



## Ad Hoc Open-Ended Expert Group on Marine Litter and Microplastics

### Position Paper

Israel Ministry of Environmental Protection (MoEP)

#### **1. View on major barriers to combatting marine litter and microplastics:**

Today there is a wide knowledge gap, both in Israel and in the rest of the Mediterranean Basin, regarding the sources and the extent of the marine waste problem. The gaps results from a **lack of resources, which does not enable sufficient sampling of the relevant ecological niches on a sufficiently large scale** (sea floor, sea level, etc.), as well as a **lack of knowledge resulting from complex data collection methods**, some of which have not yet been proven and have not yet been widely implemented.

- Microplastic Waste

As part of Israel's National Action Plan to reduce pollution from land-based activities, monitoring of marine litter and microplastics will be carried out on the coast line and in the sea. In the future we are planning to carry out also monitoring of urban run-off and drainage reaching the sea through streams and other means. **However at present we do not know what the exact levels of microplastics reaching the sea are.**

- Pollution from land based sources:

A large percentage of Israel's population as well as major industrial sites are situated along the Mediterranean coast. Domestic legislation allows for the issuance of permits for marine disposal of wastewater from industrial sources containing pollutants. In the past such permits were issued due to the absence of suitable land based solutions. Permits were issued by an interministerial committee comprising 8 representatives from various bodies, including a representative of non-governmental organizations.

The reduction from direct effluents to the sea will be effected by limiting permits granted for the discharge of wastewater to the marine environment, by introducing best technological treatment facilities and by providing land based alternatives which are preferable on environmental, economic and feasibility grounds.

In addition, streams carrying litter to the sea and municipal drainage that reaches the sea are also major contributors to marine litter. However, the biggest problem we face is garbage left on the beach by bathers, which is responsible for approximately 60% of the plastic marine litter originating from Israel. **As this is a non-point source involving a large number of people, it might be harder to control and abate.**

- Sea Floor

Sea Floor/sediment litter monitoring – Monitoring is currently carried out by organizations such as the Society for the Protection of Nature, diving associations,



governmental and commercial sea floor operations, leisure boating activities, etc. **In order to make the monitoring program more efficient, work on a more significant scale must be done.** Funding for the pilot project for monitoring currently comes for UNEP MAP.

## **2. View on potential national, regional and international response options and associated environmental, social and economic costs:**

As a member state of the Barcelona Convention, Israel is committed to the **Regional Plan on Marine Litter Management**. According to this plan, which is part of a broader plan to reduce sea pollution from land-based sources (NAP), Member States are required to take a long list of actions to minimize the extent of the marine waste phenomenon, its harmful effects on the marine environment and on the coastal population.

As a coastal state, Israel is strongly dependent on a healthy marine environment and the invaluable ecosystem services it provides. Israel is facing the environmental challenges accompanying fast population increase, decreasing land space and economic growth. In this context, Israel recognizes the severe threat posed by marine litter, particularly microbeads and single-use plastics. In recent years, Israel has implemented various measures to reduce its national plastic footprint, and future measures are planned.

### - Plastic Bag Law

The law came into effect on January 1st, 2017, and addresses the above-average consumption of plastic bags in Israel. This law, which is aimed at motivating Israelis to use environmentally-friendly reusable bags, has **banned the distribution of "very thin" plastic bags** (with a width of less than 20 microns) at major supermarkets chains. In addition, these supermarkets must now charge a tax of at least NIS 0.10 for bags with a width between 20-50 microns. Supermarkets are required to submit quarterly reports to the Ministry, detailing the number of bags sold. The money paid for plastic bag purchase is transferred to the Ministry's Maintenance of Cleanliness Fund, to be used to fund related environmental projects including better treatment of waste and recycling, preventing air pollution and raising public awareness. Results of the first year of enforcement of the law indicate a very effective outcome. There has been a reduction of approx. 80% in the number of plastic bags purchased in the major supermarkets chains. During the implementation of the law, a national public awareness campaign was launched and free reusable bags were distributed to every household.

### - Clean Coast Program

This is a multi-layered approach to dealing with waste left on the beaches or washed ashore. This program is partially funded by the Ministry of Environmental Protection. The budget for the Clean Coast program has been increased threefold to over 2 million USD and a goal has been set for 2018 to have 60% of Israel's beaches clean 70% of the time.

At the heart of the program are routine **cleanup activities** by local authorities responsible for the beaches and volunteers; **enforcement measures** against polluters



and authorities that fail to comply with their obligations; **information and public media campaigns** and educational efforts by NGOs and communities. The Clean Coast program is carried out together with the Israel Nature and Parks Authority and with the involvement of other stakeholders and has cooperated, among others with the Blue Flag Eco-Label and local NGOs such as EcoOcean and the Israel Society for the Protection of Nature, which provides assistance in monitoring marine plastic.

Furthermore, the program includes educational activities in Israel's schools and other information and publicity campaigns. The program has continuously succeeded in meeting its stated waste reduction targets, progress toward which is measured in regular intervals by the Clean Coast Index (CCI).

- Clean Coast Index

The Clean Coast program is an ongoing and results-oriented effort. Therefore inspections and measurements are carried out every two weeks by the Ministry of Environmental Protection at 66 beaches along Israel's coastline. **The data collected from these inspections is published as The Clean Coast Index (CCI) and beaches are ranked at one to five levels from "very clean" to "extremely dirty" and the ranking may affect the budgetary assistance provided.** The CCI methodology was developed in Israel specifically for this program and has been cited in studies by UNEP and other bodies as an effective means to contend with this challenge.

- "Adopt a Beach" and marine litter monitoring pilots

The main Objectives set by UNEP's Integrated Monitoring and Assessment Program (IMAP) for marine litter are to identify spatial and temporal trends in marine and coastal litter in our area, to identify anomalous behaviors and to identify pollution sources and risks, in order to reduce or eliminate them in the future. These will assist us in assessments of the potential ecological impacts, and potential human health impacts. Moreover this monitoring will provide a baseline for environmental impact risk assessment of future developments.

The Israeli monitoring plan for litter was built based on the IMAP guidelines. The program includes various domains, which requires the collaboration of governmental bodies, NGO's, and science groups. The Israeli plan for litter monitoring currently includes beach litter monitoring, floating stream litter monitoring, seafloor litter monitoring, micro-litter monitoring of surface water and micro-litter monitoring of sediments.

A **citizen-science component** has been pointed out by previous marine litter studies as highly effective in raising awareness of the public to marine litter and to marine monitoring in general. The monitoring work is carried out by volunteers- divers from "Mishmar Hayam" (Sea Guard) and students from School of Marine Sciences, Ruppin Academic Center. Therefore, a citizen-science component was added to the marine litter monitoring pilot. This component is funded by UNEP as part of the "Adopt a Beach" project.

The future plan is that surveys will be carried out every 3 months, to gather seasonal variations of the marine litter in the monitored beach. Production of materials required



for the "Adopt a Beach" project, such as posters or pamphlets, will be determined after the first year of the project.

- National Plan for the Reduction at Source of Municipal Solid Waste

MoEP will engage in preparing a National Plan for Waste Minimization during 2018 and it will include actions for reducing the consumption of various waste streams, including plastics such as bottles, packaging, plastic bags and disposable products such as cups and cutlery.

### **3. View on the feasibility and effectiveness of different response options**

- Clean Coast Index

The index measures the number of plastic items found on a defined beach area. Recent data shows that in 2017 54.5% of beaches were "clean" and "very clean" as opposed to only around 20% before the Clean Beach Program began in 2005. The goal for 2018 is to have 60% of Israel's beaches "clean" and "very clean" 70% of the time. Between 2005 and 2017, Israel's population grew by 25%. In contrast, the Clean Beach Index has maintained relative stability. The relative stability in beach cleanliness during a period of population growth could indicate a certain improvement in public conduct on beaches.

- "Adopt a Beach" and marine litter monitoring

These programs are currently at a pilot stage; therefore it is still not possible to draw conclusions. The data gathered so far is only preliminary. More surveys are needed in order to get a broader picture of the extent of the marine litter problem.

The work plan for IMAP implementation for marine litter includes: beach litter monitoring, Floating Stream litter monitoring, Seafloor litter monitoring, Microlitter monitoring of surface water, and Microlitter monitoring of sediments.

Beach litter monitoring will be done along 100m belt transects (width from the waterline to the edge of the beach) at 5 Mediterranean coast beaches which are parts of national parks, therefore managed by the NPA. The survey sampling protocol is based on counting and categorizing the standing stock of debris items.

Seafloor litter monitoring near shore litter (up to 6m bottom depth) is executed by SCUBA along two belt transects of 100m long and 4m wide four times a year at two sites: Beit-Yanay – near the mouth of the Alexander stream and Neveh-Yam next to a municipal beach.

#### 4. Any other inputs

Coastal population	Waste generation rate [Kg/person/day]	% Plastic in waste stream	% Inadequately managed waste	Waste generation [Kg/day]	Plastic waste generation [Kg/day]	Inadequately managed plastic waste [Kg/day]	Plastic waste littered [Kg/day]
6,667,810	2.12	14	1	14,156,957	1,974,896	12,577	39,498

Fig 1: Israel coastal population and waste/plastic generation (UNEP Marine litter assessment in the Mediterranean, 2015)

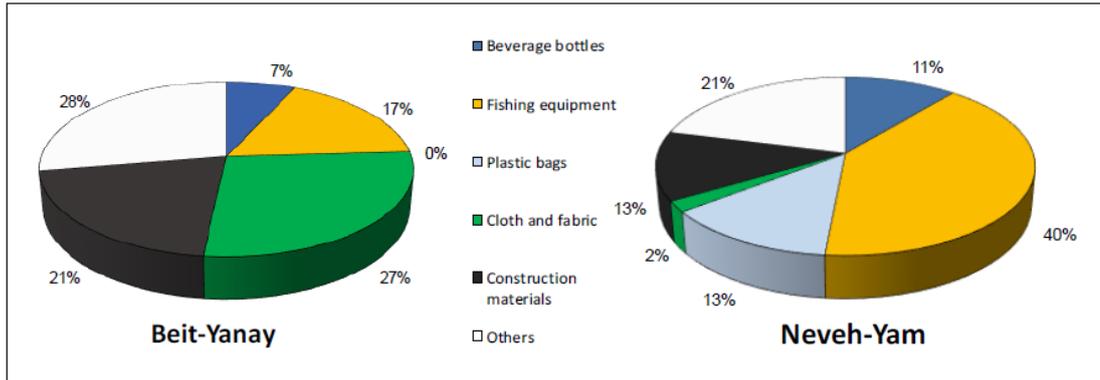


Fig 2: Marine litter found on the sea floor during winter underwater observation – march 2017. The data gathered so far is only preliminary, but shows distinction between the two sites (Fig. 2). More surveys are needed in order to get a broader picture of the extent of the marine litter problem

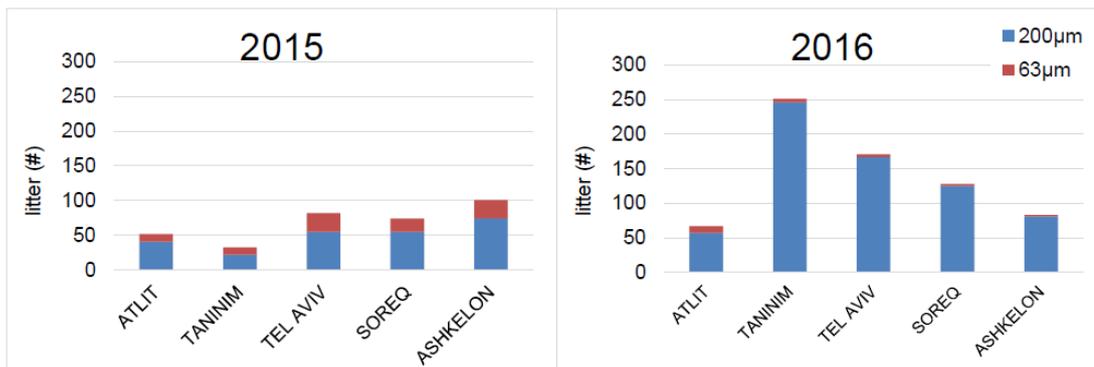


Fig. 3: Microplastic count 2015-2016. The stations are arranged from northern station (Atlit) to the southern one (Ashkelon).