

## **The South's Solid Waste Management Plan: Collection, Recycle, Disposal**

### **A- Collection**

#### **I- Resorts**

HEPCA's southern waste collection operation is made up of five trucks, with a sixth truck to soon join the convoy. These trucks visit 34 subscribers who are stretched out along 200km of coastline twice a day seven days a week, collecting over 20 tons of waste a day. Subscribers are required to segregate organic waste from non-organic and an incentive program for further segregation is in its pilot phase with a small number of our subscribers.

#### **II- Marsa Alam City**

One truck and team of workers are dedicated to the city of Marsa Alam; they cover the streets of Marsa Alam, the hotels, shops, markets, and marina. Two shifts are conducted daily, seven days a week. Street sweepers operate three times a week and extensive beach clean ups take place at least once a week.

### **B- Segregation Plots**

The trucks deposit solid waste at segregation plots; HEPCA has so far established six segregation plots, four north of Marsa Alam city, one to the west and one south of Marsa Alam in Wadi El Gemal. There is an additional one in Hamata but is yet fully operational. These segregation plots have been founded in areas that herders inhabit. Due to the lack of rainfall over two decades pastoral nomads have been under a mounting threat of extinction; this initiative has alleviated a great amount of pressure upon their mode of life and has permitted them to persevere. This is one of many initiatives by HEPCA to support the communities of the Red Sea. The segregation plots are simple enclosures, fenced off by five meter high fences to trap any waste picked up by the wind. Here the waste that is classified as organic is re-segregated since it is usually from the restaurants and kitchens of hotels which contains a significant amount of water bottles, yogurt cups, cans and the like. The segregated waste is then transported to our Material Recovery and Recycling Facility (MRRF).

### **C- Material Recovery and Recycling Facility**

HEPCA's MRRF is located in the Marsa Alam Industrial zone, where more than fifty individuals work in the facility and are involved in the collection. The facility operates 9 hours a day, 7 days a week. Visitors are welcome to view this incredibly necessary and commendable but often thankless work.

#### **I- Segregation**

The first stage the solid waste goes through the segregation conveyer belt. The facility contains two belts on which the mixed waste is placed, from which the different materials are manually removed. The waste is segregated into nineteen different materials (some are divided further into subgroups):

\*Materials go through another process before compacting/ shredding

#### **II- Processing**

All collected non-organic materials are recycled. Only plastic bags are recycled on site, while others are sent to factories in Cairo for recycling. Before sent on, different materials are processed in

different ways, and some do not require further processing; while others can be processed in more than one way.

By the end of the day, items are either compacted or shredded to reduce volume for transport; vital to reduce the number of trucks travelling from Marsa Alam to Cairo in regard to both cost and emissions. Some materials are shredded and packed in sacks while others are compacted. Materials such as glass cannot go through either process and are transported as is. Some require an intermediate step between the segregation belt and the processing phase such as plastics which require further segregation and aluminum foil which customarily contains leftover food and therefore are spread out and sundried before compacted.

### III- Recycling

Paper, aluminum, glass, plastic, steel and tin are all recyclable and incredible results have so far proven that recycling does make a difference and dramatically helps to reduce daily damage to the environment, including our carbon footprint. Currently only plastic bags are recycled at the facility, the next phase of development will be recycling hard plastics.

The recycling process of plastic bags is a four stage process. Plastic bags are initially washed, rinsed and sundried. The dried bags are then shredded after being segregated by color; usually they go through two stages of shredding. Then the shredded plastics are then placed into the pellet machine which melts the plastic and ejects them as small pellets.

The pellets are then placed into the film machine which melts the pellets and spreads the plastic into a sheet of film into which air is blown to create a cylinder which is cooled by the air leaving us with a very long plastic cylinder (100m in length). This cylinder is then cut using a hot blade which welds the edges shut to make a plastic rubbish bag.

### D- Disposal

Materials that cannot be recycled which comprise less than 20% of the non-organics are transferred to the local landfill.