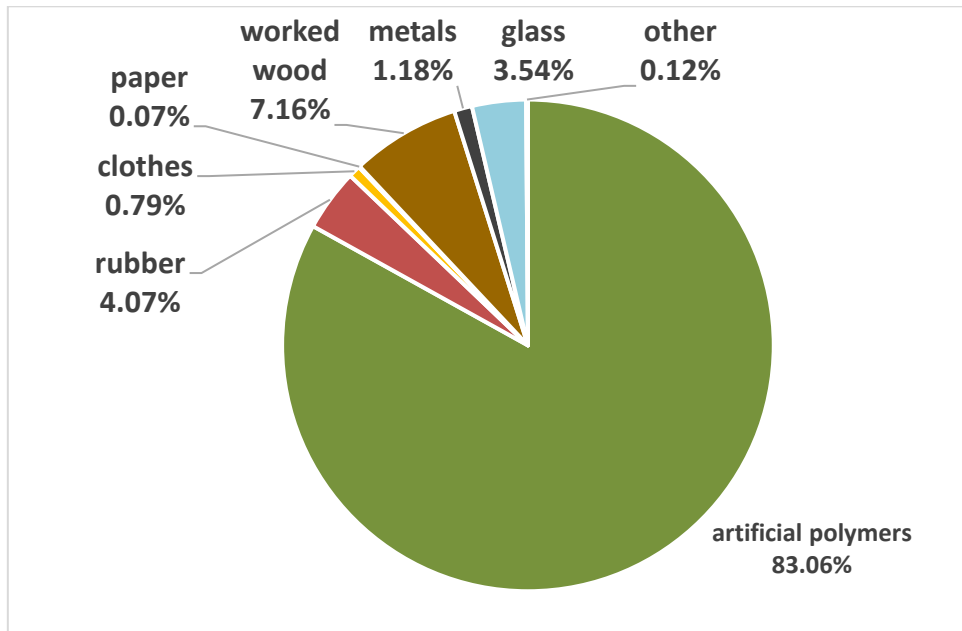
**19, ERROR! REFERENCE SOURCE NOT FOUND.20).**



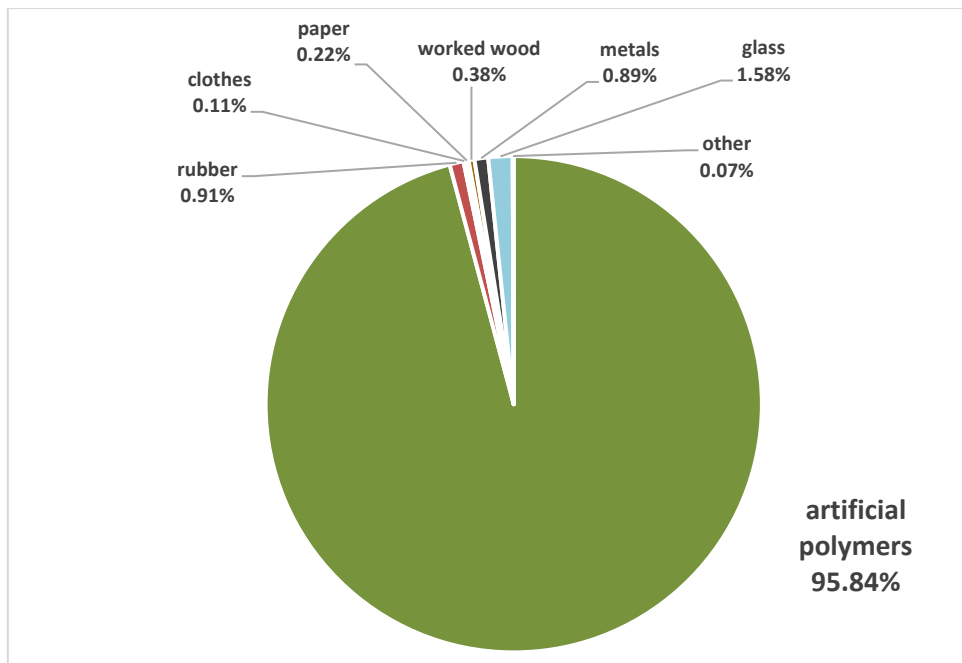
**Figure 13:** Plot of nMDS performed on a Bray Curtis similarity matrix not transformed based on the number of ITEMS. I = time 1; II = time 2; III = time 3; IV = time 4; V = time 5; VI = time 6



**Figure 14:** Plot of nMDS performed on a Bray Curtis similarity matrix not transformed based on the WEIGHT. I = time 1; II = time 2; III = time 3; IV = time 4; V = time 5; VI = time 6

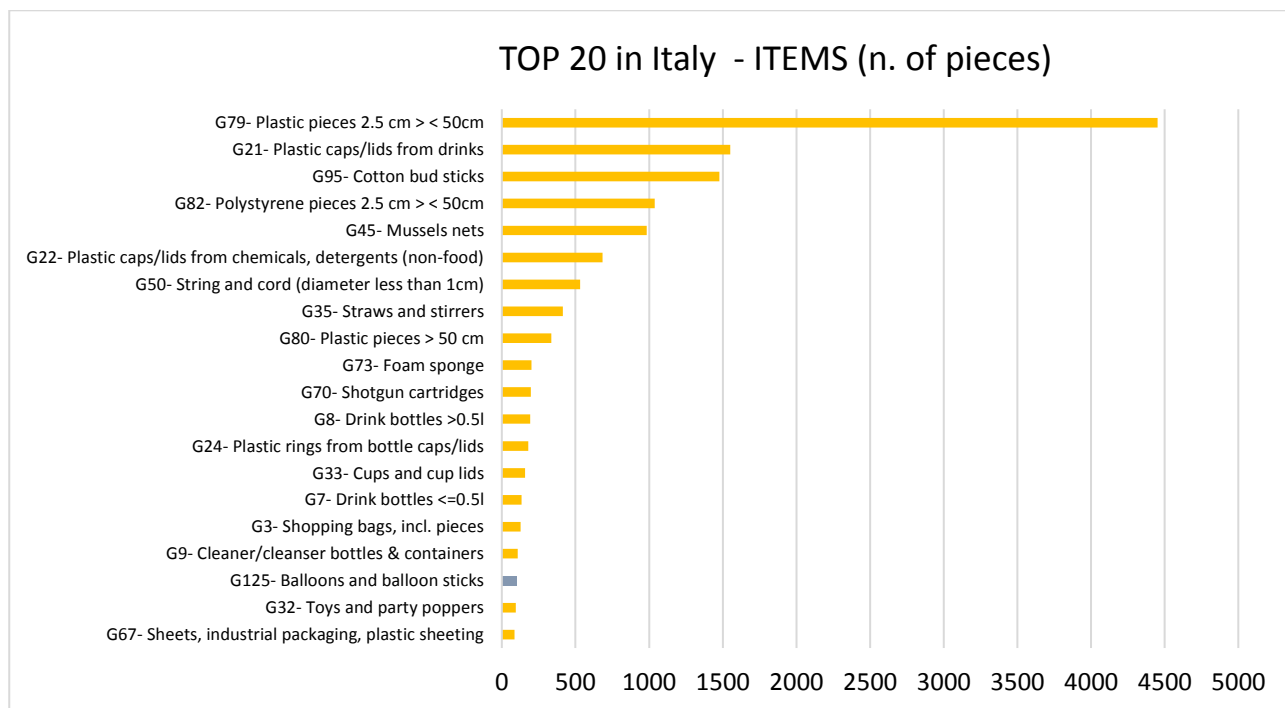


*Figure 15: Composition of marine litter removed in Italy in terms of WEIGHT during all the six surveys*



*Figure 16: Composition of marine litter removed in Italy in terms of number of ITEMS during all the six surveys*





*Figure 17: Top 20 items collected during all the six surveys in Italy*

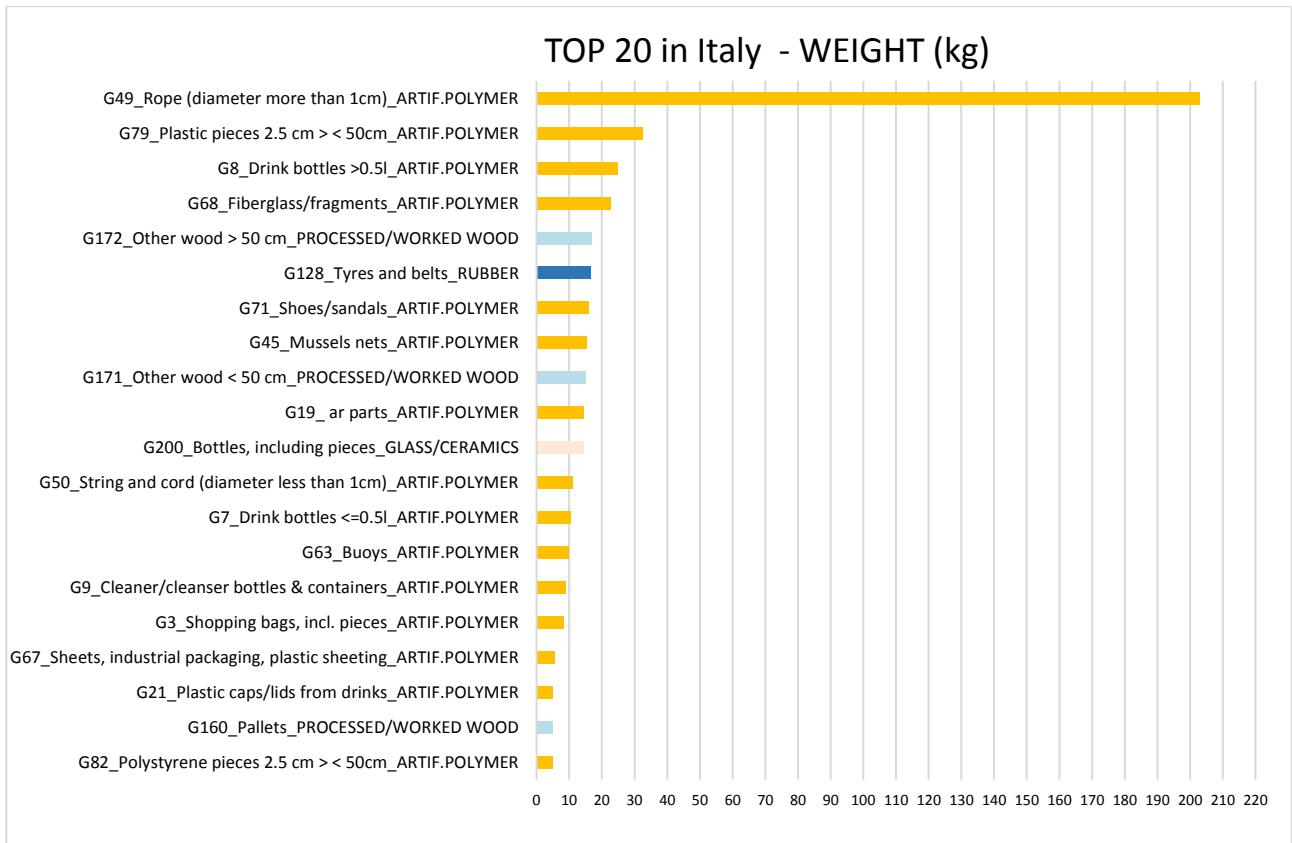


Figure 18: Top 20 categories (in terms of weight) collected during all the six surveys in Italy

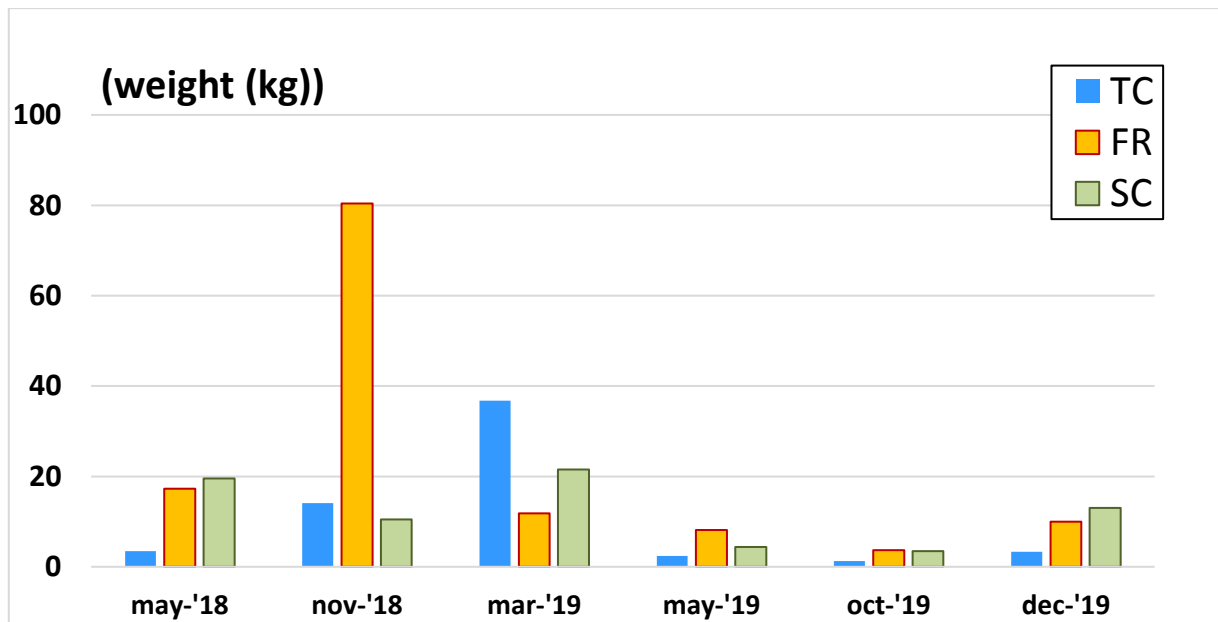
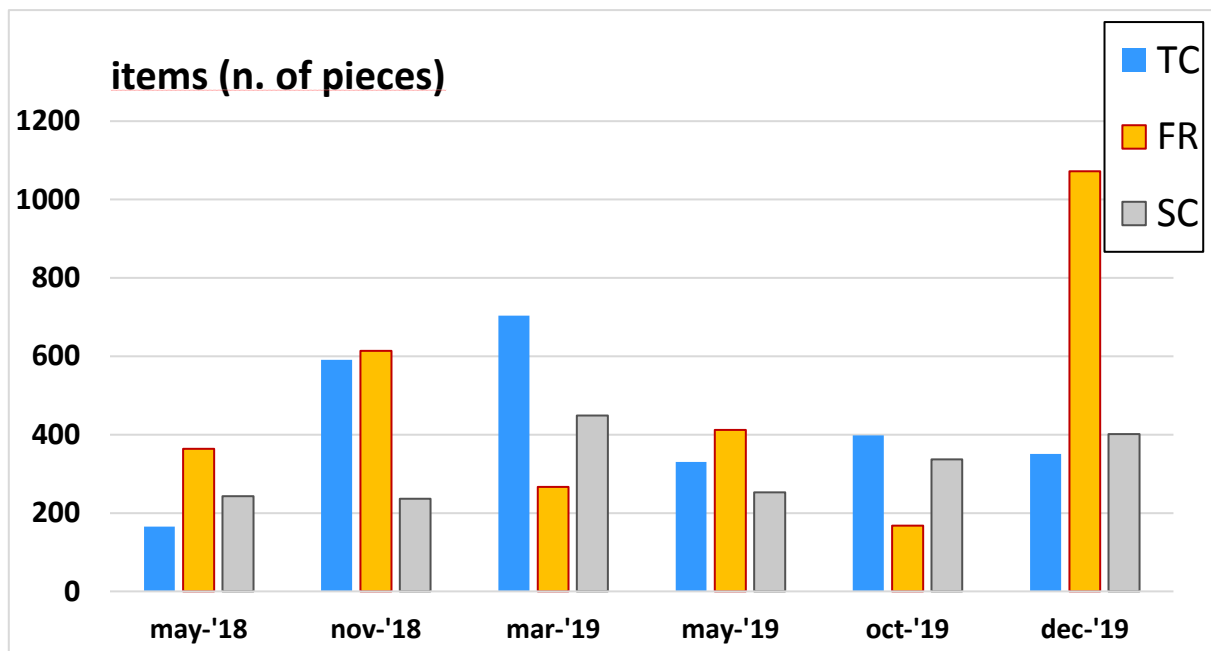


Figure 19: Marine litter accumulation, in term of weight, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 122.51 kg; FR = 262.45 kg; SC= 144.84 kg



**Figure 20:** Marine litter accumulation, in term of number of ITEMS, measured during the six surveys in Italy. TC= Torre Chianca, FR= Frigole, SC= San Cataldo. Total accumulation: TC= 5078 pcs; FR = 5795 pcs; SC= 3839

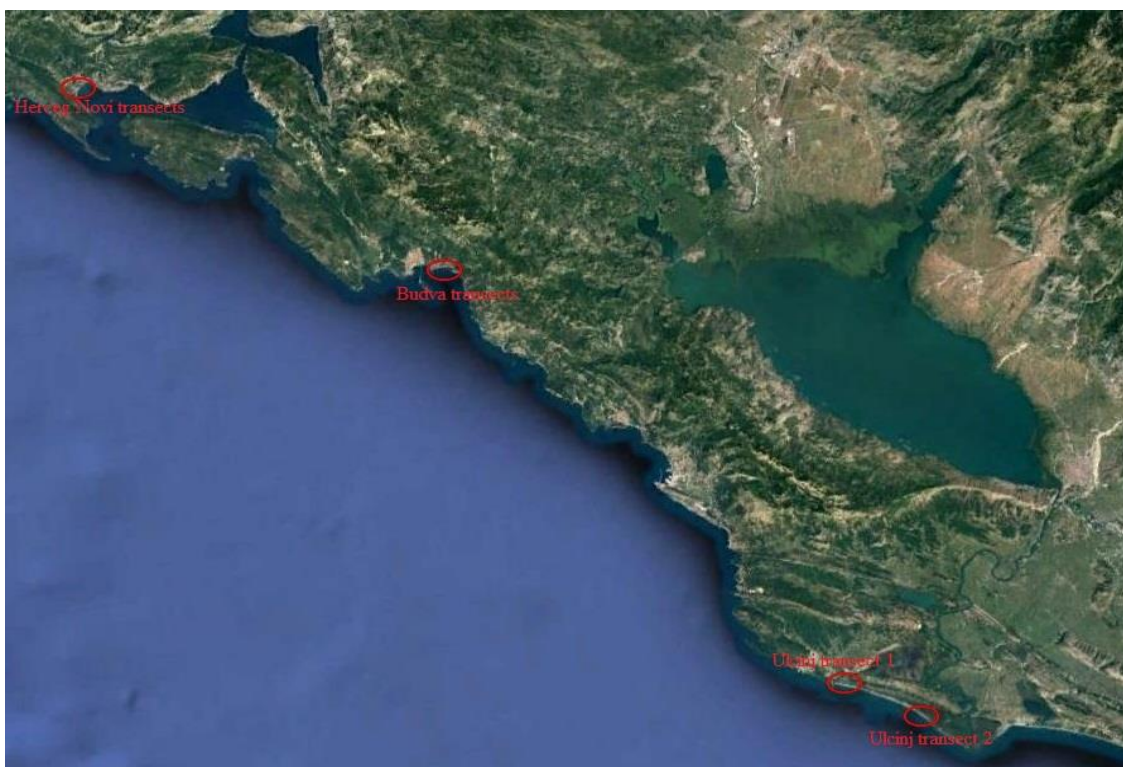
## 2. FINAL RESULTS OF THE RESEARCH ACTIVITIES CONDUCTED IN MONTENEGRO

### 2.1 Sampling methods, selected beaches and followed guidelines

In the framework of the WELCOME project Public Enterprise for Coastal Zone Management, together with Institute of Marine Biology, at the beginning of the project selected three beaches for the marine litter removal and research activities. These activities were carried out on the following beaches in Montenegro:

- **beach Velika plaža** in Ulcinj municipality,
- **Bečićka beach** in Budva municipality and
- **Igalo beach** in Herceg Novi municipality.

In Ulcinj municipality one transect was selected under the hotel “Otrant“ and other one in area of Kite-Surfe zone (Z4) on the beach Velika plaža. In Budva municipality „St. Toma“ and “Samsara” are selected on the beach Bečićka plaža, while in Herceg Novi municipality two transect on Igalo beach are selected – “Igalo I” and “Igalo II” (*Figure 21*).



*Figure 21: Selected transects on Montenegrin coast according to the WELCOME project*

Marine litter collection and selection activities were carried out according to pre-defined transects in accordance with the adopted methodology – “Metodology for Monitoring Marine Litter on Beaches” which is developed within the IPA ADRIATIC “DeFishGear” project. The followed methodology has been prepared based on the EU MSFD TG10 “Guidance on Monitoring of Marine Litter in European Seas (2013)”, the OSPAR “Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area (2010)” and the NOAA “Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the Marine Environment (2013), taking into consideration the draft “UNEP/MAP MEDPOL Monitoring Guidance Document on Ecological Objective 10: Marine Litter (2014)”.

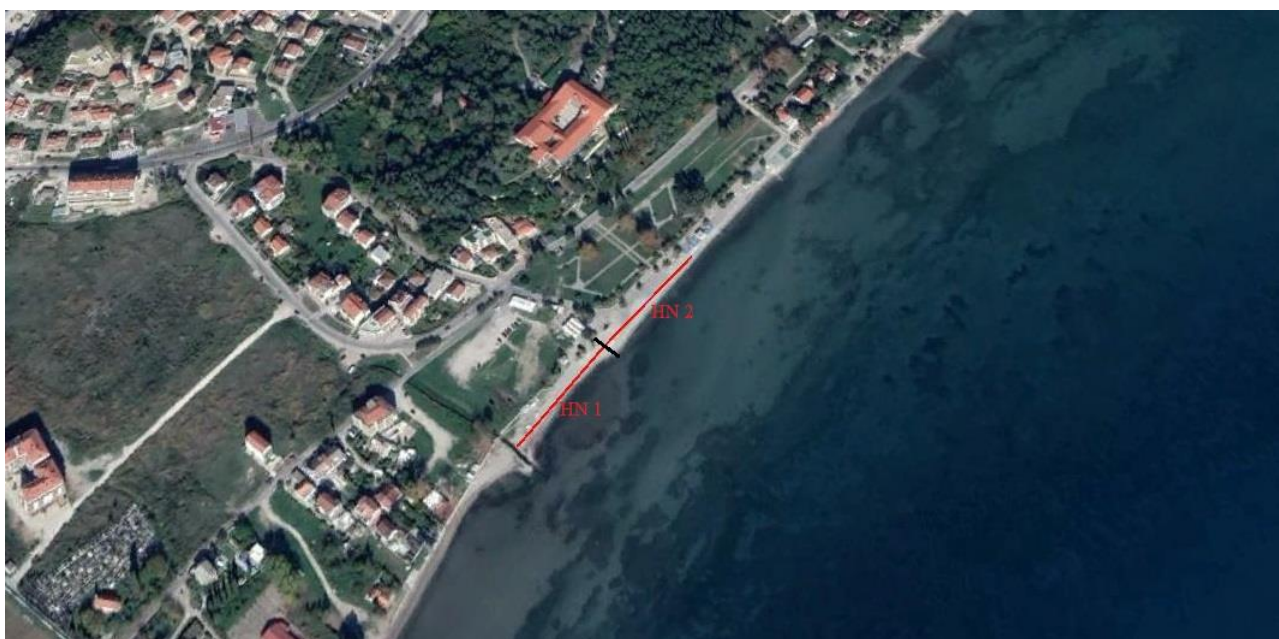
In detail, these criteria include the conditions that selected beaches should be situated in the vicinity of coastal urban areas and of tourism destinations. Moreover, the selected beaches should: have a minimum length of 100 m; be characterized by a low slope (1.5 – 4.5 °); have clear access to the sea; be accessible to survey operators throughout the year. A further required condition is that the beaches should not be subject to cleaning activities, otherwise the timing of non-survey must be known so that litter flux rates can be determined. After the first monitoring the existing methodology has been partially improved and more data has been collected compared to the first monitoring activities, that is, a more detailed measurement of the weight of the collected waste has been carried out.

*Table 2: Coordinates of selected transects in Montenegro*

Beach	Code	Starting point	Ending point
<b>Herceg Novi, Igalo I</b>	HN1	42°27'15.45"N	42°27'13.65"N
		18°30'28.57"W	18°30'26.30"W
<b>Herceg Novi, Igalo II</b>	HN2	42°27'13.65"N	42°27'10.60"N
		18°30'26.30"W	18°30'22.65"W
<b>Budva, St. Toma</b>	BD1	42°16'50.99"N	42°16'51.12"N
		18°52'11.77"W	18°52'16.18"W
<b>Budva, Samsara</b>	BD2	42°16'51.13"N	42°16'51.04"N
		18°52'23.36"W	18°52'27.66"W
<b>Ulcinj, Otrant</b>	UL1	41°54'32.96"N	41°54'33.02"N
		19°14'09.68"W	19°14'13.86"W
<b>Ulcinj, Z4</b>	UL2	41°52'41.28"N	41°52'39.32"N
		19°19'21.60"W	19°19'24.99"W

The fixed sampling unit was transect of 100 m of sandy beach. So, two different transects of 100 m was determine on all three selected beaches on Montenegrin coast. Two contiguous transects are separated at least by 50 m, except in Herceg Novi where transects were next to each other because selected beaches are only sandy beaches in this municipality which meet all requirements according to the protocol. In Table 1 starting and ending points of each transect are given.

Locations of transects on the selected beaches (Igalo beach, beach Bečićka plaža and Velika plaža) on the Montenegrin coast are showed in **Figures 22, 23, 24** and **25**.



*Figure 22: Location of the two transects in Herceg Novi Municipality*



*Figure 23: Location of the two transects in Budva Municipality*



*Figure 24: Location of transect 1 in Ulcinj Municipality*



*Figure 25: Location of transect 2 in Ulcinj Municipality*

Beach clean-ups and marine litter research activities in Montenegro were performed three times per year during a period of 2 years on 3 selected beaches - 3 times during the 2018 and 3 times during 2019. First survey on the selected beaches began in mid- May 2018 in order to verify the standard conditions required from the international protocols of the marine litter monitoring. Moreover, a better choice of transects was performed in order to promote the restoration of traits of the nearby dunes consumed by the coastal erosion.

**The field surveys in Montenegro were carried out in the following dates:**

- I survey      18-25/05/2018      TIME I
- II survey     25-27/10/2018      TIME II
- III survey    22-24/12/2018      TIME III
- IV survey    15-17/03/2019      TIME IV
- V survey     20-22/09/2019      TIME V
- VI survey    20-22/12/2019      TIME VI

The first field activities on beach clean-ups and marine litter research activities which included collection, assessment of the quantity, type, distribution and qualitative/quantitative analysis of marine litter on the selected beaches along the Montenegrin coast, were carried out during the May 2018 and the last beach clean-ups activities were done during December 2019.



## 2.2 Summary data of all six surveys conducted in Montenegro

The data collected in all six surveys conducted on three selected beaches in Montenegro during 2018 and 2019 have been listed in three matrices (one for each beach) separating data of each one of the two transects of a single beach (**beach Velika plaža** in Ulcinj municipality, **Bečićka beach** in Budva municipality and **Igalo beach** in Herceg Novi municipality). The matrices list the codes of the specific items collected and their brief descriptions. Each column referring to one transect reports both number of pieces for that specific item and their weight. At the end of each material group (i.e. rubber, cloth etc.) the total number of items and their total weight has been reported.

On the field, all the items (> 2.5 cm) inside the selected transects were collected and classified in eight main litter groups (artificial polymer materials, rubber, cloth/textile, paper/cardboard, processed/worked wood, metal, glass/ceramics, unidentified and/or chemicals). In the laboratory of the Institute of Marine Biology marine litter was classified in detail according to their respective codes and finally items were counted and weighted based on the material group. Natural wood was also collected and selected as small pieces (diameter less than 10 cm) and large pieces (diameter more than 10 cm). In addition to the DeFishGear Methodology, the code G74 was included because there are a lot of items belonging to this code already considered in other protocols (e.g. EU MSFD TG10 and OSPAR). Additional items for each material category has been included in the tables of data followings the integration suggested by all partners involved in the field survey. Finally, two additional lines were added in reference to the beached natural wood SMALL (diameter less than 10 cm) and LARGE (diameter more than 10 cm).



*Figure 26: Marine litter research activities in Montenegro*

## 2.2.1 Beach Velika plaža - Ulcinj municipality

ARTIFICIAL POLYMER MATERIALS	MONTENEGRO Ulcinj, Hotel Otrant		MONTENEGRO Ulcinj, Z4	
	MN_UL1		MN_UL2	
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
4/6-pack yokes, six-pack rings	0	0	0	0
Shopping bags, incl. pieces	16	0.048	0	0
Small plastic bags, e.g. freezer bags, including pieces	7	0.202	19	0.159
Plastic bag collective roll; what remains from rip-off plastic bags	11	1.145	15	1.146
Drink bottles <=0.5l	37	0.313	12	0.193
Drink bottles >0.5l	15	0.814	16	1.341
Cleaner/cleanser bottles & containers	0	0	10	0.821
Food containers incl. fast food containers	19	1.481	10	0.713
Beach use related cosmetic bottles and containers, e.g. Sunblocks	3	0.091	3	0.018
Other cosmetics bottles & containers	8	0.425	6	0.296
Other bottles & containers (drums)	1	1.05	4	0.545
Engine oil bottles & containers <50 cm	0	0	1	0.352
Engine oil bottles & containers > 50 cm	0	0	0	0
Jerry cans (square plastic containers with handle)	0	0	1	0
Injection gun containers	0	0	1	0
Crates and containers / baskets	0	0	0	0
Car parts	0	0	0	0
Plastic caps/lids from drinks	38	0.087	83	0.158
Plastic caps/lids from chemicals, detergents (non-food)	6	0.018	10	0.065
Plastic caps/lids unidentified	1	0.003	1	0
Plastic rings from bottle caps/lids	0	0	8	0.003
Tobacco pouches / plastic cigarette box packaging	4	0.006	2	0.004
Cigarette lighters	1	0	4	0.038
Cigarette butts and filters	524	0.331	62	0.027
Pens and pen lids	0	0	6	0.025
Combs/hair brushes/sunglasses	0	0	1	0.004
Crisps packets/sweets wrappers	93	1.089	37	0.144
Lolly sticks	12	0.007	3	0.001
Toys and party poppers	3	0.052	2	0.013
Cups and cup lids	12	0.106	14	0.072
Cutlery and trays	1	0.011	1	0.007
Straws and stirrers	11	0.023	38	0.042
Fertilizer/animal feed bags	0	0	0	0
Mesh vegetable bags	1	0.7	0	0

Gloves (washing up)	0	0	0	0
Gloves (industrial/professional rubber gloves)	0	0	0	0
Crab/lobster pots and tops	0	0	0	0
Tags (fishing and industry)	0	0	0	0
Octopus pots	0	0	0	0
Mussels nets, Oyster nets	2	0.034	0	0
Oyster trays (round from oyster cultures)	0	0	0	0
Plastic sheeting from mussel culture (Tahitians)	0	0	0	0
Rope (diameter more than 1cm)	1	0.009	2	0.16
String and cord (diameter less than 1cm)	0	0	0	0
Nets and pieces of net < 50 cm	0	0	0	0
Nets and pieces of net > 50 cm	0	0	0	0
Tangled nets/cord	0	0	0	0
Fish boxes - plastic	0	0	0	0
Fish boxes - expanded polystyrene	0	0	0	0
Fishing line/monofilament (angling)	0	0	0	0
Light sticks (tubes with fluid) incl. packaging	0	0	0	0
Floats for fishing nets	0	0	0	0
Buoys	0	0	0	0
Fenders	0	0	0	0
Buckets	0	0	0	0
Strapping bands	0	0	0	0
Sheets, industrial packaging, plastic sheeting	86	0.988	22	0.055
Fiberglass/fragments	0	0	0	0
Hard hats/Helmets	0	0	1	0.662
Shotgun cartridges	1	0.015	0	0
Shoes/sandals	0	0	0	0
Traffic cones	0	0	0	0
Foam sponge	5	0	8	0.067
Plastic pieces 2.5 cm > < 50cm	78	0.909	84	0.373
Plastic pieces > 50 cm	0	0	0	0
Polystyrene pieces 2.5 cm > < 50cm	5	0.01	10	0.07
Polystyrene pieces > 50 cm	0	0	0	0
CD, CD-boxes	0	0	0	0
Salt packaging	0	0	0	0
Fin trees (from fins for scuba diving)	1	0.614	0	0
Masking tape	0	0	0	0
Telephone (incl. parts)	0	0	0	0
Plastic construction waste	1	0.062	0	0
Plastic flower pots	1	0	0	0
Biomass holder from sewage treatment plants	0	0	0	0
Bait containers/packaging	0	0	0	0
Cable ties	38	0.011	6	0.008
Cotton bud sticks	0	0	6	0.002

Sanitary towels/panty liners/backing strips	55	0.29	12	0.191
Toilet fresheners	0	0	0	0
Diapers/nappies	18	1.022	3	0.401
Syringes/needles	5	0.031	15	0.008
Medical/Pharmaceuticals containers/tubes	1	0.003	8	0.066
Dog faeces bags	0	0	0	0
Flip-flops	0	0	0	0
Other plastic/polystyrene items (identifiable)	6	0.028	6	0.143
<i>animals food packaging</i>	1	1.885	0	0
<i>Beach umbrella end</i>	0	0	1	0.026
<b>Bioballs</b>	0	0	0	0
<i>Brooms without handle</i>	0	0	0	0
<i>Brush from nailpolish</i>	1	0.101	1	0.004
<i>Building / hardware / electrical supplies</i>	0	0	0	0
<i>Clothes pegs</i>	0	0	0	0
<i>Coffe capsule</i>	0	0	0	0
<i>crate (plastic)</i>	0	0	0	0
<i>light sticks (tubes with fluid) incl. packaging</i>	0	0	0	0
<i>desk parts (plastic)</i>	0	0	0	0
<i>diving mask incl. parts</i>	2	0.017	0	0
<i>Furnishings</i>	0	0	0	0
<i>gorse (plastic)</i>	0	0	0	0
<i>lure for fish</i>	0	0	0	0
<i>Other sanitary / cosmetic items</i>	0	0	1	0.017
<i>plastik lid from big trash cans</i>	1	0.03	1	0.789
<i>plastic strainer for food</i>	0	0	0	0
<i>Pipes</i>	2	0.04	0	0
<i>sanitary napkin</i>	0	0	0	0
<i>scratch bag</i>	0	0	0	0
<i>Shoes polish containers</i>	0	0	0	0
<i>toothpick plastic</i>	0	0	0	0
<i>toothbrush</i>	0	0	1	0.012
	<b>1135</b>	<b>45.301</b>	<b>558</b>	<b>12.111</b>

**RUBBER**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Balloons and balloon sticks	1	0	1	0.001
Balls	0	0	1	0.06
Rubber boots	0	0	0	0
Tyres and belts	0	0	0	0
Inner-tubes and rubber sheets	0	0	0	0
Wheels	0	0	0	0
Rubber bands (small, for kitchen/household/post use)	0	0	1	0.002

Bobbins (fishing)	0	0	0	0
Condoms (incl. packaging)	0	0	4	0.012
Other rubber pieces	13	0.084	7	0.133
<i>Car parts</i>	0	0	0	0
<i>mattress for beach</i>	0	0	0	0
<i>Pacifier</i>	0	0	0	0
<i>Pram tyre</i>	0	0	0	0
<i>rubber thongs</i>	0	0	1	0.148
<i>sandals</i>	0	0	12	2.023
<i>swimming belt</i>	0	0	2	0.584
	<b>14</b>	<b>0.384</b>	<b>29</b>	<b>2.963</b>

### CLOTH/TEXTILE

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Clothing / rags (clothes, hats, towels)	12	0.243	2	0.285
Shoes and sandals (e.g. leather, cloth)	6	5.693	2	0.062
Backpacks & bags	0	0	0	0
Sacking (hessian)	0	0	0	0
Carpet & furnishing	0	0	0	0
Rope, string and nets	8	0.029	0	0
Sails, canvas	0	0	0	0
Tampons and tampon applicators	0	0	0	0
Other textiles (incl. rags)	4	0.095	1	0.007
<i>blanket</i>	0	0	0	0
<i>cotton scraf</i>	0	0	0	0
<i>leather belt</i>	0	0	0	0
<i>Leather pieces</i>	0	0	0	0
<i>Leather + textile toys</i>	0	0	0	0
	<b>30</b>	<b>8.16</b>	<b>5</b>	<b>0.704</b>

### PAPER/CARDBOARD

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Paper bags	1	0.06	1	0.015
Cardboard (boxes & fragments)	0	0	0	0
Cartons/Tetrapack Milk	1	0.081	1	0.062
Cartons/Tetrapack (others)	1	0.055	2	0.065
Cigarette packets	2	0.041	1	0.009
Cups, food trays, food wrappers, drink containers	1	0.006	0	0
Newspapers & magazines	0	0	0	0
Tubes for fireworks	0	0	0	0
Paper fragments	21	0.059	4	0.014
Other paper items	1	0.003	1	0.002

**28                      0.305                      10                      0.167**

**PROCESSED/WORKED WOOD**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Corks	0	0	1	0.011
Pallets	25	8.514	0	0
Processed timber	2	1.832	23	5.222
Crates	0	0	0	0
Crab/lobster pots	0	0	0	0
Fish boxes	0	0	0	0
Ice-cream sticks, chip forks, chopsticks, toothpicks	2	0.005	0	0
Paint brushes	0	0	0	0
Matches & fireworks	0	0	0	0
Other wood < 50 cm	5	0.236	9	0.052
Other wood > 50 cm	1	0.788	0	0
	<b>35</b>	<b>12.375</b>	<b>33</b>	<b>9.185</b>

**METAL**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Aerosol/Spray cans	0	0	1	0.033
Cans (beverage)	38	1.455	8	0.286
Cans (food)	5	0.062	1	0.026
Foil wrappers, aluminum foil	5	0.018	1	0.001
Bottle caps, lids & pull tabs	15	0.026	283	0.71
Disposable BBQs	0	0	0	0
Appliances (refrigerators, washers, etc.)	0	0	0	0
Tableware (plates, cups & cutlery)	0	0	1	0.022
Fishing related (weights, sinkers, lures, hooks)	0	0	0	0
Lobster/crab pots	0	0	0	0
Industrial scrap	0	0	0	0
Drums, e.g. oil	0	0	0	0
Other cans (< 4 L)	0	0	0	0
Gas bottles, drums & buckets (> 4 L)	0	0	0	0
Paint tins	0	0	0	0
Wire, wire mesh, barbed wire	0	0	8	0.078
Car parts / batteries	0	0	0	0
Cables	0	0	0	0
Household Batteries	0	0	0	0
Other metal pieces < 50 cm	1	0.03	3	0.043
Other metal pieces > 50 cm	0	0	1	2.523
<i>Medical containers</i>	0	0	0	0
<i>Milk capsule</i>	0	0	0	0

Nails				
	0	0	50	0.357
	<b>64</b>	<b>2.291</b>	<b>357</b>	<b>4.099</b>
GLASS/CERAMICS				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Bottles, including pieces	6	0.41	10	1.907
Jars, including pieces	0	0	3	0.496
Light bulbs	1	0.02	0	0
Tableware (plates & cups)	0	0	0	0
Construction material (brick, cement, pipes)	1	0.422	0	0
Fluorescent light tubes	0	0	0	0
Glass buoys	0	0	0	0
Octopus pots	0	0	0	0
Glass or ceramic fragments >2.5cm	4	0.022	0	0
Other glass items	0	0	0	0
<i>broken mercury thermometer</i>	0	0	0	0
<i>cosmetic bottles</i>	1	0.01	0	0
<i>medical containers</i>	0	0	0	0
	<b>13</b>	<b>0.89</b>	<b>13</b>	<b>2.603</b>
UNIDENTIFIED AND/OR CHEMICALS				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Other medical items (swabs, bandaging, adhesive plaster, etc.)	0	0	0	0
Paraffin/Wax	2	0.008	3	0.182
TAR (catrame)	0	0	0	0
	<b>2</b>	<b>0.008</b>	<b>3</b>	<b>0.182</b>
<b>TOTAL ML (Kg)</b>	<b>1321</b>	<b>69.71</b>	<b>1008</b>	<b>32.01</b>

Natural Wood - SMALL (kg) - diameter < 10 cm

Natural Wood - LARGE (kg) - diameter > 10 cm

**TOTAL NATURAL WOOD (kg)**

**43.51**

**17.09**

Marine plant leaves

yes

yes

## 2.2.2 Bečićka beach - Budva municipality

ARTIFICIAL POLYMER MATERIALS	MONTENEGRO Budva, Sv. Toma		MONTENEGRO Budva, Samsara	
	MN_BD1 Items (n. of pieces)	Weight (kg)	MN_BD2 Items (n. of pieces)	Weight (kg)
4/6-pack yokes, six-pack rings	0	0	0	0
Shopping bags, incl. pieces	12	0.127	3	0.011
Small plastic bags, e.g. freezer bags, including pieces	5	0.06	7	0.058
Plastic bag collective roll; what remains from rip-off plastic bags	6	0.058	9	0.043
Drink bottles <=0.5l	7	0.124	6	0.104
Drink bottles >0.5l	5	0.128	1	0
Cleaner/cleanser bottles & containers	2	0.085	0	0
Food containers incl. fast food containers	24	0.196	50	0.381
Beach use related cosmetic bottles and containers, e.g. Sunblocks	0	0	1	0
Other cosmetics bottles & containers	0	0	0	0
Other bottles & containers (drums)	0	0	0	0
Engine oil bottles & containers <50 cm	1	0.02	0	0
Engine oil bottles & containers > 50 cm	0	0	0	0
Jerry cans (square plastic containers with handle)	0	0	0	0
Injection gun containers	0	0	0	0
Crates and containers / baskets	0	0	0	0
Car parts	0	0	0	0
Plastic caps/lids from drinks	38	0.065	39	0.018
Plastic caps/lids from chemicals, detergents (non-food)	1	0.011	5	0
Plastic caps/lids unidentified	1	0	1	0.002
Plastic rings from bottle caps/lids	4	0.001	9	0.006
Tobacco pouches / plastic cigarette box packaging	1	0.01	3	0.007
Cigarette lighters	6	0.001	3	0.01
Cigarette butts and filters	242	0.082	193	0.036
Pens and pen lids	1	0.099	2	0.011
Combs/hair brushes/sunglasses	1	0.004	0	0
Crisps packets/sweets wrappers	72	0.151	81	0.187
Lolly sticks	8	0.003	12	0.002
Toys and party poppers	4	0.064	1	0.008
Cups and cup lids	37	0.136	52	0.125
Cutlery and trays	24	0.034	9	0.019
Straws and stirrers	28	0.016	15	0.003
Fertilizer/animal feed bags	0	0	0	0
Mesh vegetable bags	1	0.004	0	0



Gloves (washing up)	0	0	0	0
Gloves (industrial/professional rubber gloves)	0	0	0	0
Crab/lobster pots and tops	0	0	0	0
Tags (fishing and industry)	0	0	0	0
Octopus pots	0	0	0	0
Mussels nets, Oyster nets	0	0	4	0.055
Oyster trays (round from oyster cultures)	0	0	0	0
Plastic sheeting from mussel culture (Tahitians)	0	0	0	0
Rope (diameter more than 1cm)	1	0	14	0.02
String and cord (diameter less than 1cm)	0	0	0	0
Nets and pieces of net < 50 cm	0	0	0	0
Nets and pieces of net > 50 cm	0	0	0	0
Tangled nets/cord	0	0	0	0
Fish boxes - plastic	0	0	0	0
Fish boxes - expanded polystyrene	0	0	0	0
Fishing line/monofilament (angling)	0	0	0	0
Light sticks (tubes with fluid) incl. packaging	0	0	0	0
Floats for fishing nets	0	0	0	0
Buoys	0	0	0	0
Fenders	0	0	0	0
Buckets	0	0	0	0
Strapping bands	9	0.026	2	0
Sheets, industrial packaging, plastic sheeting	54	0.625	211	1.112
Fiberglass/fragments	0	0	0	0
Hard hats/Helmets	0	0	0	0
Shotgun cartridges	0	0	0	0
Shoes/sandals	0	0	1	0.003
Traffic cones	0	0	0	0
Foam sponge	7	4.464	8	0.001
Plastic pieces 2.5 cm > < 50cm	73	0.4	104	0.208
Plastic pieces > 50 cm	0	0	7	0.447
Polystyrene pieces 2.5 cm > < 50cm	18	0.139	8	0
Polystyrene pieces > 50 cm	0	0	0	0
CD, CD-boxes	0	0	0	0
Salt packaging	0	0	0	0
Fin trees (from fins for scuba diving)	0	0	0	0
Masking tape	0	0	4	0.002
Telephone (incl. parts)	0	0	0	0
Plastic construction waste	1	0.004	4	0.327
Plastic flower pots	0	0	0	0
Biomass holder from sewage treatment plants	0	0	0	0
Bait containers/packaging	0	0	0	0
Cable ties	16	0.029	18	0.027
Cotton bud sticks	3	0.0015	2	0.001

Sanitary towels/panty liners/backing strips	13	0.068	3	0.003
Toilet fresheners	0	0	0	0
Diapers/nappies	0	0	0	0
Syringes/needles	1	0	1	0.001
Medical/Pharmaceuticals containers/tubes	2	0.015	0	0
Dog faeces bags	0	0	0	0
Flip-flops	1	0.014	0	0
Other plastic/polystyrene items (identifiable)	23	2.202	6	0.037
<i>animals food packaging</i>	0	0	0	0
<i>Beach umbrella end</i>	0	0	0	0
<b>Bioballs</b>	0	0	0	0
<i>Brooms without handle</i>	0	0	0	0
<i>Brush from nailpolish</i>	0	0	0	0
<i>Building / hardware / electrical supplies</i>	0	0	0	0
<i>Clothes pegs</i>	0	0	0	0
<i>Coffe capsule</i>	0	0	0	0
<i>crate (plastic)</i>	0	0	0	0
<i>light sticks (tubes with fluid) incl. packaging</i>	0	0	0	0
<i>desk parts (plastic)</i>	0	0	0	0
<i>diving mask incl. parts</i>	0	0	0	0
<i>Furnishings</i>	0	0	0	0
<i>gorse (plastic)</i>	0	0	0	0
<i>lure for fish</i>	0	0	1	0.006
<i>Other sanitary / cosmetic items</i>	0	0	0	0
<i>plastik lid from big trash cans</i>	0	0	0	0
<i>plastic strainer for food</i>	0	0	0	0
<i>Pipes</i>	0	0	0	0
<i>sanitary napkin</i>	0	0	0	0
<i>scratch bag</i>	0	0	0	0
<i>Shoes polish containers</i>	0	0	0	0
<i>toothpick plastic</i>	0	0	0	0
<i>toothbrush</i>	0	0	0	0
	<b>753</b>	<b>10.966</b>	<b>900</b>	<b>4.781</b>

**RUBBER**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Balloons and balloon sticks	5	0.004	1	0
Balls	1	0	0	0
Rubber boots	0	0	3	0.03
Tyres and belts	3	0.008	0	0
Inner-tubes and rubber sheets	3	0.048	1	0.003
Wheels	0	0	3	0.001

Rubber bands (small, for kitchen/household/post use)	9	0.033	0	0
Bobbins (fishing)	0	0	0	0
Condoms (incl. packaging)	0	0	9	0.58
Other rubber pieces	17	2.057	3	0.089
<i>Car parts</i>	0	0	0	0
<i>mattress for beach</i>	0	0	0	0
<i>Pacifier</i>	0	0	0	0
<i>Pram tyre</i>	0	0	0	0
<i>rubber thongs</i>	0	0	0	0
<i>sandals</i>	1	0.037	0	0
<i>swimming belt</i>	0	0	0	0
	<b>39</b>	<b>3.787</b>	<b>20</b>	<b>0.706</b>

### CLOTH/TEXTILE

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Clothing / rags (clothes, hats, towels)	4	0.138	6	0.947
Shoes and sandals (e.g. leather, cloth)	4	0.221	2	0.022
Backpacks & bags	0	0	0	0
Sacking (hessian)	0	0	0	0
Carpet & furnishing	0	0	3	0.087
Rope, string and nets	10	0.12	8	0.036
Sails, canvas	0	0	0	0
Tampons and tampon applicators	1	0.004	2	0.01
Other textiles (incl. rags)	16	0.029	6	0.024
<i>blanket</i>	0	0	1	1.65
<i>cotton scraf</i>	0	0	0	0
<i>leather belt</i>	0	0	0	0
<i>Leather pieces</i>	0	0	0	0
<i>Leather + textile toys</i>	0	0	0	0
	<b>35</b>	<b>0.698</b>	<b>28</b>	<b>2.811</b>

### PAPER/CARDBOARD

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Paper bags	0	0	0	0
Cardboard (boxes & fragments)	1	0.006	2	0.009
Cartons/Tetrapack Milk	0	0	0	0
Cartons/Tetrapack (others)	0	0	0	0
Cigarette packets	4	0.026	5	0.027
Cups, food trays, food wrappers, drink containers	15	0.025	5	0.012
Newspapers & magazines	0	0	0	0
Tubes for fireworks	0	0	0	0
Paper fragments	46	0.088	22	0.018

Other paper items	3	0.002	11	0.019
	<b>69</b>	<b>0.162</b>	<b>45</b>	<b>0.135</b>

**PROCESSED/WORKED WOOD**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Corks	2	0.014	0	0
Pallets	3	0.545	10	0.364
Processed timber	9	3.847	20	0.195
Crates	0	0	0	0
Crab/lobster pots	0	0	0	0
Fish boxes	0	0	0	0
Ice-cream sticks, chip forks, chopsticks, toothpicks	34	0.046	19	0.018
Paint brushes	0	0	0	0
Matches & fireworks	0	0	0	0
Other wood < 50 cm	6	0.017	1	0.475
Other wood > 50 cm	0	0	0	0
	<b>54</b>	<b>4.511</b>	<b>50</b>	<b>3.152</b>

**METAL**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Aerosol/Spray cans	1	0.006	0	0
Cans (beverage)	3	0.032	15	0.193
Cans (food)	3	0.01	1	0.009
Foil wrappers, aluminum foil	39	0.041	1	0.006
Bottle caps, lids & pull tabs	28	0.042	8	0.012
Disposable BBQs	0	0	0	0
Appliances (refrigerators, washers, etc.)	0	0	0	0
Tableware (plates, cups & cutlery)	0	0	0	0
Fishing related (weights, sinkers, lures, hooks)	1	0.105	0	0
Lobster/crab pots	0	0	0	0
Industrial scrap	6	0.506	11	0.893
Drums, e.g. oil	0	0	0	0
Other cans (< 4 L)	0	0	0	0
Gas bottles, drums & buckets (> 4 L)	2	0.006	0	0
Paint tins	0	0	0	0
Wire, wire mesh, barbed wire	8	0.14	2	0.038
Car parts / batteries	3	0.007	0	0
Cables	0	0	1	0.003
Household Batteries	5	0.078	0	0
Other metal pieces < 50 cm	8	0.137	10	0.049
Other metal pieces > 50 cm	0	0	0	0
<i>Medical containers</i>	0	0	0	0

Milk capsule	0	0	0	0
Nails	0	0	0	0
	<b>107</b>	<b>1.169</b>	<b>49</b>	<b>2.203</b>

**GLASS/CERAMICS**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Bottles, including pieces	25	0.955	23	0.202
Jars, including pieces	1	0.353	0	0
Light bulbs	0	0	0	0
Tableware (plates & cups)	0	0	0	0
Construction material (brick, cement, pipes)	52	1.923	50	2.366
Fluorescent light tubes	0	0	0	0
Glass buoys	0	0	0	0
Octopus pots	0	0	0	0
Glass or ceramic fragments >2.5cm	43	0.781	39	1.045
Other glass items	0	0	0	0
<i>broken mercury thermometer</i>	0	0	0	0
<i>cosmetic bottles</i>	0	0	0	0
<i>medical containers</i>	0	0	0	0
	<b>121</b>	<b>4.114</b>	<b>112</b>	<b>3.648</b>

**UNIDENTIFIED AND/OR CHEMICALS**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Other medical items (swabs, bandaging, adhesive plaster, etc.)	0	0	0	0
Paraffin/Wax	0	0	0	0
TAR (catrame)	0	0	0	0
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**TOTAL ML (Kg)** **1178** **25.41** **1204** **17.44**

Natural Wood - SMALL (kg) - diameter < 10 cm

Natural Wood - LARGE (kg) - diameter > 10 cm

**TOTAL NATURAL WOOD (kg)**

**6.35**

**22.00**

Marine plant leaves

yes

yes

## 2.2.3 Igalo beach - Herceg Novi municipality

ARTIFICIAL POLYMER MATERIALS	MONTENEGRO		MONTENEGRO	
	MN_HN1		MN_HN2	
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
4/6-pack yokes, six-pack rings	0	0	0	0
Shopping bags, incl. pieces	15	0.031	8	0.202
Small plastic bags, e.g. freezer bags, including pieces	58	0.754	91	0.432
Plastic bag collective roll; what remains from rip-off plastic bags	21	0.478	8	0.093
Drink bottles <=0.5l	64	1.439	45	0.475
Drink bottles >0.5l	41	0.99	21	0.62
Cleaner/cleanser bottles & containers	9	0.269	3	0
Food containers incl. fast food containers	72	0.398	25	0.469
Beach use related cosmetic bottles and containers, e.g. Sunblocks	7	0.082	4	0
Other cosmetics bottles & containers	28	0.732	19	0.219
Other bottles & containers (drums)	4	0.215	20	0.488
Engine oil bottles & containers <50 cm	8	0.641	1	0.077
Engine oil bottles & containers > 50 cm	0	0	0	0
Jerry cans (square plastic containers with handle)	2	0	1	0.068
Injection gun containers	0	0	1	0
Crates and containers / baskets	0	0	4	0
Car parts	0	0	0	0
Plastic caps/lids from drinks	180	0.151	191	0.281
Plastic caps/lids from chemicals, detergents (non-food)	55	0.115	79	0.109
Plastic caps/lids unidentified	30	0.083	54	0.036
Plastic rings from bottle caps/lids	28	0.026	46	0.045
Tobacco pouches / plastic cigarette box packaging	8	0.015	9	0.014
Cigarette lighters	17	0.121	27	0.121
Cigarette butts and filters	140	0.039	177	0.0532
Pens and pen lids	39	0.127	19	0.07
Combs/hair brushes/sunglasses	2	0.004	5	0.047
Crisps packets/sweets wrappers	174	0.422	103	0.226
Lolly sticks	42	0.013	40	0.017
Toys and party poppers	6	0.195	5	0.028
Cups and cup lids	25	0.113	46	0.068
Cutlery and trays	24	0.014	22	0.005
Straws and stirrers	86	0.073	81	0.042
Fertilizer/animal feed bags	0	0	0	0
Mesh vegetable bags	2	0.193	2	0.009
Gloves (washing up)	1	0.009	0	0

Gloves (industrial/professional rubber gloves)	0	0	1	0
Crab/lobster pots and tops	0	0	0	0
Tags (fishing and industry)	0	0	0	0
Octopus pots	0	0	0	0
Mussels nets, Oyster nets	2	0.017	0	0
Oyster trays (round from oyster cultures)	0	0	0	0
Plastic sheeting from mussel culture (Tahitians)	0	0	0	0
Rope (diameter more than 1cm)	2	2.681	16	0.151
String and cord (diameter less than 1cm)	0	0	7	0
Nets and pieces of net < 50 cm	2	0.011	1	0.007
Nets and pieces of net > 50 cm	0	0	0	0
Tangled nets/cord	0	0	2	0
Fish boxes - plastic	0	0	0	0
Fish boxes - expanded polystyrene	0	0	0	0
Fishing line/monofilament (angling)	0	0	0	0
Light sticks (tubes with fluid) incl. packaging	0	0	0	0
Floats for fishing nets	0	0	3	0.1
Buoys	0	0	1	0
Fenders	0	0	0	0
Buckets	1	0.204	0	0
Strapping bands	2	0.005	0	0
Sheets, industrial packaging, plastic sheeting	103	4.34	288	0.021
Fiberglass/fragments	0	0	0	0
Hard hats/Helmets	0	0	0	0
Shotgun cartridges	0	0	0	0
Shoes/sandals	25	0.046	8	0.305
Traffic cones	0	0	0	0
Foam sponge	62	0.437	196	0.116
Plastic pieces 2.5 cm > < 50cm	400	1.029	597	1.465
Plastic pieces > 50 cm	101	2.01	14	1.282
Polystyrene pieces 2.5 cm > < 50cm	164	0.38	249	0.197
Polystyrene pieces > 50 cm	2	0.442	0	0
CD, CD-boxes	0	0	0	0
Salt packaging	0	0	1	0
Fin trees (from fins for scuba diving)	0	0	0	0
Masking tape	0	0	3	0.004
Telephone (incl. parts)	0	0	0	0
Plastic construction waste	6	1.114	1	0.056
Plastic flower pots	1	0.06	3	0
Biomass holder from sewage treatment plants	0	0	0	0
Bait containers/packaging	0	0	0	0
Cable ties	5	0.005	6	0.008
Cotton bud sticks	93	0.015	207	0.0135
Sanitary towels/panty liners/backing strips	46	0.193	49	0.158

Toilet fresheners	6	0.01	15	0
Diapers/nappies	2	0.055	3	0.575
Syringes/needles	7	0.008	12	0.01
Medical/Pharmaceuticals containers/tubes	39	0.121	23	0.043
Dog faeces bags	0	0	0	0
Flip-flops	0	0	3	0.014
Other plastic/polystyrene items (identifiable)	46	0.411	72	0.591
<i>animals food packaging</i>	0	0	1	0.006
<i>Beach umbrella end</i>	0	0	1	0.397
<b>Bioballs</b>	0	0	0	0
<i>Brooms without handle</i>	0	0	0	0
<i>Brush from nailpolish</i>	1	0.054	0	0
<i>Building / hardware / electrical supplies</i>	0	0	0	0
<i>Clothes pegs</i>	0	0	0	0
<i>Coffe capsule</i>	0	0	1	0.008
<i>crate (plastic)</i>	0	0	0	0
<i>light sticks (tubes with fluid) incl. packaging</i>	1	0.015	0	0
<i>desk parts (plastic)</i>	2	0.369	0	0
<i>diving mask incl. parts</i>	1	0.238	0	0
<i>Furnishings</i>	0	0	0	0
<i>gorse (plastic)</i>	2	0.009	1	0.068
<i>lure for fish</i>	0	0	0	0
<i>Other sanitary / cosmetic items</i>	0	0	0	0
<i>plastik lid from big trash cans</i>	2	0.023	0	0
<i>plastic strainer for food</i>	1	0.419	0	0
<i>Pipes</i>	0	0	0	0
<i>sanitary napkin</i>	1	0.007	0	0
<i>scratch bag</i>	0	0	0	0
<i>Shoes polish containers</i>	0	0	0	0
<i>toothpick plastic</i>	1	0.001	0	0
<i>toothbrush</i>	0	0	1	0.01
	<b>2317</b>	<b>30.831</b>	<b>2943</b>	<b>26.819</b>
				<b>7</b>

**RUBBER**

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Balloons and balloon sticks	0	0	3	0
Balls	1	0	3	0.014
Rubber boots	0	0	0	0
Tyres and belts	15	0.061	10	0.104
Inner-tubes and rubber sheets	0	0	1	0
Wheels	0	0	0	0
Rubber bands (small, for kitchen/household/post use)	0	0	0	0



Bobbins (fishing)	0	0	0	0
Condoms (incl. packaging)	0	0	0	0
Other rubber pieces	5	0.02	11	0.252
<i>Car parts</i>	0	0	0	0
<i>mattress for beach</i>	1	2.46	0	0
<i>Pacifier</i>	0	0	0	0
<i>Pram tyre</i>	0	0	0	0
<i>rubber thongs</i>	2	0.084	0	0
<i>sandals</i>	1	0.152	1	0.12
<i>swimming belt</i>	1	0.183	0	0
	<b>26</b>	<b>2.961</b>	<b>29</b>	<b>15.74</b>

### CLOTH/TEXTILE

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Clothing / rags (clothes, hats, towels)	14	0.317	8	0.122
Shoes and sandals (e.g. leather, cloth)	15	0.998	1	0
Backpacks & bags	0	0	0	0
Sacking (hessian)	0	0	0	0
Carpet & furnishing	0	0	0	0
Rope, string and nets	11	0.108	17	0.038
Sails, canvas	0	0	0	0
Tampons and tampon applicators	0	0	0	0
Other textiles (incl. rags)	3	0.004	8	0.385
<i>blanket</i>	0	0	0	0
<i>cotton scraf</i>	1	0.018	0	0
<i>leather belt</i>	1	0.144	0	0
<i>Leather pieces</i>	0	0	0	0
<i>Leather + textile toys</i>	0	0	0	0
	<b>45</b>	<b>2.349</b>	<b>34</b>	<b>1.109</b>

### PAPER/CARDBOARD

Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Paper bags	0	0	3	0
Cardboard (boxes & fragments)	12	0.102	8	0.16
Cartons/Tetrapack Milk	2	0.07	1	0.015
Cartons/Tetrapack (others)	5	0.103	3	0.209
Cigarette packets	11	0.038	19	0.103
Cups, food trays, food wrappers, drink containers	3	0.017	12	0.059
Newspapers & magazines	8	0.322	0	0
Tubes for fireworks	0	0	0	0
Paper fragments	89	0.145	84	0.143
Other paper items	10	0.006	15	0.016

	140	0.89	145	1.186
<b>PROCESSED/WORKED WOOD</b>				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Corks	1	0	2	0.006
Pallets	10	0.7	2	0.28
Processed timber	31	5.708	43	1.346
Crates	0	0	0	0
Crab/lobster pots	0	0	0	0
Fish boxes	0	0	0	0
Ice-cream sticks, chip forks, chopsticks, toothpicks	40	0.054	36	0.049
Paint brushes	0	0	0	0
Matches & fireworks	0	0	0	0
Other wood < 50 cm	30	0.999	49	0.231
Other wood > 50 cm	0	0	6	0.605
	<b>112</b>	<b>8.391</b>	<b>138</b>	<b>8.917</b>

<b>METAL</b>				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Aerosol/Spray cans	0	0	4	0.49
Cans (beverage)	43	0.689	18	0.281
Cans (food)	8	0.334	5	0.138
Foil wrappers, aluminum foil	3	0.027	14	0.024
Bottle caps, lids & pull tabs	67	0.096	89	0.1
Disposable BBQs	0	0	0	0
Appliances (refrigerators, washers, etc.)	0	0	0	0
Tableware (plates, cups & cutlery)	0	0	0	0
Fishing related (weights, sinkers, lures, hooks)	1	0.035	0	0
Lobster/crab pots	0	0	0	0
Industrial scrap	0	0	0	0
Drums, e.g. oil	2	0	0	0
Other cans (< 4 L)	1	0	0	0
Gas bottles, drums & buckets (> 4 L)	0	0	0	0
Paint tins	0	0	2	0.288
Wire, wire mesh, barbed wire	1	0.003	3	0.014
Car parts / batteries	0	0	0	0
Cables	1	0	0	0
Household Batteries	0	0	0	0
Other metal pieces < 50 cm	11	0.244	5	0.167
Other metal pieces > 50 cm	0	0	0	0
<i>Medical containers</i>	0	0	0	0
<i>Milk capsule</i>	0	0	0	0

Nails				
	0	0	0	0
	<b>138</b>	<b>1.97</b>	<b>140</b>	<b>2.172</b>
GLASS/CERAMICS				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Bottles, including pieces	52	3.057	152	3.365
Jars, including pieces	1	0.316	0	0
Light bulbs	3	0.1	0	0
Tableware (plates & cups)	0	0	0	0
Construction material (brick, cement, pipes)	3	0.178	3	0.484
Fluorescent light tubes	0	0	0	0
Glass buoys	0	0	0	0
Octopus pots	0	0	0	0
Glass or ceramic fragments >2.5cm	2	0.002	1	0
Other glass items	0	0	4	0
<i>broken mercury thermometer</i>	0	0	0	0
<i>cosmetic bottles</i>	0	0	0	0
<i>medical containers</i>	0	0	0	0
	<b>61</b>	<b>4.293</b>	<b>161</b>	<b>4.492</b>
UNIDENTIFIED AND/OR CHEMICALS				
Items name	Items (n. of pieces)	Weight (kg)	Items (n. of pieces)	Weight (kg)
Other medical items (swabs, bandaging, adhesive plaster, etc.)	5	0.073	1	0.024
Paraffin/Wax	0	0	6	0.236
TAR (catrame)	0	0	0	0
	<b>5</b>	<b>0.073</b>	<b>7</b>	<b>0.263</b>
TOTAL ML (Kg)				
	<b>2844</b>	<b>51.76</b>	<b>3597</b>	<b>60.7</b>

Natural Wood - SMALL (kg) - diameter < 10 cm

Natural Wood - LARGE (kg) - diameter > 10 cm

**TOTAL NATURAL WOOD (kg)**

**40.65**

**49.21**

Marine plant leaves

yes

yes

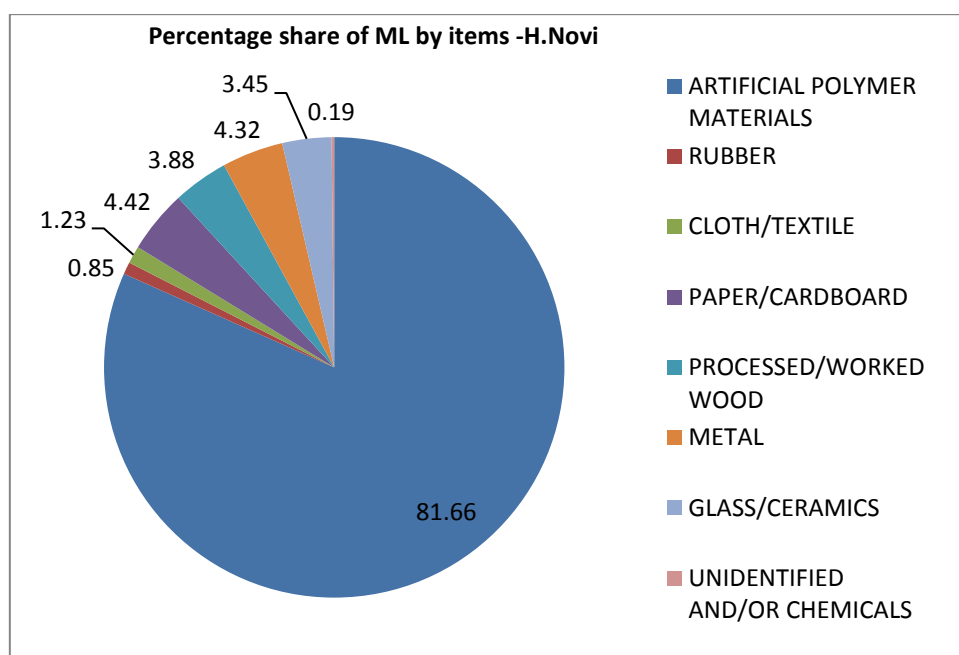
## 2.3 Final results of the research activities conducted in Montenegro

Overall, 11152 items were collected and a total amount of 257.03 kg of litter removed from beaches along the Montenegrin coasts of the municipality of Herceg Novi, Budva and Ulcinj. In detail, 112.46 kg of marine litter were collected at Herceg Novi beach, 42.84 kg at Budva beach and 101.73 kg at Ulcinj beach.

The natural wood estimated on the three beaches during surveys was about 178.79 kg in total. In detail, about 89 kg at Herceg Novi beach, 28 kg at Budva beach and 60 kg at Ulcinj beach.

### ➤ Igalo beach in Herceg Novi municipality

Analyses of beach transects in Herceg Novi transects (**Figure 27** and **28**) during all six surveys resulted the most abundant material the ‘artificial polymers’ both in terms of weight (51.26%) and number of items (81.66%). Contribution of ‘Rubber’ was 16.63% (weight) and 0.85% (items); ‘Processed/worked wood’ was 15.39% (weight) and 3.88% (items); ‘Glass/ceramics’ 7.81% (weight) and 3.45% (items); ‘Metal’ 3.68% (weight) and 4.32% (items); ‘Clothes’ 3.07% (weight) and 1.23% (items), ‘Other’ 0.30% (weight) and 0.19% (items).



**Figure 27:** Percentage share of ML by items in Herceg Novi transects (for all six surveys)

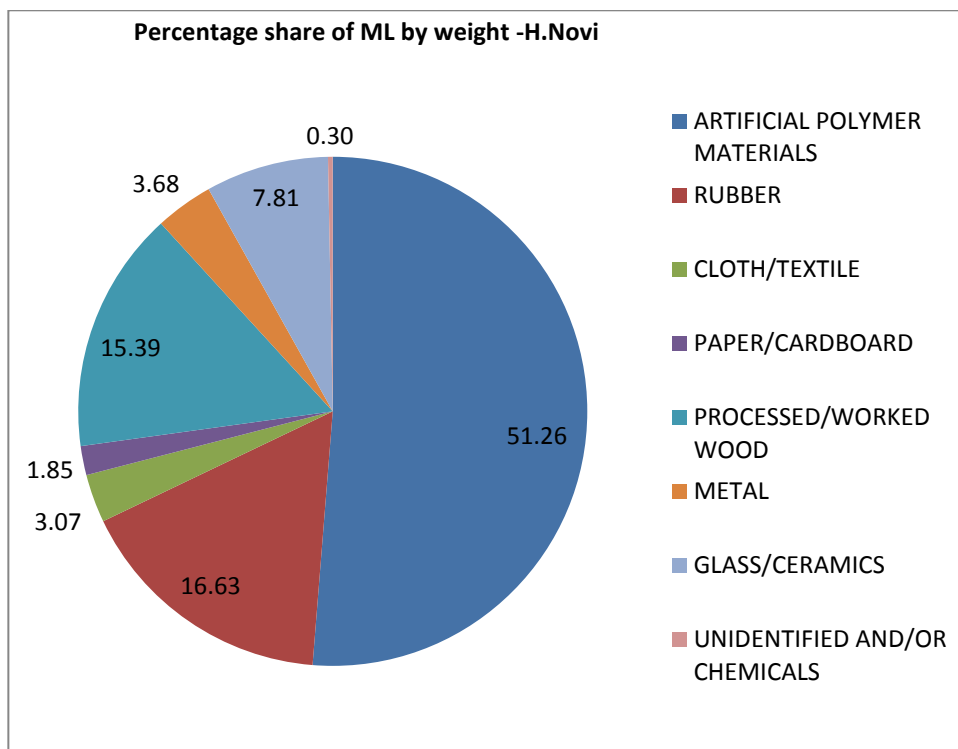
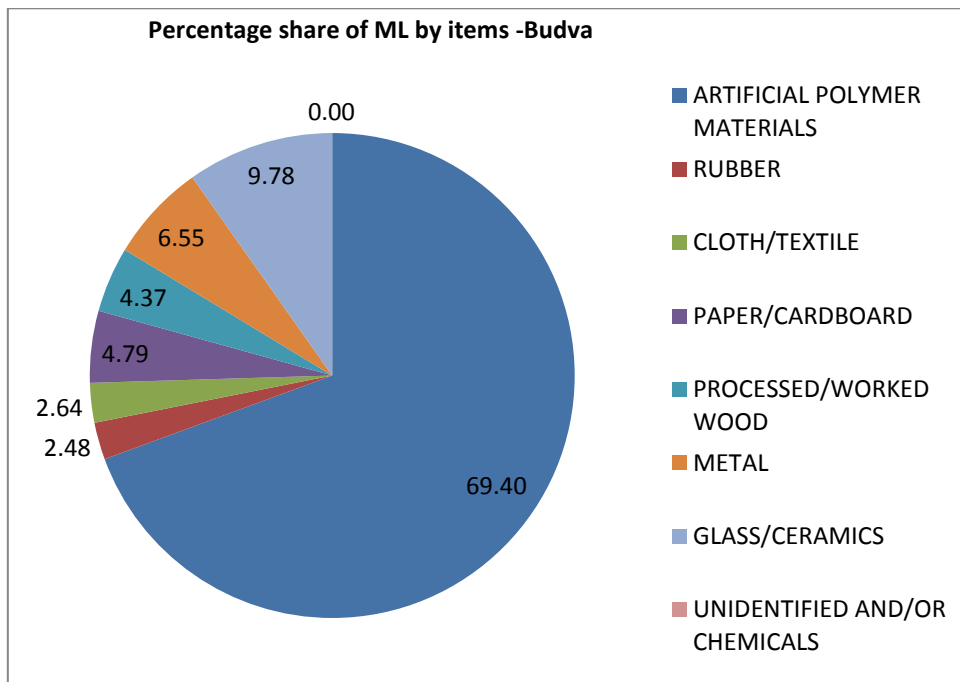


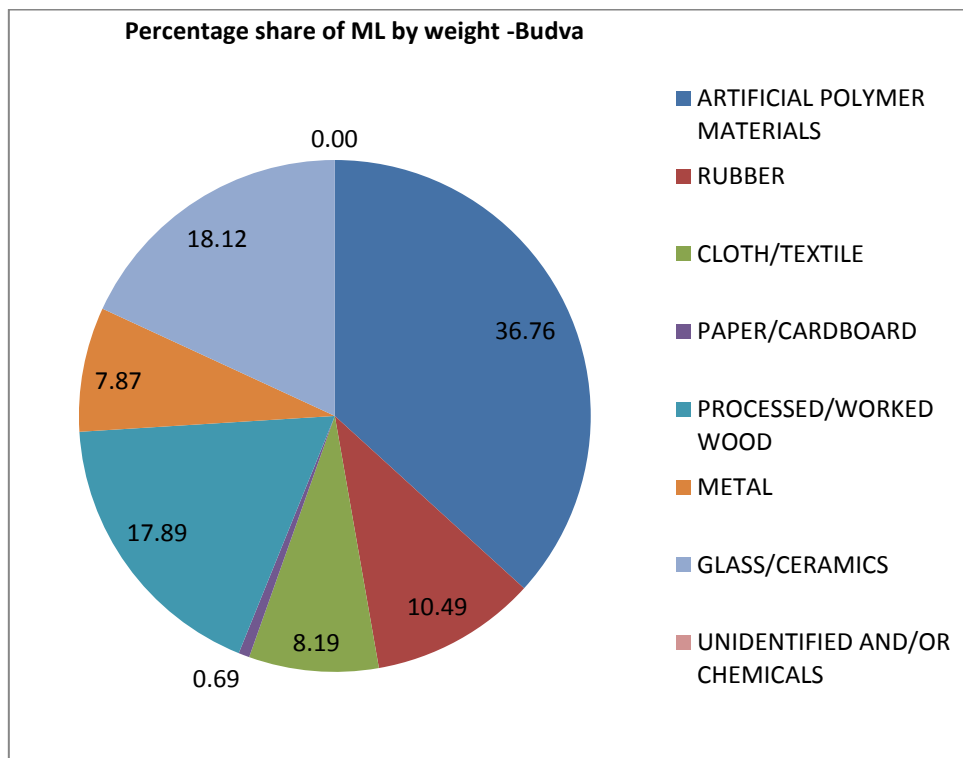
Figure 28: Percentage share of ML by weight in Herceg Novi transects (for all six surveys)

➤ **Bečićka beach in Budva municipality**

Beach transects monitored in Budva, during all six surveys showed that the ‘artificial polymers’ (**Figure 29** and **30**) resulted the most abundant material both in terms of weight (36.76%) and number of items (69.40%). Contribution of ‘Glass/ceramics’ 18.12% (weight) and 9.78% (items); ‘Processed/worked wood’ was 17.89% (weight) and 4.37% (items); ‘Rubber’ was 10.49% (weight) and 2.48% (items); ‘Clothes’ 8.19% (weight) and 2.64% (items); ‘Metal’ 7.87% (weight) and 6.55% (items); ‘Other’ 0.00% (weight) and 0.00% (items).



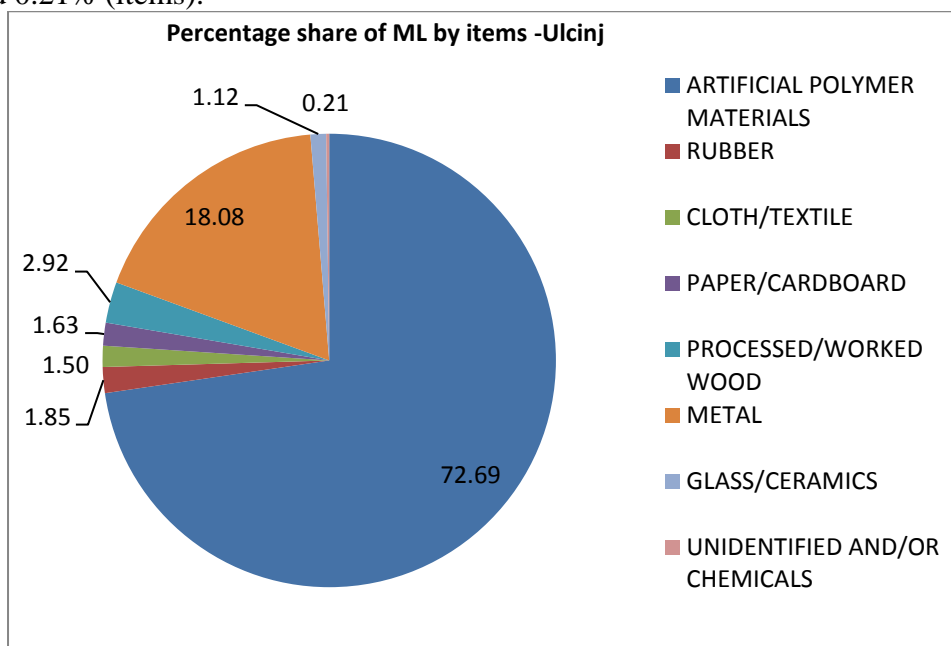
**Figure 29:** Percentage share of ML by items in Budva transects (for all six surveys)



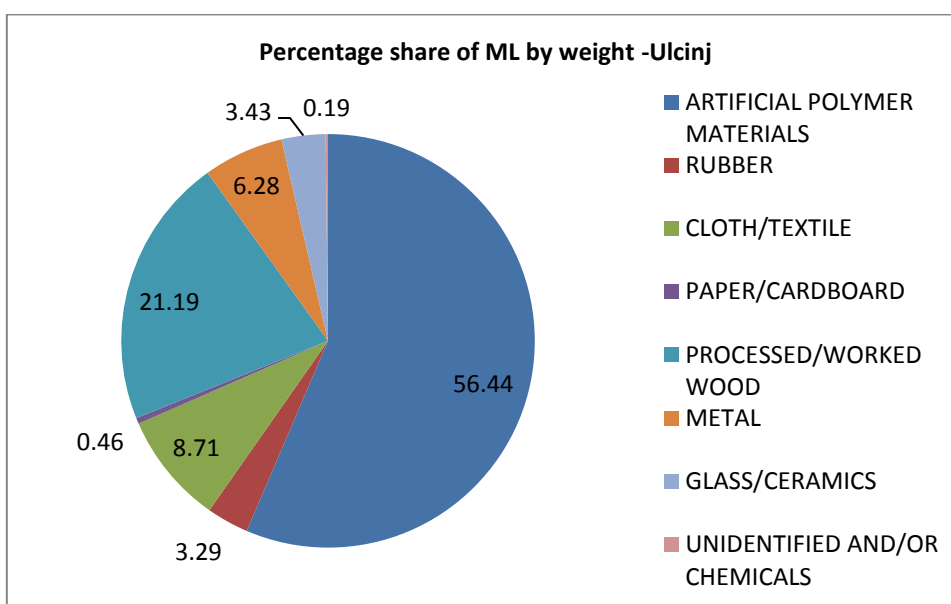
**Figure 30:** Percentage share of ML by weight in Budva transects (for all six surveys)

➤ **Beach Velika plaža in Ulcinj municipality**

The ‘artificial polymers’ in Ulcinj transects (**Figure 31** and **32**) during all six surveys also resulted the most abundant material both in terms of weight (56.44%) and number of items (72.69%). Contribution of ‘Processed/worked wood’ was 21.19% (weight) and 2.92% (items); ‘Clothes’ 8.71% (weight) and 1.5% (items), ‘Metal’ 6.28% (weight) and 18.08% (items); ‘Glass/ceramics’ 3.43% (weight) and 1.12% (items); ‘Rubber’ was 3.29% (weight) and 1.85% (items); ‘Other’ 0.19% (weight) and 0.21% (items).

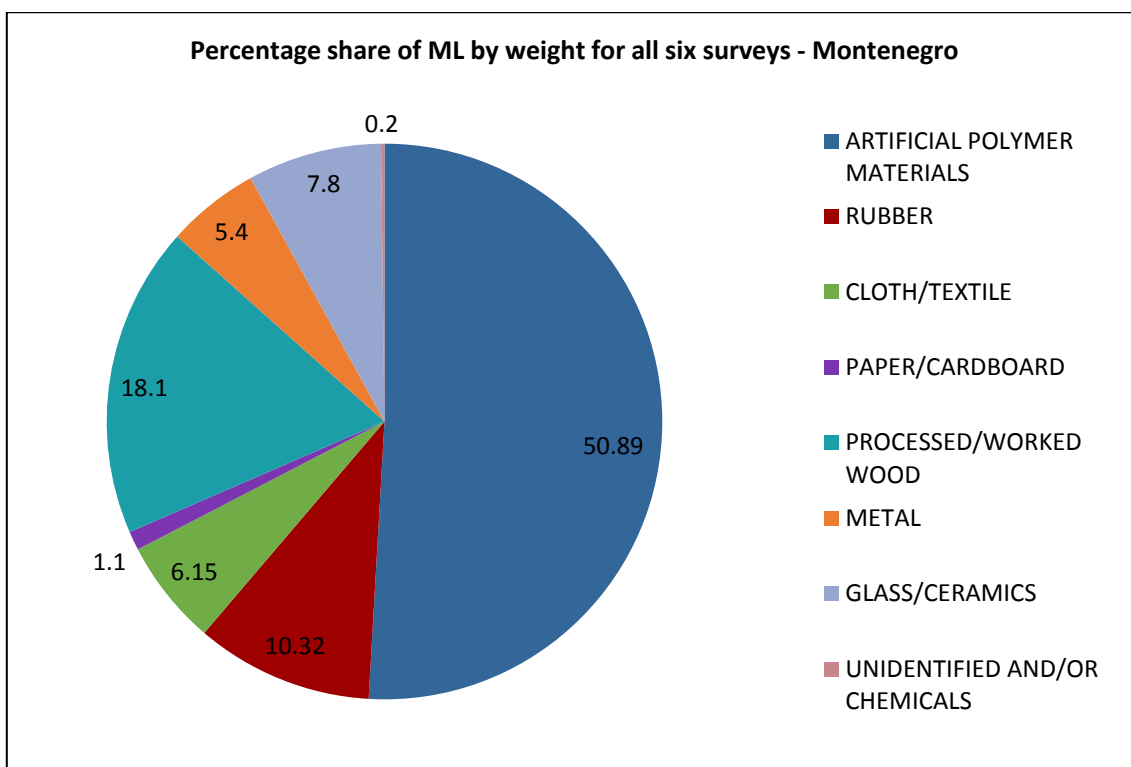


**Figure 31:** Percentage share of ML by items in Ulcinj transects (for all six surveys)



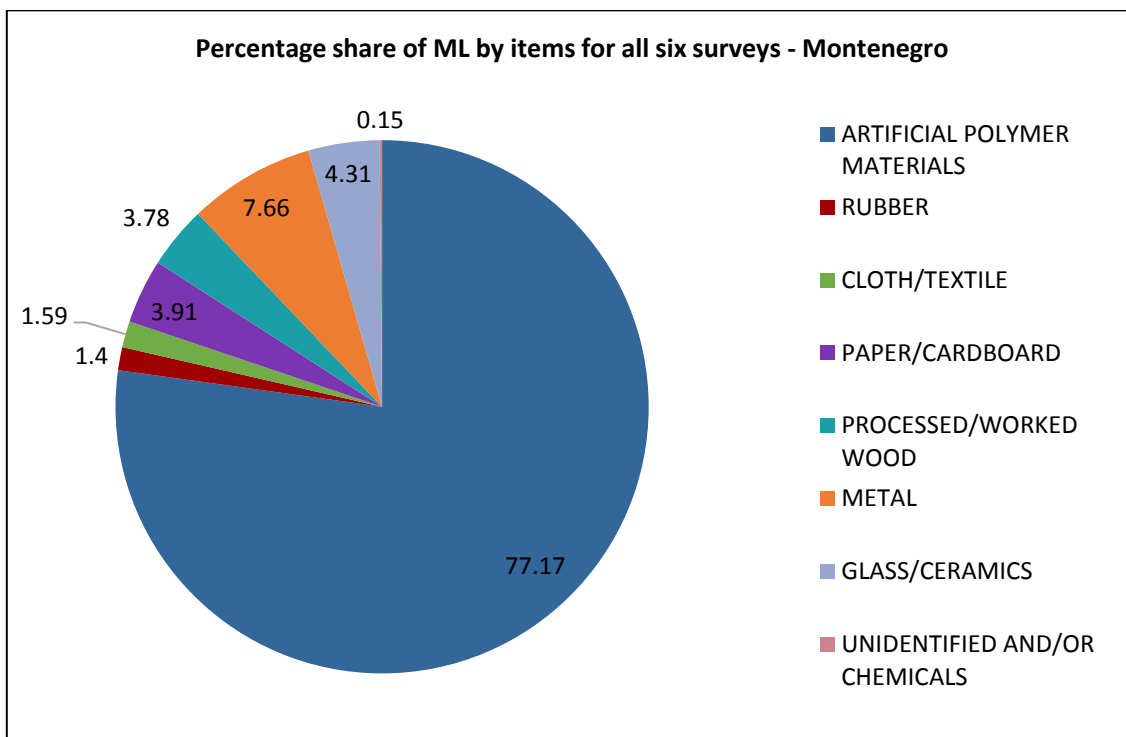
**Figure 32:** Percentage share of ML by weight in Budva transects (for all six surveys)

**Analyses of beach transects in Montenegro during all six surveys** resulted the most abundant material the ‘artificial polymers’ both in terms of weight (50,89%) and number of items (77,17%). Contribution of ‘Processed/worked wood’ was 18,1% (weight) and 3,78% (items); ‘Rubber’ was 10,32% (weight) and 1,4% (items); ‘Glass/ceramics’ 7,8% (weight) and 4,31% (items); ‘Clothes’ 6,15% (weight) and 1,59% (items); ‘Metal’ 5,4% (weight) and 7,66% (items);, ‘Paper/cardboard’ 1,1% (weight) and 3,91% (items); ‘Other’ 0,2% (weight) and 0,15% (items) (**Figure 33** and **34**).



**Figure 33:** Percentage share of ML by weight for all six surveys in Montenegro



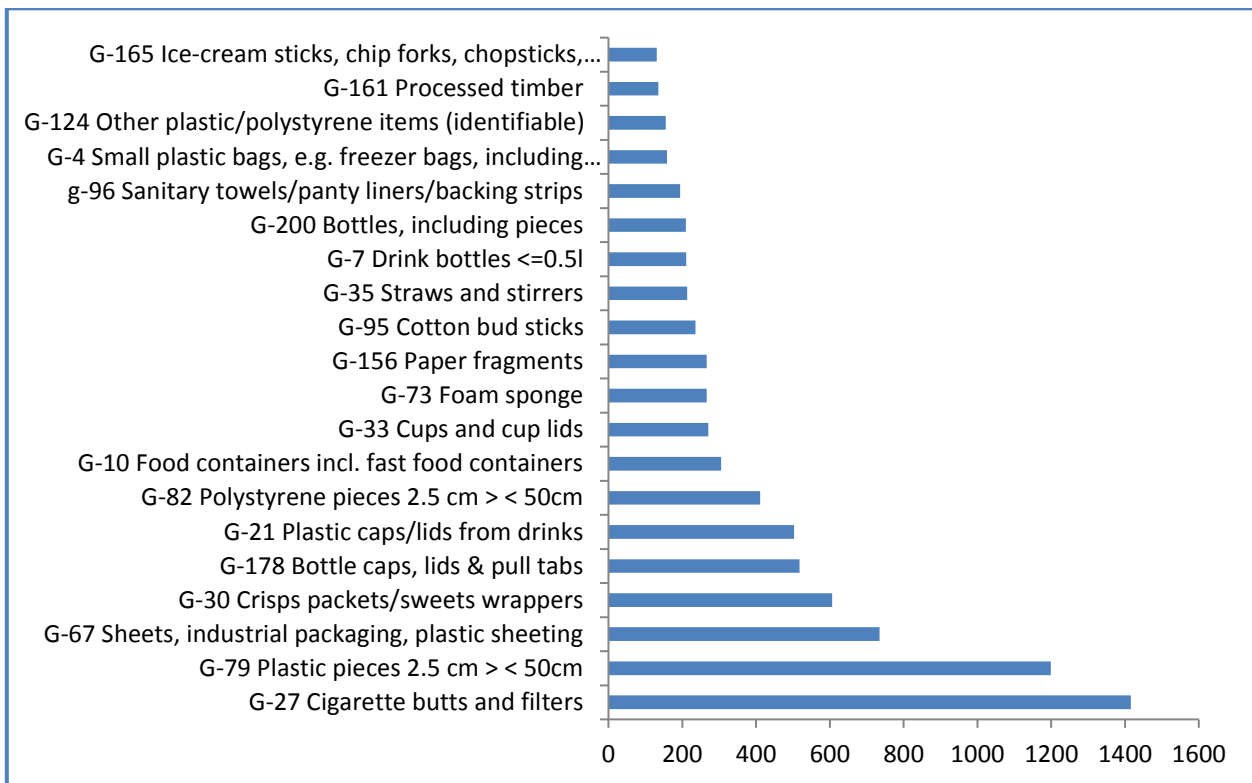


*Figure 34: Percentage share of ML by items for all six surveys in Montenegro*

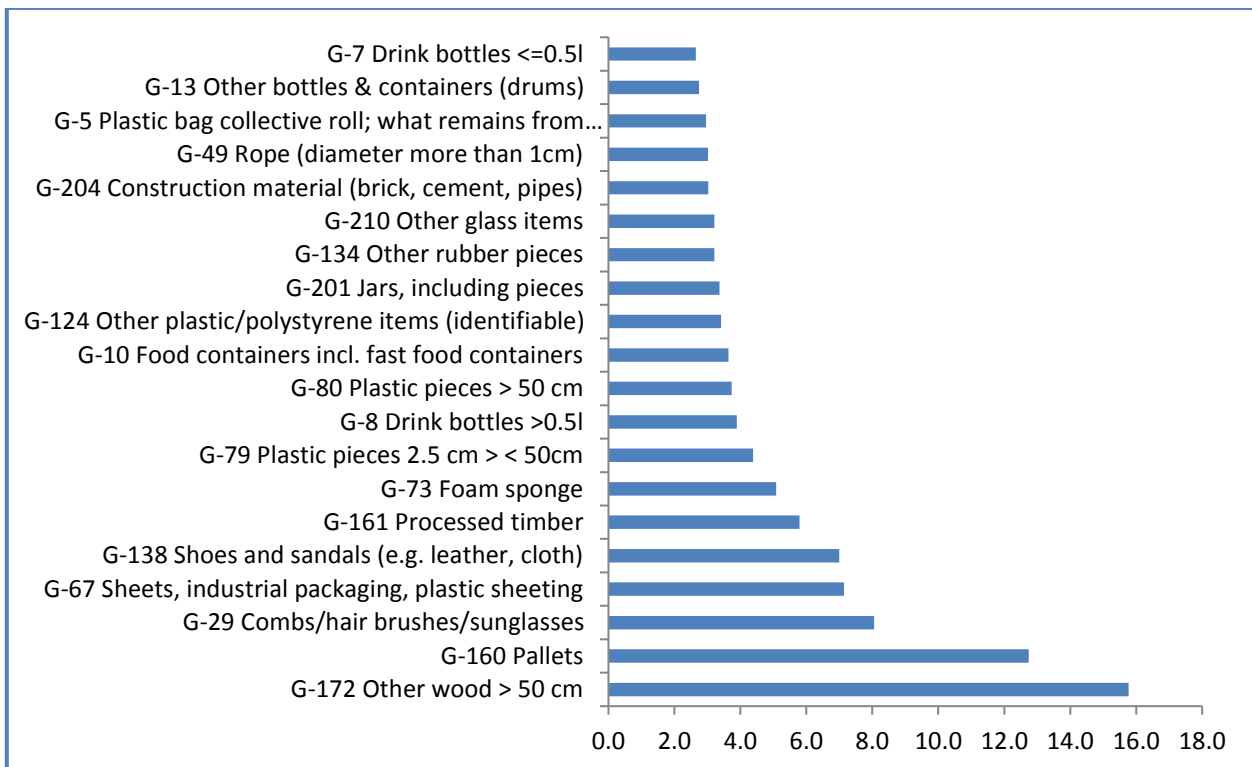
**The top 20 items** with their description and codes are reported in the *Figure 35*. Majority of top 20 items belongs to the group of the ‘artificial polymers’. The first 5 of “top 20” are: G-27 Cigarette butts and filters with 1416 items, “G-79 Plastic pieces 2.5 cm > < 50cm” with 1199 items, “G-67 Sheets, industrial packaging, plastic sheeting” with 735 items, “G-30 Crisps packets/sweets wrappers “ with 606 items and “G-178 Bottle caps, lids & pull tabs” with 518 items in total.

**The top 20 most abundant categories in terms of weight**, with their description and code, are reported in the *Figure 36*. The heaviest categories recorded were: “G-172 Other wood > 50 cm” with 15.8 kg, “G-160 Pallets” with 12.7 kg, “G-29 Combs/hair brushes/sunglasses” with 8.1 kg, “G-67 Sheets, industrial packaging, plastic sheeting” with 7.1 kg and “G-138 Shoes and sandals (e.g. leather, cloth)” with 7 kg in total.

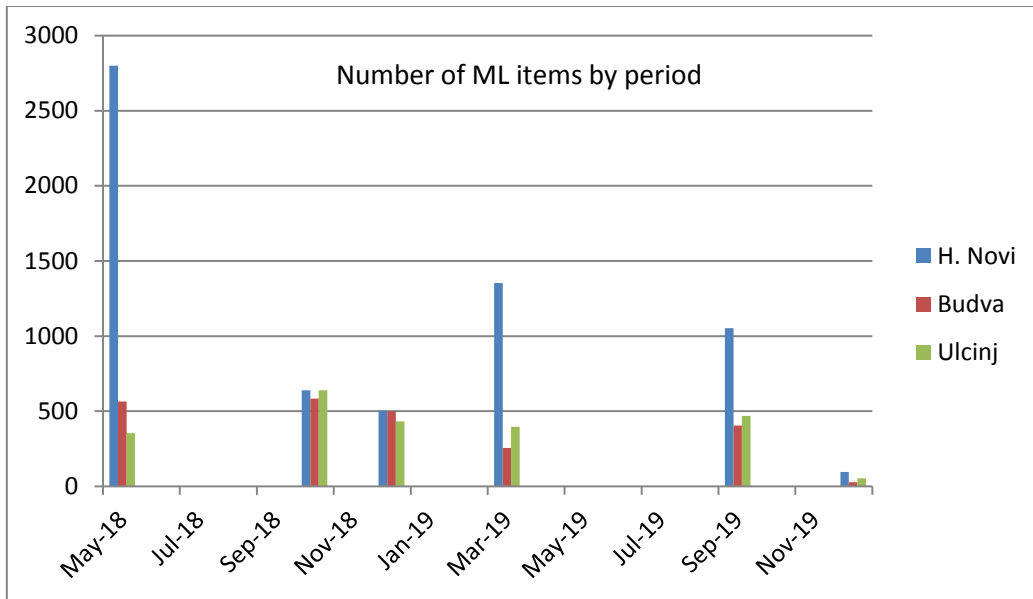
The highest abundances, both in terms of weight and number of items, were recorded during March-May period (*Figure 37, Figure 38*).



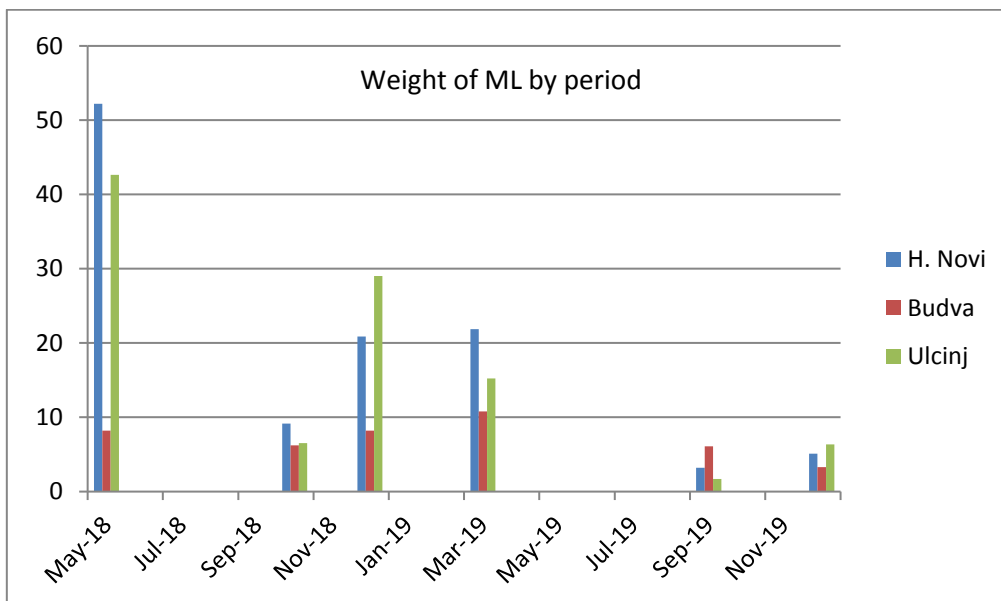
**Figure 35:** Top 20 items collected during all the six surveys in Montenegro



**Figure 36:** Top 20 categories (in terms of weight) collected during all the six surveys in Montenegro



*Figure 37: Number of ML items by period during all six surveys in Montenegro*



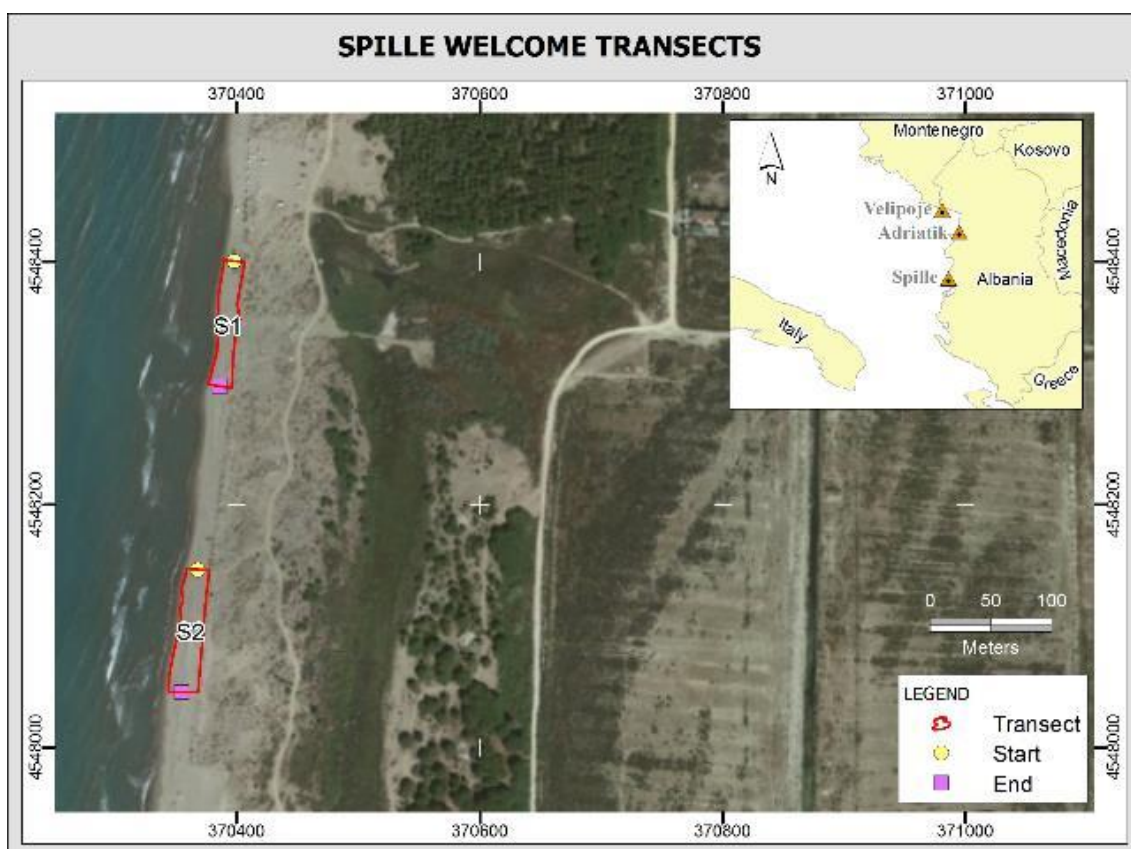
*Figure 38: Weight (in kg) of ML by period during all six surveys in Montenegro*

### 3. FINAL RESULTS OF THE RESEARCH ACTIVITIES CONDUCTED IN ALBANIA

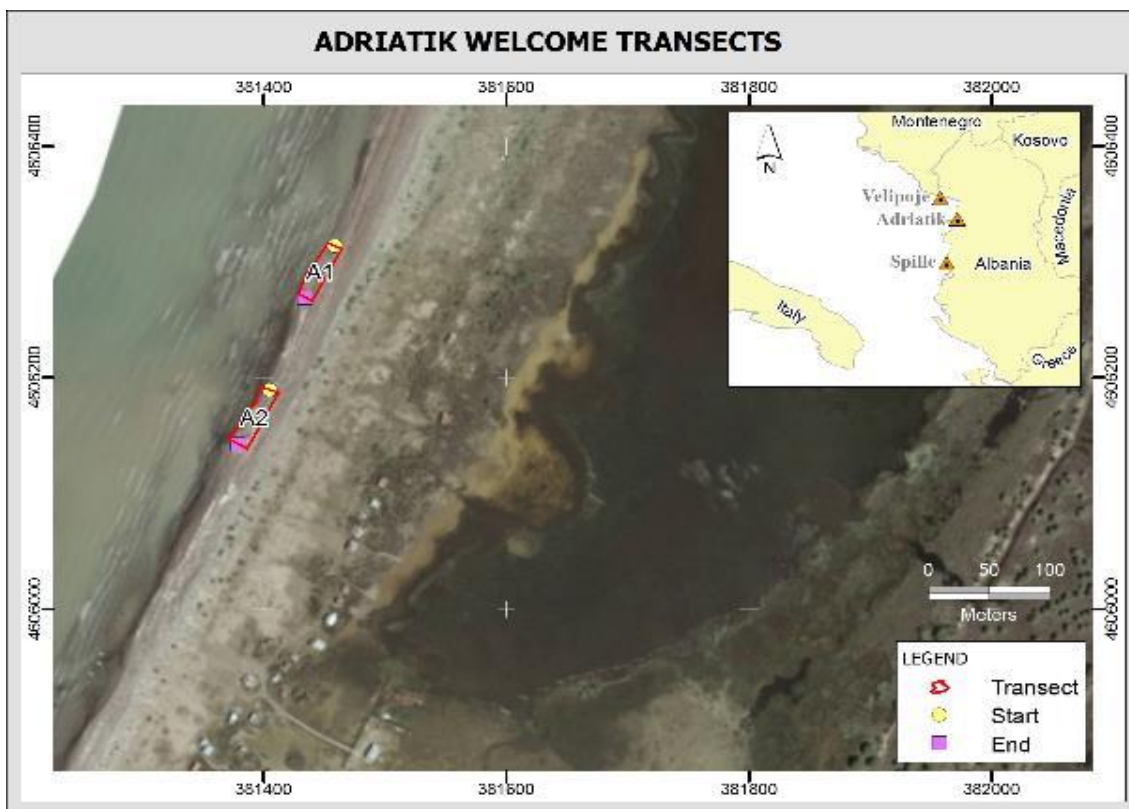
#### 3.1 Sampling methods, selected beaches and followed guidelines

In order to finally define the sites for the beach cleanup and the ML classification, several field surveys were conducted, covering the entire Adriatic coastline from Vlora in the South to the Buna River mouth (border with Montenegro) during April – May 2018. The objective of these surveys was the suitability of the priorly selected sites with the criteria described in the selected methodology. Some of which did not comply with one or several criteria and consequently, non significant displacements from previously selected areas have been performed. The coastal erosion phenomenon was also taken into consideration.

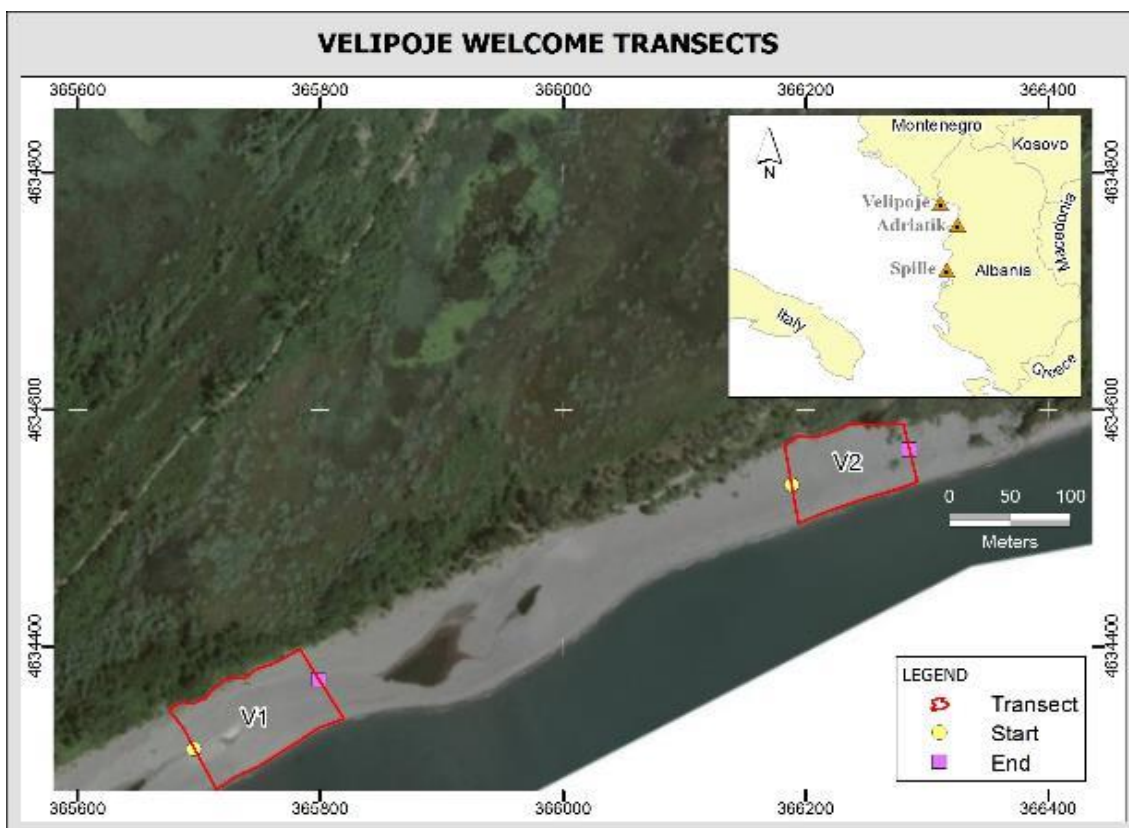
Finally the selected sites are: Spille, Adriatik and Velipoja.



*Figure 39: Geographic location of SPILLE transects*



*Figure 40: Geographic location of the Adriatik Transects*



*Figure 41: Geographic location of Velipoja Transects*

Their locations are given in the table below.

*Table 3: Geographic location of the selected study sites in Albania*

Site	Code	START North		END South	
		Easting	Northing	Easting	Northing
Velipoje	V1	365696	4634314	365799	4634372
Velipoje	V2	366188	4634537	366286	4634566
Adriatik	A1	381459	4606314	381434	4606269
Adriatik	A2	381405	4606189	381379	4606143
Spille	S1	370398	4548400	370386	4548297
Spille	S2	370368	4548147	370355	4548046

The methodology used in the study is largely based on the **DeFishGear Methodology for Monitoring Marine Litter on Beaches (macro-debris > 2.5 cm)**. This methodology include reference to the EU MSFD TG10 “Guidance on Monitoring of Marine Litter in European Seas (2013)”, the OSPAR “Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area (2010)” and the NOAA “Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the Marine Environment (2013)”.

First survey on the selected beaches has been carried out during may 2018 while the last beach cleaning operation were carried out during December 2019.

Six beach clean-up operation and ML classification were carried out. The beach clean-ups operations in the selected study sites in Albania were carried out by the staff of the Faculty of Geology and Mining (FGJM) with the kind contribution of it’s students.

The surveys were carried out as scheduled in the approved project. Due to the geographic locations, distance from Tirana, site conditions (distances to do by walk, site access), quantity of ML, distances from the selected sites to the garbage bins in the study areas, especially in the sites of Adriatik and Velipoja, the operations took more than 1 week each. As examples in Velipoja and Adriatik sites more than one hour of walk is needed to reach the selected transects.

It should be noted that in the Adriatik study site the third survey did not occur due to the inaccessibility of the site. In the period corresponding to the third survey it was not possible to access to the Adriatik transects due to the weather conditions. The selected study site is separated from the land by a wetland having a width of about 1.6 km as shown in the Google earth image below. During January-March period of the year 2019, this wetland was completely covered by water reaching depths of about 1 m. Three site inspections were conducted in order to assess the accessibility to the study site, and the inaccessibility was verified.

In all six surveys the ML was counted, weighted and classified in the field. Only ML of small dimensions were taken away and the counting and classification were carried out in the laboratory of the Faculty of Geology and Mining.

The surveys were carried out as scheduled in the approved project. Due to the geographic locations, site conditions (distances to do by walk, site access), quantity of ML, distances from the selected sites to the garbage bins in the study areas, especially in the sites of Adriatik and Velipoja, the operations took more than 1 week each. The ML was counted, weighted and classified in the study areas. Only ML of small dimensions were taken away and the counting and classification were carried out in the laboratory of the Faculty of Geology and Mining.

**The field surveys were carried out in the following periods:**

I survey	June 2018	TIME I
II survey	mid-September – mid-October 2018	TIME II
III survey	mid-January – mid-February 2019	TIME III
IV survey	mid-June – mid-July 2019	TIME IV
V survey	mid-September – mid-October 2019	TIME V
VI survey	December 2019	TIME VI

## 3.2 Summary data of all six surveys conducted in Albania

### 3.2.1 Spille site

Code	ARTIFICIAL POLYMER MATERIALS Items name	AL_S1		AL_S2	
		Item counts	Total	Item counts	Total
G1	4/6-pack yokes, six-pack rings	2	0.02	3	0.03
G3	Shopping bags, incl. pieces	314	2.12	258	1.51
G4	Small plastic bags, e.g. freezer bags, including pieces	121	3.29	25	0.78
G5	Plastic bag collective roll; what remains from rip-off plastic bags	40	0.36	4	0.01
G7	Drink bottles <=0.5l	276	9.19	171	5.34
G8	Drink bottles >0.5l	297	16.19	242	15
G9	Cleaner/cleaner bottles & containers	47	2.69	45	2.57
G10	Food containers incl. fast food containers	115	1.46	100	1.73
G11	Beach use related cosmetic bottles and containers, e.g. Sunblocks	45	1.35	42	1.37
G12	Other cosmetics bottles & containers	16	1.44	23	1.03
G13	Toys and party poppers	3	0.15	0	0
G14	Engine oil bottles & containers <50 cm	9	0.55	7	0.37
G15	Engine oil bottles & containers > 50 cm	0	0	0	0
G16	Jerry cans (square plastic containers with handle)	0	0	0	0
G17	Injection gun containers	1	0.32	4	0.4
G18	Crates and containers / baskets	0	0	0	0
G19	Car parts	2	0.34	2	0.15
G21	Plastic caps/lids from drinks	737	2.48	578	2.34
G22	Plastic caps/lids from chemicals, detergents (non-food)	119	0.65	129	0.56
G23	Plastic caps/lids unidentified	34	0.09	17	0.08
G24	Plastic rings from bottle caps/lids	32	0.02	69	0.05
G25	Tobacco pouches / plastic cigarette box packaging	8	0	13	0.19
G26	Cigarette lighters	21	0.18	14	0.16
G27	Cigarette butts and filters	415	0.07	51	0.01
G28	Pens and pen lids	49	0.14	40	0.13
G29	Combs/hair brushes/sunglasses	2	0.05	2	0.02
G30	Crisps packets/sweets wrappers	718	3.48	622	2.51
G31	Lolly sticks	70	0.01	52	0.01
G32	Toys and party poppers	71	0.85	41	1.95
G33	Cups and cup lids	530	2.43	552	1.66
G34	Cutlery and trays	34	0.19	12	0.05
G35	Straws and stirrers	54	0.05	81	0.05
G36	Fertilizer/animal feed bags	2	0.06	2	0.23
G37	Mesh vegetable bags	0	0	1	0.01
G40	Gloves (washing up)	0	0	0	0
G41	Gloves (industrial/professional rubber gloves)	0	0	0	0
G42	Crab/lobster pots and tops	1	0.26	0	0
G43	Tags (fishing and industry)	7	0.01	0	0
G44	Octopus pots	0	0	0	0
G45	Mussels nets, Oyster nets	11	0.08	3	0.13
G46	Oyster trays (round from oyster cultures)	0	0	0	0
G47	Plastic sheeting from mussel culture (Tahitians)	0	0	0	0



G49	Rope (diameter more than 1cm)		0	0	2	0.04
G50	String and cord (diameter less than 1cm)		23	0.15	23	0.19
G53	Nets and pieces of net < 50 cm		1	0.08	3	0.13
G54	Nets and pieces of net > 50 cm		5	1.63	1	0.78
G56	Tangled nets/cord		0	0	3	0.42
G57	Fish boxes - plastic		2	0.2	2	0.27
G58	Fish boxes - expanded polystyrene		2	0.29	3	0.27
G59	Fishing line/monofilament (angling)		3	0	1	0
G60	Light sticks (tubes with fluid) incl. packaging		0	0	0	0
G62	Floats for fishing nets		45	0.07	7	0.02
G63	Buoys		17	0.03	0	0
G64	Fenders		0	0	0	0
G65	Buckets		3	0.57	1	0.1
G66	Strapping bands		50	0.26	24	0.09
G67	Sheets, industrial packaging, plastic sheeting		2	0.1	3	0.42
G68	Fiberglass/fragments		0	0	0	0
G69	Hard hats/Helmets		0	0	0	0
G70	Shotgun cartridges		6	0.07	5	0.01
G71	Shoes/sandals		55	5.04	36	4.24
G72	Traffic cones		0	0	0	0
G73	Foam sponge		79	2.95	91	0.84
G79	Plastic pieces 2.5 cm > = 50cm		793	10.58	389	5.56
G80	Plastic pieces > 50 cm		12	2.96	15	3.13
G82	Polystyrene pieces 2.5 cm > = 50cm		281	1.57	357	1.32
G83	Polystyrene pieces > 50 cm		6	0.82	1	0.04
G84	CD, CD-boxes		0	0	0	0
G85	Salt packaging		0	0	0	0
G86	Fin trees (from fins for scuba diving)		0	0	1	0.38
G87	Masking tape		0	0	2	0.01
G88	Telephone (incl. parts)		0	0	0	0
G89	Plastic construction waste		16	0.44	5	0.06
G90	Plastic flower pots		1	0.03	3	0.14
G91	Biomass holder from sewage treatment plants		0	0	0	0
G92	Bait containers/packaging		0	0	2	0.03
G93	Cable ties		0	0	0	0
G95	Cotton bud sticks		0	0	0	0
G96	Sanitary towels/panty liners/backing strips		61	0.34	48	0.45
G97	Toilet fresheners		4	0.02	2	0.02
G98	Diapers/nappies		65	6.77	47	4.74
G99	Syringes/needles		33	0.14	36	0.16
G100	Medical/Pharmaceuticals containers/tubes		94	1.28	54	0.61
G101	Dog faeces bags		0	0	0	0
G102	Flip-flops		1	0.1	1	0.06
G124	Other plastic/polystyrene items (identifiable)		163	0.72	136	3.84
	<i>Beach umbrella end</i>		1	0.04	2	0.01
	<i>Brooms without handle</i>		0	0	7	1.02
	<i>Building / hardware / electrical supplies</i>		12	0.19	16	0.11
	<i>Clothes pegs</i>		1	0	0	0
	<i>Coffe capsule</i>		3	0.03	0	0
	<i>Furnishings</i>		1	0.02	2	0.18
	<i>Other sanitary / cosmetic items</i>		5	0.03	10	0.18
	<i>Pipes</i>		0	0	16	0.9

		<i>Shoes polish containers</i>			
		3	0.04	1	0.01
		<b>6052</b>	<b>88.13</b>	<b>4563</b>	<b>71.21</b>
		<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>RUBBER</b>					
Code	Items name	Item counts	Total	Item counts	Total
G125	Balloons and balloon sticks	3	0.12	1	0
G126	Balls	1	0.11	0	0
G127	Rubber boots	0	0	0	0
G128	Tyres and belts	0	0	0	0
G129	Inner-tubes and rubber sheets	1	0.25	7	2.17
G130	Wheels	1	0.32	0	0
G131	Rubber bands (small, for kitchen/household/post use)	0	0	3	0.01
G132	Bobbins (fishing)	0	0	0	0
G133	Condoms (incl. packaging)	3	0	2	0.06
G134	Other rubber pieces	3	1.05	2	0.15
	<i>Car parts</i>	2	0.05	4	0.37
	<i>Pacifier</i>	0	0	0	0
	<i>Pram tyre</i>	1	0.1	0	0
		<b>15</b>	<b>2.000</b>	<b>19</b>	<b>2.760</b>
		<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>CLOTH/TEXTILE</b>					
Code	Items name	Item counts	Total	Item counts	Total
G137	Clothing / rags (clothes, hats, towels)	31	5.19	20	2.03
G138	Shoes and sandals (e.g. leather, cloth)	52	10.88	25	4.43
G139	Backpacks & bags	0	0	1	0.49
G140	Sacking (hessian)	0	0	0	0
G141	Carpet & furnishing	0	0	0	0
G142	Rope, string and nets	12	0.18	19	0.12
G143	Sails, canvas	0	0	0	0
G144	Tampons and tampon applicators	3	0.06	2	0.04
G145	Other textiles (incl. rags)	2	0.06	4	0.05
	Leather pieces	0	0	0	0
	Leather + textile toys	0	0	6	0.06
		<b>100</b>	<b>16.370</b>	<b>77</b>	<b>7.220</b>
		<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>PAPER/CARDBOARD</b>					
Code	Items name	Item counts	Total	Item counts	Total
G147	Paper bags	0	0	0	0
G148	Cardboard (boxes & fragments)	54	1.07	37	0.98
G150	Cartons/Tetrapack Milk	8	0.23	2	0.06
G151	Cartons/Tetrapack (others)	29	1.18	61	1.64
G152	Cigarette packets	12	0.21	17	0.24

<b>G153</b>	Cups, food trays, food wrappers, drink containers		3	0.06	0	0
<b>G154</b>	Newspapers & magazines		1	0.02	3	0.02
<b>G155</b>	Tubes for fireworks		0	0	0	0
<b>G156</b>	Paper fragments		0	0	3	0.02
<b>G158</b>	Other paper items		59	0.1	2	0.25
			<b>166</b>	<b>2.870</b>	<b>125</b>	<b>3.210</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>PROCESSED/WORKED WOOD</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G159</b>	Corks		3	0.02	5	0.03
<b>G160</b>	Pallets		0	0	0	0
<b>G161</b>	Processed timber		7	0.59	16	1.84
<b>G162</b>	Crates		0	0	0	0
<b>G163</b>	Crab/lobster pots		0	0	0	0
<b>G164</b>	Fish boxes		0	0	0	0
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks		2	0.02	0	0
<b>G166</b>	Paint brushes		0	0	0	0
<b>G167</b>	Matches & fireworks		0	0	3	0.55
<b>G171</b>	Other wood < 50 cm		26	3.98	6	1.26
<b>G172</b>	Other wood > 50 cm		1	0.44	1	0.55
			<b>39</b>	<b>5.050</b>	<b>31</b>	<b>4.230</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>METAL</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G174</b>	Aerosol/Spray cans		4	0.36	2	0.22
<b>G175</b>	Cans (beverage)		56	1.33	35	1.34
<b>G176</b>	Cans (food)		9	0.16	15	0.24
<b>G177</b>	Foil wrappers, aluminum foil		14	0.07	25	0.09
<b>G178</b>	Bottle caps, lids & pull tabs		21	0.28	12	0.06
<b>G179</b>	Disposable BBQs		0	0	0	0
<b>G180</b>	Appliances (refrigerators, washers, etc.)		0	0	0	0
<b>G181</b>	Tableware (plates, cups & cutlery)		0	0	0	0
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)		0	0	1	0
<b>G184</b>	Lobster/crab pots		0	0	0	0
<b>G186</b>	Industrial scrap		0	0	0	0
<b>G187</b>	Drums, e.g. oil		0	0	0	0
<b>G188</b>	Other cans (< 4 L)		0	0	3	0.33
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)		0	0	1	0.11
<b>G190</b>	Paint tins		0	0	1	0.12
<b>G191</b>	Wire, wire mesh, barbed wire		1	0.03	0	0
<b>G193</b>	Car parts / batteries		0	0	0	0
<b>G194</b>	Cables		0	0	0	0
<b>G195</b>	Household Batteries		0	0	0	0
<b>G198</b>	Other metal pieces < 50 cm		4	0.21	2	0.01
<b>G199</b>	Other metal pieces > 50 cm		0	0	0	0

	<i>Medical containers</i>		0	0	0	0
	<i>Milk capsule</i>		0	0	1	0
			<b>109</b>	<b>2.440</b>	<b>98</b>	<b>2.520</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
	<b>GLASS/CERAMICS</b>					
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G200</b>	Bottles, including pieces		34	6.68	37	6.34
<b>G201</b>	Jars, including pieces		4	0.81	5	0.33
<b>G202</b>	Light bulbs		6	0.12	1	0.02
<b>G203</b>	Tableware (plates & cups)		0	0	0	0
<b>G204</b>	Construction material (brick, cement, pipes)		19	0.78	25	1.58
<b>G205</b>	Fluorescent light tubes		0	0	0	0
<b>G206</b>	Glass buoys		0	0	0	0
<b>G207</b>	Octopus pots		0	0	0	0
<b>G208</b>	Glass or ceramic fragments >2.5cm		5	0.54	11	0.67
<b>G210</b>	Other glass items		0	0	0	0
	<i>broken mercury thermometer</i>		0	0	0	0
	<i>cosmetic bottles</i>		1	0.19	0	0
	<i>medical containers</i>		19	1.33	15	0.92
			<b>88</b>	<b>10.450</b>	<b>94</b>	<b>9.860</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
	<b>UNIDENTIFIED AND/OR CHEMICALS</b>					
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G211</b>	Other medical items (swabs, bandaging, adhesive plaster, etc.)		0	0	1	0.02
<b>G213</b>	Paraffin/Wax		0	0	0	0
			<b>0</b>	<b>0.000</b>	<b>1</b>	<b>0.020</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
			<b>6569</b>	<b>127.31</b>	<b>5008</b>	<b>101.03</b>
	<b>TOTAL ML</b>		<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
			0	0	0	0
	<b>Natural Wood - SMALL (kg)</b>		9	23.81	27	21.46
	<b>Natural Wood - LARGE (kg)</b>		1	4.1	1	20.5
			0	0	0	0
	<b>Corncob</b>		105	2.6	63	1.5
			0	0	0	0
	<b>Posidonia</b>		24	3.87	0	1.86
			<b>139</b>	<b>34.38</b>	<b>91</b>	<b>45.32</b>
	<b>TOTAL NATURAL WOOD</b>		<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>

### 3.2.2 Adriatik site

ARTIFICIAL POLYMER MATERIALS		Adriatik		Adriatik	
		AL_A1_50m		AL_A2_50m	
Code	Items name	Item counts	Total	Item counts	Total
G1	4/6-pack yokes, six-pack rings	5	0.15	9	0.29
G3	Shopping bags, incl. pieces	68	4.88	76	6.15
G4	Small plastic bags, e.g. freezer bags, including pieces	89	2.15	71	2.05
G5	Plastic bag collective roll; what remains from rip-off plastic bags	7	0.03	30	0.1
G7	Drink bottles <=0.5l	847	27.26	838	22.15
G8	Drink bottles >0.5l	1030	62.64	1104	66.41
G9	Cleaner/cleaner bottles & containers	245	15.27	232	14.59
G10	Food containers incl. fast food containers	452	7.96	377	6.43
G11	Beach use related cosmetic bottles and containers, e.g. Sunblocks	59	1.56	77	2.22
G12	Other cosmetics bottles & containers	184	9	158	9.34
G13	Toys and party poppers	22	5.19	30	4.77
G14	Engine oil bottles & containers <50 cm	7	0.62	6	0.64
G15	Engine oil bottles & containers > 50 cm	11	4	11	4.14
G16	Jerry cans (square plastic containers with handle)	3	0.47	1	0.17
G17	Injection gun containers	9	0.79	6	0.53
G18	Crates and containers / baskets	8	3.58	3	1.1
G19	Car parts	23	7.22	3	1.11
G21	Plastic caps/lids from drinks	1757	5.18	1615	4.37
G22	Plastic caps/lids from chemicals, detergents (non-food)	573	3.75	530	2.95
G23	Plastic caps/lids unidentified	0	0	0	0
G24	Plastic rings from bottle caps/lids	32	0.04	38	0.07
G25	Tobacco pouches / plastic cigarette box packaging	0	0	0	0
G26	Cigarette lighters	56	0.43	65	0.48
G27	Cigarette butts and filters	47	0.01	48	0.01
G28	Pens and pen lids	156	0.92	139	0.81
G29	Combs/hair brushes/sunglasses	3	0.03	2	0.02
G30	Crisps packets/sweets wrappers	1569	8.85	1413	5.78
G31	Lolly sticks	380	0.09	370	0.09
G32	Toys and party poppers	97	8.71	117	4.47
G33	Cups and cup lids	381	2.99	329	5.54
G34	Cutlery and trays	70	0.15	67	0.19
G35	Straws and stirrers	80	0.05	119	0.07
G36	Fertilizer/animal feed bags	0	0	0	0
G37	Mesh vegetable bags	0	0	5	0.06
G40	Gloves (washing up)	9	0.07	3	0.01
G41	Gloves (industrial/professional rubber gloves)	1	0.05	0	0
G42	Crab/lobster pots and tops	0	0	0	0
G43	Tags (fishing and industry)	0	0	0	0
G44	Octopus pots	0	0	0	0
G45	Mussels nets, Oyster nets	10	0.11	9	0.08
G46	Oyster trays (round from oyster cultures)	0	0	0	0
G47	Plastic sheeting from mussel culture (Tahitians)	0	0	0	0

<b>G49</b>	Rope (diameter more than 1cm)		6	0.67	0	0
<b>G50</b>	String and cord (diameter less than 1cm)		11	0.1	11	0.12
<b>G53</b>	Nets and pieces of net < 50 cm		12	0.45	3	0.14
<b>G54</b>	Nets and pieces of net > 50 cm		1	0.25	0	0
<b>G56</b>	Tangled nets/cord		4	0.33	2	3.61
<b>G57</b>	Fish boxes - plastic		1	0.19	1	0.66
<b>G58</b>	Fish boxes - expanded polystyrene		75	5.57	58	4.39
<b>G59</b>	Fishing line/monofilament (angling)		3	0.02	2	0.01
<b>G60</b>	Light sticks (tubes with fluid) incl. packaging		0	0	0	0
<b>G62</b>	Floats for fishing nets		5	0.02	0	0
<b>G63</b>	Buoys		0	0	0	0
<b>G64</b>	Fenders		0	0	1	2.92
<b>G65</b>	Buckets		11	5.67	12	4.33
<b>G66</b>	Strapping bands		7	0.1	6	0.02
<b>G67</b>	Sheets, industrial packaging, plastic sheeting		0	0	2	4.35
<b>G68</b>	Fiberglass/fragments		0	0	0	0
<b>G69</b>	Hard hats/Helmets		9	10.97	7	8.33
<b>G70</b>	Shotgun cartridges		32	0.08	22	0.06
<b>G71</b>	Shoes/sandals		70	9.23	83	9.01
<b>G72</b>	Traffic cones		0	0	0	0
<b>G73</b>	Foam sponge		161	7.42	163	5.68
<b>G79</b>	Plastic pieces 2.5 cm > = 50cm		793	22.56	885	18.97
<b>G80</b>	Plastic pieces > 50 cm		11	2.82	8	2.55
<b>G82</b>	Polystyrene pieces 2.5 cm > = 50cm		604	6.06	691	3.07
<b>G83</b>	Polystyrene pieces > 50 cm		5	1.37	1	1.58
<b>G84</b>	CD, CD-boxes		0	0	0	0
<b>G85</b>	Salt packaging		0	0	0	0
<b>G86</b>	Fin trees (from fins for scuba diving)		0	0	0	0
<b>G87</b>	Masking tape		0	0	0	0
<b>G88</b>	Telephone (incl. parts)		0	0	3	0.12
<b>G89</b>	Plastic construction waste		49	11.35	56	11.57
<b>G90</b>	Plastic flower pots		6	0.29	9	0.93
<b>G91</b>	Biomass holder from sewage treatment plants		0	0	0	0
<b>G92</b>	Bait containers/packaging		0	0	4	0.02
<b>G93</b>	Cable ties		0	0	0	0
<b>G95</b>	Cotton bud sticks		17	0	3	0
<b>G96</b>	Sanitary towels/panty liners/backing strips		27	0.08	17	0.07
<b>G97</b>	Toilet fresheners		0	0	0	0
<b>G98</b>	Diapers/nappies		118	15.86	129	18.23
<b>G99</b>	Syringes/needles		48	0.44	42	0.39
<b>G100</b>	Medical/Pharmaceuticals containers/tubes		167	2.5	156	2.06
<b>G101</b>	Dog faeces bags		0	0	0	0
<b>G102</b>	Flip-flops		69	5.15	85	10.1
<b>G124</b>	Other plastic/polystyrene items (identifiable)		12	0.03	6	0.51
	<i>Beach umbrella end</i>		0	0	0	0
	<i>Brooms without handle</i>		11	2.28	2	0.73
	<i>Building / hardware / electrical supplies</i>		26	0.72	18	1.14
	<i>Clothes pegs</i>		2	0.02	0	0
	<i>Coffe capsule</i>		9	0.05	16	0.08
	<i>Furnishings</i>		12	1.45	6	0.11
	<i>Other sanitary / cosmetic items</i>		40	0.47	55	0.68
	<i>Pipes</i>		8	0.57	13	1.46

	<i>Shoes polish containers</i>		9	0.19	6	0.13
			<b>10741</b>	<b>299.53</b>	<b>10485</b>	<b>285.32</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
	<b>RUBBER</b>					
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
G125	Balloons and balloon sticks		4	0.45	7	0.79
G126	Balls		3	0.5	6	0.96
G127	Rubber boots		2	0.73	0	0
G128	Tyres and belts		15	0.74	12	0.39
G129	Inner-tubes and rubber sheets		2	0.91	4	1.81
G130	Wheels		1	4.45	1	3.19
G131	Rubber bands (small, for kitchen/household/post use)		0	0	0	0
G132	Bobbins (fishing)		0	0	0	0
G133	Condoms (incl. packaging)		0	0	1	0
G134	Other rubber pieces		14	1.38	8	0.6
	<i>Car parts</i>		0	0	7	0.3
	<i>Pacifier</i>		1	0.02	3	0.01
	<i>Pram tyre</i>		3	0.42	0	0
			<b>45</b>	<b>9.600</b>	<b>49</b>	<b>8.050</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
	<b>CLOTH/TEXTILE</b>					
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
G137	Clothing / rags (clothes, hats, towels)		12	4.82	25	5.74
G138	Shoes and sandals (e.g. leather, cloth)		38	8.14	42	9.34
G139	Backpacks & bags		8	2.94	6	1.88
G140	Sacking (hessian)		0	0	1	0.25
G141	Carpet & furnishing		0	0	0	0
G142	Rope, string and nets		14	0.3	14	0.11
G143	Sails, canvas		0	0	0	0
G144	Tampons and tampon applicators		3	0.02	5	0.03
G145	Other textiles (incl. rags)		7	0.19	23	0.61
	Leather pieces		0	0	0	0
	Leather + textile toys		5	0.79	8	1.05
			<b>87</b>	<b>17.200</b>	<b>124</b>	<b>19.010</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
	<b>PAPER/CARDBOARD</b>					
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
G147	Paper bags		0	0	0	0
G148	Cardboard (boxes & fragments)		14	0.68	12	0.28
G150	Cartons/Tetrapack Milk		26	1.4	7	0.12
G151	Cartons/Tetrapack (others)		53	2.14	60	1.58
G152	Cigarette packets		10	0.07	7	0.04
G153	Cups, food trays, food wrappers, drink containers		0	0	15	0.3
G154	Newspapers & magazines		0	0	0	0

<b>G155</b>	Tubes for fireworks		0	0	0	0
<b>G156</b>	Paper fragments		0	0	3	0.02
<b>G158</b>	Other paper items		0	0	0	0
			<b>103</b>	<b>4.290</b>	<b>104</b>	<b>2.340</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>PROCESSED/WORKED WOOD</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G159</b>	Corks		19	0.47	15	0.23
<b>G160</b>	Pallets		0	0	0	0
<b>G161</b>	Processed timber		51	12.61	55	12.18
<b>G162</b>	Crates		0	0	0	0
<b>G163</b>	Crab/lobster pots		0	0	0	0
<b>G164</b>	Fish boxes		0	0	0	0
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks		0	0	0	0
<b>G166</b>	Paint brushes		0	0	1	0.13
<b>G167</b>	Matches & fireworks		0	0	0	0
<b>G171</b>	Other wood < 50 cm		11	1.24	8	0.9
<b>G172</b>	Other wood > 50 cm		3	2.5	7	5.01
			<b>84</b>	<b>16.820</b>	<b>86</b>	<b>18.450</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>METAL</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G174</b>	Aerosol/Spray cans		25	2.26	5	0.45
<b>G175</b>	Cans (beverage)		346	7.83	371	8.85
<b>G176</b>	Cans (food)		14	0.91	5	0.55
<b>G177</b>	Foil wrappers, aluminum foil		5	0.01	3	0.01
<b>G178</b>	Bottle caps, lids & pull tabs		14	0.06	19	0.07
<b>G179</b>	Disposable BBQs		0	0	0	0
<b>G180</b>	Appliances (refrigerators, washers, etc.)		0	0	0	0
<b>G181</b>	Tableware (plates, cups & cutlery)		0	0	0	0
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)		6	0.01	3	0.01
<b>G184</b>	Lobster/crab pots		0	0	0	0
<b>G186</b>	Industrial scrap		0	0	0	0
<b>G187</b>	Drums, e.g. oil		0	0	0	0
<b>G188</b>	Other cans (< 4 L)		7	1.1	3	0.56
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)		0	0	0	0
<b>G190</b>	Paint tins		0	0	0	0
<b>G191</b>	Wire, wire mesh, barbed wire		0	0	0	0
<b>G193</b>	Car parts / batteries		0	0	0	0
<b>G194</b>	Cables		0	0	5	0.16
<b>G195</b>	Household Batteries		0	0	0	0
<b>G198</b>	Other metal pieces < 50 cm		5	0.33	4	0.26
<b>G199</b>	Other metal pieces > 50 cm		0	0	0	0
	<i>Medical containers</i>		14	0.46	17	0.5
	<i>Milk capsule</i>		9	0.01	8	0.01
			<b>445</b>	<b>12.980</b>	<b>443</b>	<b>11.430</b>



			Total items	Total weight (kg)	Total items	Total weight (kg)
<b>GLASS/CERAMICS</b>						
Code	Items name		Item counts	Total	Item counts	Total
G200	Bottles, including pieces		45	16.02	52	16.52
G201	Jars, including pieces		41	7.52	49	8.48
G202	Light bulbs		22	0.63	29	0.78
G203	Tableware (plates & cups)		0	0	0	0
G204	Construction material (brick, cement, pipes)		8	0.84	30	2.24
G205	Fluorescent light tubes		0	0	0	0
G206	Glass buoys		0	0	0	0
G207	Octopus pots		0	0	0	0
G208	Glass or ceramic fragments >2.5cm		19	0.21	4	0.05
G210	Other glass items		0	0	0	0
	<i>broken mercury thermometer</i>		1	0.02	0	0
	<i>cosmetic bottles</i>		15	1.26	11	1.08
	<i>medical containers</i>		35	2.91	35	2.7
			<b>186</b>	<b>29.410</b>	<b>210</b>	<b>31.850</b>
			Total items	Total weight (kg)	Total items	Total weight (kg)
<b>UNIDENTIFIED AND/OR CHEMICALS</b>						
Code	Items name		Item counts	Total	Item counts	Total
G211	Other medical items (swabs, bandaging, adhesive plaster, etc.)		30	0.26	43	0.18
G213	Paraffin/Wax		0	0	0	0
			<b>30</b>	<b>0.260</b>	<b>43</b>	<b>0.180</b>
			Total items	Total weight (kg)	Total items	Total weight (kg)
			<b>11721</b>	<b>390.09</b>	<b>11544</b>	<b>376.63</b>
	<b>TOTAL ML</b>		Total items	Total weight (kg)	Total items	Total weight (kg)
			0	0	0	0
	Natural Wood - SMALL (kg)		63	81.46	115	150.03
	Natural Wood - LARGE (kg)		19	207.79	17	232.19
			0	0	0	0
	Corncob		60	1.81	107	2.02
			0	0	0	0
	Posidonia		0	0	0	0
			<b>142</b>	<b>291.0600</b>	<b>239</b>	<b>384.2400</b>
	<b>TOTAL NATURAL WOOD</b>		Total items	Total weight (kg)	Total items	Total weight (kg)

### 3.2.3 Velipoje site

Code	Items name	Velipoja		Velipoja	
		AL_V1	AL_V2	AL_V1	AL_V2
Item counts	Total	Item counts	Total	Item counts	Total
<b>ARTIFICIAL POLYMER MATERIALS</b>					
G1	4/6-pack yokes, six-pack rings	29	2.93	8	0.37
G3	Shopping bags, incl. pieces	477	6.03	36	0.45
G4	Small plastic bags, e.g. freezer bags, including pieces	857	17.75	329	8.46
G5	Plastic bag collective roll; what remains from rip-off plastic bags	15	0.08	5	0.04
G7	Drink bottles <=0.5l	514	12.39	623	16.78
G8	Drink bottles >0.5l	755	43.39	588	38.97
G9	Cleaner/cleaner bottles & containers	166	11.66	180	10.82
G10	Food containers incl. fast food containers	212	3.45	28	0.59
G11	Beach use related cosmetic bottles and containers, e.g. Sunblocks	22	0.95	21	0.74
G12	Other cosmetics bottles & containers	48	2.62	68	2.66
G13	Toys and party poppers	13	2.05	7	10.35
G14	Engine oil bottles & containers <50 cm	11	1.62	7	1.02
G15	Engine oil bottles & containers > 50 cm	0	0	0	0
G16	Jerry cans (square plastic containers with handle)	0	0	1	0.1
G17	Injection gun containers	2	0.23	2	0.21
G18	Crates and containers / baskets	5	1.75	2	0.57
G19	Car parts	10	18.44	2	0.38
G21	Plastic caps/lids from drinks	1320	3.54	834	2.81
G22	Plastic caps/lids from chemicals, detergents (non-food)	320	1.79	272	1.7
G23	Plastic caps/lids unidentified	10	0.07	0	0
G24	Plastic rings from bottle caps/lids	12	0.01	12	0.01
G25	Tobacco pouches / plastic cigarette box packaging	2	0.02	1	0
G26	Cigarette lighters	44	0.48	54	0.53
G27	Cigarette butts and filters	16	0.01	49	0.02
G28	Pens and pen lids	81	0.48	95	0.85
G29	Combs/hair brushes/sunglasses	4	0.27	0	0
G30	Crisps packets/sweets wrappers	513	9.31	113	1.35
G31	Lolly sticks	116	0.02	80	0.02
G32	Toys and party poppers	82	2.88	69	1.11
G33	Cups and cup lids	71	0.38	51	0.2
G34	Cutlery and trays	4	0.01	10	0.02
G35	Straws and stirrers	20	0.02	31	0.02
G36	Fertilizer/animal feed bags	0	0	1	0.05
G37	Mesh vegetable bags	2	0.19	0	0
G40	Gloves (washing up)	4	0.02	0	0
G41	Gloves (industrial/professional rubber gloves)	1	0.07	0	0
G42	Crab/lobster pots and tops	10	0.2	0	0
G43	Tags (fishing and industry)	0	0	0	0
G44	Octopus pots	0	0	0	0
G45	Mussels nets, Oyster nets	7	0.3	3	0.04
G46	Oyster trays (round from oyster cultures)	0	0	0	0
G47	Plastic sheeting from mussel culture (Tahitians)	0	0	0	0
G49	Rope (diameter more than 1cm)	2	0.12	0	0
G50	String and cord (diameter less than 1cm)	32	0.22	78	0.98

G53	Nets and pieces of net < 50 cm		0	0	1	0.03
G54	Nets and pieces of net > 50 cm		4	1.9	4	0.4
G56	Tangled nets/cord		3	0.4	0	0
G57	Fish boxes - plastic		0	0	2	0.78
G58	Fish boxes - expanded polystyrene		43	0.56	16	1.26
G59	Fishing line/monofilament (angling)		14	0.04	0	0
G60	Light sticks (tubes with fluid) incl. packaging		0	0	0	0
G62	Floats for fishing nets		25	0.09	27	0.07
G63	Buoys		0	0	0	0
G64	Fenders		0	0	0	0
G65	Buckets		7	3.6	1	0.66
G66	Strapping bands		15	0.09	9	0.11
G67	Sheets, industrial packaging, plastic sheeting		18	2.28	0	0
G68	Fiberglass/fragments		0	0	0	0
G69	Hard hats/Helmets		2	2.81	0	0
G70	Shotgun cartridges		39	0.07	26	0.07
G71	Shoes/sandals		73	10.75	207	14.75
G72	Traffic cones		0	0	0	0
G73	Foam sponge		180	8.7	254	7.05
G79	Plastic pieces 2.5 cm > = 50cm		565	13.98	459	6.38
G80	Plastic pieces > 50 cm		72	11.33	7	1.77
G82	Polystyrene pieces 2.5 cm > = 50cm		857	1.3	2049	4.75
G83	Polystyrene pieces > 50 cm		77	1.02	0	0
G84	CD, CD-boxes		0	0	0	0
G85	Salt packaging		0	0	0	0
G86	Fin trees (from fins for scuba diving)		0	0	0	0
G87	Masking tape		0	0	0	0
G88	Telephone (incl. parts)		0	0	0	0
G89	Plastic construction waste		57	8.7	42	0.79
G90	Plastic flower pots		6	0.49	4	0.23
G91	Biomass holder from sewage treatment plants		0	0	0	0
G92	Bait containers/packaging		0	0	0	0
G93	Cable ties		0	0	0	0
G95	Cotton bud sticks		0	0	1	0
G96	Sanitary towels/panty liners/backing strips		17	0.1	4	0.01
G97	Toilet fresheners		0	0	1	0.01
G98	Diapers/nappies		65	6.74	46	7.04
G99	Syringes/needles		19	0.08	41	0.14
G100	Medical/Pharmaceuticals containers/tubes		69	0.81	114	1.6
G101	Dog faeces bags		0	0	0	0
G102	Flip-flops		10	0.93	39	2.73
G124	Other plastic/polystyrene items (identifiable)		3	0.15	3	0.01
	<i>Beach umbrella end</i>		0	0	1	0.01
	<i>Brooms without handle</i>		7	1.85	16	2.24
	<i>Building / hardware / electrical supplies</i>		28	2.91	52	1.95
	<i>Clothes pegs</i>		6	0.04	0	0
	<i>Coffe capsule</i>		64	0.2	27	0.15
	<i>Furnishings</i>		0	0	6	1.19
	<i>Other sanitary / cosmetic items</i>		52	0.68	11	0.13
	<i>Pipes</i>		14	0.61	13	0.69
	<i>Shoes polish containers</i>		3	0.05	6	0.16
			<b>8223</b>	<b>229.01</b>	<b>7149</b>	<b>159.38</b>

			Total items	Total weight (kg)	Total items	Total weight (kg)
<b>RUBBER</b>						
Code	Items name		Item counts	Total	Item counts	Total
G125	Balloons and balloon sticks		0	0	0	0
G126	Balls		5	0.96	2	0.31
G127	Rubber boots		1	0.85	1	0.37
G128	Tyres and belts		11	0.86	3	0.28
G129	Inner-tubes and rubber sheets		0	0	0	0
G130	Wheels		0	0	1	0.03
G131	Rubber bands (small, for kitchen/household/post use)		1	0.04	0	0
G132	Bobbins (fishing)		0	0	0	0
G133	Condoms (incl. packaging)		0	0	0	0
G134	Other rubber pieces		8	0.06	18	0.14
	<i>Car parts</i>		0	0	3	0.3
	<i>Pacifier</i>		0	0	0	0
	<i>Pram tyre</i>		0	0	1	0.09
			<b>26</b>	<b>2.770</b>	<b>29</b>	<b>1.520</b>
			Total items	Total weight (kg)	Total items	Total weight (kg)
<b>CLOTH/TEXTILE</b>						
Code	Items name		Item counts	Total	Item counts	Total
G137	Clothing / rags (clothes, hats, towels)		37	3.33	26	2
G138	Shoes and sandals (e.g. leather, cloth)		78	12.09	102	14.21
G139	Backpacks & bags		4	2.51	0	0
G140	Sacking (hessian)		1	0.48	0	0
G141	Carpet & furnishing		0	0	0	0
G142	Rope, string and nets		10	0.39	10	0.43
G143	Sails, canvas		0	0	0	0
G144	Tampons and tampon applicators		0	0	0	0
G145	Other textiles (incl. rags)		20	2.77	0	0
	Leather pieces		10	0.54	6	0.76
	Leather + textile toys		10	3.95	0	0
			<b>170</b>	<b>26.060</b>	<b>144</b>	<b>17.400</b>
			Total items	Total weight (kg)	Total items	Total weight (kg)
<b>PAPER/CARDBOARD</b>						
Code	Items name		Item counts	Total	Item counts	Total
G147	Paper bags		0	0	0	0
G148	Cardboard (boxes & fragments)		0	0	0	0
G150	Cartons/Tetrapack Milk		23	1.65	6	0.14
G151	Cartons/Tetrapack (others)		25	0.92	21	1.25
G152	Cigarette packets		4	0.03	1	0.01
G153	Cups, food trays, food wrappers, drink containers		24	0.28	3	0.04
G154	Newspapers & magazines		0	0	1	0.03

<b>G155</b>	Tubes for fireworks		0	0	0	0
<b>G156</b>	Paper fragments		0	0	0	0
<b>G158</b>	Other paper items		0	0	0	0
			<b>76</b>	<b>2.880</b>	<b>32</b>	<b>1.470</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>PROCESSED/WORKED WOOD</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G159</b>	Corks		6	0.04	9	0.05
<b>G160</b>	Pallets		0	0	0	0
<b>G161</b>	Processed timber		33	15.97	50	20.71
<b>G162</b>	Crates		0	0	1	0.53
<b>G163</b>	Crab/lobster pots		0	0	0	0
<b>G164</b>	Fish boxes		0	0	0	0
<b>G165</b>	Ice-cream sticks, chip forks, chopsticks, toothpicks		0	0	0	0
<b>G166</b>	Paint brushes		1	0.45	1	0.21
<b>G167</b>	Matches & fireworks		0	0	0	0
<b>G171</b>	Other wood < 50 cm		121	19.22	0	0
<b>G172</b>	Other wood > 50 cm		26	34.57	0	0
			<b>187</b>	<b>70.250</b>	<b>61</b>	<b>21.500</b>
			<b>Total items</b>	<b>Total weight (kg)</b>	<b>Total items</b>	<b>Total weight (kg)</b>
<b>METAL</b>						
<b>Code</b>	<b>Items name</b>		<b>Item counts</b>	<b>Total</b>	<b>Item counts</b>	<b>Total</b>
<b>G174</b>	Aerosol/Spray cans		4	0.37	27	2.09
<b>G175</b>	Cans (beverage)		268	11.5	121	2.86
<b>G176</b>	Cans (food)		3	0.9	3	0.08
<b>G177</b>	Foil wrappers, aluminum foil		6	0.14	8	0.05
<b>G178</b>	Bottle caps, lids & pull tabs		5	0.03	7	0.05
<b>G179</b>	Disposable BBQs		0	0	0	0
<b>G180</b>	Appliances (refrigerators, washers, etc.)		0	0	0	0
<b>G181</b>	Tableware (plates, cups & cutlery)		1	0.01	2	0.14
<b>G182</b>	Fishing related (weights, sinkers, lures, hooks)		2	0	2	0
<b>G184</b>	Lobster/crab pots		0	0	0	0
<b>G186</b>	Industrial scrap		0	0	0	0
<b>G187</b>	Drums, e.g. oil		0	0	0	0
<b>G188</b>	Other cans (< 4 L)		0	0	3	0.29
<b>G189</b>	Gas bottles, drums & buckets (> 4 L)		2	0.22	0	0
<b>G190</b>	Paint tins		1	0.23	1	0.21
<b>G191</b>	Wire, wire mesh, barbed wire		0	0	1	0.02
<b>G193</b>	Car parts / batteries		0	0	0	0
<b>G194</b>	Cables		0	0	0	0
<b>G195</b>	Household Batteries		0	0	0	0
<b>G198</b>	Other metal pieces < 50 cm		0	0	0	0
<b>G199</b>	Other metal pieces > 50 cm		0	0	0	0
	<i>Medical containers</i>		0	0	8	0.08
	<i>Milk capsule</i>		28	0.2	19	0.03

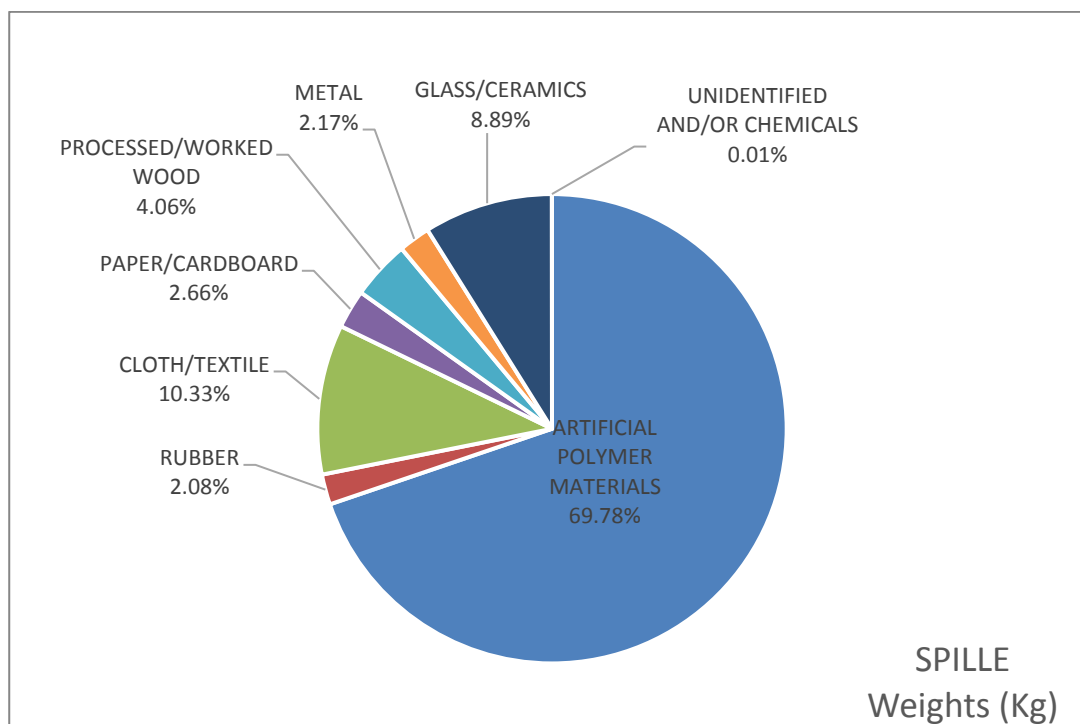
		320	13.600	202	5.900
		Total items	Total weight (kg)	Total items	Total weight (kg)
<b>GLASS/CERAMICS</b>					
Code	Items name	Item counts	Total	Item counts	Total
G200	Bottles, including pieces	30	10.62	119	39.88
G201	Jars, including pieces	6	1.08	32	5.34
G202	Light bulbs	22	0.56	43	3.73
G203	Tableware (plates & cups)	0	0	0	0
G204	Construction material (brick, cement, pipes)	14	2.99	108	9.72
G205	Fluorescent light tubes	0	0	0	0
G206	Glass buoys	0	0	0	0
G207	Octopus pots	0	0	0	0
G208	Glass or ceramic fragments >2.5cm	32	0.37	11	0.14
G210	Other glass items	0	0	0	0
	<i>broken mercury thermometer</i>	2	0.03	1	0.01
	<i>cosmetic bottles</i>	4	0.49	11	1.4
	<i>medical containers</i>	22	1.4	67	5.06
		<b>132</b>	<b>17.540</b>	<b>392</b>	<b>65.280</b>
		Total items	Total weight (kg)	Total items	Total weight (kg)
<b>UNIDENTIFIED AND/OR CHEMICALS</b>					
Code	Items name	Item counts	Total	Item counts	Total
G211	Other medical items (swabs, bandaging, adhesive plaster, etc.)	21	0.16	3	0.02
G213	Paraffin/Wax	0	0	6	0.14
		<b>21</b>	<b>0.160</b>	<b>9</b>	<b>0.160</b>
		Total items	Total weight (kg)	Total items	Total weight (kg)
<b>TOTAL ML</b>		<b>9155</b>	<b>362.27</b>	<b>8018</b>	<b>272.61</b>
		Total items	Total weight (kg)	Total items	Total weight (kg)
		0	0	0	0
Natural Wood - SMALL (kg)		219	216.94	66	110.89
Natural Wood - LARGE (kg)		49	957	28	511.07
		0	0	0	0
Corncob		102	0.81	114	1.45
		0	0	0	0
Posidonia		0	0	0	10.5
		<b>370</b>	<b>1174.750</b>	<b>208</b>	<b>633.9100</b>
<b>TOTAL NATURAL WOOD</b>		Total items	Total weight (kg)	Total items	Total weight (kg)

### 3.3 Final results of the research activities conducted in Albania

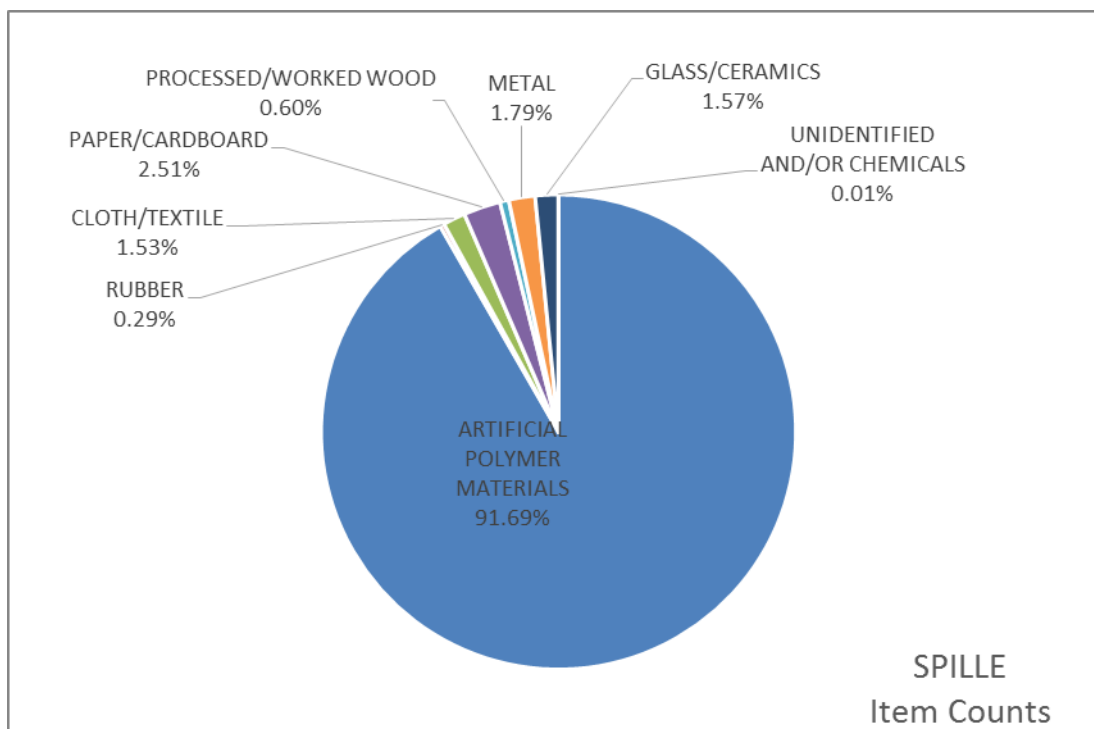
Overall, about 52000-items were collected and a total amount of 1629,84 kg of litter removed from beaches along the Albanian coasts, respectively 11577 items for a weight 228.34 kg in Spille, 23265 items for a weight 766.72 kg in Adriatik and 17173 items for a weight 634.88 kg in Velipoje.

The natural wood estimated on the three beaches during surveys was about 2560 kg in total, respectively 79 kg, 675.3 kg and 1808.66 kg in Spille, Adriatik and Velipoje. It should be highlighted that the quantity in terms of weight in Velipoje is probably underestimated due to the impossibility of weighting the entire trees found in this area. It should be also noted that the woody material in the beaches is removed for domestic use by local people.

#### ➤ Spille

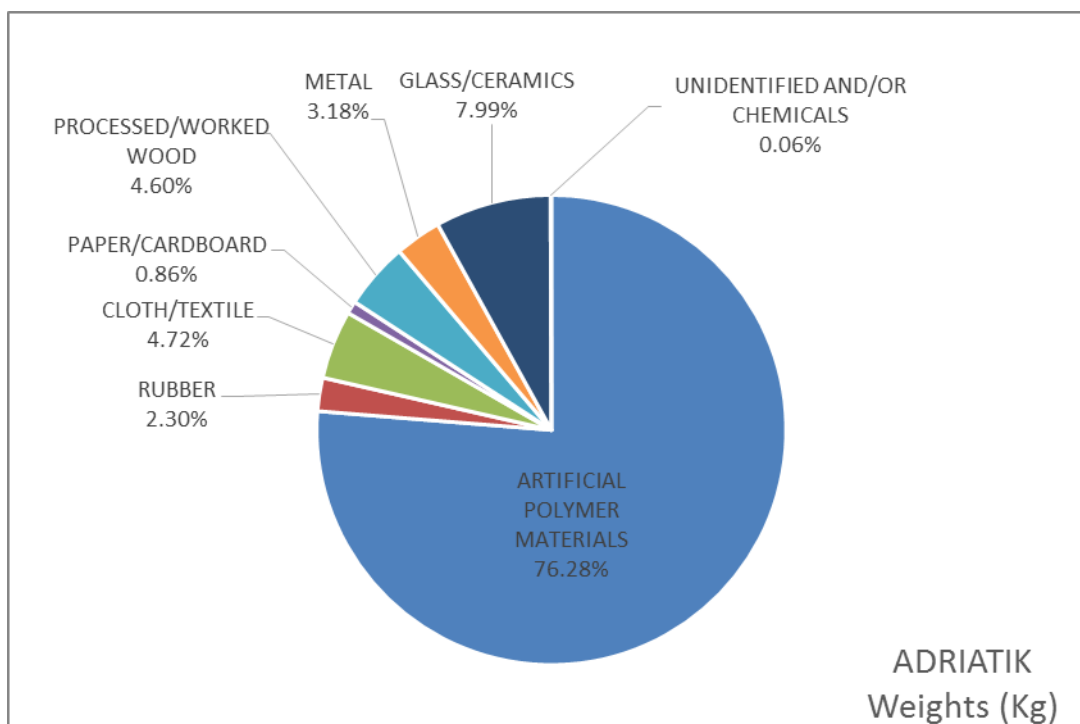


**Figure 42:** Percentage of ML composition (weight based) at Spille (all six surveys)



**Figure 43:** Percentage of ML composition (item based) at Spille (all six surveys)

➤ **Adriatik**



**Figure 44:** Percentage of ML composition (weightbased) at Adriatik (all six surveys)



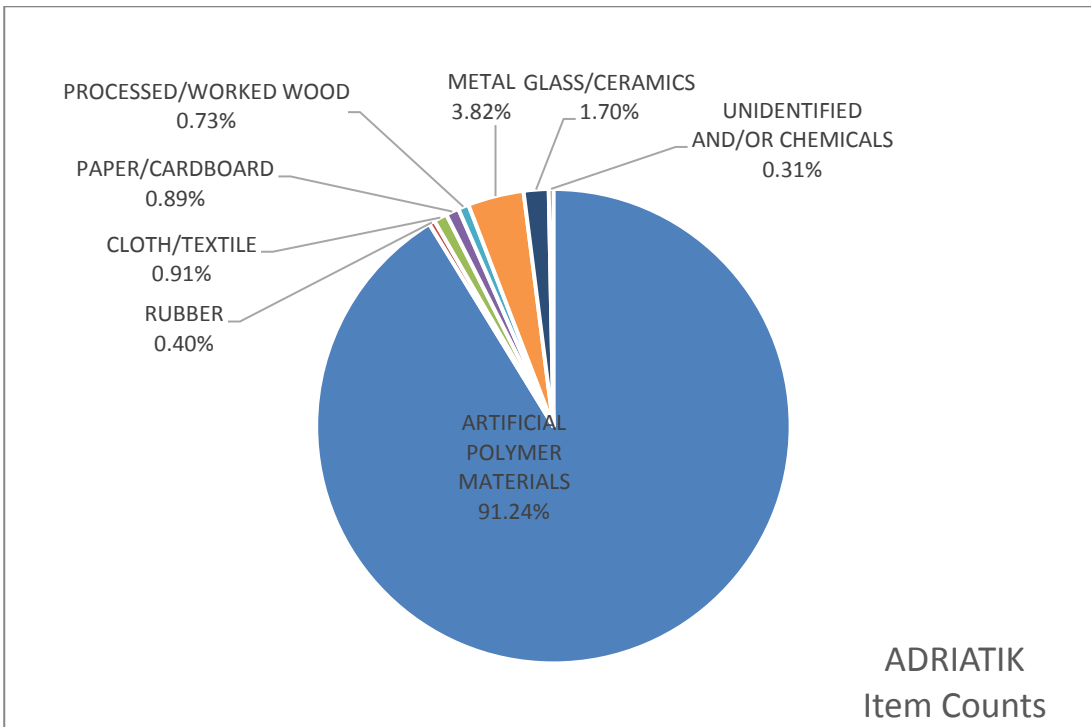


Figure 45: Percentage of ML composition (item based) at Adriatik (all six surveys)

➤ **Velipoje**

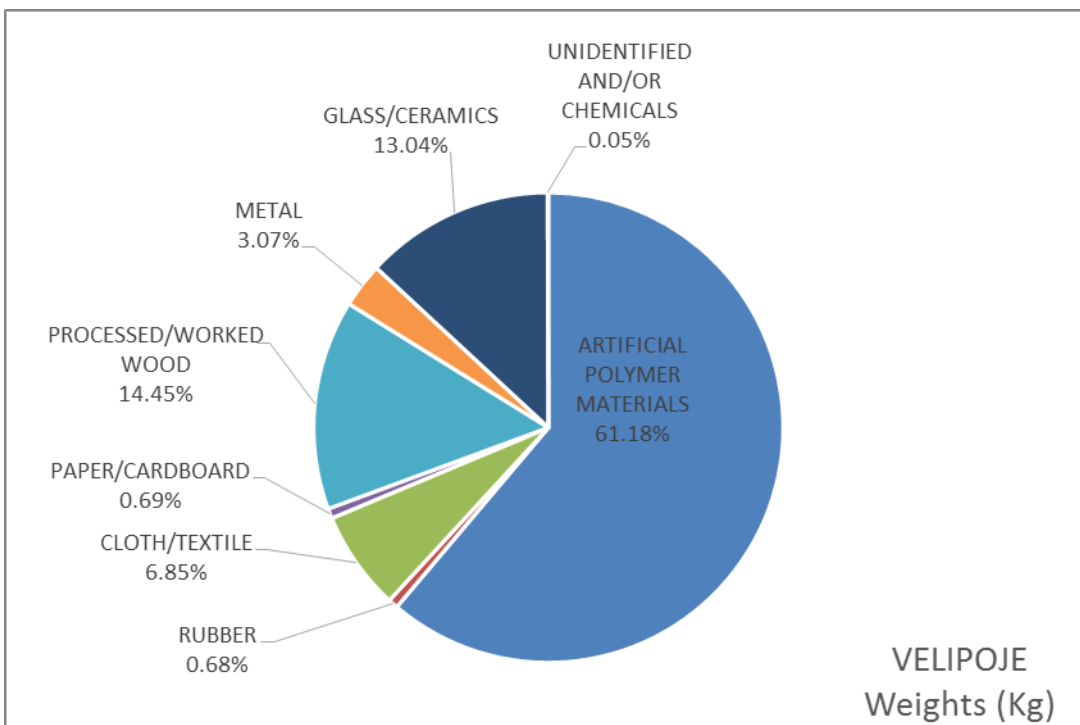
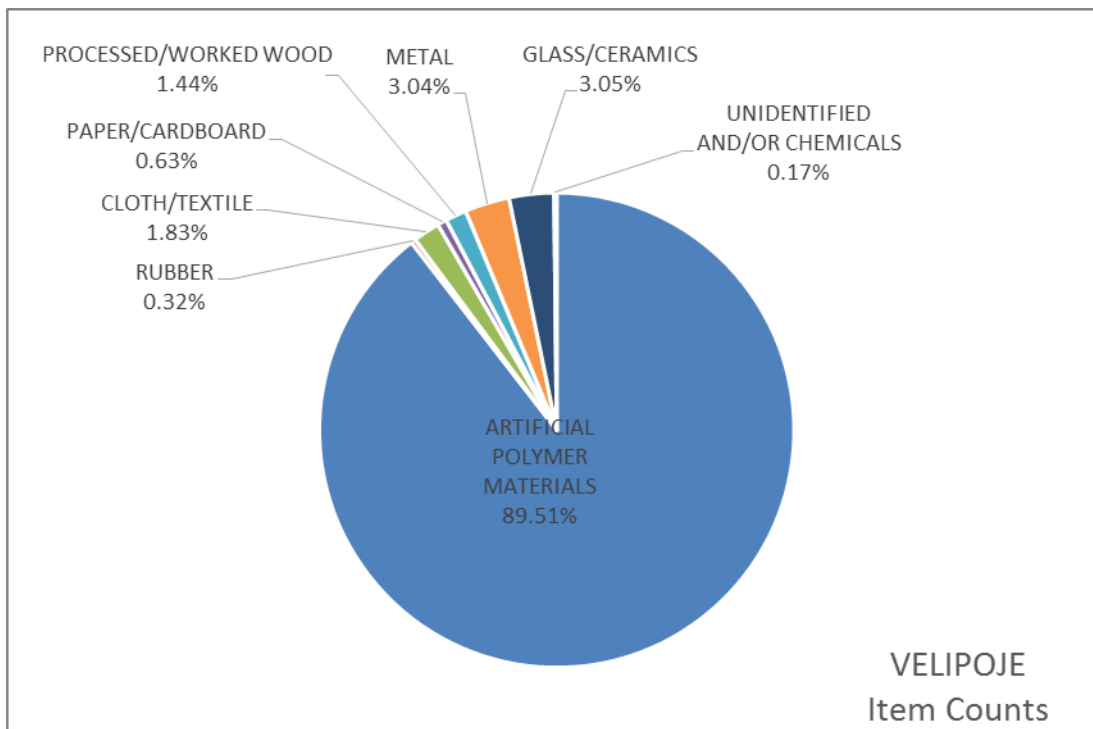


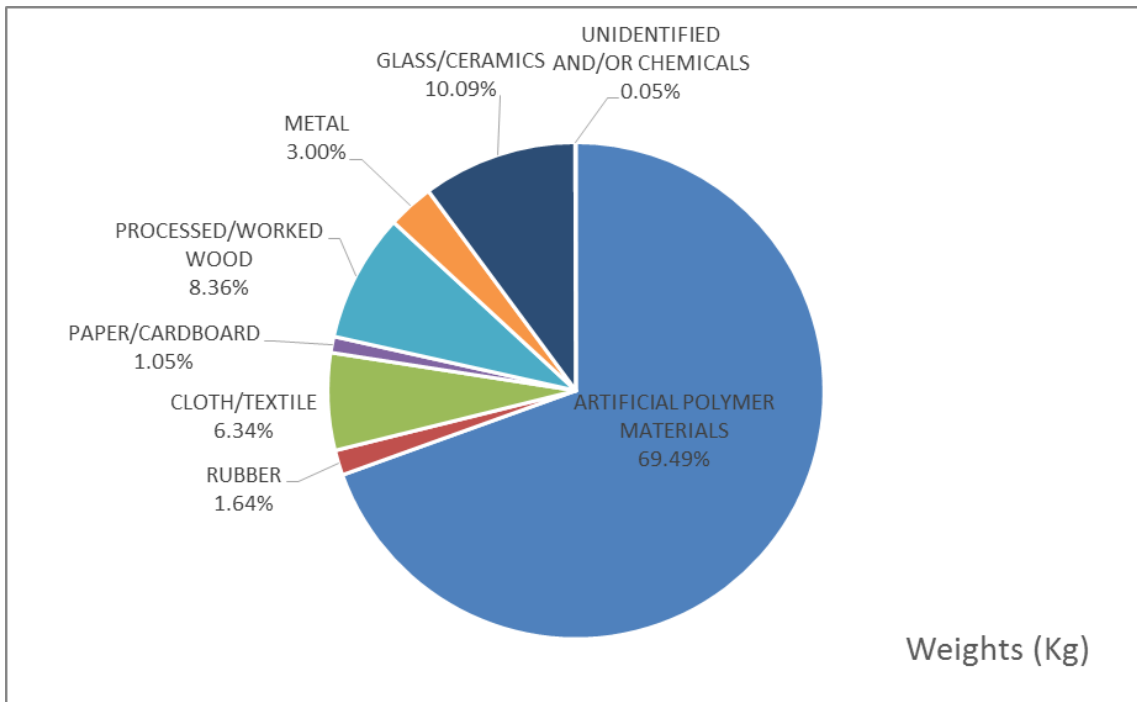
Figure 46: Percentage of ML composition (weight based) at Velipoje (all six surveys)



**Figure 47:** Percentage of ML composition (item based) at Velipoje (all six surveys)

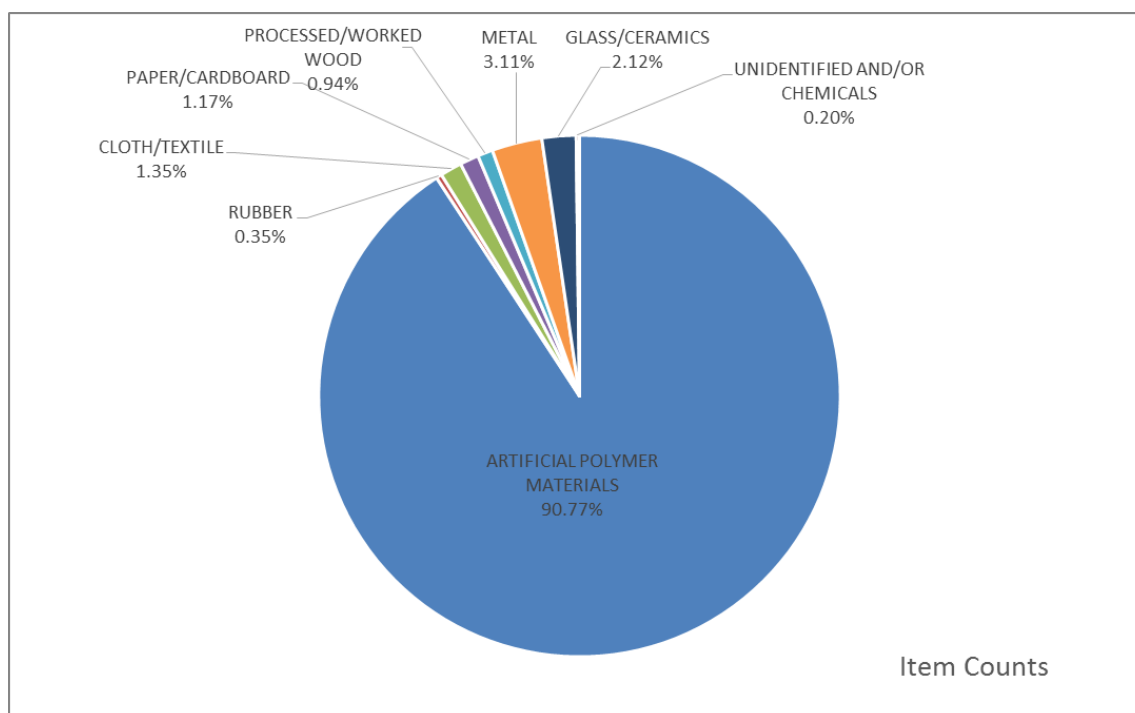
The composition of marine litter according to their specific material does not allow to separate statically transects monitored in the Albanian coasts since they show a comparable composition both in space and time.

**In terms of weight**, the ‘artificial polymers’ (**Figure 48**) resulted the most abundant material representing 69.5% of the total, followed by “glass/ceramics” (10.09 %), “processed/ worked wood” (8.36%), “cloth/textile” (6.34%), “metal” (3.00%), “rubber” (1.64%), “paper/cardboard” (1.05%) and finally the “unidentified items” (0.05%).



**Figure 48:** Composition of marine litter in terms of weight removed in the Albanian selected study sites (for all beach cleanups operations)

**In terms of number of ITEMS**, the ‘artificial polymers’ (**Figure 49**) resulted the most abundant material representing 90.77% of the total, followed by “metal” (3.11%) “glass/ceramics” (2.12 %), “cloth/textile” (1.35 %) “paper/cardboard” (1.17 %), “processed/ worked wood “ (0.94 %), “rubber” (0.35 %), and finally the “unidentified items” (0.20 %).



**Figure 49:** Composition of marine litter in terms of number of items removed in the Albanian selected study sites (for all beach cleanups operations)

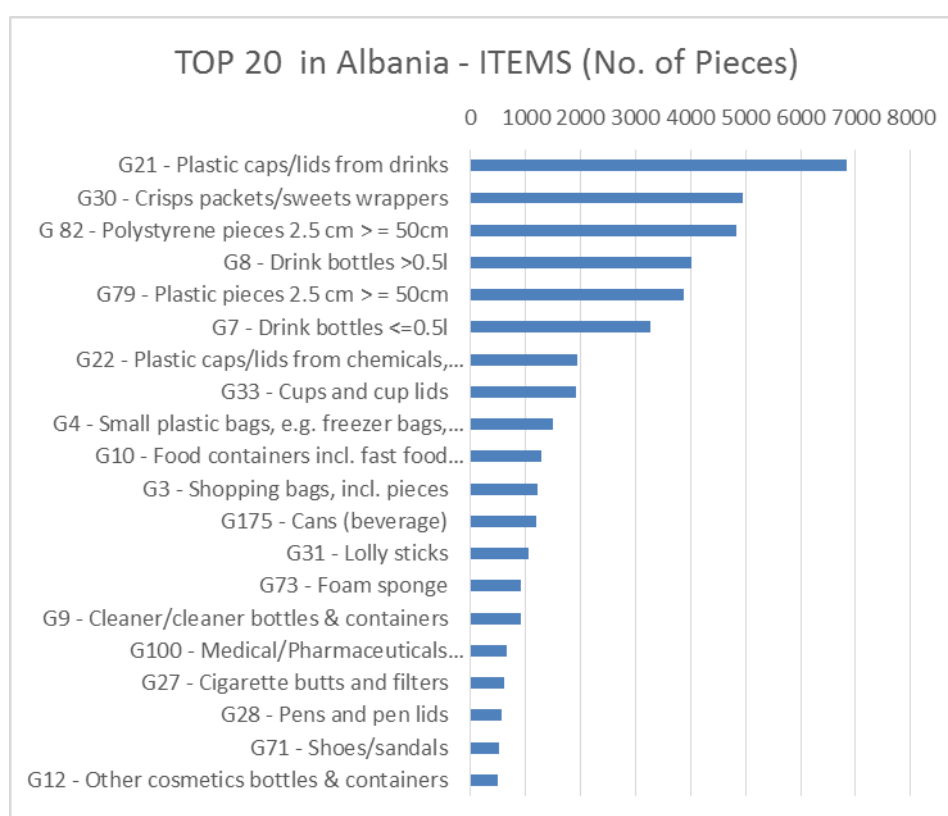
The top 20 items with their description and code are reported in the **Table 4** and **Figure 50**, and belong all to the category of the ‘artificial polymers’ excluding “G175 - Cans (beverage)” belonging to “Metal” group.

The first 5 are: G21 - Plastic caps/lids from drinks with 6841 pieces; G30 - Crisps packets/sweets wrappers, 4948 pieces; ‘G 82 - Polystyrene pieces 2.5 cm > = 50cm, 4839 pieces; G8 - Drink bottles >0.5l, 4016 pieces and G79 - Plastic pieces 2.5 cm > = 50cm, 3884 pieces.

**Table 4:** Top 20 ITEMS collected during all the six surveys in THE Albanian study sites

No	ITEMS Code and Name	No. of Pieces
1	G21 - Plastic caps/lids from drinks	6841
2	G30 - Crisps packets/sweets wrappers	4948
3	G 82 - Polystyrene pieces 2.5 cm > = 50cm	4839
4	G8 - Drink bottles >0.5l	4016
5	G79 - Plastic pieces 2.5 cm > = 50cm	3884
6	G7 - Drink bottles <=0.5l	3269
7	G22 - Plastic caps/lids from chemicals, detergents (non-food)	1943
8	G33 - Cups and cup lids	1914
9	G4 - Small plastic bags, e.g. freezer bags, including pieces	1492

10	G10 - Food containers incl. fast food containers	1284
11	G3 - Shopping bags, incl. pieces	1229
12	G175 - Cans (beverage)	1197
13	G31 - Lolly sticks	1068
14	G73 - Foam sponge	928
15	G9 - Cleaner/cleaner bottles & containers	915
16	G100 - Medical/Pharmaceuticals containers/tubes	654
17	G27 - Cigarette butts and filters	626
18	G28 - Pens and pen lids	560
19	G71 - Shoes/sandals	524
20	G12 - Other cosmetics bottles & containers	497



**Figure 50:** Top 20 ITEMS collected during all the six surveys in the Albanian study sites

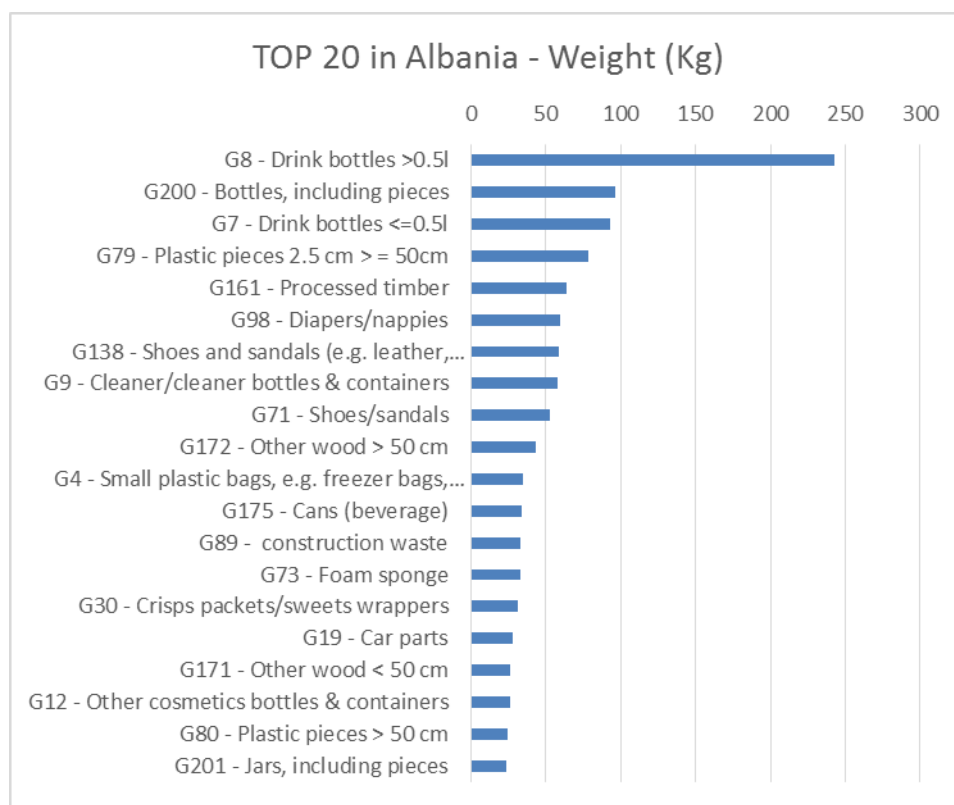
The top 20 most abundant categories in terms of weight, are reported in the **Table 5** and **Figure 51**. The heaviest categories recorded were: G8 - Drink bottles >0.5l 242.6 kg; G200 - Bottles, including pieces 96.06 kg, G7 - Drink bottles <=0.5l 93.11 kg; G79 - Plastic pieces 2.5 cm > = 50cm 78.03 kg and G161 - Processed timber 63.9 kg.

*Table 5: Top 20 ITEMS in terms of weight collected during all the six surveys in the Albanian study sites*

No	ITEMS Code and Name	Weight (Kg)
1	G8 - Drink bottles >0.5l	242.6
2	G200 - Bottles, including pieces	96.06
3	G7 - Drink bottles ≤0.5l	93.11
4	G79 - Plastic pieces 2.5 cm ≥ 50cm	78.03
5	G161 - Processed timber	63.9
6	G98 - Diapers/nappies	59.38
7	G138 - Shoes and sandals (e.g. leather, cloth)	59.09
8	G9 - Cleaner/cleaner bottles & containers	57.6
9	G71 - Shoes/sandals	53.02
10	G172 - Other wood > 50 cm	43.07
11	G4 - Small plastic bags, e.g. freezer bags, including pieces	34.48
12	G175 - Cans (beverage)	33.71
13	G89 - construction waste	32.91
14	G73 - Foam sponge	32.64
15	G30 - Crisps packets/sweets wrappers	31.28
16	G19 - Car parts	27.64
17	G171 - Other wood < 50 cm	26.6
18	G12 - Other cosmetics bottles & containers	26.09
19	G80 - Plastic pieces > 50 cm	24.56
20	G201 - Jars, including pieces	23.56

Other the group of Artificial polymers other groups are present in above list as follows:

CLOTH/TEXTILE	G138 - Shoes and sandals (e.g. leather, cloth)
PROCESSED/WORKED WOOD	G161 - Processed timber and G171 - Other wood < 50 cm,
METAL	G175 - Cans (beverage)
GLASS/CERAMICS	G200 - Bottles, including pieces and G201 - Jars, including pieces,



**Figure 51:** Top 20 categories (in terms of weight) collected during all the six surveys in the Albanian study sites

The spatio-temporal distribution of the ML accumulation in the selected study sites are given in the **Table 6** and **Figure 22** and **53**.

**Table 6:** Time depending ML accumulations in the selected study sites in the Albanian coasts

	1 <sup>st</sup> survey		2 <sup>nd</sup> survey		3 <sup>rd</sup> survey		4 <sup>th</sup> survey		5 <sup>th</sup> survey		6 <sup>th</sup> survey	
	Item counts	Weights (Kg)	Item counts	Weights (Kg)	Item counts	Weights (Kg)	Item counts	Weights (Kg)	Item counts	Weights (Kg)	Item counts	Weights (Kg)
Spille	4756	104.7	2752	34.34	829	14.9	1258	24	1175	30	807	20
Adriatik	8148	238.1	1172	34.68	0	0.0	5341	195	5465	168	3139	131
Velipoje	3762	155.2	828	29.66	2709	108.3	5016	154	2190	78	2668	110

The annual distribution of the ML accumulation is irregular. The irregularities observed are due to various factors such as the length of the time period between two measurements, the aleatory of the river discharges and beach characteristics. However, some observations can be highlighted as follows.

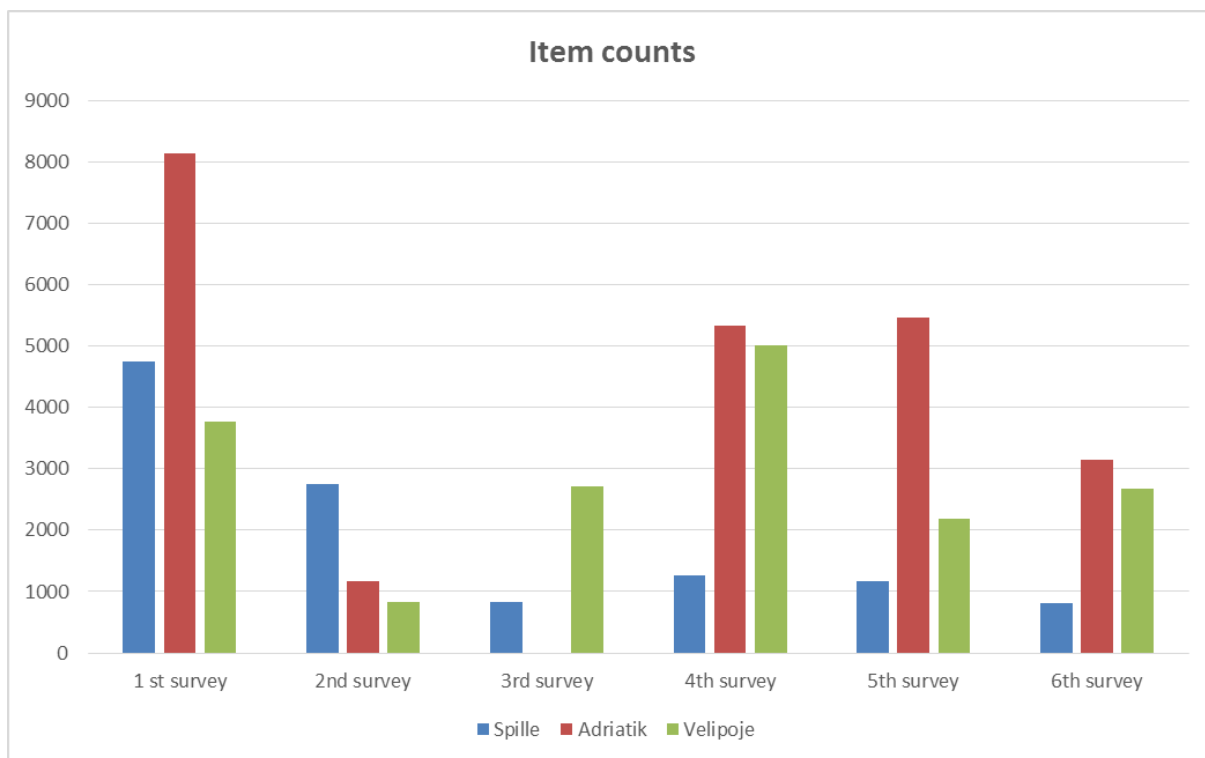
The highest quantities as well in terms of weight as in terms of number of items are recorded during the first survey. The study site of Adriatik record the major number of ITEMS equal to 8148 pieces corresponding with a weight of 238.1 kg. Note that, due to the high level of pollution the transects of Adriatik have a length of 50 each, while the transects of Spille and Velipoje have lengths of 100 m each.

The quantities decrease for the second and third surveys for all study sites. During the third survey it was not possible to access to the Adrtiatic transects due to the weather conditions. The selected study site is separated from the land by a wetland having a width of about 1.6 km. During January-March period of the year 2019, this wetland was completely covered by water reaching depths of about 1 m. Three site inspection were conducted in order to assess the accessibility to the study site, and the inaccessibility was verified.

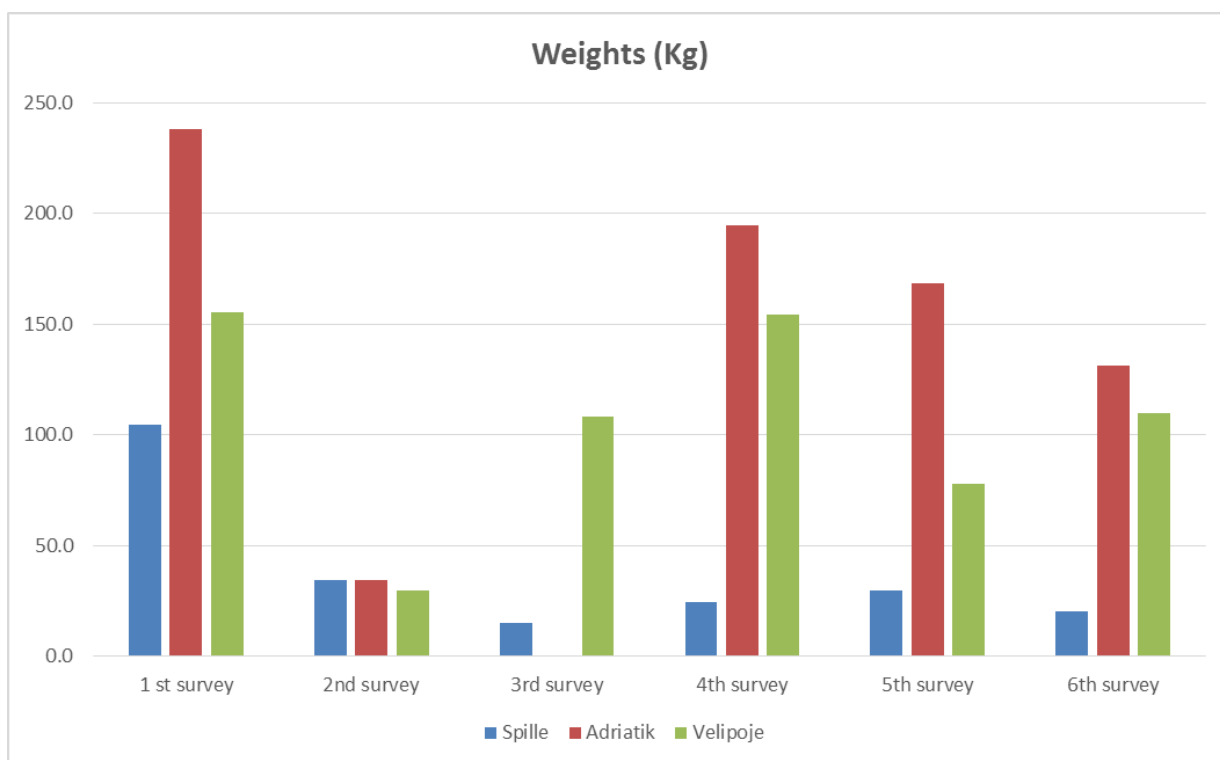
The quantities increase in the forth survey representing the ML accumulated in the beaches during the period from February 2019 to June 2019, corresponding with wet weather conditions and consequently with high river discharges. Note that the selected study sites are located directly north of important river mouths such as Shkumbini and Ishmi, representing the main contributors of ML in the Adriatic Sea because they pass through important urban centers. The displacement of ML towards the selected study sites is favored by the dominant wind and wave direction in the Adriatic Sea.

For the fifth and sixth survey the selected sites show different ML accumulation trends due to their characteristics.





**Figure 22:** Marine litter accumulation, in term of number of ITEMS, measured during the six surveys in the Albanian study sites



**Figure 53:** Marine litter accumulation, in term of WEIGHT, measured during the six surveys in the Albanian study sites

## **4. MAIN RESULTS OF THE RESEARCH ACTIVITIES CONDUCTED IN ITALY, ALBANIA AND MONTENEGRO**

Research activities about marine litter in the study area, within the Interreg IPA CBC project "WELCOME", were carried out in Italy, Albania and Montenegro after each beach clean-ups and garbage management activity.

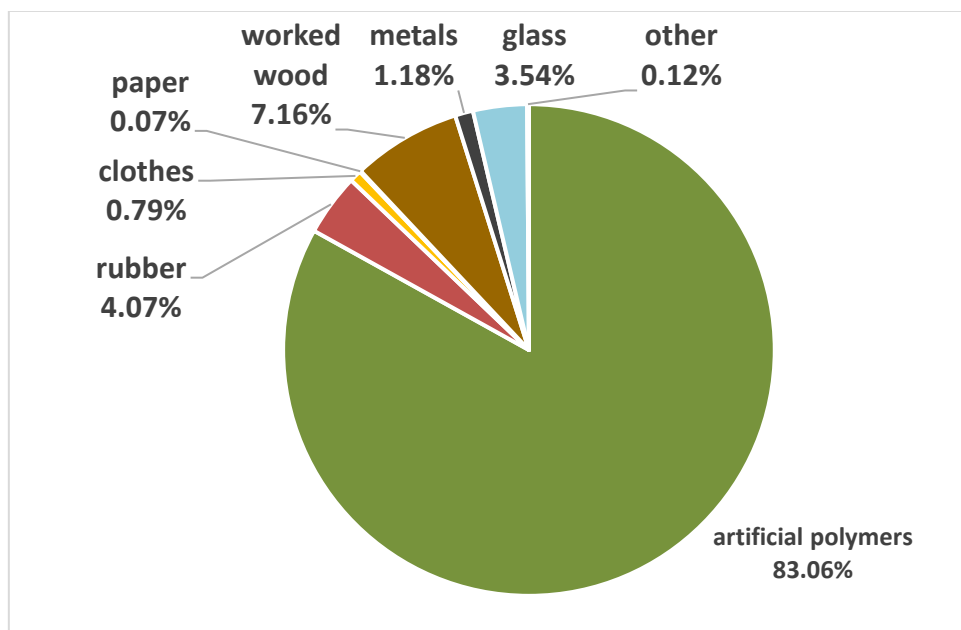
Marine litter collection and research activities were carried out according to pre-defined transects in accordance with the adopted methodology – “Metodology for monitoring marine litter on beaches” which is developed within the IPA ADRIATIC “DeFishGear” project. The following methodology has been prepared based on the EU MSFD TG10 “Guidance on Monitoring of Marine Litter in European Seas (2013)”, the OSPAR “Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area (2010)” and the NOAA “Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the Marine Environment (2013), taking into consideration the draft “UNEP/MAP MEDPOL Monitoring Guidance Document on Ecological Objective 10: Marine Litter (2014)”. The use of the same methodology by all project partners has enabled more efficient implementation of marine litter removal and research activities, easier comparison of the obtained data and obtaining more complete information on marine litter along the Italian, Albanian and Montenegrin coasts.

Beach clean-ups and marine litter research activities were performed each four months during the project implementation – three times per year during a period of 2 years on 3 selected beaches along the three cross-border coasts. The first activities on beach clean-ups and research activities which included collection, assessment of the quantity, type, distribution, qualitative/quantitative analysis of marine litter on the selected beaches along the coast, within the Interreg IPA CBC project "WELCOME", were carried out during the May 2018 and the last beach clean-ups activities were done during December 2019.

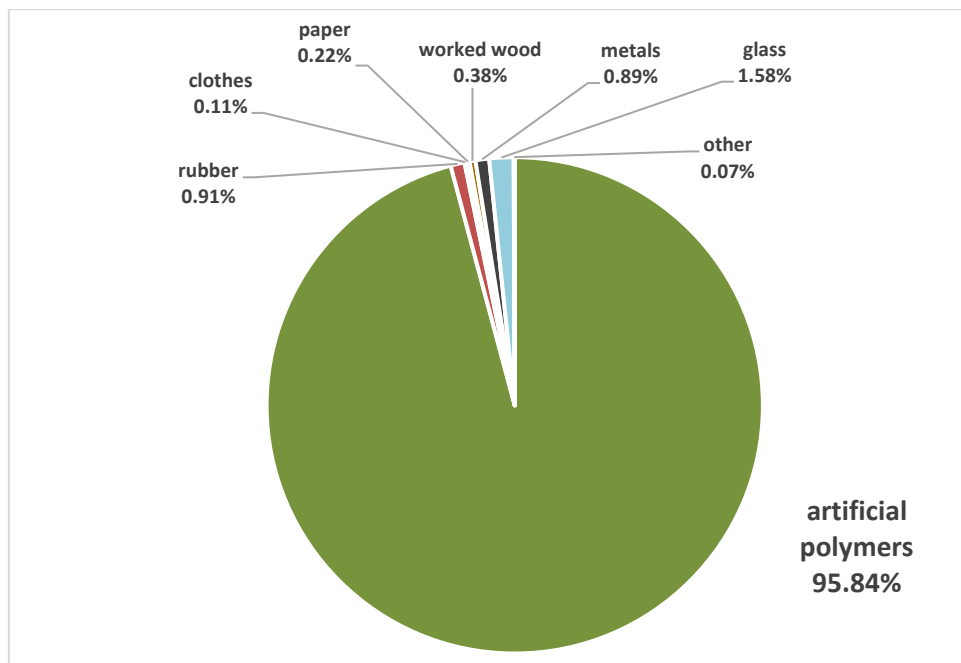
➤ **Italy**

Overall, 14712 items were collected and a total amount of 529.81 kg of litter removed from beaches along the Italian coasts of the municipality of Lecce in the beaches of Torre Chianca, Frigole and San Cataldo. In detail, 122.51 kg of marine litter were collected at Torre Chianca, 262.46 kg at Frigole and 144.84 kg at San Cataldo. The natural wood estimated on the three beaches during surveys was about 5200 kg in total. In detail, about 1000 at Torre Chianca, about 2000 at Frigole kg and more than 2000 kg at San Cataldo.

The ‘artificial polymers’ (Figure 54, Figure 55) resulted the most abundant material both in terms of weight (83.06% in total on six surveys) and number of items (95.84%). Contribution of ‘Rubber’ was 4.07% (weight) and 0.91% (items); ‘glass’ was 3.54% (weight) and 1.58% (items); ‘metals’ 1.18% (weight) and 0.89% (items); ‘worked wood’ 7.16% (weight) and 0.38% (items); ‘clothes’ 0.79% (weight) and 0.11% (items), ‘other’ 0.12% (weight) and 0.07% (items).



**Figure 54:** Composition of marine litter removed in Italy in terms of WEIGHT during all the six surveys

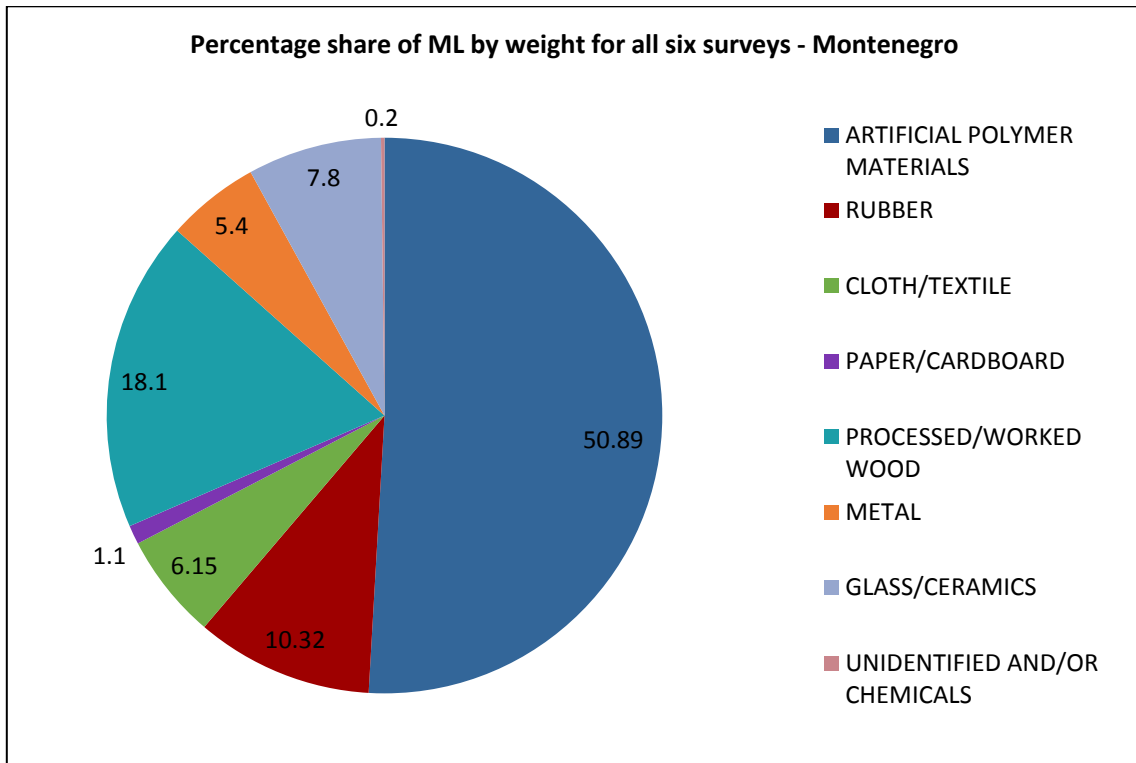


*Figure 55: Composition of marine litter removed in Italy in terms of number of ITEMS during all the six surveys*

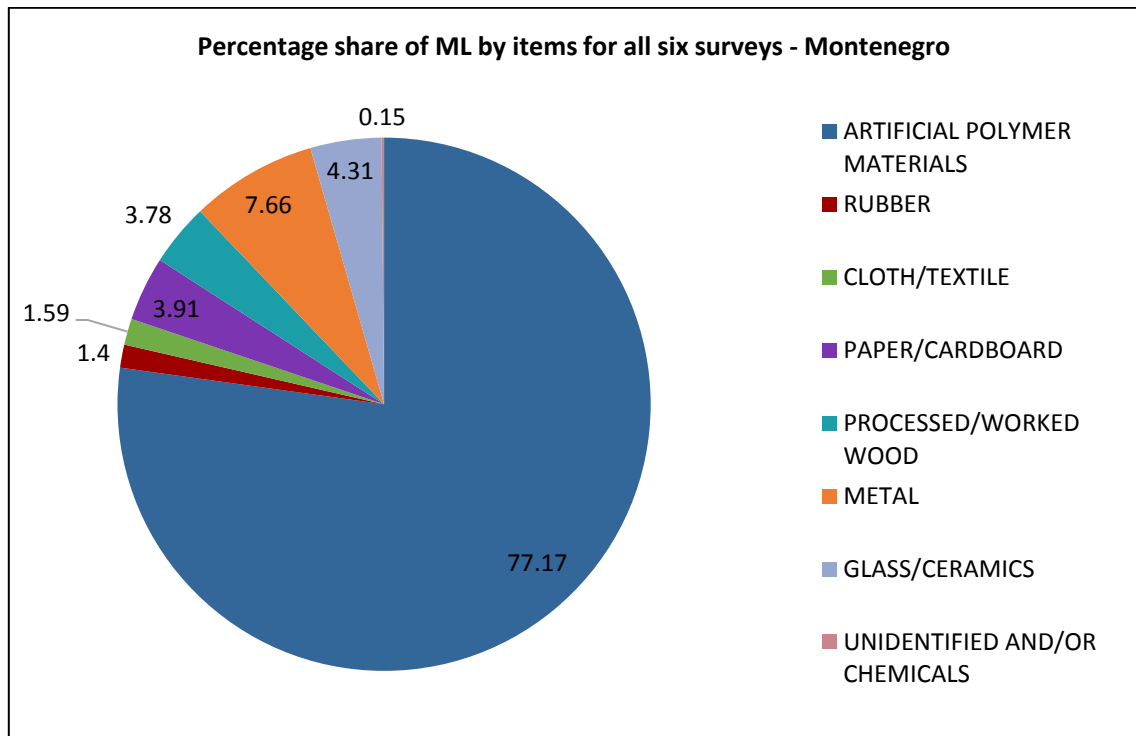
### ➤ Montenegro

Overall, 11152 items were collected and a total amount of 257.03 kg of litter removed from beaches along the Montenegrin coasts of the municipality of Herceg Novi, Budva and Ulcinj. In detail, 112.46 kg of marine litter were collected at Herceg Novi beach, 42.84 kg at Budva beach and 101.73 kg at Ulcinj beach. The natural wood estimated on the three beaches during surveys was about 178.79 kg in total. In detail, about 89 kg at Herceg Novi beach, 28 kg at Budva beach and 60 kg at Ulcinj beach.

**Analyses of beach transects in Montenegro during all six surveys** resulted the most abundant material the ‘artificial polymers’ both in terms of weight (50,89%) and number of items (77,17%). Contribution of ‘Processed/worked wood’ was 18,1% (weight) and 3,78% (items); ‘Rubber’ was 10,32% (weight) and 1,4% (items); ‘Glass/ceramics’ 7,8% (weight) and 4,31% (items); ‘Clothes’ 6,15% (weight) and 1,59% (items); ‘Metal’ 5,4% (weight) and 7,66% (items); ‘Paper/cardboard’ 1,1% (weight) and 3,91% (items); ‘Other’ 0,2% (weight) and 0,15% (items) (**Figure 56 and 57**).



*Figure 56: Percentage share of ML by weight for all six surveys in Montenegro*



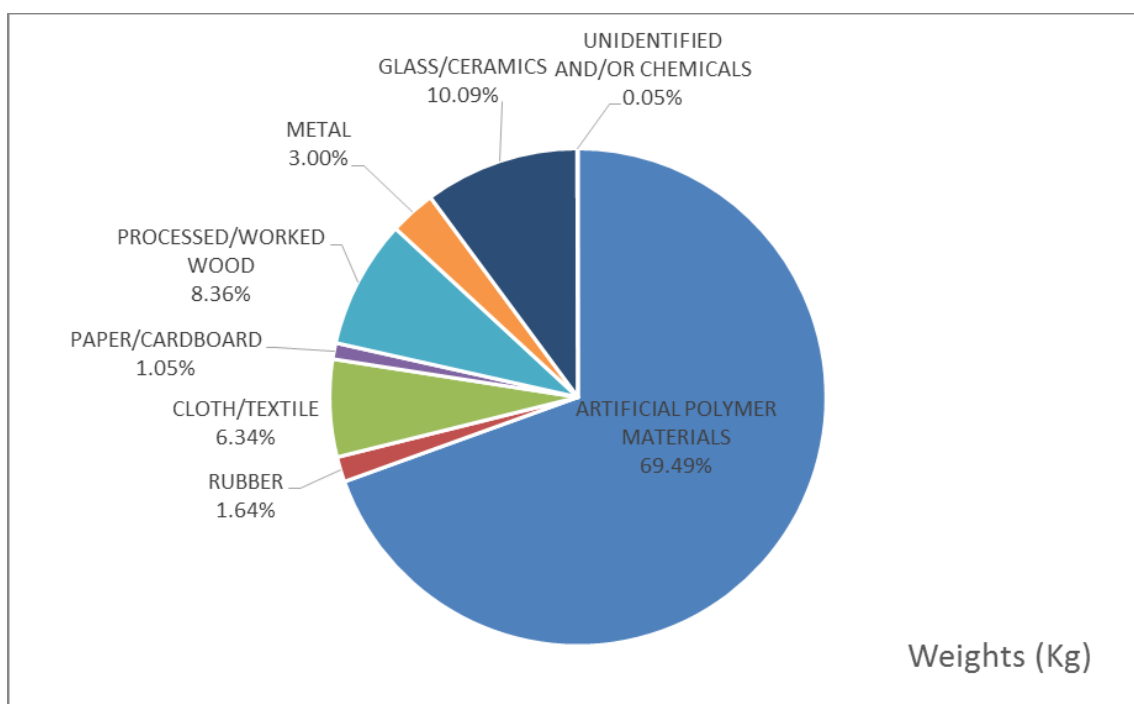
*Figure 57: Percentage share of ML by items for all six surveys in Montenegro*

➤ **Albania**

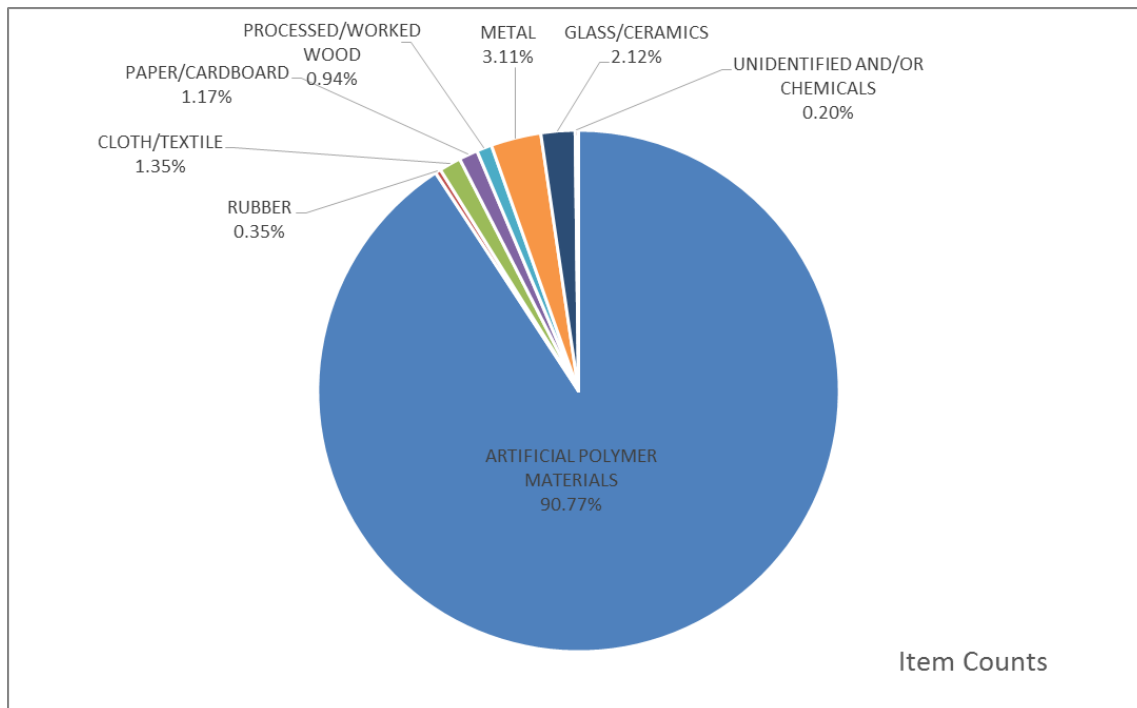
Overall, about 52000-items were collected and a total amount of 1629,84 kg of litter removed from beaches along the Albanian coasts, respectively 11577 items for a weight 228.34 kg in Spille, 23265 items for a weight 766.72 kg in Adriatik and 17173 items for a weight 634.88 kg in Velipoje. The natural wood estimated on the three beaches during surveys was about 2560 kg in total, respectively 79 kg, 675.3 kg and 1808.66 kg in Spille, Adriatik and Velipoje. It should be highlighted that the quantity in terms of weight in Velipoje is probably underestimated due to the impossibility of weighting the entire trees found in this area. It should be also noted that the woody material in the beaches is removed for domestic use by local people.

**In terms of weight**, the ‘artificial polymers’ (**Figure 58**) resulted the most abundant material representing 69.5% of the total, followed by “glass/ceramics” (10.09 %), “processed/ worked wood“ (8.36%), “cloth/textile” (6.34%), “metal” (3.00%), “rubber” (1.64%), “paper/cardboard” (1.05%) and finally the “unidentified items” (0.05%).

**In terms of number of ITEMS**, the ‘artificial polymers’ (**Figure 59**) resulted the most abundant material representing 90.77% of the total, followed by “metal” (3.11%) “glass/ceramics” (2.12 %), “cloth/textile” (1.35 %) “paper/cardboard” (1.17 %), “processed/ worked wood “ (0.94 %), “rubber” (0.35 %), and finally the “unidentified items” (0.20 %).

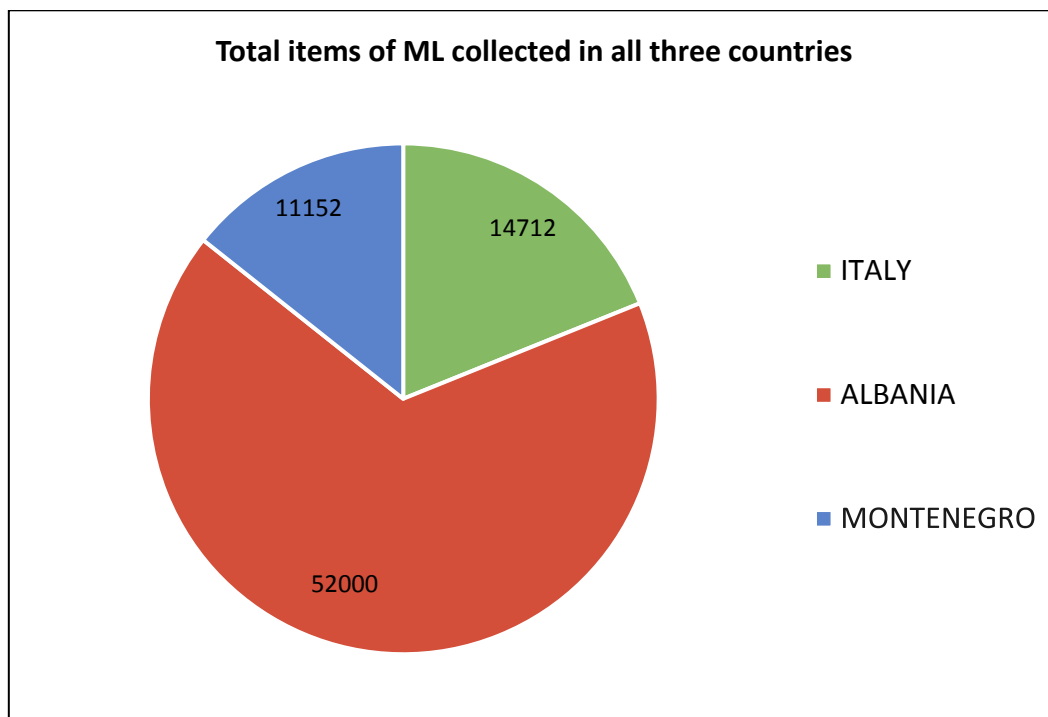


**Figure 58:** Composition of marine litter in terms of weight removed in the Albanian selected study sites (for all beach cleanups operations)

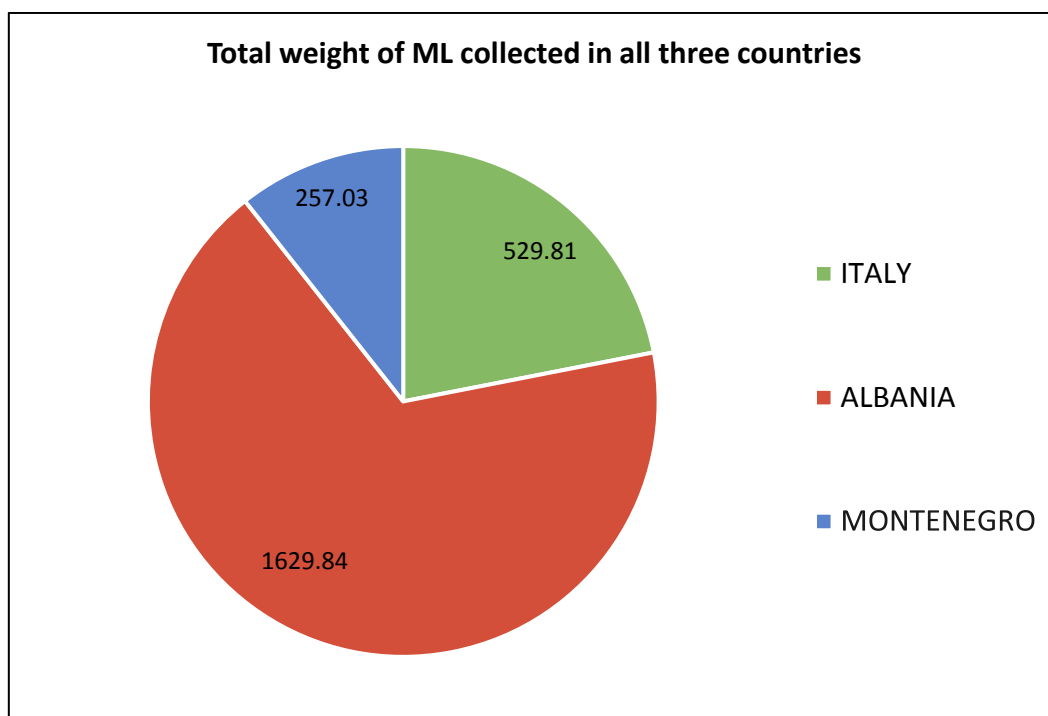


**Figure 59:** Composition of marine litter in terms of number of items removed in the Albanian selected study sites (for all beach cleanups operations)

**The main results of the research of marine litter** collected on the selected beaches show that the quantities and types of marine litter are different in each country. Overall, 77 864 items were collected and a total amount of 2 416,68 kg of litter removed from the selected beaches along the Italian, Albanian and Montenegrin coasts. In detail, 14712 items and a total amount of 529.81 kg were collected in Italy, 11152 items and a total amount of 257.03 in Montenegro and about 52000 items and a total amount of 1629,84 kg in Albania (**Figure 60, Figure 61**).



*Figure 60: Total items of ML collected in Italy, Albania and Montenegro*



*Figure 61: Total weight of ML collected in Italy, Albania and Montenegro*



The main results of the research of marine litter collected on the selected beaches show that the quantities and types of marine litter are different in each country. The largest amounts of marine litter were collected on beaches in Albania, both in terms of weight and number of items while on the beaches in Italy and Montenegro the significantly less amounts of marine litter were collected. The results of the research of marine litter in the period of 2 years shows that various types of marine litter were collected in Italy, Albania and Montenegro but the most dominant marine litter in each country are Artificial Polymer Materials.

Implementation of the beach clean-ups and garbage management as well as marine litter research activities and the results of the survey has enabled the monitoring of marine litter in the period of 2 years as well as the comparison of data and identification of the type and origin of marine litter that comes to the beaches from the sea and the mouth of the river. The obtained data and information on the state of marine litter will be useful to predict the sources of marine litter in the cross-border marine environment. This will contribute to development of the cross-border Marine Litter (ML) Management Plan that should enable the establishment of a sustainable and long-lasting marine litter management system. Furthermore, the publication of information related to the results of the marine litter research will contribute to raising public awareness towards the marine litter issue.



# JAVNO PREDUZEĆE ZA UPRAVLJANJE MORSKIM DOBROM CRNE GORE

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