



STUDY ON  
**PLASTIC VALUE  
CHAIN IN EGYPT**

NOVEMBER 2021







This country study on plastic value chain in Egypt was conducted by Chemonics Egypt under the UNIDO project “Study on available sustainable alternative materials to plastics, and innovative packaging and recycling technologies that meet market needs in Africa to reduce plastics leakages to the environment”.

The purpose of the UNIDO project is to provide stakeholders in Africa with an overview of available technological options matching with local contexts and needs so that they could take necessary actions to reduce plastic waste leaking to the environment in their country. In order to achieve it, the country study collected information on current legal, policy and institutional framework in relations to plastic value chain including production of alternative materials and single-use plastics, distribution, and plastic waste management and recycling system in the country so that stakeholders are informed for further actions.

The project is funded by the Government of Japan under the MARINE initiative to support G20 Osaka Blue Ocean Vision, which was shared as a common global vision in June 2019 at G20 Osaka Summit under Japan’s G20 presidency. The vision aims to reduce additional pollution by marine plastic litter to zero by 2050 through a comprehensive life-cycle approach that includes reducing the discharge of mismanaged plastic litter by improved waste management and innovative solutions while recognizing the important role of plastics for society.

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# Acronyms

<b>ASRT</b>	The Academy of Scientific Research & Technology
<b>CAPMAS</b>	Central Agency for Public Mobilization and Statistics
<b>CCI</b>	The Chamber of Chemical industries
<b>CEDARE</b>	The Centre for Environment and Development for the Arab Region and Europe
<b>ECARU</b>	Egyptian Company for Solid Waste Recycling
<b>EEAA</b>	Egyptian Environmental Affairs Agency
<b>EIA</b>	Environmental Impact Assessment
<b>EMU</b>	Environmental Management Units
<b>ENCPC</b>	Egyptian National Cleaner Production Center
<b>EOS</b>	The Egyptian Organization for Standards
<b>EPEMA</b>	Egyptian Plastics Exporters and Manufacturers Association
<b>EPF</b>	Environmental Protection Fund
<b>EPR</b>	Extended producer responsibility
<b>EPS</b>	Expanded Polystyrene
<b>EU</b>	European Union
<b>EgyptERA</b>	Egyptian Electric Utility and Consumer Protection Regulatory Agency
<b>FEI</b>	Federation of Egyptian Industries
<b>FI</b>	Financial Institutions
<b>FMCG</b>	Fast-Moving Consumer Goods
<b>GAFI</b>	Ministry of Investment
<b>GDP</b>	Gross Domestic Product
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>GKC</b>	Global Knowledge Company
<b>GOEIC</b>	The General Organization for Export and Import Control
<b>GOV</b>	Governmental Organizations
<b>GoE</b>	Government of Egypt
<b>HDPE</b>	High-Density Polyethylene
<b>ICA</b>	Industrial Control Authority
<b>IDA</b>	Industrial Development Authority
<b>IMC</b>	Industrial Modernization Center
<b>ISDF</b>	Informal Settlements Development Fund



# Acronyms

<b>ISW</b>	Industrial Solid Waste
<b>ISWMS</b>	Integrated Solid Waste Management Sector
<b>LARU</b>	The Local Administration Reform Unit
<b>LDPE</b>	Low-Density Polyethylene
<b>M ton</b>	Million Ton
<b>MSEA</b>	The Ministry of State for Environmental Affairs
<b>MSMEDA</b>	Micro, Small and Medium Enterprises Development Agency
<b>MSW</b>	Municipal Solid Waste
<b>MTI</b>	Ministerial Decree
<b>MTI</b>	Ministry of Trade and Industry
<b>MWRI</b>	Ministry of Water and Irrigation
<b>MoLD</b>	Ministry of State for Local Development
<b>NGO</b>	Non-Governmental Organization
<b>NSWMP</b>	National Solid Waste Management Program
<b>PE</b>	Polyethylene or polythene
<b>PET</b>	Polyethylene Terephthalate
<b>PLA</b>	Poly Lactic Acid
<b>PP</b>	Polypropylene
<b>PS</b>	Polystyrene
<b>PTC</b>	Plastic Technology Center
<b>PVC</b>	Polyvinylchloride
<b>RBO</b>	EEAA regional branch offices
<b>RDF</b>	Refuse derived fuel
<b>SIMA</b>	Small Industries Modernization Association in Alexandria
<b>SPI</b>	Recycling symbols Society of the plastics Industry
<b>SWM</b>	Solid Waste Management
<b>SWOT</b>	Strength, Weakness, Opportunities and Threats
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>USAID</b>	US Agency for International Development
<b>WMRA</b>	Waste Management Regulatory Agency

# 01

## Introduction

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### 1.1 Background

**The plastics industry in Egypt is one of the most flourishing and active sub-sectors of the chemical industry sector.** Many industries rely on plastics, including the building and construction industry, which is the second largest consumer of plastics, followed by the packaging industry. The plastics industry is essential for many applications in Egypt, including pipes, valves, cables, housewares, automotive, packaging and for agricultural purposes. The plastics market in Egypt is expected to grow at a rate of 10 per cent annually in the next ten years alone, placing Egypt as the largest consumer of plastics in Africa. Furthermore, Egypt consumes 11 per cent of the Middle East's share of plastic products and 0.7 per cent of global production<sup>1</sup>.

Plastic, which is often likened to an invasive species, can be easily designated as one of the defining materials of the modern era. Convenient as it is cheap and ubiquitous, countries around the world are now shouldered with the increasing impact that plastic pollution is having on the natural world, and are trying to find a more sustainable path forward, which inevitably means looking at ways to reduce plastic consumption.

Beyond having a well-documented negative impact on the environment, extensive research has shown that plastics also affect human health in a number of detrimental ways: spoiling groundwater sources, attracting other pollutants, poisoning the food chain through ingestion by animals and soil contamination. Meanwhile, because of their slow decomposition rate plastics tend to pile up in large quantities in urban and marine environments. In cities around

the world, plastic waste clogs drains, causing floods and breeding disease<sup>2</sup>. Plastic packaging accounts for nearly half of all plastic waste globally, and much of it is thrown away within just a few minutes of its first use. Most plastics may be single-use, but that does not mean that they are easily disposable. When discarded in landfills or in the environment, plastics can take up to a thousand years to decompose.

Within this context, this project aims to provide an overview of available technology options that align with local contexts and needs, with the goal to reduce the amount of new plastic usage in packaging and single-use products in the targeted African countries. This falls under a global initiative whose target is to limit and stop the global marine plastic litter challenge.



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<sup>1</sup> USAID, *Value chain mapping and assessment, 2017*

<sup>2</sup> EU, *single-use plastics sustainability, 2018*



## 1.2 Negative environmental impacts of single-use plastics

Single-use plastics refer to disposable plastics that are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled. These include, among other items, grocery bags, food and kitchen packaging and water bottles. While multi-use plastics are referred to as long-term applications, which include pipes, valves, housewares and automotive applications, and are used in industrial manufacturing of textiles, electrical equipment and transportation.

Most plastics do not biodegrade. Instead, they slowly break down into smaller fragments known as micro-plastics that take up to thousands of years to decompose, in the meantime contaminating soil and water<sup>3</sup>. The single-use plastics found everywhere in the environment are the waste of a throwaway culture that treats plastics as a disposable material, rather than a valuable resource to be utilized. Hence, the inadequate solid waste management systems globally lead to increasing pollution and the unsafe disposal of waste.

Single-use plastics in the environment cause significant hazards to wildlife both on land and in the ocean. High concentrations of plastic materials, particularly plastic bags, have been found blocking the breathing passages and stomachs of hundreds of different species. Plastic bags in the ocean resemble jellyfish and are often ingested by turtles and dolphins who mistake them for food. There is emerging evidence that the toxic chemicals added during the manufacturing process transfer from the ingested plastics into the animals' tissues, eventually entering the food chain for humans as well. Moreover, the improper disposal of plastic bags, which are often burned or left to clog drainage systems, cause contamination of water sources, killing fish, and also causing visual pollution of nature that was once free of man-made contamination.



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<sup>3</sup> EU, *single-use plastics sustainability, 2018*

## 1.3 Problem statement

**Reducing single-use plastics could decrease negative environmental impacts and waste generated without affecting the economy negatively.**

Reducing single-use plastics, which represent 36 per cent of the plastics market in Egypt, should be done with minimal negative impact on industry and consumers. No individual firm can solve the problem of plastic waste. But there are significant opportunities for businesses to influence their wider environment. For example, firms can engage with their suppliers, stressing their own priorities and values for single-use plastic recycling to their business partners and encouraging them to adopt the same values<sup>4</sup>. The relationship with suppliers is an additional opportunity to reduce single-use plastics. Alternatives to single-use plastic applications have a positive impact on local job creation and innovation as well as product affordability. Some interventions could embrace the economic opportunities that will accompany the responsible use of single-use plastics; this includes for example, progressive systems designed to prevent or manage beverage and take-away food packaging, such as deposit return schemes and reusable coffee cups. This could create more jobs than single-use plastics disposal<sup>5</sup>.

## 1.4 Possible solutions to decrease single-use plastics with limited negative impact on the economy

**Possible solutions for reducing single-use plastics with limited negative impact on the economy include:** Increasing circularity through promoting recycling and symbiosis, decreasing waste at a factory-level through resource efficiency, and encouraging the use of alternative packaging materials.



Firstly, increasing recycling activities of single-use plastics will create jobs and value addition. Also, it can increase added-value of single-use plastics, as well as decreasing environmental impact.



Secondly, decreasing waste at production-level could increase resource efficient production; for example, the use of plastics can be reduced by improving the design to reduce the amount of plastics used, extend product life, allow repair and reuse, and improve recyclability by limiting the number of polymers, additives, and mixtures. This could increase profitability for manufacturers and produce cost effective but high-quality products.



Thirdly, encouraging the use of alternative materials could open opportunities for manufacturers to increase production by adding more alternative product lines. Using alternative packaging materials requires strategies favorable to their development. It also requires more awareness from manufacturers and more support from the government.

<sup>4</sup> World economic forum, 5 ways to reduce single-use plastics in the Middle East, 2019. Retrieved Online

<sup>5</sup> Zero Waste Europe, Seizing the opportunity: Using plastic only where it makes sense, 2017. Retrieved Online

## 1.5 Approaches to increase circularity



**A circular economy implies reducing waste to a minimum.**

Moving the plastic value chain towards improving recycling, promoting reuse, and re-designing products, while taking into account the whole life cycle of the products will lead to increasing circularity of the plastic economy in Egypt. This requires a value chain approach that looks at both production and recycling sides of plastics. For the plastic sector to grow, it has to be viewed more through the lens of increasing the industry profitability through waste reduction besides increasing the recycling side efficiency, to ensure each link in the value chain grows, while growing the amount of recycled material. Weak links should be supported to grow and barriers at each segment of the value chain mitigated or eliminated.

A major part of reducing single-use plastics is ensuring that the plastic waste generated in the manufacturing of plastics is reduced or fully recycled. This would entail raising the resource efficiency of factories or ensuring factories have systems in place to recover their waste (defective products for instance). This can be driven by saving opportunities or through firm-level commitments.



**The policy, legal, and institutional framework of SWM in Egypt need more effort to be effective.**

Before publishing the new WM law, the roles amongst ministries and authorities were indistinguishable which result in duplicate efforts, lack of accountability, and inefficient use of human resources along with fragile capacity that does not meet demand.

Now the new waste management law assigned WMRA to be responsible for all WM related activities and practices. However, the executive regulation of the law is not published yet so there is no further information available. Assessment of such aspects will take place, particularly the most recent efforts by the Egyptian government.



**The informal sector in waste management should be supported by the Egyptian government.**

The informal sector does play an active role in waste management and can be a positive force in recycling and improving environmental conditions. The informal sector in waste management in Egypt is an economic block with over 50 years of experience, particularly in Cairo where whole neighborhoods are dedicated to recycling and sorting waste. If this economic block is ignored in planning or treated as an enemy, rather than a stakeholder, failure of plans is likely to occur. The implementation of any project aiming at addressing single-use plastics, needs to carefully capture the role of the informal sector and understand their stake and involvement, while assessing their capacity to evolve and play a role in the reduction of single-use plastics through recycling of man-made contamination.



## 1.6 Objectives of the study

The main overall objective of the assignment is to provide stakeholders in Egypt with an overview of available technological options suitable to local contexts and needs, so that they could take necessary actions to reduce the amount of new plastic usage in packaging and single-use products in their country.

The Specific objectives of this study is to carry out local studies in Egypt to collect information on current status of single-use plastic products value chain. This is to take place through the following:

- Careful mapping and analysis of policy and regulatory framework on waste management systems relevant to the (single use) plastic waste stream.
- Detailed sector overview/industry/market information of single-use plastic products, including major stakeholders in the value chain and their business data/ market size including various products and technologies.

## 1.7 Expected impact of the study

A deep understanding of the study clearly points to the effective strategies that could shape the implementation approach. This includes the following:

- Increasing the recycling industry of plastics
- Increasing the resource efficient products for manufacturers
- Encouraging the use of alternative materials

## 1.8 Organization of the document

Following the introduction section, the next sections are divided as follows:

1. Implementation methodology
2. Single-use Plastics Industry Assessment
3. Value Chain Assessment
4. SWOT Analysis
5. General SWM regulatory framework
6. Plastics regulatory framework
7. Findings and Recommendations
8. Annexes





**Today, we produce about 300 million tons of plastic waste every year. That is nearly equivalent to the weight of the entire human population\***

*\* All quotes below are retrieved from [UNDEP website](#)*





# 02

## Implementation methodology

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### 2.1 Data collection

Data collection took place through extensive literature review of national sources and plastic experts' contributions. The literature review included published work on the current situation of the plastics industry, recycling businesses, and value chain mapping and analysis, as well as the regulatory and policy framework of the overall waste management system, and the plastic waste management specifically. Unpublished reports provided through stakeholders and industry experts were also relied upon.

The data collection relies also on effective key stakeholders engagement. Stakeholders are mainly governmental organizations (GOV), non-governmental organizations (NGOs) and financial institutions (FIs). Stakeholders provide data and their experience in assessing the market and identifying key interventions. Seven interviews were done with key stakeholders including 3 (GOV), 3 (NGO) and 1 (FI) (See annex 1 for more details).

Data collection was extended to cover private sector value chain players. Twenty-seven interviews were conducted to further investigate the sector dynamics and get in-depth insights on the sector

The interview questions had a structured format and covered the following topics: description of key stakeholders' activities or projects that support the plastics industry, data estimates regarding plastic recycling and local technologies used, SWOT analysis for plastic recycling businesses, resource efficient production and use of alternative materials, barriers

affecting the value chain and suggested interventions to address them. The data obtained from literature and interviews with key stakeholders was analyzed to identify key stakeholders potential collaboration in the project, as well as identify preliminary barriers affecting the single-use plastic value chain and suggested interventions. This collected data was further validated in the private sector interviews conducted.

### 2.2 Data analysis approach

In order to develop a close-to-reality estimate of the amount of plastic waste and composition in Egypt, waste is categorized based on the source, either from MSW or ISW. The amounts generated from each source were estimated as follows:

**For MSW**, two methodologies were adopted for estimating the amounts of plastic waste generated which are the following:

- A. Top-down methodology, in which total amounts of plastic waste are determined as percentage of total annual generated MSW
- B. Bottom-up methodology, in which amounts of single-used plastic waste can be estimated as percentage of annual generated amount of MSW per capita in rural and urban areas.

**For ISW**, the amount of plastic waste was estimated based on a representative sample of ISW from the 10th of Ramadan industrial area, the sample was collected and studied in a previous project implemented by the consultant.



# 03

## Single-use plastics industry assessment

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The Egyptian plastics industry is one of the most flourishing and active sub-sectors of the chemical industry sector. Many industries rely on plastics, including building and construction industry, which is the second largest consumer of plastics, followed by the packaging industry. The plastics industry is essential for many applications in Egypt, including pipes and valves, cables, housewares, automotive, packaging and agriculture purposes. Plastics vary in types and applications. The plastic application determines whether it can be considered single-use plastics or not, the type of plastics determines the ease of recycling and the environmental impact if dumped in an inappropriate way. Defining the type of plastic for each plastic product also helps in estimating the total amount of waste.

In this section, estimations of plastic products and application, in addition to plastic supply, based on local production and imports, will be presented. Moreover, plastic waste in Egypt and the impact of the informal sector will be discussed.

### 3.1 Plastic key products and raw materials

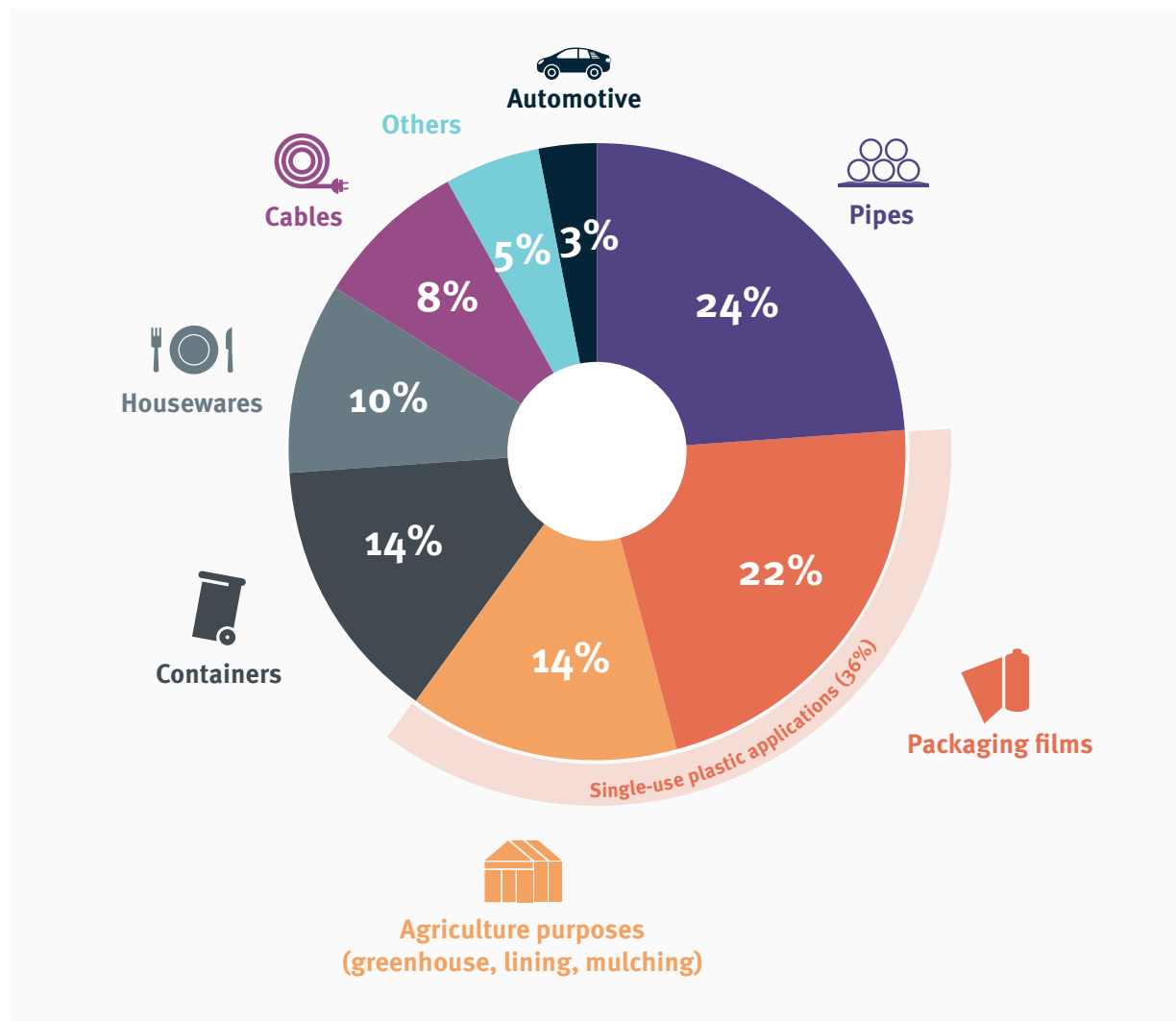
There are many plastic applications used in Egypt. Each market has its own dynamics, way of disposal and rate of consumption. Figure 3.1<sup>6</sup> shows the amounts and percentage of plastic consumption per application. The figure shows that packaging film applications (plastic bags, food and cosmetics packaging products and bottles) and agriculture applications (greenhouse, lining and mulching) represent 36 per cent of plastic applications consumption in Egypt, which is more than one third of the total consumption, indicating the scale of consumption of single-use plastics alone. This kind of categorization could help in focusing efforts to reduce single-use plastic consumption in an area which is responsible for the highest amounts of single-use plastics.



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<sup>6</sup> USAID, *Value chain mapping and assessment*, 2017

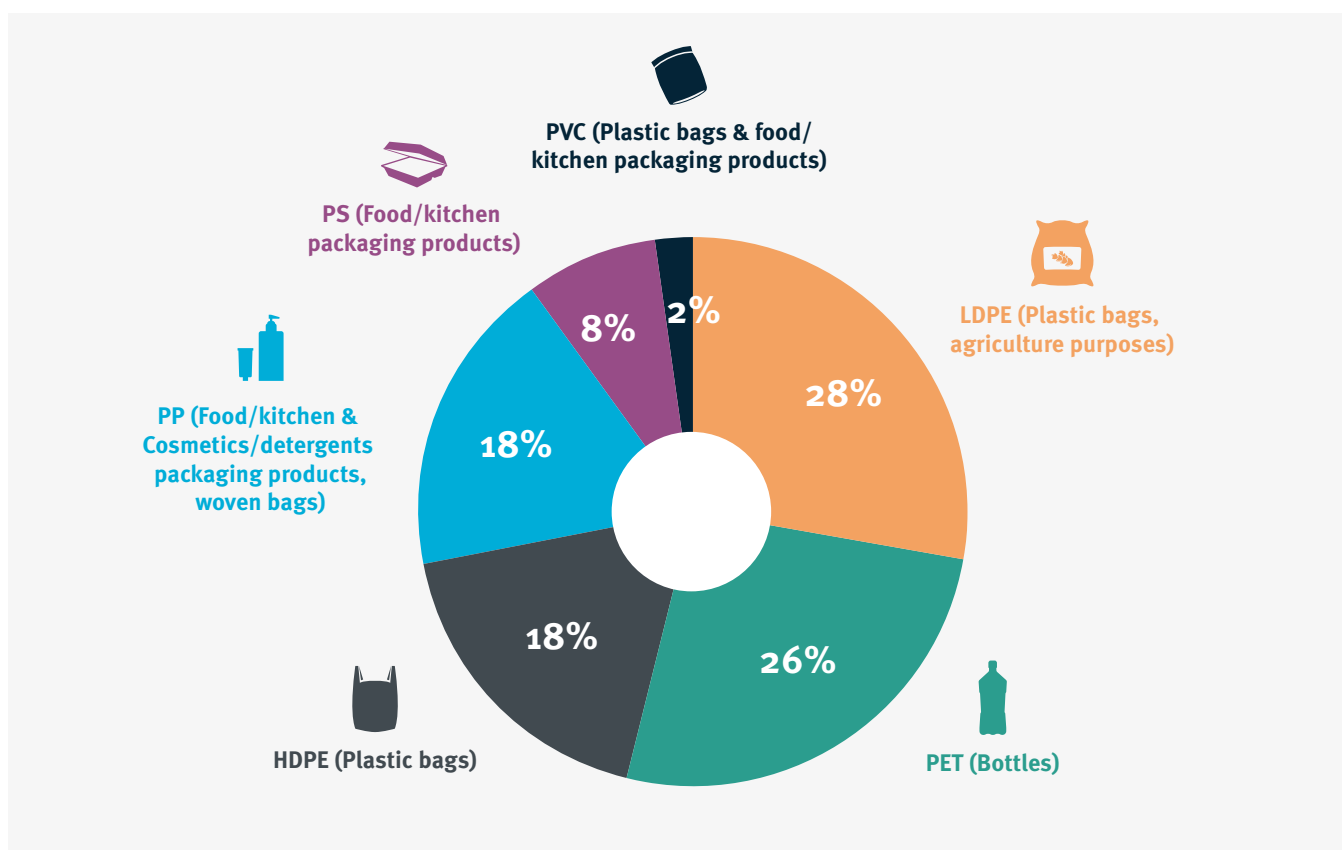
The figure also shows that, regardless of single-use plastics, packaging film and pipes are responsible for about half of plastic consumption in Egypt, while other applications like automotive, cables and housewares are responsible for approximately 10 per cent each. Containers, mentioned in the chart are a type of rigid packaging, which can be easily recycled and represent 14 per cent of plastic consumption. However, containers such as food/cosmetics packaging products are considered as flexible packaging which are included in single-use plastics.



**Figure 3.1:** Percentage of plastic consumption per application

It is important to identify the main plastic raw materials used in single-use plastic applications in order to know which material has high consumption. Figure 3.2<sup>7</sup> shows the plastics raw material composition in single-use plastic applications. PE (LDPE & HDPE), PET, followed by PP are the main top materials used in single-use plastic applications. As illustrated in the chart, the main applications of PE are plastic bags and products for agriculture purposes, while PET is used in bottles and PP in food/kitchen and cosmetic/detergents packaging products. While, PS is used in relatively small amounts in food/kitchen packaging products compared with PP.

<sup>7</sup> USAID, Value chain mapping and assessment, 2017 - Local plastic experts



**Figure 3.2:** Plastics raw material composition of single-use plastic applications

Plastics raw material in general, including single-use plastics, vary in applications (as described in Figure 3.1) and for each application many products can be produced. Table 3.1 shows the various single-use plastic applications and types of raw material, as well as key products per each application.

**Table 3.1:** Applications, raw material and product description of key single-used plastic products<sup>8</sup>

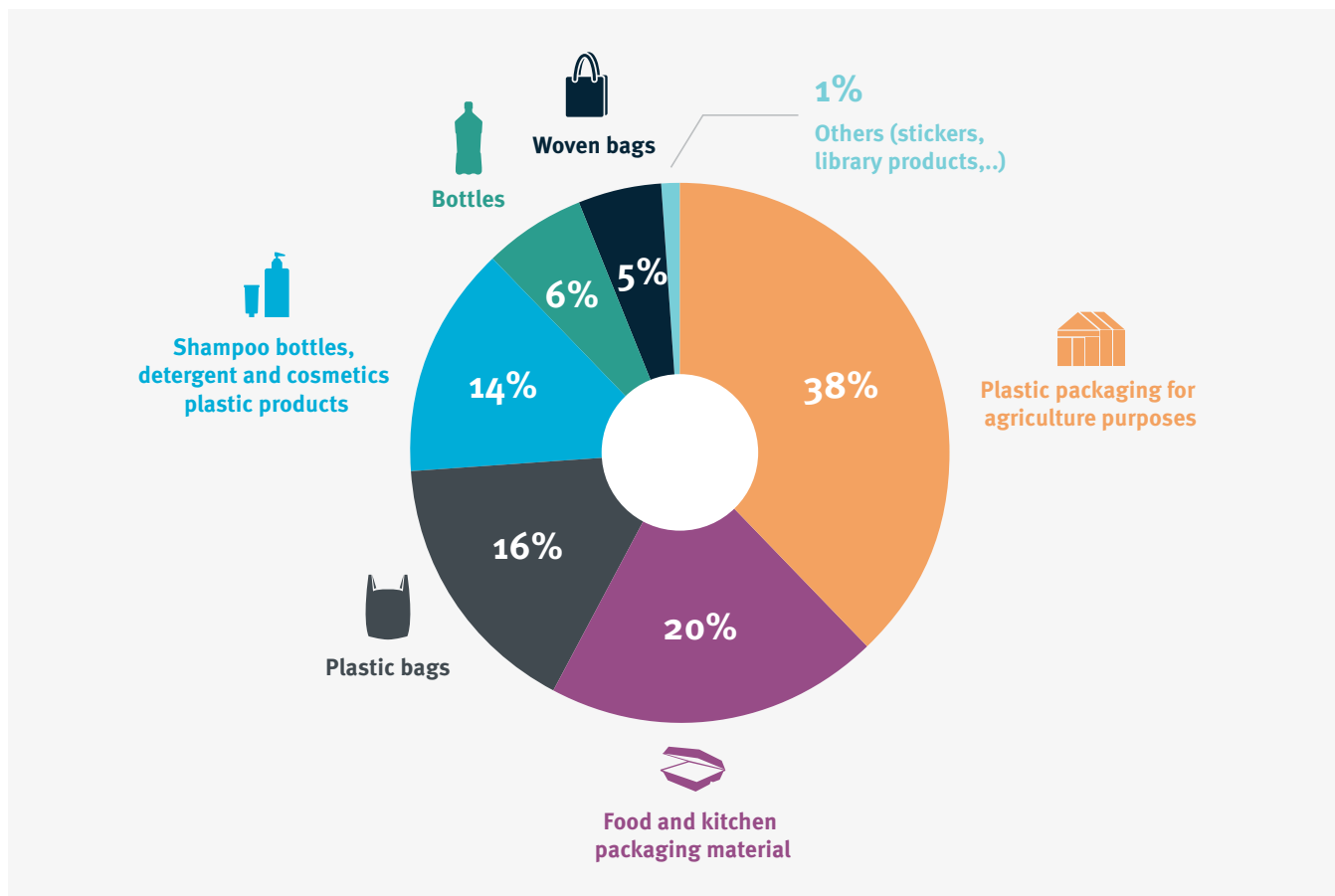
Single-use plastic applications	Plastics raw material	Single-use plastic key products
Packaging film	PE (LDPE, HDPE), PVC	Plastic bags, all kinds of heavy and light bags
	PET	Plastic bottles
	PP, PE	Cosmetics and detergent packaging and other products like stickers and library products
	PP	Woven bags
	PP, PS, PVC	Food and kitchen packaging materials
Agriculture	LDPE	Agricultural purposes (green houses, mulching and lining)

<sup>8</sup> USAID, Value chain mapping and assessment, 2017



Single-use plastics serve diverse markets in Egypt, which vary by type and consumption. Figure 3.3<sup>9</sup> shows the percentages of single-use plastic key products consumption. Agriculture purposes application is the most consumed in Egypt representing 38 per cent of the total consumption of

key products. Agriculture purposes products include greenhouses cover films, lining and mulching plastic films used to cover the soil. Food / kitchen packaging material products are the second top products consumed coming in at 20 per cent.



**Figure 3.3:** Percentage of single-use plastic key products consumption

Source, form and quality of plastic waste determine its price. Table 3.2 shows the types of plastic waste of different qualities with their average market price. Table 3.3 shows the list of types of plastic recycled materials and some alternative materials with their average market price. These prices are the most

updated estimated prices this year that are gathered from interviews, plastic waste traders and recycling factories. The price of plastic waste vary greatly due to the difference in waste quality and source of generation (either from MSW or ISW).

<sup>9</sup> CAPMAS 2016

**Table 3.2:** Price per kg of waste plastics based on plastics type

Plastic waste	Waste price (EGP/kg)
PE	8 – 17
PET	6 – 8
PP - low quality	7
PP - high quality	15 – 18
PS	9 – 15

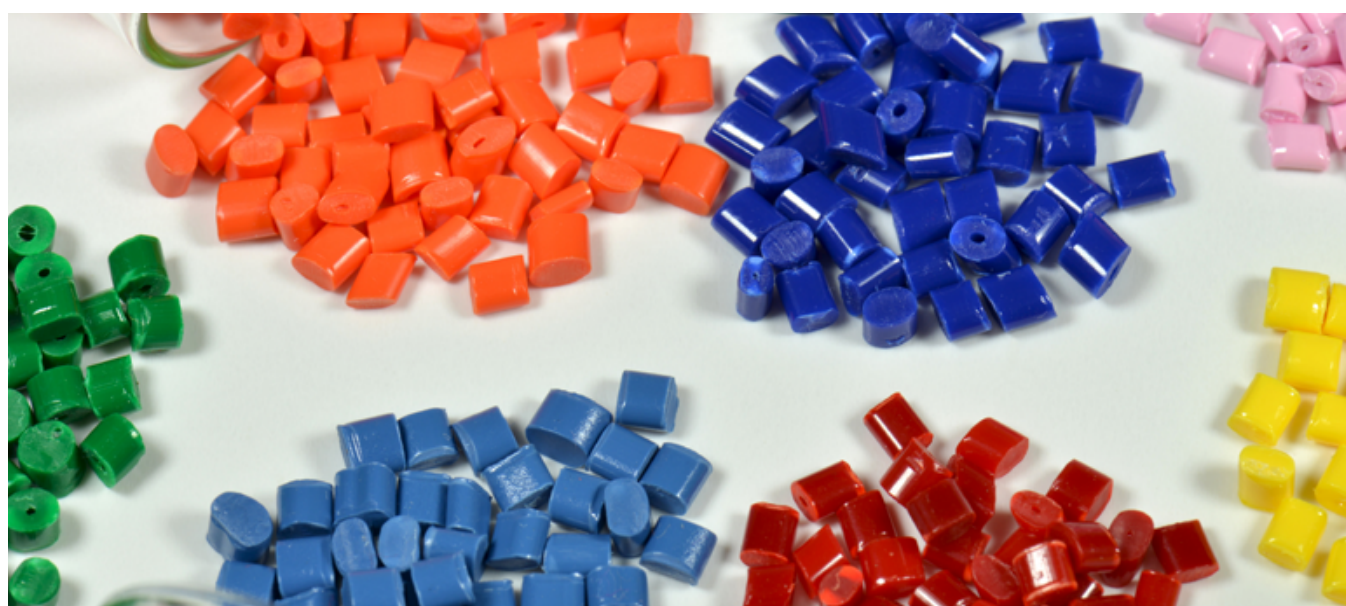
**Table 3.3:** Price per kg of plastic recycled material and some alternative materials

Plastic recycled materials	Price (EGP/kg)
Recycled LDPE & HDPE product	20-25
HDPE oxo-degradable pellets (used as an additive 1%)	440
Biodegradable pellets	60

### 3.2 Plastics local market

The Egyptian plastics market depends on both locally produced and imported plastic raw materials. In order to have a clear understanding about the context of plastic waste management in Egypt, the amount of new plastic products entering the Egyptian market

annually should be carefully studied as follows. Petrochemical companies in Egypt currently can produce around 2 million tons of various types of plastics annually. Table 3.4<sup>10</sup> shows the list of key petrochemical companies in Egypt with their location and types of plastic raw materials produced and production capacities for local and export markets.



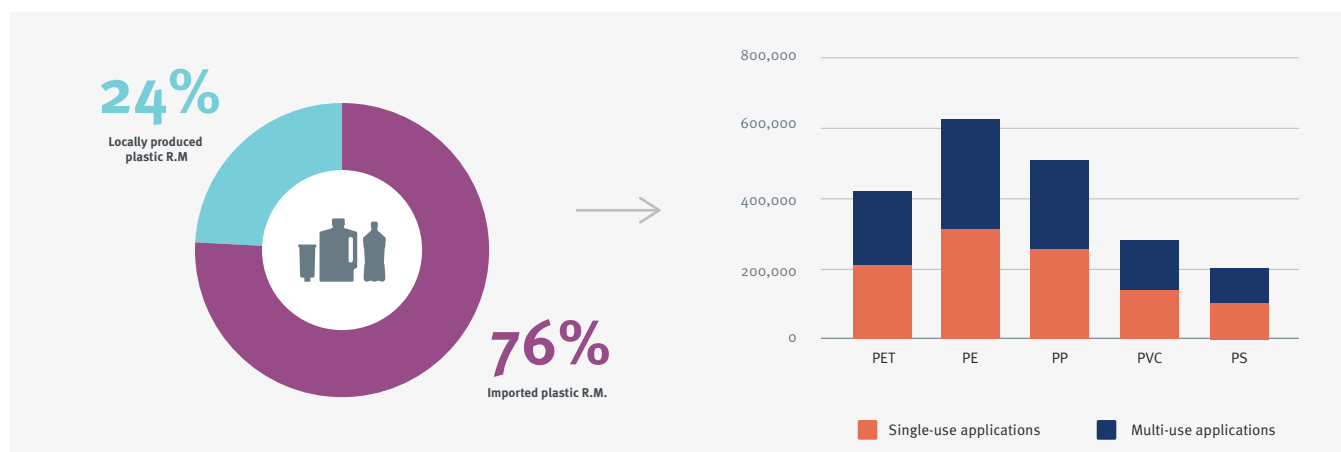
<sup>10</sup> Source: (Value chain mapping and assessment, USAID, 2017)

**Table 3.4:** Egyptian Petrochemical companies' location, products, production and export capacities

Entity	Location	Products	Capacities (Ton/year)
Sidi Kerir Petrochemical Co (SIDPEC)	Alexandria	HDPE, LLDPE	225,000
Egyptian Ethylene and Derivatives Company (ETHYDCO)	Alexandria	HDPE, LLDPE	400,000
Egyptian Petrochemicals Company (EPC)	Alexandria	PVC & PVC compound	80,000
Egyptian Styrenics Co for polystyrene (Estyrenics)	Alexandria	PS (HI, GP)	200,000
Egyptian Propylene and Polypropylene Company (EPPC)	Port Said	PP complex	350,000
Oriental Petrochemical for Polypropylene (PP) (Now Holding Carbon Co.)	Suez	PP	160,000
Egyptian Indian Polyester Company (EIPET)	Ain Sokhna	PET	420,000
Indian Petrochemical Industry TCI Sanmar group	Port Said	PVC & PVC compound	200,000

However, locally produced plastic raw materials represent only 24 per cent of market needs, while the remaining demand is satisfied through the import of 6 million tons of plastics raw material as shown in Figure 3.4. Given that, as mentioned previously, single-use plastic applications represent 36 per cent

of the market, 50 per cent of local petrochemical production is directed towards single-use plastic production as illustrated in Figure 3.4. This makes single-use plastics one of the most active economic subsectors in the Egyptian plastics industry.



**Figure 3.4:** Percentage of locally produced and imported plastic raw materials



### 3.3 Plastic import and export trends

Figure 3.5 shows the variation in imports and exports of plastics between 2015 and 2019. Regarding exports, the figure shows a decrease in exports until 2016, which can be attributed to the currency flotation, after which exports then started to increase. Such growth in the last two years reflects the growing

manufacturing effort in Egypt and the movement towards higher value-added businesses. Regarding imports, the figure shows relatively stable trends in the last five years, with Egypt trying to improve plastics industry and encouraging local manufacturing. Also, according to Presidential Decree No. 25 of 2016, import tariffs were raised on a wide range of products, including some items related to plastics (for more details see section 8.3).

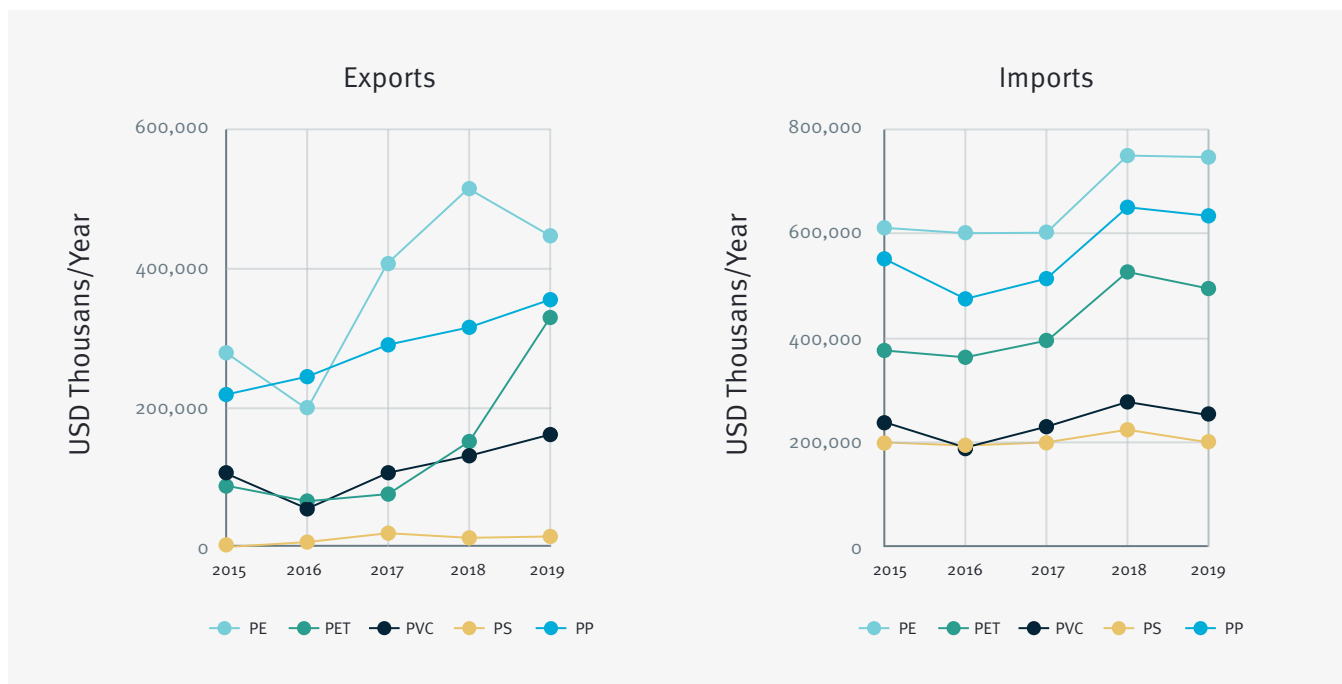


Figure 3.5: Variation in exports and imports of PE, PET, PVC, PS and PP between year 2015 and 2019<sup>11</sup>

### 3.4 Plastic waste in Egypt

The waste management sector in Egypt suffers from lack of reliable data, many sources often have conflicting estimations of the amounts of waste, regardless of its type. In the case of single-use plastic waste, it is even more complicated. Variations in types of single-use plastic waste, value of each type, sources of generation, collection and disposal practices and involvement of the informal sector make it hard to make exact estimates for the amounts of plastic waste.

As mentioned above, the amounts of plastic generated from MSW are estimated through two different methodologies based on the source of generation. Then, the amounts of plastic generated from ISW are estimated through studying a representative sample of industrial waste. Plastic waste composition generated from both MSW and ISW are then determined. Finally, an overall mass balance is done to estimate the disposal rates through different disposal methods.

<sup>11</sup> Trade map, 2019

### 3.4.1 Sources of generation for plastic waste

Waste generation and plastic waste generation specifically varies from one entity to another based on the activities performed, level of awareness, social and economic context and access to waste management services. Hence, it was important to study the various sources of generation in order to capture the real situation. Distinguishing between the different sources of generation will help in deciding which of them has the highest impact on the plastic waste challenge in Egypt and accordingly in devising an efficient development plan.

**Regarding plastic waste generated from MSW**, as mentioned before (in section 2), two methodologies were adopted for estimating the amounts of plastic waste generated from MSW which are the following:

- A. Top-down methodology, in which the total amounts of plastic waste are determined as percentage of total annual generated MSW
- B. Bottom-up methodology, in which the amounts of single-used plastic waste can be estimated as percentage of the annual generated amount of MSW per capita in rural and urban areas.

**Top-down approach:** based on the country report on solid waste, the total amount of MSW was 21 M ton/year in 2014. The composition of MSW per type is presented in Figure 3.6 where plastic waste represents 13% of total generated MSW (2.7 M ton/year). Based on the annual growth rate of the plastics industry (6%)<sup>12</sup>, plastic waste can be estimated to be 3.6 M ton/year in 2019.

**Bottom-up approach:** the total amount of MSW was estimated based on population data (CAPMAS 2019) and generation rate per capita for both rural and urban areas as shown in Figure 3.7. The result is 26 M ton/year of total MSW generated. Based on data analysis done by the consultant team in West Cairo and Upper Egypt, the percentage of plastic waste is estimated to be 30 per cent and 7.5 per cent in urban and rural areas respectively. Accordingly, plastic waste can be estimated to be 5.4 M ton/year.

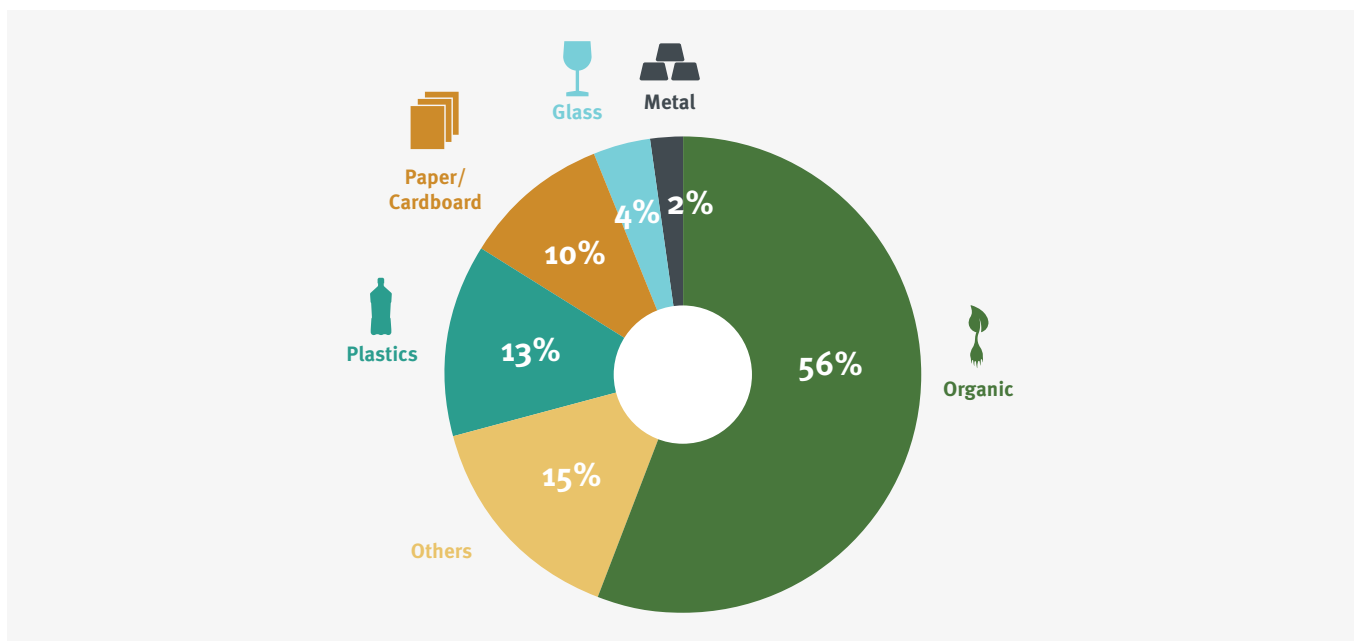
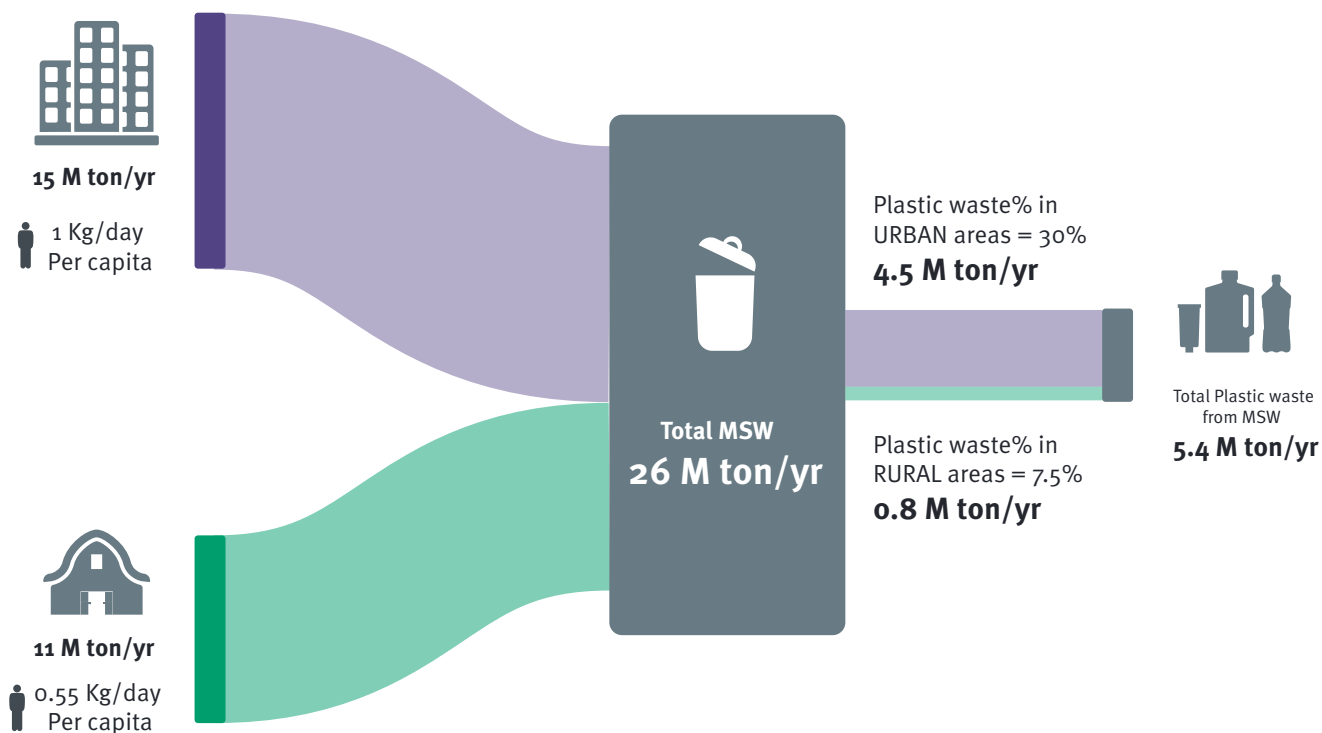


Figure 3.6: Composition of annual generated MSW in Egypt (2014)<sup>13</sup>

<sup>12</sup> USAID, Value chain mapping and assessment, 2017

<sup>13</sup> GIZ, Country report on solid waste, 2014

Variation in the amounts of plastic waste can be attributed to the level of accuracy of different sources and the date of estimation. It can be concluded that plastic waste generated from MSW ranges from **3.6 to 5.4 M ton/year**.



**Figure 3.7:** Total plastic waste estimation from MSW using bottom-up methodology<sup>14</sup>



**Regarding plastic waste generated from ISW**, ISW represents 5 per cent<sup>15</sup> of the total annual generated solid waste in Egypt, amounting to 5.2 million tons. Around 5.5 million<sup>16</sup> of the industrial waste in Egypt is plastics, according to the representative sample from 10th of Ramadan City. Accordingly, the total plastic waste from ISW can be estimated to be **290,000 ton/year**.

<sup>14</sup> CAPMAS, 2019, Based on analysis done by Chemonics Egypt on MSW generated in West Cairo and Upper Egypt, GIZ, Economic business models in Egypt's recycling sector for start-ups and SMEs, 2018

<sup>15</sup> GIZ, Economic business models in Egypt's recycling sector for start-ups and SMEs, 2018

<sup>16</sup> ENPC, Industrial waste mapping in the 10th Ramadan City in Egypt, 2016



### 3.4.2 Plastic waste composition per source of generation

As stated previously, many variables affect the amount and composition of plastic waste generated from different sources, in this sub-section the composition of plastic waste from MSW (urban and rural areas) and ISW will be discussed. The discussion will illustrate current practices of dealing with plastic products, as well as providing an overall view of where plastic waste ends up.

**Regarding plastic waste generated from MSW,** the composition of plastic waste, per type in both urban and rural areas is presented in Figure 3.8. PE waste is the largest type of waste generated from both urban and rural areas, this indicates high consumption of plastic bags in both areas and also high consumption of products for agriculture purposes, especially in rural areas.

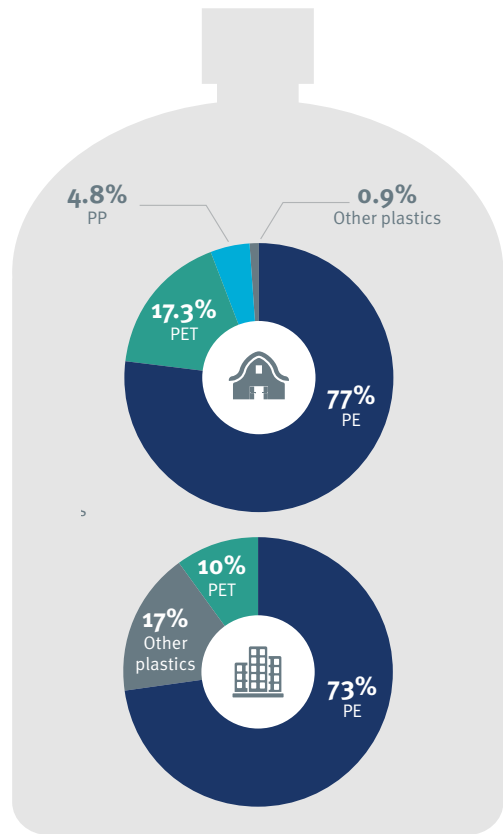
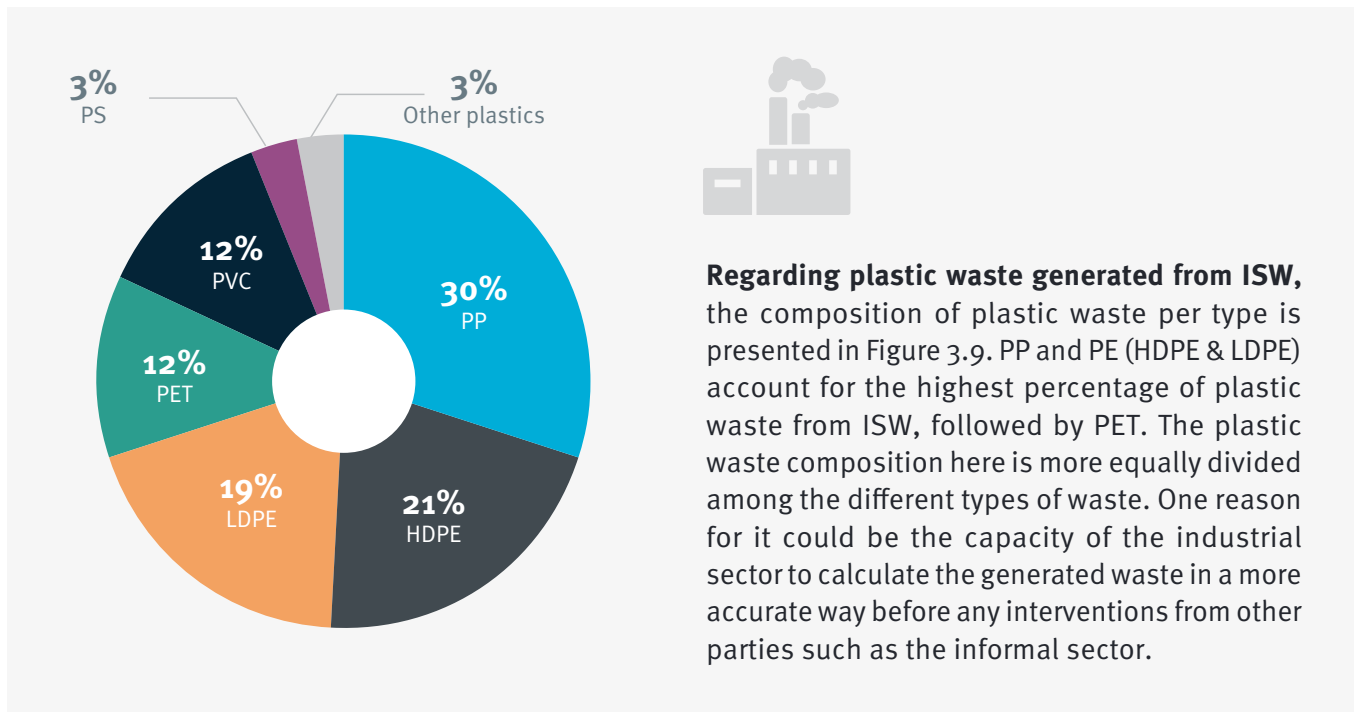


Figure 3.8 Plastic waste % per type from MSW in rural and urban areas



**Regarding plastic waste generated from ISW,** the composition of plastic waste per type is presented in Figure 3.9. PP and PE (HDPE & LDPE) account for the highest percentage of plastic waste from ISW, followed by PET. The plastic waste composition here is more equally divided among the different types of waste. One reason for it could be the capacity of the industrial sector to calculate the generated waste in a more accurate way before any interventions from other parties such as the informal sector.

Figure 3.9 Plastic waste % per type from ISW<sup>17</sup>

<sup>17</sup> ENCPC, Industrial waste mapping in the 10th Ramadan City in Egypt, 2016

An overall mass balance is done on the plastic value chain, in order to track plastic annual rates starting from raw material rates till waste disposal rates as illustrated in Figure 3.10. First, plastic consumption is estimated through local production, imports and exports of plastic raw materials to be 8 million ton<sup>18</sup>. The plastics industry consumes plastic raw materials to produce both single-use and multi-use plastic products. These products are to be used by end-users. Plastic waste is generated from both end-users as MSW and the plastics industry as ISW.

For MSW, plastic waste is generated at an average rate of 4.5 million ton/year<sup>19</sup>. Only 5 per cent of it is reused, 30 per cent is recycled, while 32 per cent and 3 per cent go to incineration and dump sites respectively<sup>20</sup>.

For ISW, plastic waste is generated at a rate of 0.29 million ton/year. Only 2 per cent goes to dump sites, 3 per cent is recycled on-site, while 15 per cent goes to recyclers, and the majority (80 per cent) is sold to traders, who either export it, sell it to recyclers or to energy intensive industry as fuel<sup>21</sup>. The limited amount of plastic waste generated at the industry level is a reflection of the current industry structure, as well as the high material efficiency of industrial facilities.

To summarize, it can be concluded that:

- Total plastic consumption equals 8 M ton per annum.
- Total plastic returned either to plastics industry or end users (recycled and re-used), green coded in the figure, equals 1.8 M ton.
- Total plastic that reached dumpsites and is incinerated, red coded in the figure, equals 2.9 M ton.
- The 5 M ton difference between consumption and disposal rates including reached dumpsites and incineration are estimated to be amounts of plastics that either are collected and recycled by the informal sector or directed to long term applications (multi-use plastics).



<sup>18</sup> Local production, imports and exports numbers are taken from (USAID, Value chain mapping and assessment, 2017)

<sup>19</sup> Based on average number between (3.6 M ton to 5.4 M ton) as discussed in previous section

<sup>20</sup> USAID, Value chain mapping and assessment, 2017

<sup>21</sup> ENPC, Industrial waste mapping in the 10th Ramadan City in Egypt, 2016

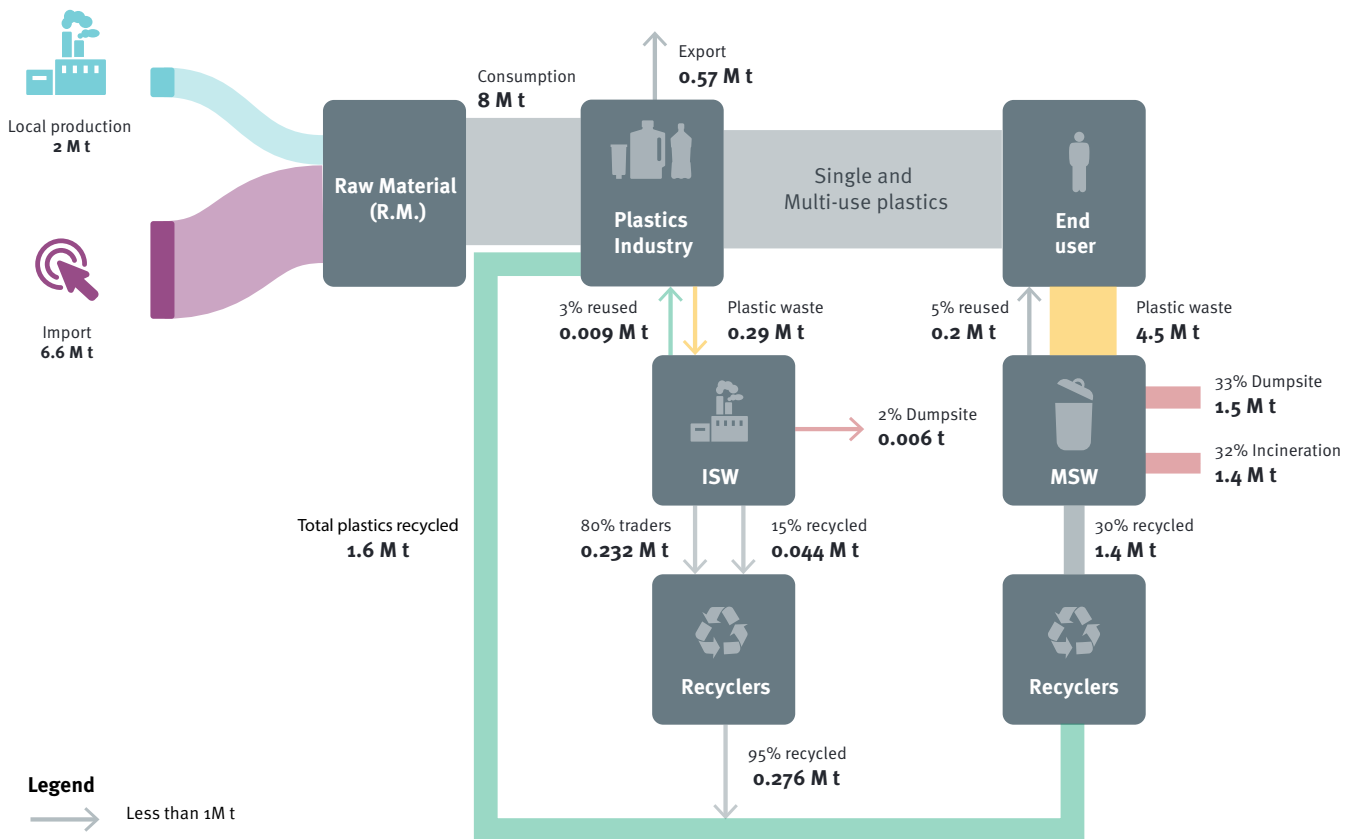


Figure 3.10 Overall mass balance on plastics annual rates

### 3.5 Impact of informal sector affects data accuracy

The informal sector controls the collection and recycling of recyclable waste in the majority of governorates in Egypt. This refers to only MSW, while for ISW it is almost always formal recyclers or traders.

The informal sector size is estimated at 1,060 informal factories and 450 registered factories and workshops<sup>22</sup>. High value recyclable plastics like PET, HDPE and PP are much more valuable for the informal collectors in comparison to other types of plastics. While informal sector practices in collection

and recycling lack health and safety measures, the informal sector greatly contributes to keeping certain types of single-used plastics away from the streets<sup>23</sup>.

In many cases, the efficiency of the informal sector in collection surpasses that of official entities. Such efficiency raises the question about the importance of the informal sector and whether it should be included in sector development practices or not. Although the informal sector's grip on waste collection makes it hard for SMEs to enter the plastic recycling market, the informal sector is already lifting a huge burden off the government when it comes to waste collection.

<sup>22</sup> USAID, Value chain mapping and assessment, 2017

<sup>23</sup> Consultancy for Up Stream Poverty and Social Impact Analysis (PSIA) for Egypt's Solid Waste Management, 2010





Worldwide, only 9% of all plastic waste ever produced has been recycled. About 12% has been incinerated, while the rest — 79% — has accumulated in landfills, dumps or the natural environment



# 04

## Value chain assessment

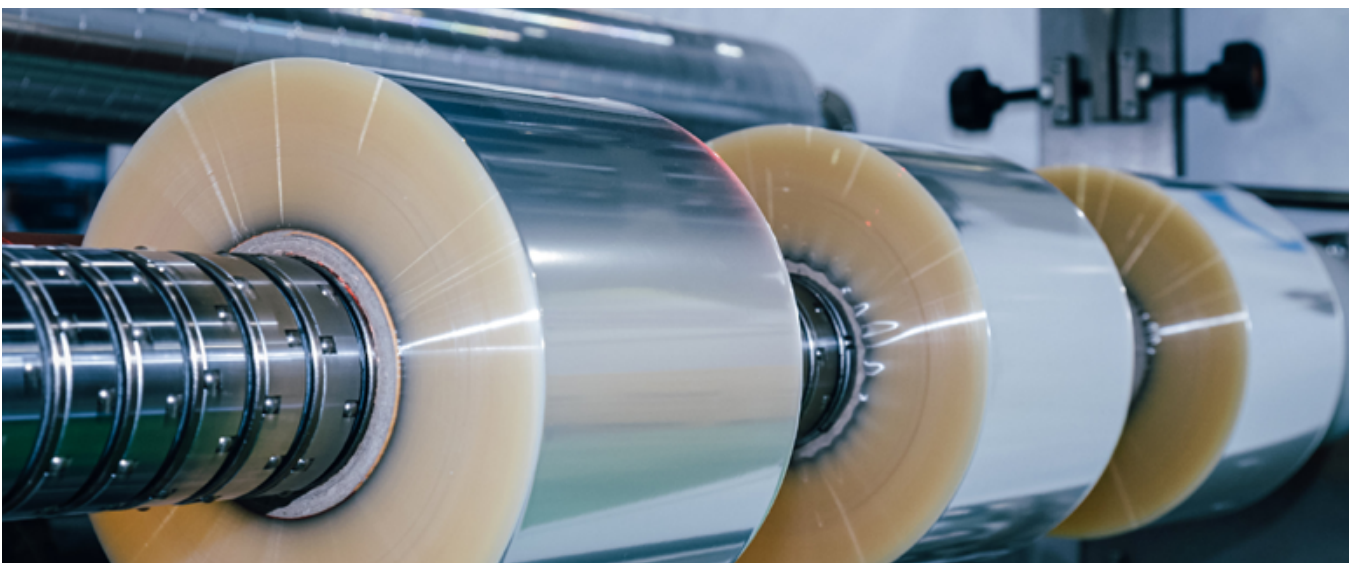
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A value chain consists of multiple business activities, which successively add value to a raw material till it reaches the form of final products. The value chain's main activities are the ones that operate on the key raw material, while supporting activities offer products and services that enable the primary activities to be completed. In the single-use plastic industry, the value chain approach integrates both plastic production and recycling sides within a circular format where both value chains are connected and at times branch to landfilling for instance. The production side refers to production of single-use plastics from the beginning of raw material manufacturing till the end user; while the recycling side refers to recycling of plastic waste generated from various sources, for instance MSW and ISW.

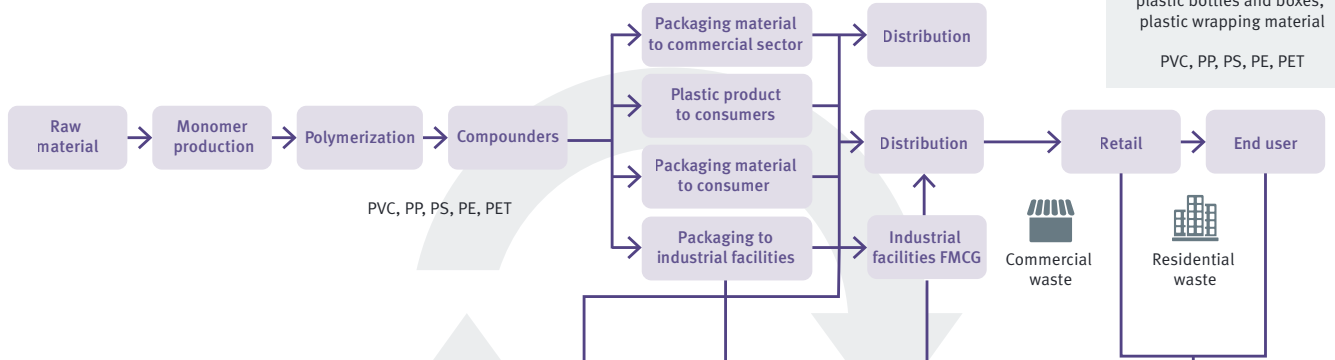
This section will present the single-use plastic value chain assessment after conducting a deep analysis of the sector. The first sub-section describes the single-use plastic waste value chain; while the second sub-section addresses the barriers mapped along the value chain in addition to the proposed classified interventions.

### 4.1 Structure of plastic value chain

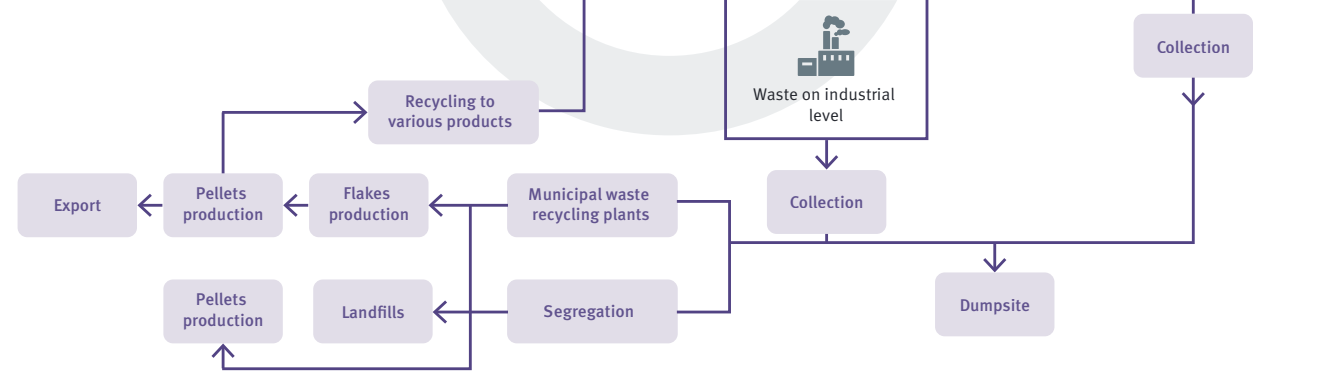
The structure of the single-use plastic value chain illustrated in Figure 4.1. was developed, refined and validated through additional interviews with key stakeholders, technical plastic experts and literature review. The production side of the value chain includes several activities, which are raw material extraction, polymerization to produce pellets of PP, PE, PET, PVC, PS, plastic processing to produce semi-finished products like plastic film, and single-use plastic end-product manufacturing. The end products are then distributed and reach retailers, end-users or other industrial facilities using packaging plastic products. The recycling side of the value chain begins from the plastic waste generation whether from MSW level or ISW level. Both levels include waste collection, sorting and recycling. The recycled plastic products go to plastic processors, RDF cement factories or to export in case of high quality products. Plastic waste residues that cannot be recycled go to landfill or incineration.



### Production side of value chain



### Recover side of the value chain



**Figure 4.1** Value chain structure of single-use plastics



The value chain description, illustrated in Table 4.1, summarizes existing activities in the value chain, along with key existing technologies, as well as major players across each segment of the value chain. Key missing activities are highlighted to be further validated. This helped to later identify gaps in the value chain.

**Table 4.1** Description of single-use plastic value chain<sup>24</sup>

Value Chain Segment	Position in the Value Chain	Key Existing Activities	Key Existing Technologies	Major Players	Key Missing Activity
Raw material production	Production side	Extraction of plastic raw materials from natural gas, polymerization process to produce petro-based plastic pellets (PP/PE/PET/PS/PVC)	Natural gas cracking processes, then polymerization process to produce pellets	Eight Egyptian petrochemical companies producing local plastic raw materials located in Alexandria, Port Said, Suez and Ain Sokhna	Polymerization process to produce bio-based plastics such as Poly Lactic Acid (PLA)
Plastic processing	Production side	New plastic pellets, as well as recycled pellets are processed through compounding and master batch (mainly for coloring plastics and improving their physical properties) then producing plastic film. Plastic film is a semi-finished product used in producing all plastic end products	The compounding process can be used for melting plastics with other additives to produce resin, with different characteristics to be used in different applications. The master batch process can be used as an additive for coloring plastics or imparting other properties to plastics. Plastic film is produced by melting pellets to produce resin, then extrusion to produce the plastic film	Around 50 compounders and master-batch manufacturers, including local and international companies, are located in Greater Cairo, 10th of Ramadan City, 6th of October City, and Alexandria	-
Plastic end product manufacturing	Production side	Production of single-use plastic end-products. The products are mainly plastic bottles, plastic bags, woven bags, food/kitchen packaging products, detergent/cosmetic packaging products, agriculture-related products	The technologies used vary between injection, molding, blow molding, extrusion, cutting and lamination	Around 5,220 plastic end-product manufacturers of which 58% are formal while 42% are informal	-

<sup>24</sup> USAID, 2017, value chain mapping and assessment

Value Chain Segment	Position in the Value Chain	Key Existing Activities	Key Existing Technologies	Major Players	Key Missing Activity
Industrial facilities and retailers	Production side	Single-use plastic products go to three types of consumers; industrial facilities (like fast-moving consumer goods (FMCG) that rely on bottles and packaging products), agricultural purposes (like greenhouse covers, lining and mulching consume plastic film products) and retailers (like large restaurants, fast food chains, hypermarkets and pharmacies that consume plastic bags and food packaging products)	-	<p>Around 166<sup>25</sup> major FMCG companies like Unilever, P&amp;G, Mars, Danone, Juhayna, GlaxoSmithKline, Nestle, Pepsico consume plastic bottles and packaging products.</p> <p>Around 27 large super market chains and 17 large pharmacies consume plastic bags.</p> <p>18 major large restaurants and fast food chains consume food / kitchen packaging products</p>	-
Equipment and mold supply	Technology and service providers	Equipment (injection, extrusion and blow molding) and molds (blow-molding molds) manufacturing	Mainly injection, extrusion and blow molding technologies. Local machinery in Egypt accounts for only 20%, while 80% is imported either from China, the EU or other markets.	A local plastic film extrusion machine manufacturing company called Shouman, which accounts for a good market share and exports to Europe	Most machinery is imported (80%)

<sup>25</sup> CAPMAS, 2016, Annual Bulletin

Value Chain Segment	Position in the Value Chain	Key Existing Activities	Key Existing Technologies	Major Players	Key Missing Activity
Waste collection and sorting	Recycling side	At MSW level: collection of waste from households and retailers	Collection using cars or trucks with minimal tools	At MSW level: most plastic waste collection is done by the informal sector At ISW level: most plastic waste collection is done by plastic traders	Effective and complete waste collection services MSW 1. Segregation at source 2. Proper collection practices 3. Proper handling and transportation 4. Establishing transfer stations
Plastic recycling	Recycling side	Plastic recycling consists of washing, crushing, drying, extrusion to produce recycled plastic pellets	Mechanical recycling using the main equipment which are crushers to produce plastic flakes and extruders to produce plastic pellets	Total plastic recyclers are 1,510 of which 70% are informal, while only 30% are formal	Plastic waste segregation at source.  Plastic chemical recycling and incineration with energy recovery.
RDF production	Recycling side	Production of energy source for cement factories by using combustible components mainly from plastic, paper and cardboard	Mainly mechanical operations such as shredding, screening and separation	Around 15 RDF companies that could serve energy intensive markets, such as the cement industry	RDF production



## 4.2 Strengths and challenges of linkages within the plastic value chain

The linkages and challenges of each value chain segment within the plastic value chain are discussed in this sub-section.

Each value chain segment has forward and backward linkages, according to its position within the value chain, as presented in Figure 4.2. Strong forward and backward interactions of the entities in each value chain segment are strategic and crucial for the plastic sector's growth and market development. The colors in the figure below represent the strength of the linkages. In the figure, green lines indicate strong linkages, yellow lines indicate medium linkages, and red lines indicate weak linkages. Almost all the segments in the production side of the value chain have medium to strong linkages with each other. This analysis is based on interviews with key stakeholders and plastics technical experts and then refined and validated in their interviews with the value chain stakeholders.

Medium linkage was identified between the single-use plastic end product manufacturers and the industrial facilities, distribution or retailers. This linkage is medium-strong depending on the quality demanded by the industrial facilities and the capabilities of the plastic end products manufacturer to reach this quality. Due to lack of specifications and standards of different products, the industrial facilities are torn between their demand for products of certain quality and the availability of supply from the plastic end product manufacturers. This is because their suppliers don't have set specifications of standards and specifications of the different packaging products. Depending on the sector of the industrial facility, the quality of packaging is graded. Industrial facilities aim at maintaining the balance between the adequate consistent quality of products from the suppliers and the cost they will incur consistent quality products.

Starting from the generation of waste, the linkage strength decreases to become weak in the recycling side of the value chain. The reason for these weak linkages is the inefficiency of the waste collection

system starting from waste collection from the source. The absence of segregation at the source leads to low quality of collected plastic waste.

The linkage between the collectors (waste traders) and the industrial facilities is a medium linkage. Industrial facilities approach more than one collector to make sure their industrial waste is collected on time and not left for storage in the facility. Another reason is that some industrial facilities have to ensure that their waste is used in a productive manner. These industrial facilities could include the multinational firms or local firms adopting social and environmental responsibility policies regarding waste disposal. They also tend to sell to only formal collectors and recyclers to ensure their waste is recycled.

The collectors both formal and informal take extra steps on the value addition ladder of recycling. Even the smallest collector takes extra steps to raise the value of the waste, and correspondingly the price. Depending on the size of the collector/trader and their formality/informality, the steps in recycling grade varies from a simple sorting and segregation to washing, crushing, drying and pelletizing.

However, most of the recycling plants use dilapidated machines as well as inefficient methods of processing, which negatively affects the quality of the product and consequently leads to selling at a low price or reaching the landfill and dumpsites.

Moreover, the impact of informal collection reflects on formal recyclers, who purchase from such collectors/traders. There is a major gap in the recycling side of the value chain between informal collectors and formal recyclers due to the informal control of the waste supply. This control causes lack of sustained supply for formal recyclers and fluctuations in waste prices. Furthermore, the linkages between the plastic recyclers and their clients (plastic processors and end-product manufacturers) are quite weak due to non-uniformity of the recycled plastic.

In an attempt to overcome the control of the informal sector, some of the recyclers extended their operations to collection of waste, rather than relying on purchasing plastic from collectors. Although expanding into collection seemed to be a way out of the waste collectors'/traders' control, the collection process added a burden on the recyclers, since it increases the collection logistics and cost of transportation and initial steps of waste preparation. That is when compared with traders, who due to their proximity to the source of waste for collection have an advantage.

Both streams of industrial solid waste and municipal solid waste are accessible to the RDF companies. The MSW is not purchased directly from the collectors and traders since the fraction used in RDF represents the non-recyclables. In this case, the RDF companies interact directly with the municipalities. With industrial waste, the RDF companies work with both the industrial facilities, especially those that need to ensure the waste has been handled properly, and the informal and formal collectors (traders) in order to diversify the sources of supply, as well as

maintain the large amount of the contracted supply to the cement factories.

The linkage between the RDF companies and the cement factories is a medium linkage given the cement factories requirements for certain supply quality and quantity. The product quality testing is always done at the cement factory. RDF companies invest in an in-house quality testing to assure the quality of their product. In some cases, both the RDF company and the cement factory agree to outsource the product quality testing to a third party.

The noted loss in the recycling sector in Egypt is due to the inconsistency and low quality of the recycled products that aren't close to prime quality, restricting the recycled product to be used in lower-end applications rather than reaching its original grade again. Often only the processing of the waste takes place in Egypt, but not to the stage of reaching the final product. PET, which is primarily used in drinking bottles, is rarely recycled to reach a food grade plastic again, but rather exported to be fed to international manufacturing facilities.



## Production side of value chain

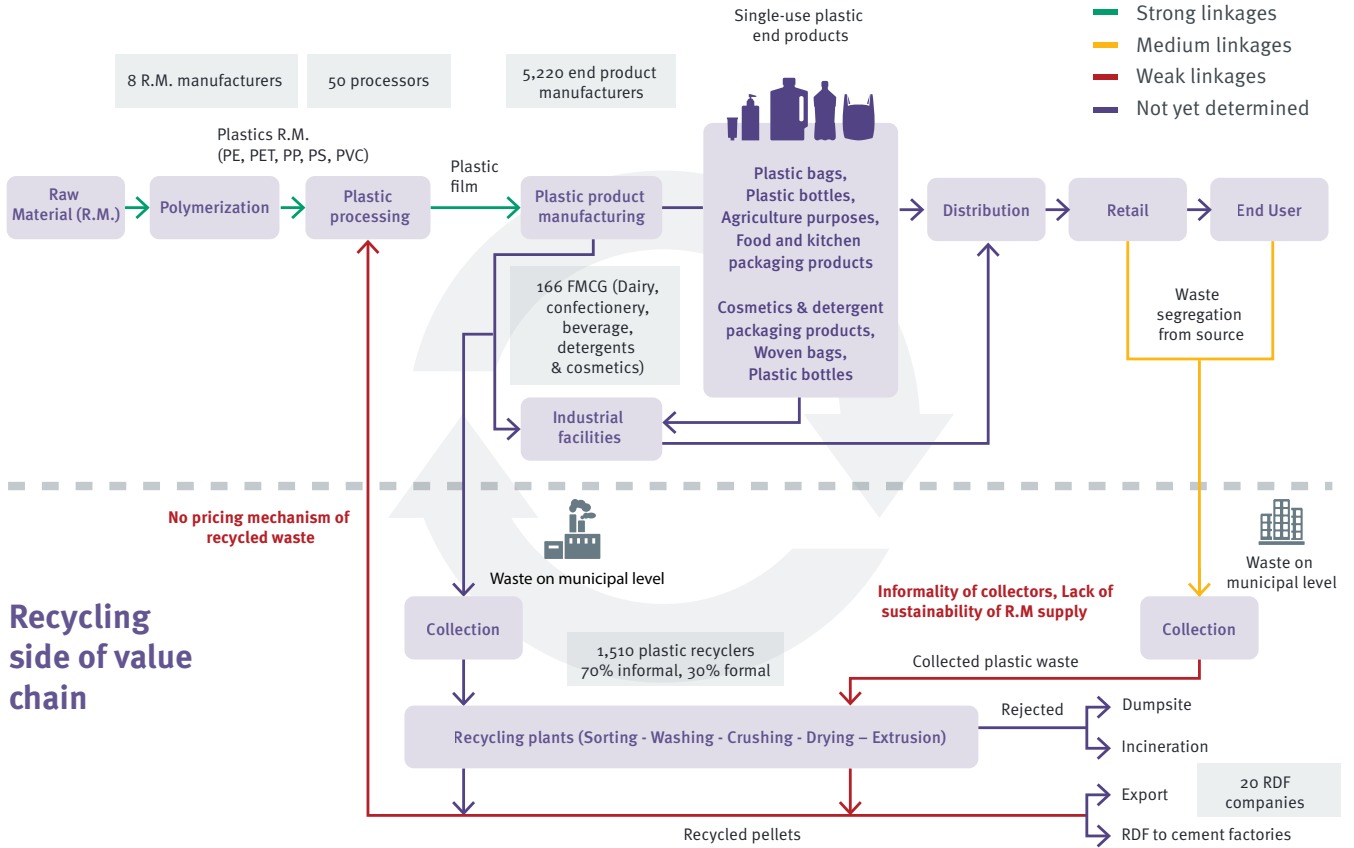


Figure 4.2 Analysis of plastic value chain



### 4.3 Analysis of the value chain

Additional stakeholders interviews were conducted with private sector entities in the plastic production and recycling industry, with the objective of understanding the activities carried out by these entities, the size of their investment and their production capacity. Additionally, the interviews aimed at validating the findings gathered from the interviews conducted in phase II. The stakeholders' analysis was done through interviews with each stakeholder, based on the value chain segment in which they operate, their relevant activities and the barriers and recommendations they identified within the industry.

The stakeholders interviewed in this phase were private sector firms across the value chain, including raw material manufacturers, plastic end product manufacturers, RDF companies, equipment suppliers, formal and informal collectors and traders, formal and informal waste recyclers in addition to industrial facilities.

The coming section discusses each value chain segment, supply, demand and production stakeholders, their assessment of the provided services and the barriers facing plastic sector improvement, as well as the proposed interventions to overcome these barriers of the sector.



Interviews were conducted with 27 stakeholders; their distribution is shown in Figure 4.3:

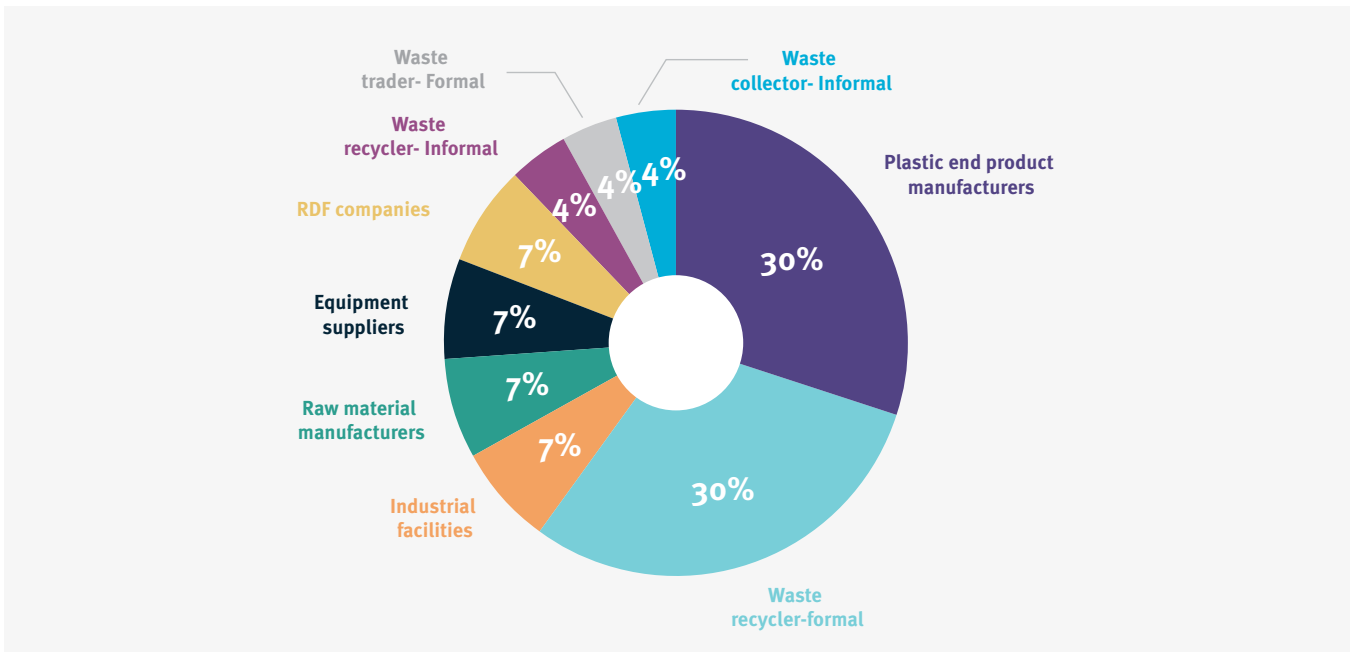


Figure 4.3: Interviewed value chain stakeholders

#### 4.3.1 Supply and demand stakeholders of single-use plastic



##### Raw Material Manufacturers

The Egyptian plastics market depends on both locally produced and imported plastic raw materials. Egyptian petrochemical companies produce around

2 million tons of various types of plastics annually, which contribute to only 24 per cent plastic raw materials required by the market.

In reference to Figure 4.2, the key activities are: extraction of plastic raw materials from natural gas and polymerization process to produce petro-based plastic pellets (PP/PE/PET/PS/PVC). The key existing technologies are the natural gas cracking processes, then polymerization process to produce pellets. The interviewed raw material manufacturers produce PE

and PP chips with a total production of 200 K ton/year and 1200 K ton/year respectively. Although the produced raw material by the eight petrochemical companies contributes to nearly a quarter of the local demand by the plastics industry in Egypt, their production is divided between local and export markets with the percentages: both interviewed manufacturers confirmed that their supply feeds 60 per cent local and 40 per cent export. The strengths of this manufacturing segment is shown in their internal product quality testing labs and their investment in R&D to develop their products



### Plastic processors

The second player in the value chain that comes after the raw material manufacturers are the plastic processors, they use new plastic pellets as well as

plastic films, which are then processed for coloring and improving their physical properties to produce plastic films. Plastic film is a semi-finished product used in producing all plastics end products. The interviewed stakeholders mentioned that they rely mainly on imported raw material (80 per cent imported, 20 per cent local), which is close to the percentage in the literature which was (76 per cent imported and 24 per cent local), and use high and low density PE as raw material, all of their customers are the local plastic end product manufacturers. The technology used is imported, mainly from Taiwan and China and they struggle to acquire the needed maintenance services for the production equipment and to access spare parts. A key strength in this segment of the value chain, is that processors have clear quality testing procedures and linkages with certified product quality testing labs.

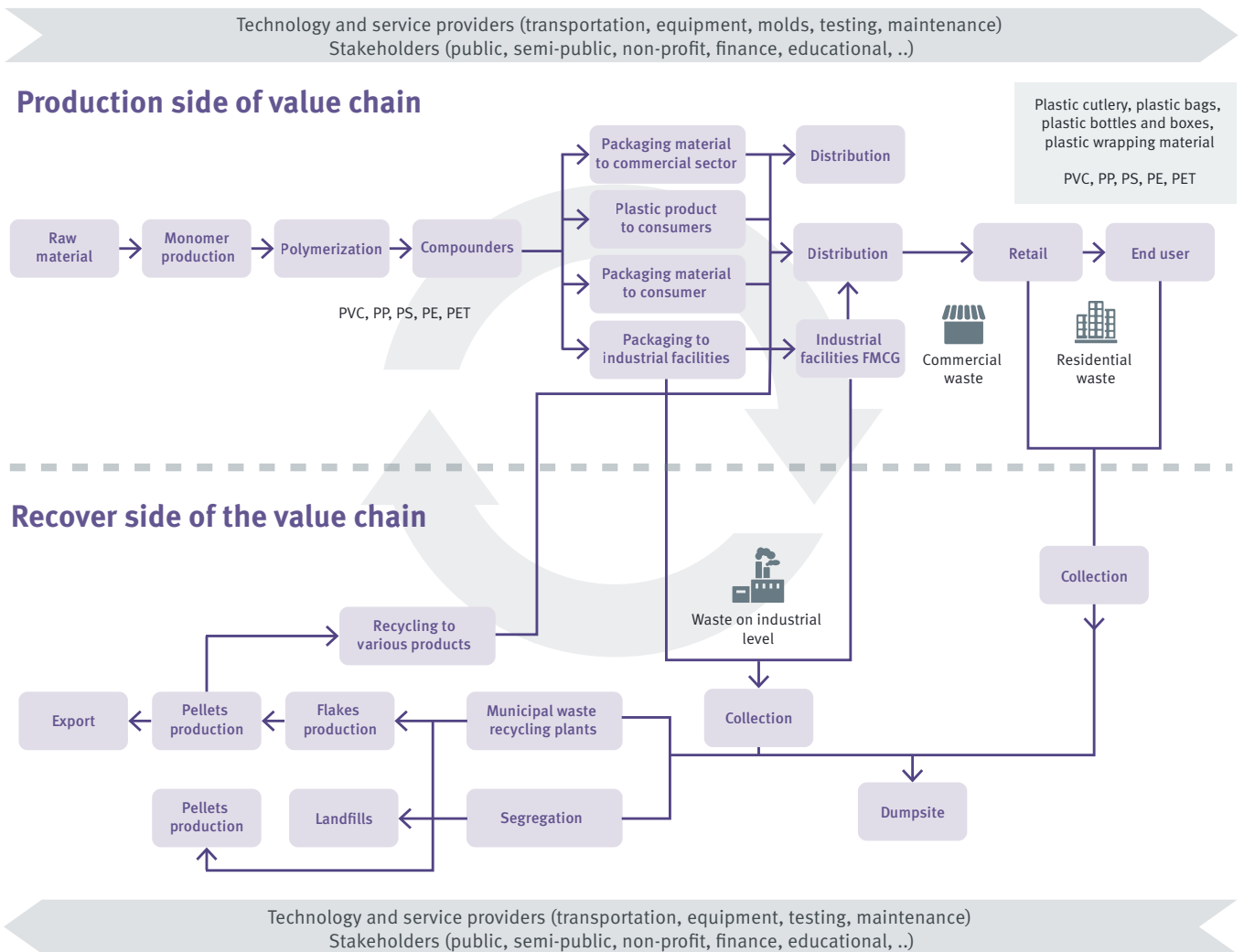


Figure 4.4 Value chain structure of single-use plastics



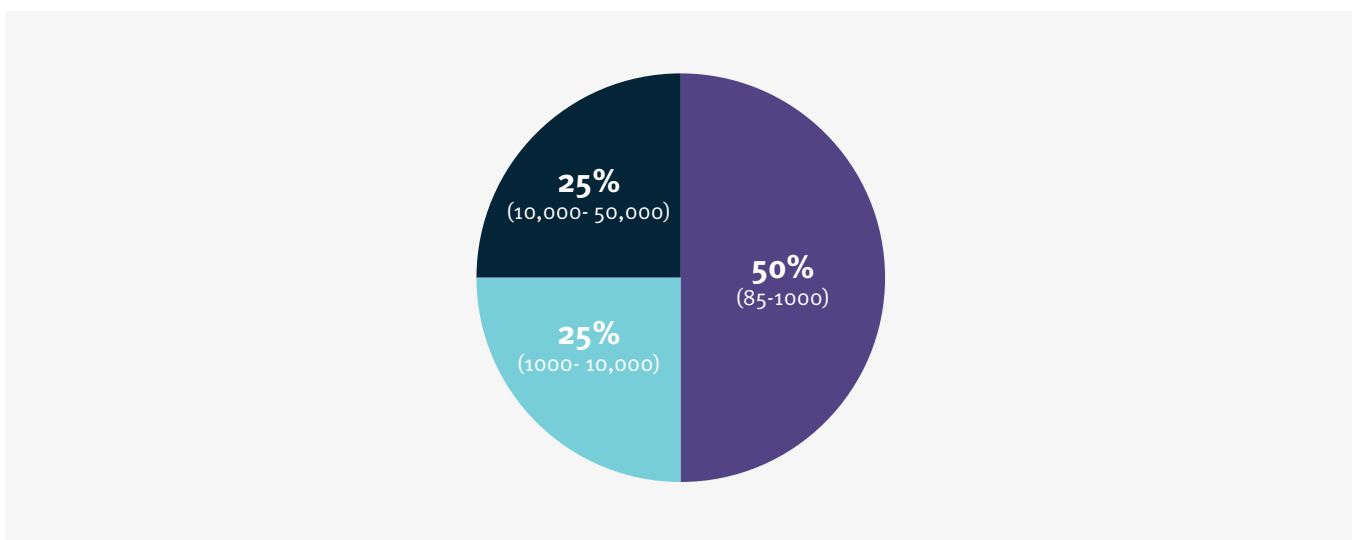
## Single-use plastic end product manufacturers

The third player in the value chain is the single-use plastic end product manufacturers. Eight manufacturers were interviewed, their production covered the applications of activities responsible for the highest consumption, which are packaging film and the agricultural applications. The main activities

of the interviewed plastic single-use manufacturers are manufacturing packaging products for cosmetics, detergents, plastic bags, mail bags, plastic films, medicinal packages, and agricultural applications: green houses and irrigation hoses and tubes, plastic insulation and lining, in addition to one manufacturer of biodegradable bags. Their production ranges between 85 and 55,000 ton/product/year as illustrated in Figure 4.5.



**Figure 4.5** Interviewed Single use- end product manufacturers and corresponding production size in (ton/product/year)



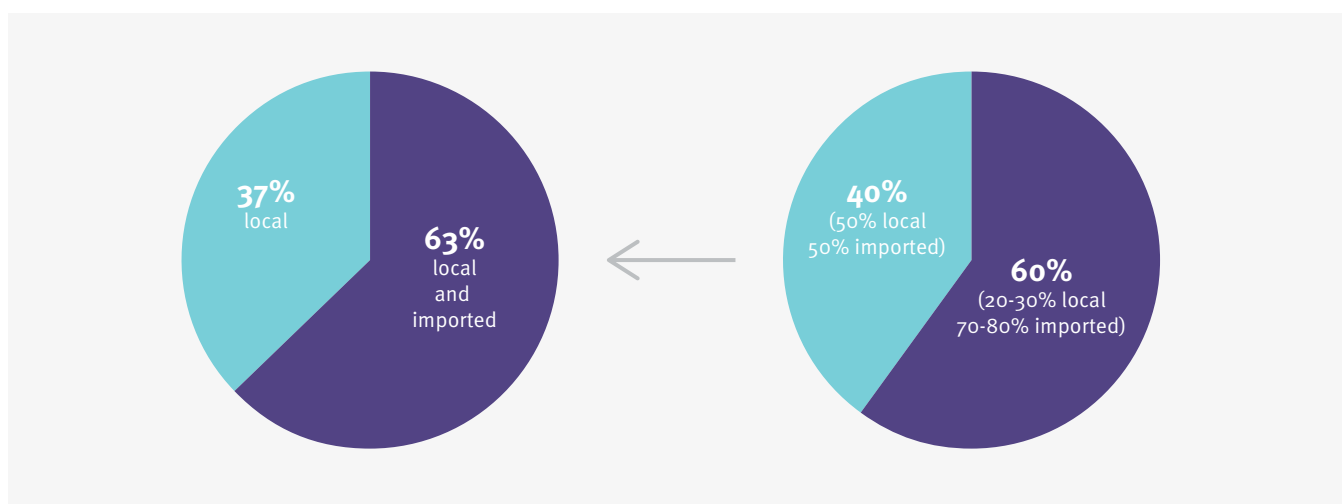
**Figure 4.6** Interviewed single-use end product manufacturers by size in ton/product/year

As seen in Figures 4.5 and 4.6, most of the end product manufacturers of single-use plastics are working on PP, PE and PET packaging products and plastic bags. This confirms the high contribution of PP, PE and PET in the single-use plastics industry and subsequently the high amount of generated waste. This high amount of specified waste is to be absorbed by the waste recycling side.

With regards to the customers that the single-use plastic end product manufacturers target and depend on to sell their products, most of those interviewed mentioned that they mainly depend on local customers as 90-100 per cent of their production is targeting local markets, whereas only two manufacturers highlighted that they sell their products to both local customers and export markets.

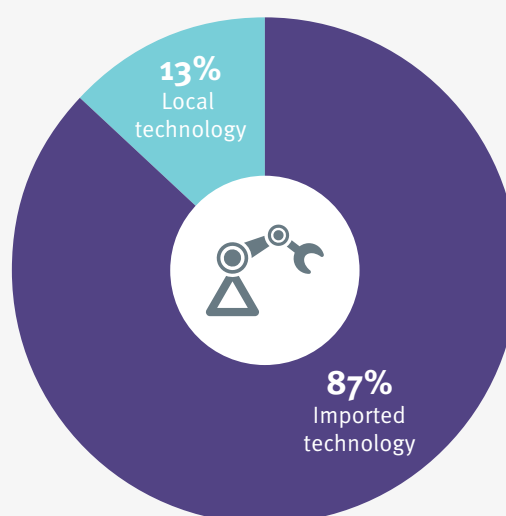
They pointed out that the export markets are: Europe, Africa, Lebanon and Kuwait.

With regard to main raw material suppliers as illustrated in Figure 4.7, 37 per cent of the manufacturers interviewed mentioned that they rely on local supply, while 63 per cent mentioned that they rely on both local and imported supply. Sixty per cent of the manufacturers interviewed said they have a mix of local and imported raw material supply, estimating the breakdown of that supply to be in the range of (20-30) per cent local / (70-80) per cent imported, while 40 per cent mentioned equal contribution of local and imported supply of raw material. This is close to the market study developed in phase II of the project, which stated that the raw material supply is 24 per cent local supply and 76 per cent imported supply.



**Figure 4.7** Percentage of raw material supply: local versus imported

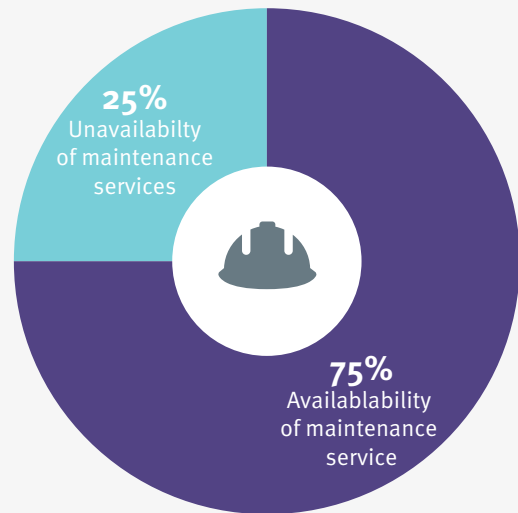
The plastic manufacturers were also asked about the technology utilized for production, whether they rely on imported technology or technology that can be purchased locally from local suppliers. Thirteen per cent of those interviewed said that they rely on local technology, while 87 per cent use imported technology as presented in Figure 4.8. It is worth mentioning that the plastic end product manufacturers utilize imported technology mostly from Europe, Korea, Taiwan and China.



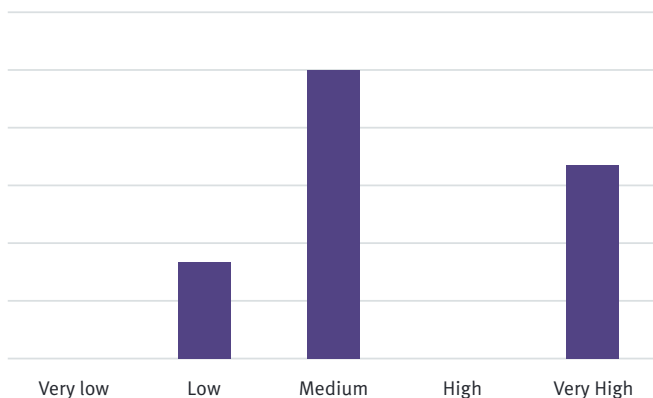
**Figure 4.8:** Type of technology utilized: Local versus imported



When asked about the availability of equipment maintenance services, 75 per cent of the stakeholders interviewed believe that maintenance services existed, while 25 per cent mentioned that maintenance services are missing, see Figure 4.9. This directly threatens the continuity of production. The perceived unavailability of maintenance services is due to internal and external reasons. Internally, there are two main reasons, firstly, the lack of internal procedures for proper maintenance processes, both preventive and corrective, in the manufacturing facility, and secondly, the unavailability of skilled engineers and technicians needed to provide these maintenance services. Externally, the main reasons are the lack of access to experts to provide the sophisticated maintenance services to the imported equipment and limited access to trusted maintenance services and spare parts.



**Figure 4.9:** Availability versus unavailability of equipment maintenance services



**Figure 4.10:** Satisfaction level of stakeholders regarding the existing equipment maintenance services

Through the interviews, the stakeholders who mentioned that equipment maintenance services exist were also asked to rate their satisfaction level with the provided services. This was crucial, because stakeholders tend to believe that the service existed because of the presence of a local agent of the equipment suppliers. When asked to rate their satisfaction level of the provided services, most of the responses indicated a medium satisfaction level. They mentioned that there is only light mechanical maintenance and for any electrical or significant mechanical maintenance they outsource maintenance experts. One of the interviewees mentioned that the lack of skilled labor and experienced maintenance engineers resulted in improper operation of the equipment or partial/complete failure. Moreover, lack of commitment to periodic maintenance schedules was one of the raised reasons for equipment failure. Figure 4.10 highlights the satisfaction level of the six manufacturers who had previously mentioned that maintenance service exists. All of the interviewees added that the need for local maintenance services providers and maintenance centers is crucial for operation continuity.

For the manufacturers targeting the local market only, the definition of product quality is vague. While they mentioned that they conduct quality procedures, when discussed further, they explained that it is limited to final product visual inspection and not applied to all products and batches. The definition of product quality is not clear and the procedures to maintain it are not in place. This is primarily because there are no standards and specifications of the products. However, the importance of product testing was raised by the manufacturers who target international markets and export their products. They added that it is very crucial to meet specific standards and specifications in order to export to Middle Eastern and European markets, and therefore it was crucial to develop internal product quality testing procedures and reach out to testing labs. Both manufacturers targeting local and export markets have identified that they have limited linkages with testing labs and they are neither aware of all the available testing labs in Egypt, nor the available services that can be provided regarding quality control or testing.

On the demand side, the interviewed stakeholders are large industrial facilities working in the Food and Beverage sector who utilize plastics for packaging their products. Their main suppliers for packaging are the single-use plastic end product manufacturers. While their packaging supply is 100 per cent from the local market, their main concern regarding single-use plastic production in Egypt is the inconsistent product quality and the lack of standards and specifications. They added that the plastics-end manufacturers do not invest in product R&D to improve their product quality and lack the technical knowledge needed for this. Moreover, the industrial facilities mentioned that they have limited knowledge on available testing labs and their provided services, and added that according to their knowledge, some testing is not available locally and therefore they send product samples abroad to be tested.

### 4.3.2 Recycling side stakeholders:



#### Waste recyclers (formal and informal)

The ten interviewed waste recyclers were asked the same questions asked to the manufacturers, regarding the main activities, production capacity and products, supply material, technology used, customers and targeted markets, current services provided to the recycling businesses and their level of satisfaction.

The recycling entities activities are as follows:

- Recycling PET (grade 1) bottles of water to transparent color pellets
- Recycling PS bottles
- Recycling PP scrap to PP Pellets
- Shredding, washing, crystalizing and pelletizing
- PE & PP washing, shredding & pelletizing

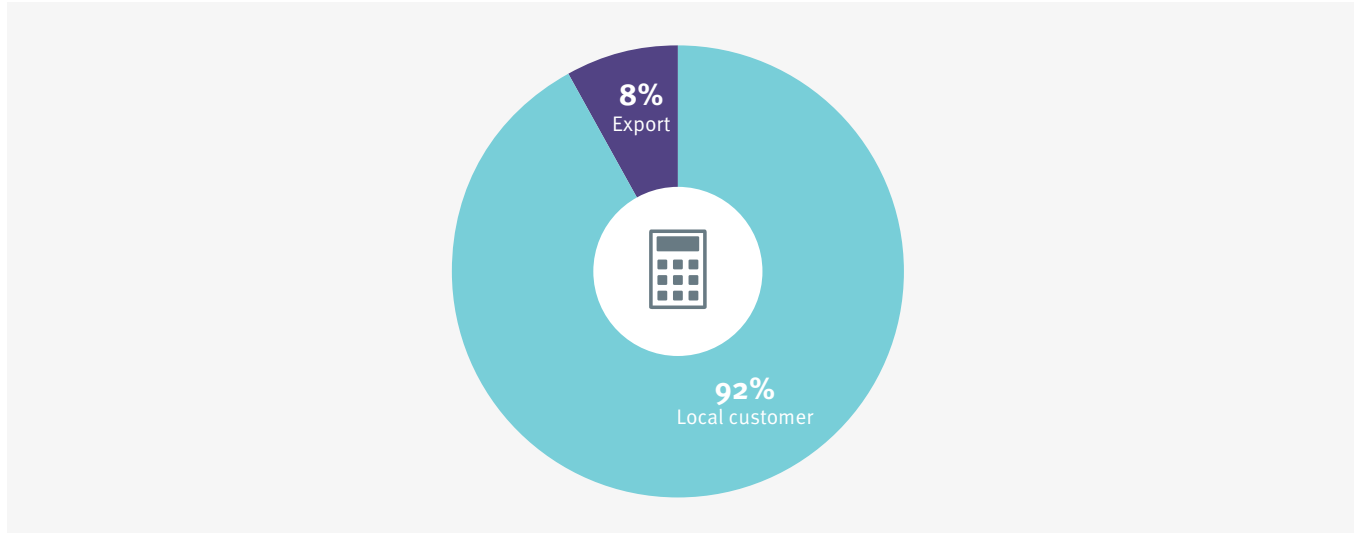
- PET, HDPE, LDPE & PP collection, sorting and shredding
- Recycling and manufacturing biodegradable plastics
- Pelletizing of PET Blocks
- Shredding, washing, and pelletizing of PP woven bags

The recyclers' capacities vary considerably depending on the size of the business. Their production varies between 20-3000 ton/year/product.

Most of the recyclers sell their products to the local market, according to Figure 4.11, 92 per cent of the recycling entities interviewed mentioned that they sell to local customers, while 8 per cent mentioned that they sell to export markets with some difficulties such as: product quality and regulations against child labor, as children are sometimes involved in the collection and segregation of waste in the informal sector. In the local market, the recyclers sell their products to the plastic converters (intermediate manufacturers) as well as to the end

product manufacturers of bottles, plastic bags, hoses, green house covers, pipes, light tables and chairs. The recycler that manufactures biodegradable products sells their products to hyper markets and market segmentation branches. Regarding the export market, the recyclers mentioned that they sell their

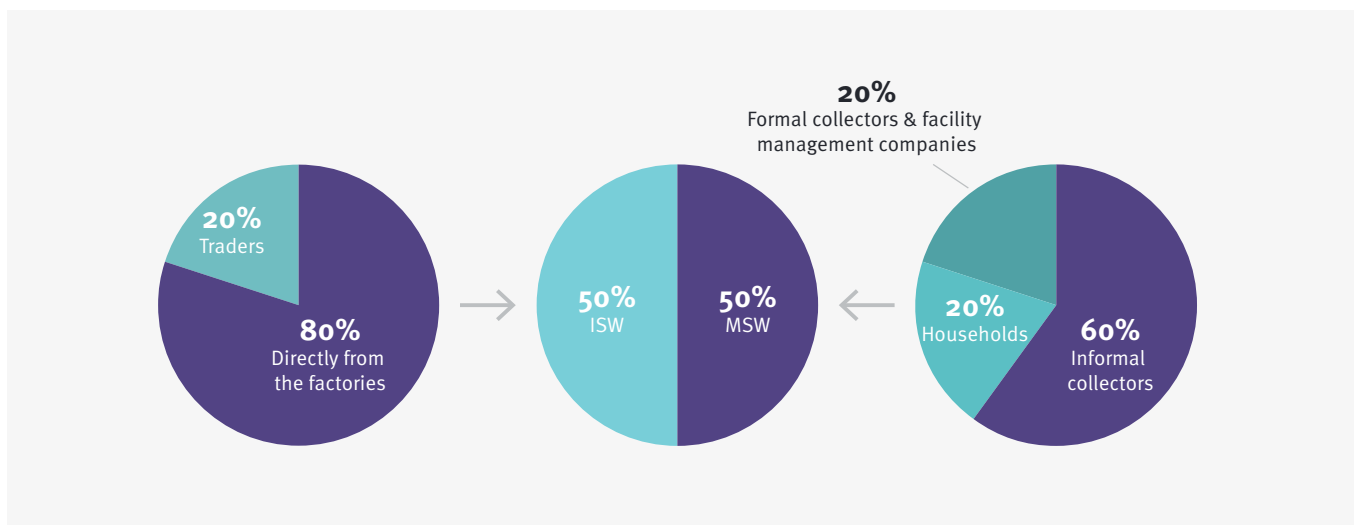
products to end-user manufacturers and intermediate processors/converters. It is worth mentioning that the recycler manufacturing biodegradable products targets the export market through selling their products to international retailers.



**Figure 4.11** Targeted markets and customers of the interviewed plastic recycling entities

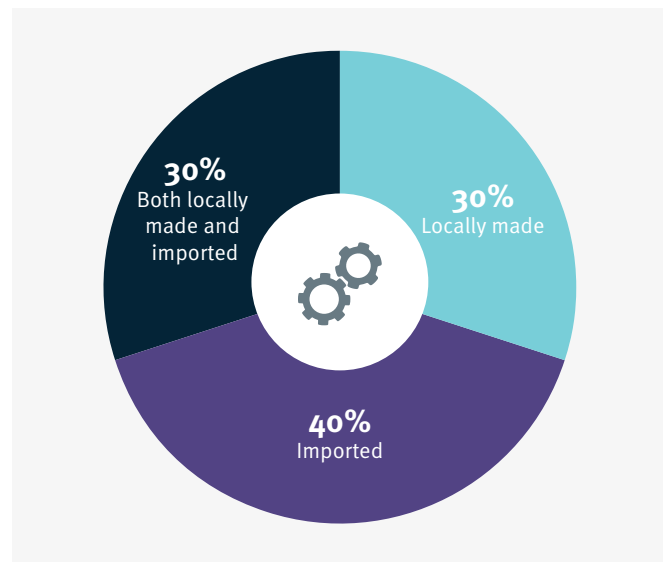
The supply waste stream of raw material of the interviewed recycling entities is equally distributed between MSW and ISW as illustrated in Figure 4.12. 80 per cent of the recyclers dealing with ISW get their plastic waste directly from the factories, while 20 per cent get the waste through ISW formal traders. The process of collection is more complicated with

MSW, as the informal sector dominates the collection process. The interviewed recycling entities mentioned that 60 per cent of their MSW supply is collected by informal collectors, while 40 per cent by formal collectors and the facility management companies, as well as households equally, each 20 per cent.

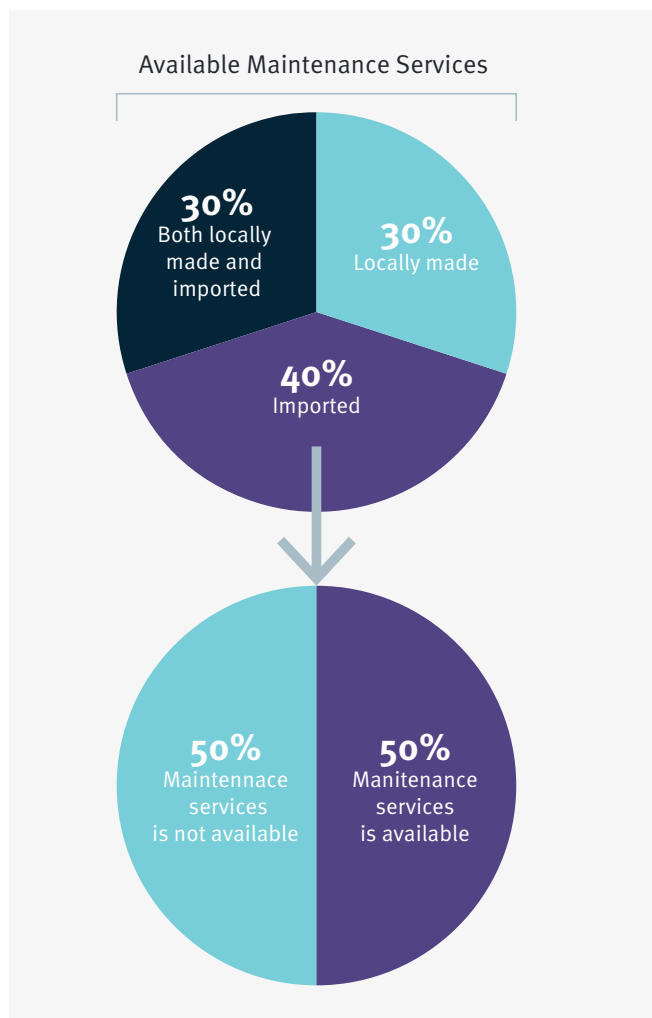


**Figure 4.12** Raw material supply sources analyzed by type of Waste Stream (MSW, ISW) and the collection

As mentioned in Figure 4.13, 40 per cent of the interviewed recycling entities mentioned that they rely on imported technology and machinery, 30 per cent on locally made technology, while 30 per cent of the interviewees mentioned that they use both locally made and imported technologies. The imported technology is made in China, but some of the entities are attempting to replicate it locally and add a filtration process. The entities combining both local and imported technologies have machines that are fabricated locally, while the crystallizer and pelletizer are imported from China. One entity reported that they import all the machinery except for the compactor, which is locally made.



**Figure 4.13** Technology utilized for production- Locally made versus imported



**Figure 4.14** Maintenance services availability at recycling side

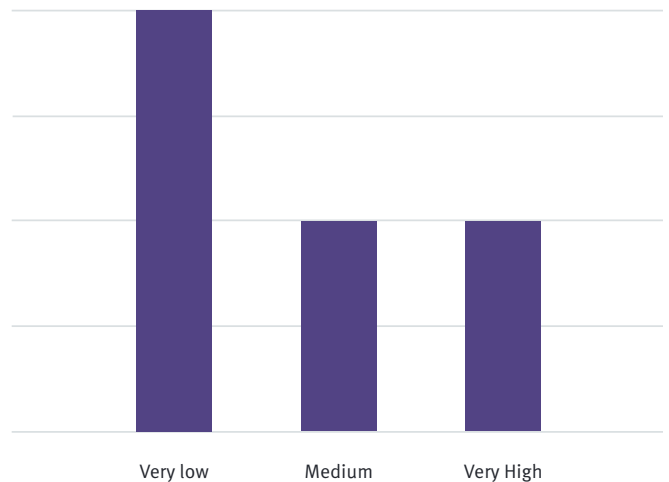
Half of the recyclers, as presented in Figure 4.14, mentioned that despite the high efficiency and high production capacities of their imported recycling machines, when it comes to maintenance, there are huge obstacles. This is due to a lack of access to qualified local maintenance service providers for imported technologies and machinery. Attempting to remotely access maintenance services, by outsourcing the equipment to a manufacturer's maintenance services failed. Moreover, it was mentioned that the spare parts are imported and there is no alternative local supplier or alternative spare parts.



On the contrary, maintenance of locally manufactured equipment is much easier due to the availability of spare parts in the local market and reasonable maintenance fees. However, the efficiency of the production and the quality of products are significantly less when compared with the imported technology. The characteristics and source of the collected plastic waste affect the choice of the sorting and processing technology, which correspondingly affect the quality of the recycled output, hence the applications that this output can be used for. However, lack of analysis of the collected plastic waste characteristics and choosing the suitable technology based on this specification hinders the plastic recycling sector. The final product is totally dependent on the waste and its characteristics, as well as the used technology to process and recycle this waste, but local technologies are not advanced enough to consider these differences in waste specifications and characteristics resulting in lower production efficiency and subsequently less product quality.

When asked about the level of satisfaction on the provided maintenance services, the recyclers with locally purchased equipment had high satisfaction

levels with the availability of skilled labor and spare parts. High satisfaction was also communicated by the recyclers who rely on a combination of both local and imported equipment. On the contrary, the recyclers with imported equipment suffer from a lack of qualified local maintenance service centers and the unavailability of spare parts, resulting in very low satisfaction level as presented in Figure 4.15.

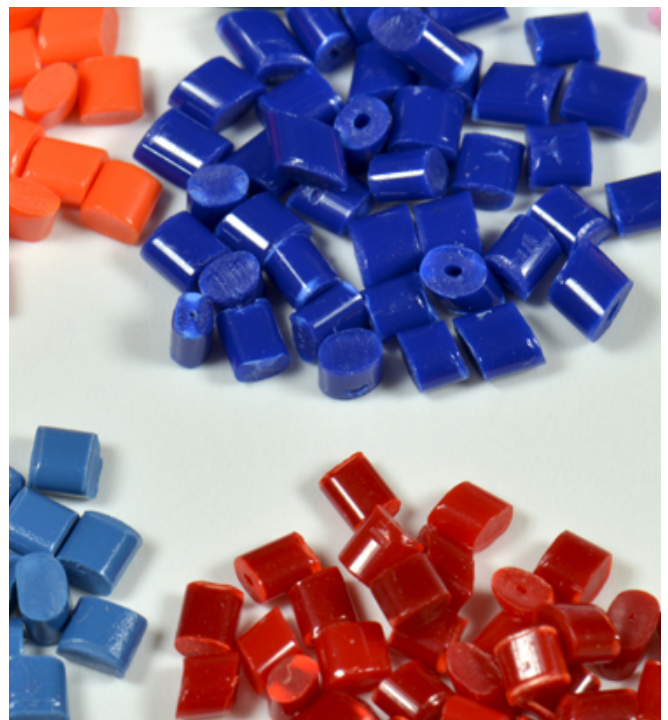


**Figure 4.15** Satisfaction level of stakeholders regarding the existing equipment maintenance services

All the interviewed recyclers confirmed that they don't conduct any quality testing for their products. Regarding the visual inspection, 2 out of 10 said that they implement such procedures internally. All of them said that the customer is the party responsible for the product quality testing.

The recyclers have limited knowledge about the methods and techniques of product testing, this creates conflict when dealing with a customer who executes the product testing and shares only a product's acceptance or rejection report, leaving the recycler unaware of the reason for the rejection or the product testing.

The lack of product specifications and standards is also considered a main issue between the recyclers and their customers that hinders the growth of the recyclers' businesses.





## RDF companies

The RDF recyclers are mainly dealing with the cement factories. Their main activities are MSW and ISW sorting, shredding, humidifying and RDF processing. Their suppliers are local and mainly dealing with municipalities from governorates. The technology used is imported and the services provided for maintenance of the equipment depend on the presence of an agent of the equipment's manufacturer. In case there is no local agent, they suffer from a lack of maintenance services and availability of spare parts and therefore they outsource an expert to maintain the equipment. Regarding the product quality testing, the cement factories always do the testing, but some RDF recyclers invest in product testing using in-house testing, as well as the R&D to assure the quality of their products. In case both parties disagree on the product quality, they outsource the product quality testing to a third party (one of the certified testing labs).



## Machines and equipment suppliers

Locally manufactured and imported machines and equipment related to waste management are available in the local market. They vary from equipment needed for collecting, sorting, baling, shredding, crystallizers and pelletizers, waste containers and waste vending machines whose capacity varies from 2 to 10 machines per year (imported from China). The suppliers of the imported machinery provide maintenance services to their customers and they state that they have available spare parts of all their equipment; and the suppliers of the locally manufactured machinery have the knowledge to upgrade the machinery according to the customers' need.



## 4.4 Barriers and interventions

The barriers that were preliminarily mapped and analyzed against the value chain segments were then refined and validated by the different value chain stakeholders to fill the gaps. These gaps are missing activities within the value chain of supporting products and services, or missing linkages between various entities in the value chain which hinder the market development.

Understanding the barriers that exist is crucial to addressing them with proper interventions and for developing the plastic sector overall. This analysis was conducted through interviews initially with the key stakeholders and then refined, validated and expanded. The interviewed stakeholders determined barriers and recommended interventions to enhance the plastic value chain.

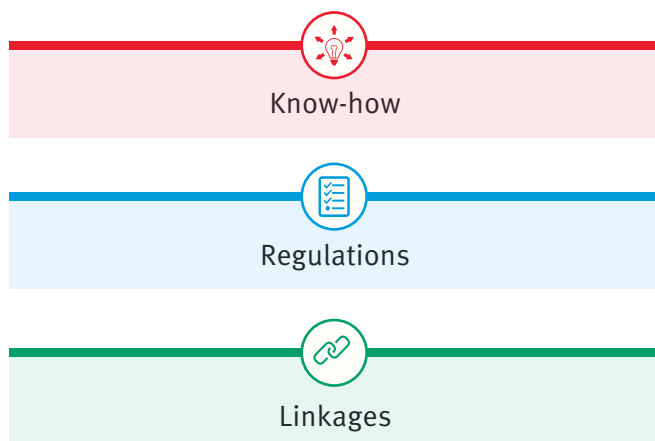
The three main categories that were previously identified with regards to reducing single-use plastic waste and increasing the entities' profitability are:

1. Single-use plastic recycling businesses
2. High resource efficient production
3. Use of alternative packaging material

The barriers were then identified and classified based on these three categories, lack of access to knowhow, regulation related barriers and the missing linkages between the sector players and service providers. The barriers are illustrated in Figure 4.16. The interventions to remove these barriers were then identified and classified in Figure 4.17

The different barriers and their corresponding proposed interventions are color coded according to their category.

The categories are:





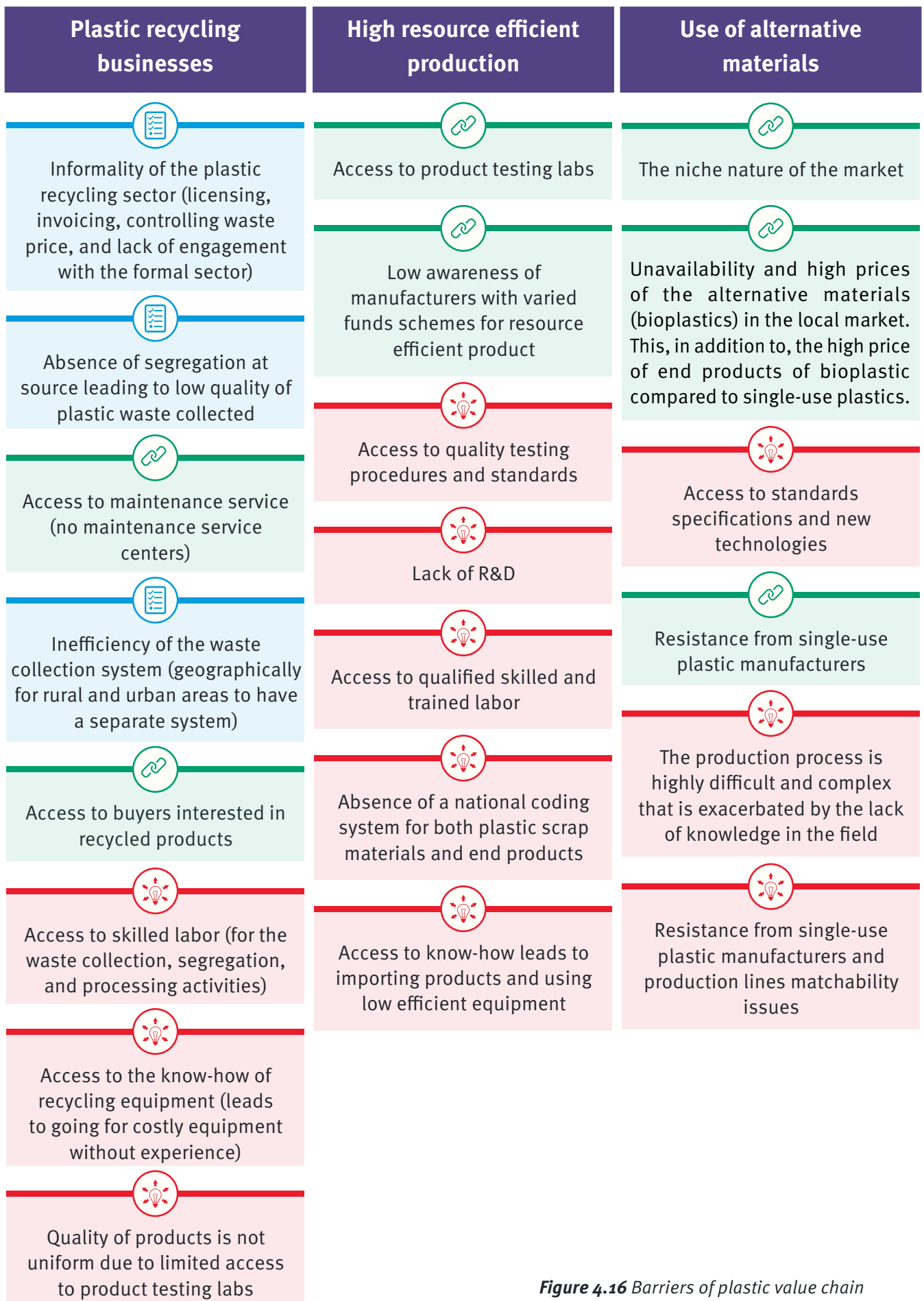
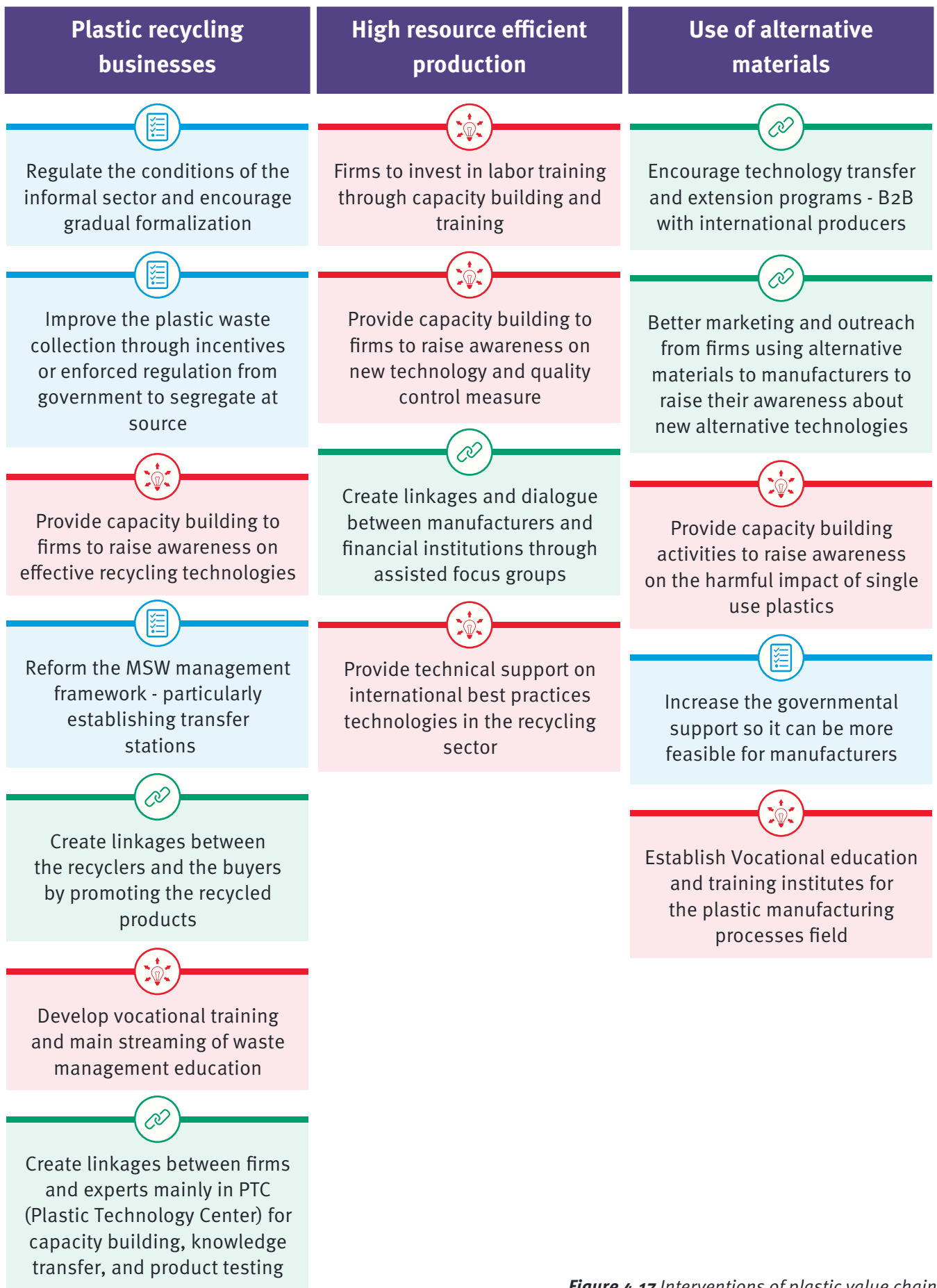


Figure 4.16 Barriers of plastic value chain



**Figure 4.17** Interventions of plastic value chain



**A staggering 8 million tons of  
plastics end up in the world's  
oceans every year**





# 05

## SWOT Analysis

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As discussed before, three main factors affect the reduction of single-use plastics and increase in manufacturers' profitability; increasing single-use plastic recycling businesses, increasing resource efficiency of manufacturers, and encouraging the

use of alternative packaging materials. This section will assess them through SWOT analysis presented in Table 5.1, Table 5.2 and Table 5.3. This was developed based on interviews with key stakeholders and literature review.





**Table 5.1** SWOT analysis of single-use plastic recycling businesses

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• High demand of plastics in the local market</li> <li>• Availability of plastic waste as a raw material</li> <li>• New labor opportunities</li> <li>• Preserving more petrochemicals as a natural resource</li> <li>• High added value to plastic waste</li> </ul>	<ul style="list-style-type: none"> <li>• Informal sector</li> <li>• Lack of government support to informal sector, absence of effective actions to formalize the sector</li> <li>• No effective waste collection system</li> <li>• Limited access to skilled labor for collection, segregation and processing activities</li> <li>• High contamination of plastic waste, which increases time and effort for segregation</li> <li>• Limited know-how to produce effectively and at the highest quality</li> <li>• No skilled-labor to work in high technology recycling</li> <li>• No standard specifications for food grade products from plastic waste</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Improvement of plastics quality by using specific additives</li> <li>• Incentives to households and commercial sector for segregation at source</li> <li>• Increasing government awareness through accurate national studies</li> <li>• Gradual formalization of the informal sector</li> <li>• Encouraging the development of plastic recycling clusters in each governorate</li> </ul>	<ul style="list-style-type: none"> <li>• Regulations and monitoring of end user to sort waste absent, leading to low quality supply</li> <li>• Absence of standards and specifications create confusion between producers and end users</li> <li>• Price of petroleum which is the main competitive to recycled plastics</li> <li>• Global crisis, such as Covid-19</li> </ul>

**Table 5.2** SWOT analysis for resource efficient production for manufacturing facilities

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Existence of supporting organizations that help manufacturing facilities to increase resource efficiency in production</li> <li>• Access to technical support, know-how and experienced consultants</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturers' low awareness of funding schemes for resource efficient production</li> <li>• Access to talent for product design</li> <li>• Lack of local manufacturing of dyeing molds</li> <li>• Limited access to know-how which leads to importing products and using low efficient equipment</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Saving opportunities for manufacturers through resource efficiency</li> <li>• Increasing support to manufacturing facilities by offering grants and affordable funds</li> <li>• Development by the Government of mandatory minimum requirements on green economy for manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• High prices of energy</li> <li>• Global crisis, such as Covid-19</li> </ul>

**Table 5.3** SWOT analysis for using alternative packaging materials

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Reducing fossil fuel usage</li> <li>• Reducing carbon footprint</li> <li>• Existence of some initiatives in Egypt, such as those by the Red Sea governorate and supermarket chains like Carrefour, for using paper bags instead of plastic bags</li> </ul>	<ul style="list-style-type: none"> <li>• Limited access to know-how</li> <li>• Limited end user awareness limits demand</li> <li>• Limited market segments, which is environmentally driven</li> <li>• Higher cost decreases competitiveness</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Development of regulations by the Government for using alternative materials</li> <li>• Market opportunities in alternative material can lead to high returns</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of standards and specifications complicates business transactions</li> <li>• Absence of regulatory framework organizing access to supply and defining raw material specs</li> </ul>

# 06

## General SWM regulatory framework

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**The establishment of the Waste Management Regulatory Authority (WMRA) in 2015.** The authority is intended to develop and catalyze the SWM sector in Egypt as the overall regulator. The roles of WMRA are as follows: set the rules and responsibilities for all entities working on solid waste; develop adequate legislation and strategic plans to improve all aspects of the integrated waste management in the country; develop mechanisms and procedures for cost recovery; encourage investment and seek opportunities for funding; provide guidance and supervise decentralized developments related to SWM and cleanliness in all governorates; collect and analyze data on the quantities and composition of solid waste at the governorate level, and establish systems for data management, monitoring and reporting; develop execution models and financing schemes to deal with all types of waste, including packaging and packaging waste, electronic waste, batteries, construction and demolition waste, industrial wastes, agricultural waste and medical waste. It also will work to promote the recycling industry and related professions, raise public awareness and community commitment to sound management of solid waste<sup>26</sup>.

**Law # 202 of 2020, aims at regulating waste management in Egypt.** The law established The Waste Management Regulatory Authority (WMRA) as the sole authority responsible to oversee and monitor waste management. WMRA is tasked by developing the national plan for combating environmental pollution through waste management. The law focuses on the integrated management of municipal, industrial,

agricultural, and demolition and construction waste as well as their safe disposal. The law classifies waste as hazardous and non-hazardous. Hazardous waste is defined in the law as any waste with harmful effect on human health or the environment as a result of their physical, chemical or biological characteristics or waste that contain any dangerous qualities. Non-hazardous waste is defined as waste that is not dangerous, whether municipal, industrial, agricultural, and construction and demolition waste or their equivalent<sup>27</sup>.

The main goals of the Law are<sup>28</sup>:

1. Develop an integrated system of waste management that ensures safe disposal
2. Reduce waste generation
3. Promote reuse
4. Ensure recycling, treatment, and final disposal of waste
5. Manage waste sustainably to reduce damage to public health and the environment.

Furthermore, the law provides authority to WMRA to manage waste in Egypt with the following roles<sup>28</sup>:

1. Regulate, track, audit, evaluate, and develop integrated waste management activities
2. Attract investments in the field of Waste Management
3. Follow up on the implementation of waste management plans in cooperation with governmental institutions, municipal governments, the private sector, NGOs, and international organizations
4. Issue licenses needed to undertake waste management activities

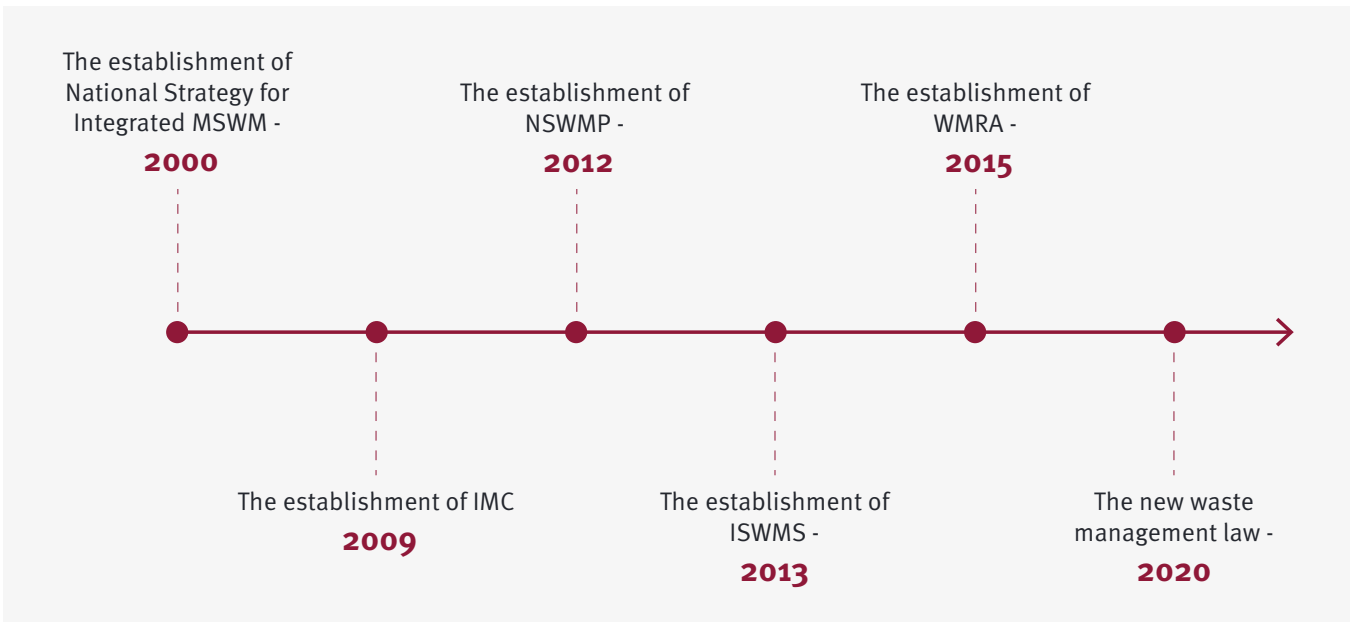
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<sup>26</sup> FAO (2020). "Prime Minister Decree No. 3005 of 2015 establishing the Waste Management Regulatory Agency". FAOLEX Database. Retrieved Online

<sup>27</sup> Shalakany (2020). "New Waste-Management Law brings Egypt closer to going Green". Shalakany firm

<sup>28</sup> FAO & FAOLEX (2020). "Waste Management Law No.202 of 2020". Food and Agriculture Organization of the United Nations.

The figure below summarizes the main efforts made by the Egyptian government to enhance the SWM system, as discussed above.



*Figure 6.1* Timeline of the recent history of SWM in Egypt





# 07

## Plastics regulatory framework

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This report focuses on single-use plastic products and provides a thorough understanding and segmentation of the plastic value chain, which accounts for the value chains of both plastic production and recycling and considers their circularity and intersections. The following sub-sections will examine the institutional and legal framework and initiatives that tackle or interact with the plastic value chain. Annex 4 summarizes these initiatives in terms of scope, date, and implementing entities.

### 7.1 Institutional framework for plastics

There are multiple institutions that interact with the plastic value chain on different levels, such as production, trade, and recycling. These institutions are as follows:

1. **MTI:** The Ministry of Trade and Industry along with its affiliates offer the plastic value chain services such as training, innovation and technology transfer, and aim to improve export capabilities and the competitiveness of Egypt's plastics industry. For example:
  - a. **The Plastics Technology Center (PTC):** provides many services to the plastic value chain in terms of production, such as testing for raw materials, compounds, and plastic products; feasibility studies; quality management systems; technical consultation; technology transfer; research; and prototype (pilot production) services for all plastic value chain stakeholders.
  - b. **The General Organization for Export and Import Control (GOEIC):** offers services to the

plastic value chain in terms of trade, it mainly deals with importers and exporters of plastic raw materials and products through setting product specifications, registering importers and exporters, and issuing certificates of origin for Egyptian products (established by Presidential Decree no. 1770 of 1971<sup>29</sup>). (See Annex 3 for more details).

2. **Egyptian Customs Authority:** operates under the Ministry of Finance. There are 42 customs outlets such as seaports, airports, and points of entry, as well as dry port storage facilities and free zone areas under the control of the Egyptian Customs Authority. It provides the following services: inspection of goods, classification of products according to Harmonized System (HS) codes, control of imports and exports according to government policy, applicable laws and regulations, and collection of tariffs (see Annex 3 for more details).

As for services for the plastic value chain in terms of trade, plastic raw materials and products are tested by eight customs branches over six governorates in MTI's Chemistry Administration and Plastics Technology Center. The required tests might include identification for finished products, specification of grades and checking for the presence of explosive materials (new test), recycled or pure materials, and the percentage of filler<sup>30</sup>.

3. **Ministry of Higher Education and Scientific Research:** main duties are to deliberate national problems and accordingly determine research strategies; design plans; develop programs and roadmaps; launch initiatives; provide trainings

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<sup>29</sup> GAFI (2019). "Decree by By the Minister of Foreign Trade & Industry no.770 /2005". *Retrieved Online*

<sup>30</sup> USAID (2017). "Strengthening Entrepreneurship and Enterprise Development (Seed) - Plastic value chain Mapping and Assessment". *The United States Agency for International Development*.

and implement research and strategies; support national industry; technology transfer, and deepen the local manufacturing industry. One of the main affiliates is The Academy of Scientific Research and Technology (ASRT) which has 20 Specialized Scientific Councils, 300 ASRT Fellows, 20 National committees, 200 members<sup>31</sup>.

#### 4. Ministry of Petroleum and Mineral Resources:

The strategic objective of the ministry is to meet the demands of the domestic market for petroleum and petrochemical products, and mineral resources, as well as achieving targets of the national economy's growth rates<sup>32</sup>. Projects are then developed to support the plastic value chain in regard to production, in order to satisfy the national demand for plastics, while decreasing the need for imports<sup>33</sup>.

#### 5. The Chamber of Chemical industries (CCI)<sup>34</sup> : was formed in 1942 as part of The Federation of the Egyptian Industries (FEI), it currently consists of 10,000 members who are business owners in the field of chemical industries. The chamber serves six main sectors, including plastics and rubber and waste management (recycling). The chamber is involved in offering many services to the plastic value chain with regard to production, such as:

- Networking opportunities with foreign commercial counselors in Egypt and Egyptian embassies abroad, as well as economic organizations worldwide
- Organizing workshops and seminars related to chemical industries
- Providing information about fairs, exhibitions, delegations, economic reviews and other relevant data from global markets
- Hosting delegations and business meetings between members and their foreign counterparts

- Obtaining local raw materials (such as polyethylene ore and others) from Egyptian raw materials producers' companies under a protocol with the Chamber
- Offering loans from the Environmental Compliance Office for Energy Saving in Factories

## 7.2 Legal framework for plastics

GoE does have regulations to allow for both import and export of plastic waste. The following are the laws and regulations that tackle the plastic value chain on different levels, such as trade and recycling (summarized in Table 7.1 along with their impact on the value chain):

1. **Article 27 in Waste Management Regulatory Law No. 202 of 2020** concerning limit the manufacturing, import, export, use and free distribution of single-use plastic bags in Egypt.
2. **Governor Decree No. 167 of 2019** concerning banning single-use or disposable plastics in the Red Sea governorate
3. **Presidential Decree No. 419 of 2018** concerning conformity with the latest version of the international Harmonized System (HS)
4. **Ministerial Decree No. 489 of 2017** concerning factories importing and recycling plastic waste
5. **Ministerial Decree No. 43 of 2016** concerning specific conditions for some HS codes
6. **Ministerial Decree No. 121 of 2016** concerning export fees on plastic waste
7. **Presidential Decree No. 25 of 2016** concerning raising import tariffs on plastics among other products
8. **Presidential Decree no. 2 of 1957** concerning the establishment of the Egyptian Organization for Standards

<sup>31</sup> ASRT (2017). "About the Academy of Scientific Research & Technology". *The Academy of Scientific Research & Technology*. Retrieved Online

<sup>32</sup> Ministry of Petroleum and Mineral Resources (nd). "Strategic Goals of the Ministry". *Ministry of Petroleum and Mineral Resources*. Retrieved Online

<sup>33</sup> Ministry of Petroleum and Mineral Resources (2020). "Petrochemical Industry". *Ministry of Petroleum and Mineral Resources*. Retrieved Online

<sup>34</sup> CCI (2019). "About the Chamber of Chemical Industries". Retrieved Online

The table below presents the above-mentioned decrees in detail in terms of issuance, level of value chain and impact.

**Table 7.1** Summary of legal framework for plastics in Egypt – new law discussed later

Law	Issued by	Plastic value chain	Summary	Impact/ Reflection
1. Waste Management Regulatory Law No. 202 of 2020	MoE	Recycling/ trade	Limiting the use of single-use plastic bags	Decrease the amount of plastic waste, and encourage using of alternative materials to plastic bags
2. Decree No. 167 of 2019	Governor Decree	Generation of waste	Bans single-use or disposable plastics in the Red Sea governorate	Decreases the amount of plastic waste and encourages the usage and production of alternatives
3. Decree No. 419 of 2018	Presidential decree	Trade	Conforms with the latest version of the international Harmonized System (HS)	Facilitates the trade in plastics in general
4. Decree No. 489 of 2017	Ministry of Trade and Industry	Recycling	Allows import of plastics by recycling factories	Facilitates the importation of plastic waste, which Egypt, though, has an abundance of. This could mean that recycling factories suffer from the inability to access plastic waste (hence a problem with collection), or, which is a result of the above, from the improper pricing of waste
5. Decree No. 43 of 2016	Ministry of Trade and Industry	Trade	Obliges importers of plastics to get approval from the EEAA beforehand	Hurdles: the importation of plastic waste
6. Decree No. 121 of 2016	Ministry of Trade and Industry	Trade	Raises the fees on waste and plastic scraps' export	Discourages the exportation of plastic waste, which could mean either increasing the recycling of plastics or the landfilling of plastics.
7. Decree No. 25 of 2016	Presidential decree	Trade	Raises the import tariffs on plastics	Discourages the importation of plastic waste or processed plastics, which could encourage the recycling of existing plastic waste and could encourage local production of plastic products
8. Decree no. 2 of 1957	Presidential decree	Recycling	Establishes the Egyptian Organization for Standards	Enhances the market of plastic waste recycling



The main aspects of these laws regarding plastics will be discussed below.



### **Waste Management Regulatory Law No. 202 of 2020, article 27<sup>35</sup>**

The waste management law seeks to limit the manufacturing, import, export, use and free distribution of single-use plastic bags in Egypt by requiring that specific control and requirements be put in place to promote alternatives to single-use plastic bags. The Law establishes that:

- Single-use plastic bags manufacturing, importing or exporting shall be in accordance with the technical controls, requirements and specifications issued by a decision issued by the Minister of Trade and Industry, including their ban in case of components with inputs or materials that seriously harm the environment;
- Single-use plastic bags sale, circulation, storage, free distribution, or disposal may take place only in accordance with the controls, conditions and technical specifications determined by the executive regulations of this Law;
- It will be issued a system of financial and economic incentives and tax and customs exemptions to encourage the import, production and manufacture of safe, environmentally friendly alternatives for single-use plastic bags



### **Governor Decree No. 167 of 2019 concerning banning single-use or disposable plastics in the Red Sea governorate**

The Red Sea is the first Egyptian governorate to ban single-use or disposable plastics. Ahmed Abdullah, Governor of the Red Sea, issued the Decree No. 167 for 2019, which bans single-use or disposable plastics in the Red Sea governorate. The decree's objective is to protect threatened and endangered species, which are severely affected by ingestion,

starvation, suffocation, drowning, entanglement and toxicity from plastics remains, that also affects human health negatively. The ban applies to any food outlets, such as restaurants, cafes, and fisheries, as well as bans food cutlery, such as knives, spoons, forks, cups and dishes. Furthermore, the governorate will not give authorization for factories to produce plastic bags. The governorate has collaborated with The Hurghada Environmental Protection and Conservation Association (HEPCA) to implement a campaign with the aim to raise awareness about the negative effects of plastics through social media, events, workshops, cleanups, and provide alternatives such as reusable bags<sup>36</sup>. The decree does not take a position on biodegradable plastics.



*Social media campaign of "Say no to plastics" – Dive Magazine 2019*



### **Presidential Decree No. 419 of 2018 concerning conformity with the latest version of the international Harmonized System (HS)<sup>37</sup>**

The aim of the decree is to bring Egypt's customs tariffs into conformity with the latest version of the international HS, reform and eliminate distortions in tariff systems, safeguard national interests, and abide by international standards. Egypt joined the

<sup>35</sup> *FAO & FAOLEX (2020). "Waste Management Law No.202 of 2020". Food and Agriculture Organization of the United Nations.*

<sup>36</sup> *Cairo Climate Talks (2019). "Report on no single-use plastics campaign". The Hurghada Environmental Protection and Conservation Association.*

<sup>37</sup> *WTO (2018). "Trade Policy Review". World Trade Organization. Retrieved Online*

International Convention on the Simplification and Harmonization of Customs Procedures (Kyoto Convention) in 2007.

Accordingly, plastics and rubbers are listed under chapter 39. Headings 39.01 - 39.14 tackle “primary forms”, the expression applies only to liquids and pastes, blocks of irregular shape, lumps, powders, granules, flakes, and similar bulk forms. Headings 39.16 - 39.26 are for processed plastics in profile shapes, semi-finished, or finished products, while 39.15 is applied for plastic waste, parings, and scrap not transformed into primary forms of headings 39.01 to 39.14<sup>38</sup>.



### **Ministerial Decree No. 489 of 2017 concerning factories importing and recycling plastic waste<sup>39 40</sup>**

The minister of trade and Industry has issued Decree No. 489 of 2017, replacing Article 55 of Decree No. 165 of 2002, pertaining the list of hazardous wastes restricted from importation, and lifting the import ban on plastics. Article 55, which originally classified recycle PET, PE, and PT as hazardous wastes, has been altered to allow their importation, under specific conditions. The first condition is that the shipment must include an inspection certificate authorized by an internationally recognized entity that states that the shipment does not include any ingredients classified as hazardous (poisonous, inflammable, active corrosion), and if present to be in quantities that does not exceed those specified by the Treaty of Basel<sup>41</sup>. The second condition is that the import is

allowed for factories operating in recycling and that are licensed by IDA.



### **Ministerial Decree No. 43 of 2016 concerning specific conditions for some HS codes<sup>42</sup>**

The Decree lists HS codes that cannot be imported to Egypt before the registration of the manufacturing factories and the owners of the trademarks (which are located outside Egypt) on GOEIC database of qualified factories to export to Egypt. Plastics are listed under these HS codes with the condition to obtain approval from EEAA before importation.



### **Ministerial Decree No.121 of 2016 concerning export fees on plastic waste<sup>43</sup>**

The MTI issued a Decree raising the fees on waste and plastic scraps’ export from EGP 3,000/ ton to EGP 5,000/ton in 2017.



### **Presidential Decree No. 25 of 2016 concerning raising import tariffs on plastics<sup>44 45</sup>**

Presidential Decree No. 25 of 2016, raised import tariffs on a wide range of products, including household appliances, electronic devices, plastics, clothing, shoes, watches, as well as food for dogs and cats and some agricultural products. For plastics import tariffs, plastic scrap and waste are mostly

<sup>38</sup> USAID (2017). “Strengthening Entrepreneurship and Enterprise Development (Seed) - Plastic value chain Mapping and Assessment”. The United States Agency for International Development.

<sup>39</sup> USAID (2017). “Strengthening Entrepreneurship and Enterprise Development (Seed) - Plastic value chain Mapping and Assessment”. The United States Agency for International Development.

<sup>40</sup> N-gage consulting (2017). “Trade Report – Q1”. Retrieved Online

<sup>41</sup> The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, usually known as the Basel Convention, is an international treaty that was designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs)

<sup>42</sup> ITC (n.d.). “Import and export procedures guide”. International Trade Center and USAID. Retrieved online

<sup>43</sup> Arab Finance (2017). “Egypt’s Industry Ministry raises fees on plastics scraps”. Retrieved Online

<sup>44</sup> Privacy Shield Framework (n.d). “Egypt - Import Tariffs”. Retrieved Online

<sup>45</sup> USAID (2017). “Strengthening Entrepreneurship and Enterprise Development (Seed) - Plastic value chain Mapping and Assessment”. The United States Agency for International Development.

subject to a zero or 2 per cent customs tariff (59 out of 92 items in headings 39.01 to 39.15), while 31 items are subject to a 5 per cent tariff and eight items are subject to 10 per cent tariff. As for processed plastics in profile shapes, semi-finished, or finished product, 33 items are subject to zero to 2 per cent tariff, 67 items are subject to 5 per cent to 10 per cent tariff, while 49 items are subject to 20 per cent to 60 per cent tariff.



### Presidential Decree No. 2 of 1957 concerning the establishment of The Egyptian Organization for Standards<sup>46</sup>

The presidential decree established The Egyptian Organization for Standards (EOS) and in the same

year EOS became an ISO member. In 1979, a new Presidential Decree No. 392 of 1979 was issued, reorganizing EOS as the only official and competent authority entrusted with all matters related to standardization, quality control and metrology. While Presidential Decree No. 83 of 2005 renamed EOS to The Egyptian Organization for Standards and Quality. The EOS provides standards and specifications for waste management and recycled materials. These standards and specifications should be understood and applied by recyclers, manufacturers, and stakeholders dealing with waste materials or products emanating from these materials. These standards can be found on the [EOS website](#) and need to be purchased by concerned stakeholders. The below table gives a sample of waste management and recycled materials listed on the website.

**Table 7.2** Standards and specifications for waste management and recycled materials provided by the EOS<sup>47</sup>

Standard	Description
6123 / 2007	Recycling symbols Society of the Plastics Industry (SPI) (obligatory)
6619 / 2008	Separation and washing of recycled plastics prior to testing (not obligatory)
6909 / 2009	Techniques to separate and identify contamination in recycled plastics (not obligatory)
7049 / 2009	Determination of contamination in recycled poly (ethylene terephthalate) (PET) flakes and chips using a plaque test (not obligatory)
7786 / 2014	Recycled Plastic Materials and Articles Intended to Come into Contact with Food (not obligatory)

<sup>46</sup> EOS (2020). "EOS History". Retrieved Online

<sup>47</sup> EOS (2020). "EOS Standards" Retrieved Online



**If current trends continue, our  
oceans could contain more  
plastic than fish by 2050**



# 08

## Findings and recommendations

Reducing single-use plastics can be done without affecting the single-use plastics market, which represents the 36 per cent of the plastics market in Egypt. While there are multiple measures that can be taken to reduce it, this needs to be done in a collaborative manner between the sector stakeholders, including technology and service providers, with their different roles and positions in the value chain.

The study was conducted based on extensive literature review of national sources and plastics expert contribution, in addition to in-depth interviews with the key sector and value chain stakeholders to refine and validate the results of the study. The study mapped and analyzed the current situation of the plastics industry, recycling businesses, and value chain, as well as the regulatory and policy framework of the waste management system in general and plastic waste management specifically.

The following is a summary of key findings from the study:



### Single-use plastic industry assessment – Focusing efforts to reduce the consumption of key products with highest consumption

Plastic raw material in general, including single-use plastics vary in applications. Focusing on the two applications responsible for the highest consumption of single-use products, the packaging film products and the agriculture purpose products. The packaging film involves multiple single-use plastic products such as plastic bags, all kinds of heavy and light bags, plastic bottles, cosmetics and detergents packaging, woven bags and food and kitchen packaging materials. While the other use related to agriculture applications are limited to greenhouses, mulching and lining. Within these two applications, the agricultural applications are the ones with the highest consumption in Egypt consuming 38 per cent of the total consumption. The food and kitchen packaging material products are the second top products consumed at 20 per cent.

Categorizing the plastic applications according to consumption is crucial to help focus efforts to reduce the single-use plastic consumption in the market responsible for the highest amounts of single-use products, instead of exerting scattered efforts on applications that contribute less to the overall consumption.





### The reduction in consumption of single-use plastics can decrease the plastic production demand and correspondingly the imported raw material

The Egyptian plastic production depends on both locally produced and imported raw materials. Eight Egyptian petrochemical companies produce 8M ton of plastics that represent only 24 per cent of the market demand, while 76 per cent of market demand is covered through imports. Single-use plastics is one of the most active economic subsectors, as 50 per cent of locally produced raw material by the petrochemical companies is directed towards single-use plastic production. The reduction in local consumption of single-use plastics leads to a decrease in the production of single-use plastics and correspondingly decreases the needed raw material for this application. This decrease in raw material demanded by single-use plastic manufacturers leads to utilizing the locally produced raw material for other applications, lowering the demand for imported raw material.



### Plastic manufacturing is improving and moving towards a higher value-added business encouraging local manufacturing

The growth in exports between 2016-2018 (nearly 2.5 times) reflects the growing manufacturing effort in Egypt and the movement towards higher value-added businesses; while the relatively stable trends of imports in the last five years reflects the country's efforts to improve the plastics industry and encourage local manufacturing. This could also be a result of the Presidential Decree No. 25 of 2016, which set import tariffs on a wide range of products, including some items for plastics.





## Barriers, interventions and recommendations

Barriers and interventions were discussed in detail in the previous sections. SWOT analysis and value chain analysis were presented in sub-section 5.3 and in section 4 respectively, and the barriers and gaps facing the development of the sector were explored in subsection 4.4.

In this section, the recommendations will be discussed in view of the main factors to develop the sector:

1. Single-use plastic recycling businesses
2. High resource efficient production
3. Use of alternative packaging materials

The barriers and their possible interventions are categorized by the type of needed support and or intervention as shown in Table 8.1



Barrier: Access to Know How

### **Value chain players have limited access to know-how, technical capacity building and awareness which affect the recycling businesses, efficient production and usage of alternative material**

The different players across the plastic value chain have limited access to the knowledge essential for enhancing the single-use plastic sector. The supply side suffers from an absence of engineers or technicians, who are aware of resource efficient production and alternative material production. On the recycling side, it is observed that the businesses lack the skilled labor for the waste collection, segregation and processing activities. Moreover, the access to know-how related to the recycling equipment is limited, leading to the purchase of costly equipment, which might not be optimum from an operational perspective. Finally, the product quality from both the supply and recycling sides is still a major obstacle facing the plastic sector due to the absence of standards and specifications.

### **The inefficiency of the waste collection system is hindering the development of the plastic recycling systems**

The generated ISW is collected by the formal sector and traders, thus the waste is well segregated and non-contaminated. On the contrary, the informal sector controls the collection and recycling of most recyclable MSW waste in almost all Egyptian governorates. This results in inefficient collection and segregation processes, resulting in contaminated waste that decreases the recycled product quality and increases the probability of product rejection. Although the informal sector's control over waste collection makes it hard for SMEs to enter the plastic recycling market, it is worth highlighting that the informal sector is carrying a huge burden for the government when it comes to waste collection.

### **Lack of clear standards and specifications for products across the value chain**

One of the weaknesses of the plastic recycling sector is the lack of product standards and specifications, which creates confusion between recyclers and buyers. For example, there are no standards and specifications for food grade products from plastic waste, which could encourage food producers to use recycled plastic in their products' packaging.

## Interventions and recommendations

### **Providing capacity building to the recycling businesses to improve productivity of processes**

- **Providing customized capacity building to collectors**, whether they are formal or informal, will improve the quality of the collected waste. Having skilled labor for collection, segregation and processing activities would contribute to decreasing the raw material in plastic production by replacing it with the high quality collected/recycled plastic waste.
- **Providing capacity building to the labor working in recycling businesses** would raise the awareness on high technology recycling. This will improve the productivity of the processes and potentially help in reaching higher value-added products.
- **Vocational training, mainstreaming of waste**

**management education and providing specialized technical assistance** to recyclers would result in building the capacity of labor and SMEs working in the field. This would in turn result in higher value-added recycling activities and higher margins for the waste management businesses, hence a higher capacity to absorb the waste. This will also attract more investments to the recycling sector.

### **Knowledge transfer on best available techniques, best practices and raising awareness on efficient production and technologies**

- **Providing capacity building activities to manufacturers, as well as end-users to raise awareness on the harmful impact of single-use plastics.** A number of initiatives already took place to raise the awareness of end-users on the harmful impact of single-use plastics on the environment.
- **Access to qualified engineers and technicians is crucial in this field, especially for new businesses in alternative material production or the already existing producers who aim at switching their current business to alternative materials.** This requires the inclusion of the plastic sector and the alternative materials in vocational education, providing training on manufacturing processes fields and alternative material in technical schools and vocational programs.
- **Customized programs** should be provided to fill the gap of the match-ability of the already existing production processes and production lines to match the use of alternative materials in packaging, in both single-use end producers and industrial facilities.

### **Developing national standards and specifications for different plastic products to clear confusion between producers and end users**

Setting clear standards and specifications will smooth business transactions between single-use plastic end manufacturers and their customers.

Moreover, creating linkages with research and technology centers, testing facilities and other specialized institutions is essential for capacity building, knowledge transfer on different standards of products, specifications needed per application and also different product testing to meet local and export markets requirements.

### **Increasing government awareness through accurate national studies to facilitate development of the policy interventions**

National studies and success stories supporting organizations should be promoted to the government to increase awareness on single-use plastic recycling businesses. The government shall benefit from accurate and reliable data, in addition to clear mapping of barriers, interventions and proposed recommendations customized for the sector.



Barrier: Lack of linkages

### **Lack of access to product quality testing and maintenance services impedes sector development**

While the linkages between supply side players are considered medium to strong, they face a problem of inconsistent product quality, due to lack of access to product testing labs and low awareness of the importance of R&D from the plastic manufacturers side. Moreover, the linkages between the supply side and the recycling side is weak due to limited access to buyers interested in the recycled products because of lack of knowledge from the recycling side on the recycled products' detailed specifications and standards, when reaching out to their potential buyers. Adding to these barriers, the recyclers have limited linkages with the product testing labs. In addition to the quality testing services, maintenance services are considered a weak point in recycling, due to the lack of access to maintenance services, especially for imported machinery.

### **Access to finance is a key barrier to both efficient production and plastic recycling businesses**

The weak linkage between financial services providers and plastic manufacturers is considered a barrier to efficient production. Even though there are number of financial institutions which provide loans to industrial manufacturers, it was concluded that the manufacturers are not aware of the financial services and opportunities the different financial institutions provide to the industrial sector. On the other hand, financial institutions which are willing to support

local manufacturing and industrial facilities have limited knowledge about technology and industry standards, which limits the financial services that could be provided to the sector. The recycling side face the same problem as the manufacturers with regard to accessing financial services. Moreover, the informality of some activities of recycling businesses (lack of invoicing due to dealing with informal sector, no proof of collection) increases the perceived risk and limits offered financial services.

## Interventions and recommendations

- **Create linkages between the recyclers and the buyers** by promoting the products. This can be done by specifying clear product quality standards and holding workshops and events to support networking between recyclers and buyers. Establishing and promoting a database of active recyclers and their products can increase the amounts of waste acquired formally, which can also improve the recyclers financial standing.
- **Create linkages between firms and experts, mainly in PTC** for capacity building, knowledge transfer, and product testing.
- **Create linkages and dialogue between manufacturers and financial institutions** through assisted focus group discussions. Financial services providers – both governmental and non-governmental – which focus on the ‘green economy’ and manufacturing (such as EBRD GEFF, MSMEDA and IMC) are willing to provide financial services to manufacturers, especially in light of the Egyptian government’s current policy of supporting local manufacturing. Moreover, supporting organizations can help manufacturers in resource efficiency, by developing programs customized for the plastic sector to implement resource efficiency measures. The facilitated focus group discussions and meetings could initiate the dialogue and support the industrial sector in acquiring financial services needed for its development.
- **Create linkages, encourage technology transfer and extension programs - B2B with international producers**, establishing a connection between technology providers and international producers for knowledge transfer. Especially in efficient

production and alternative material production, which could support manufacturers and industrial facilities to overcome the problem of alternative materials and technology compatibility.

- **Better marketing and outreach from firms using alternative materials to manufacturers** to raise their awareness about new alternative technologies. This can be done through holding awareness sessions for the industrial sector and networking events in the presence of manufacturers using alternative materials and the plastics producers to encourage the industry to adopt the new alternative material technologies. This could also be done through presenting successful case studies from abroad, with the adopted technologies and related profitability.
- **Improving recycling businesses with a focus on encouraging business clustering and industrial symbiosis.** SMEs working in the recycling business are still in their early growth phase, developing their business strategies and facing cash flow and market obstacles. As they are in the early stage, there is competition between them despite facing the same barriers. Developing clusters and forming associations is a key solution to the common barriers they face. Plastic recycling clusters in each governorate would gradually enhance formalization of the waste sector and increase the recycling opportunities.



Barrier: Regulations

### Unregulated conditions of the informal sector in waste management limits recycling sector growth

The informal sector is widely spread across Egypt, especially in the MSW value chain, dominating the market and hampering the progress of formal SMEs in entering the business. As the informal sector represents the main supplier for MSW recycling SMEs, the lack of regulations in the waste management sector gives an advantage to the informal segment, due to the unfair competition with the formal sector. Moreover, there are no incentives for the informal sector to become formal. Although the informal sector helps in effectively collecting waste, that is mainly in low value-added recycling activities. In addition to



the unfair competition to the formal sector, the main challenges posed by the informality are lower environmental standards, and most importantly limited finance to the sector, thus hindering its growth.

## Interventions and recommendations

- Regulate the conditions of the informal sector and encourage gradual formalization of the sector
- Improve plastic waste collection through incentives or enforced regulation from government to segregate at source
- Continue the reform of the MSW management framework - particularly establishing transfer stations
- Develop resource-recovery-based eco-industrial zones with planned allocation of industrial facilities' sectors and the matching recycling workshops and factories. This would create tangible results in improving the recycling businesses, regulating the conditions of the informal sector and encouraging gradual inclusion.
- Increase the governmental support to use alternative material, so it can be more feasible for manufacturers



# 01

## ANNEX- Key players

**Table 1** Identification of key stakeholders

#	Stakeholder Name	Type of Entity (GOV/NGO/FI)	Relevant Activities
1	SIMA - Small Industries Modernization Association in Alexandria	NGO	<ul style="list-style-type: none"> <li>• Providing technical support, training for recyclers</li> <li>• Representing the enterprises – especially the MSMEs governmental entities</li> <li>• Funding micro plastics projects</li> </ul>
2	PTC - Plastics Technology Center	GOV	<ul style="list-style-type: none"> <li>• Providing technical support to plastics manufacturing, plastic recycling, feasibility studies</li> <li>• Providing capacity building through trainings in all types of manufacturing</li> <li>• Product testing labs for quality</li> <li>• Supporting recyclers in pilot scale production.</li> <li>• Participate in national and international projects that support plastics</li> </ul>
3	EPEMA - Egyptian Plastics Exporters and Manufacturers Association	NGO	<ul style="list-style-type: none"> <li>• Supporting plastic manufacturers in the development of plastic products and processes to benefit their business (with latest technology, materials, and equipment)</li> <li>• Promoting the development of the plastics industry by providing training, technology transfer, and international marketing to the Egyptian plastics industry</li> </ul>
4	MSMEDA - Micro, Small and Medium Enterprises Development Agency	FI	Supporting MSMEs through different kinds of general trainings (not customized per sector) and finance schemes
5	Houras Association for Supporting Informal Sector	NGO	<ul style="list-style-type: none"> <li>• Supporting the informal sector to gradually formalize through searching for alternative places for sorting and recycling waste rather than the Manshet Nasser neighborhood</li> <li>• Looking for funding for the informal sector for equipment purchase.</li> <li>• Center for informal sector training on equipment operation.</li> </ul>

#	Stakeholder Name	Type of Entity (GOV/NGO/FI)	Relevant Activities
6	IMC - Industrial Mod-ernization Center	GOV	<ul style="list-style-type: none"> <li>• Implementing projects related to energy saving for industrial facilities to optimize production, produce at lower cost and higher quality</li> <li>• Supporting manufacturing facilities to get products with certified quality and to be able to export</li> <li>• Offering financial services (in-house service) such as cost control and feasibility studies</li> <li>• Offering consultation sessions (in-house or outsourcing) in project management, HR and marketing</li> </ul>
7	FEI - Federation of Egyptian Industries	GOV	<ul style="list-style-type: none"> <li>• Providing professional representation &amp; advocacy of member interests locally &amp; globally.</li> <li>• Facilitating access to essential knowledge, information, advice and consultation services.</li> <li>• Promoting economic development via: Advancing the usage of clean &amp; innovative technologies.</li> <li>• Supporting entrepreneurship and initiatives for marginalized sectors.</li> <li>• Forging &amp; strengthening cooperation and alliances with international organizations &amp; institutions.</li> <li>• Minimizing administrative, regulatory and other potential burdens on businesses and startups.</li> <li>• Extending training &amp; capacity building opportunities.</li> <li>• Supporting business development needs.</li> <li>• Promoting corporate social responsibility, sustainability awareness and best practices in each industrial sector.</li> </ul>



# 02

## ANNEX - History of SWM framework

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### **The solid waste management (SWM) system in Egypt need to have a sole ministry charged with its responsibility.**

Several efforts were made by the Egyptian government over recent years to handle solid waste management which will be discussed briefly. However, this report does not aim at providing an exhaustive account of the efforts made, rather it will focus on the previous situation covering the institutional regulatory frameworks, and planned laws.

### **The 2000 National Strategy for Integrated Municipal Solid Waste Management.**

The Ministry of State for Environmental Affairs (MSEA)/Egyptian Environmental Affairs Agency (EEAA) issued the National Strategy for Integrated Municipal Solid Waste Management in 2000. The central government was designated as the facilitator to implement the strategy, while the governorates and municipalities were assigned the roles of planning, monitoring, control, and enhancing the participation of the private and public sectors. However, many of the recommendations from this strategy were not implemented<sup>1</sup>.

### **The establishment of an Inter-Ministerial Committee in 2009.**

The government has established an Inter-Ministerial Committee (IMC) in 2009 to address solid waste management as a growing crisis in Egypt. This committee included a representative from key ministries with a role in the solid waste management system. The IMC's task was to prepare a proposal for the future institutional arrangements to govern the waste management sector across Egypt. The

IMC's consultative process has been supported by the German Government (through KfW and GIZ) and the European Union (EU). The main outcome of the IMC is the agreement amongst stakeholders of the need to establish a single national solid waste management entity to take charge of policy and oversee implementation in the sector. Another key outcome is the development of the National Solid Waste Management Program (NSWMP) in 2012. The objective of the NSWMP is "Protection of public health, environment, and quality of the living environment for Egyptian citizens through sustainable development of waste management practices"<sup>2</sup>, through supporting the establishment of new and effective policies, legislations, and institutional arrangements for waste management at the national and governorate level in Egypt, enhancing professional capacity, and developing an investment pipeline for implementation of sectoral projects at the regional and local level

### **The establishment of the Integrated Solid Waste Management Sector (ISWMS) in 2013.**

The national authority was established under the Ministry of State for Environmental Affairs (MSEA). The new authority was intended to take charge of the solid waste management in Egypt along with implementing the National Solid Waste Management Program (NSWMP).

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<sup>1</sup> NSWMP Egypt (2013). "National Solid Waste Management Programme (NSWMP) Egypt – Main Report". MoLD/EEAA KfW

<sup>2</sup> SWEEPNET (2014). "Country report on the solid waste management in EGYPT". GIZ

Egypt needed to have a sole ministry responsible for the SWM system. The legal framework is dispersed in many different pieces of laws, ministerial decrees, and regulations. This legal framework relies heavily on regulatory instruments, rather than economic or social instruments<sup>3</sup>. These are as follows<sup>4</sup>:

1. **Law No. 38 of 1967** concerning cleanliness and its amendment **Law No. 31 of 1976**
  - a. **Decree No. 134 of 1968** (Ministry of Housing, Utilities, and New Communities) concerning implementing **Law No. 38 of 1967**.
  - b. **Law No. 10 of 2005** amending certain Provisions of **Law No. 38 of 1967** concerning public cleanliness.
  - c. Governor of Alexandria's Decrees concerning the enforcement of **Law No. 38 of 1967**.
2. **Law No. 84 of 1968** concerning prohibiting dumping of solid waste in public ways.
3. **Law No. 43 of 1979** (Local Administration Law) concerning City Councils' responsibilities related to infrastructure.
4. **Law No. 12 of 2003** replacing **Law No. 137 of 1981** concerning occupational safety.
5. **Law No. 48 of 1982** concerning solid waste and the protection of the Nile River waterways from pollution.
6. Presidential Decree **No. 284 of 1983** concerning the establishment of the Cairo and Giza Cleaning and Beautification Authorities.
7. **Law No. 4 of 1994** promulgating the Law concerning the environment and its executive regulations issued by Prime Minister's Decree **No. 338 of 1995**.
  - a. Prime Minister's Decree **No. 710 of 2012** and 2015 amending executive regulations of **Law No. 4/1994**.
  - b. **Law No. 9 of 2009** amends **Law No. 4/1994** for the protection of the environment.
  - c. **Law No. 105 of 2015** amends **Law No. 4/1994** for the protection of the environment.
  - d. The Prime Ministerial Decree **No. 964 of 2015** amends **Law No. 4/1994** for the protection of the environment.
8. **Law No. 155 of 1999** concerning polluting public ways.
9. **Law No. 119 of 2008** concerning the building law and its executive regulations **No. 199 of 2009**.
10. Presidential Decree **No. 86 of 2010** concerning landfills in Cairo.
11. **Law No. 67 of 2010** concerning the Public Private Partnership Law.
12. Ministerial Decree (MTI) **No. 865 of 2014** concerning the authority of granting licenses to handle hazardous and industrial waste.
13. Prime Ministerial Decree **No. 3005 of 2015** concerning the establishment of the Waste Management Regulatory Agency (WMRA).
14. Prime Minister's Decree **No. 41 of 2019** concerning the feed-in-tariffs.
15. **Law No. 263 of 2020** concerning the formation of a committee to study the establishment of a waste recycling city.
16. **Law No. 202 of 2020** concerning the creation the Waste Management Regulatory Authority (WMRA) to oversee proper waste management and recycling practices, and develop a national strategy to improve waste disposal and recycling.

<sup>3</sup> Gaber, Ahmed & Badr, Sawsan (2019). "Bridging the gaps – The case of SWM". *Vision of Egypt 2030*. Unpublished report.

<sup>4</sup> CEDARE (2017). "Study on Improving Solid Waste Governance Systems in Urban areas". *The Centre for Environment and Development for the Arab Region and Europe*

**Table 2** Summary of legal framework for SWM in Egypt

Law	Issued by	Type	Impact	Gaps
1. Law No. 38 of 1967 <b>as amended by</b> Law 31 of 1976	Presidential decree	Legislation	Regulates the collection and disposal of solid waste from residential, commercial, industrial and public areas.	<ul style="list-style-type: none"> <li>• The imposed cleanliness tax was not implemented due to many complaints</li> <li>• Solid waste is defined as both domestic and industrial</li> <li>• Enforcement of the law's articles is weak in regards to garbage containers, means of transportation, and the timeliness of solid waste collection.</li> </ul>
2. Law No. 84 of 1968	Presidential decree – Ministry of Transport	Legislation	Traffic law – prohibits dumping of solid waste in public ways	<ul style="list-style-type: none"> <li>• Low awareness of the existence of the article</li> <li>• Weak enforcement of the article</li> </ul>
3. Law No. 43 of 1979	Local Administration	Regulation, Decree, Ordinance	Assigns authority of SWM to the governorate municipalities (local authority/ EMU)	
4. Law No. 12 of 2003	Ministry of Manpower and Migration	Law, act	Regulates occupational safety, health and assurance of the adequacy of the working environment	<ul style="list-style-type: none"> <li>• A deficiency in the ability to obligate</li> </ul>
5. Law No. 48 of 1982	Presidential decree – Ministry of Water and Irrigation	Legislation	Permits MWRI the authority to protect waterways from solid waste	<ul style="list-style-type: none"> <li>• Limited success with enforcement</li> <li>• Lack of coordination among ministries with related responsibilities</li> </ul>
6. Decree No. 284 of 1983	Presidential decree	Legislation	Created the Cairo and Giza Cleaning and Beautification Agencies along with their responsibilities	<ul style="list-style-type: none"> <li>• No financial autonomy since the agencies do not directly collect sanitation taxes</li> <li>• The agencies' capacity to invest and take the initiative is curtailed</li> <li>• Lack of technical capacity</li> <li>• Conflict of interest since one governmental unit supervises another</li> </ul>
7. Law No. 4 of 1994	Presidential decree	Legislation	Created an agency for the protection and promotion of the environment, the (EEAA), along with its responsibilities, violations, and policies	<ul style="list-style-type: none"> <li>• Enforcement of the law's articles is weak in regards to responsibilities of waste collectors and penalties</li> <li>• EEAA has limited enforcement role</li> <li>• Does not include explicit provisions for specifying roles of different authorities nor minimum specifications or performance/emission provisions for solid waste facilities and services</li> <li>• Lack of definitions (waste/ roles)</li> </ul>



Law	Issued by	Type	Impact	Gaps
8.Law No. 155 of 1999	Ministry of Transport	Legislation	Traffic law – Prohibits discarding waste on to public ways	<ul style="list-style-type: none"> <li>• Low awareness of the existence of the article</li> <li>• Weak enforcement of the article</li> </ul>
9.Law No. 119 of 2008	Ministry of Housing, Utilities, and New Communities	Law	Building law - dictates that in any urban planning, there needs to be a detailed, developed plan regarding the infrastructure, including solid waste management	<ul style="list-style-type: none"> <li>• Low level of details and definitions</li> </ul>
10.Decree No. 86 of 2010	Presidential	Legislation	Regulated the establishment and closure of landfills in Cairo	<ul style="list-style-type: none"> <li>• Lack of financial allocation for the establishment of new landfills</li> </ul>
11.Law No. 67 of 2010		Law	Regulates partnership with the private sector in infrastructure projects, Services and Public Utilities	<ul style="list-style-type: none"> <li>• The Law did not abolish existing laws which regulate government concessions “Sector specific laws”</li> <li>• The “competent authority”, whose approval is required, is not clearly defined, as it may refer to the Minister, the Chairman of the authority, or the legal representative of the public juristic entity, meaning that the level of necessary approval is unclear</li> <li>• The law is limited to the PPP contracts not less than EGP one hundred million</li> </ul>
12.No. 865 of 2014	Ministry of Trade and Industry	Decree	Grants authority to ICA to grant licenses to individuals or bodies to handle and transfer hazardous and industrial waste	<ul style="list-style-type: none"> <li>• Enforcement is weak</li> </ul>
13. Decree No. 3005 of 2015	Prime Minister	Legislation	Creates WMRA along with assigning responsibility of planning, follow up and monitoring of all operations relevant to solid waste management on the central and local levels	This law further fragments responsibilities between the EEAA and WMRA
14.Decree No. 41 of 2019	Prime minister	Decree	States the feed-in-tariff rate for purchasing electrical energy generated through the thermal treatment of MSW, the biogas of the sanitary land-filling, and the sludge of the wastewater treatment plants	NA
15. Law No. 263 of 2020	Minister of Trade and Industry	Law	Established a committee with members from the different entities and ministries to study the establishment of a waste recycling city	NA

**Table 3** Summary of violations and penalties concerning SW under Law No. 4 of 1994

Type of Violation	Penalty	Article
<b>Crimes</b>		
<b>Intentional commission of acts in violation of the provisions of Law 4/1994:</b>		
- Resulting in the injury of one person with a permanent disability which can-not be healed	Imprisonment not exceeding 10 years	95
- Resulting in the injury of three or more persons with permanent disability	Imprisonment from 3 to 15 years	95
- Resulting in the death of one person	Temporary hard labor from 3 to 15 years	95
- Resulting in the death of three or more persons	Life imprisonment (hard labor)	95,11
<b>Faults</b>		
<b>Disposal or discharge of solid, liquid or gaseous waste in waterways without a license</b>	A fine from EGP 200 to EGP 20,000, in case of repetition, the punishment shall be imprisonment and the aforementioned fine. Moreover, the offender is required to remove the infringing works or correct them within the time specified by the Ministry of Irrigation. If this is not undertaken, removal or correction would be carried out through administrative means at the expenses of the offender with the right to cancel the license.	89
<b>Discharge or disposal of any untreated material or waste or liquid causing pollution of Egyptian beaches or their adjacent waters (whether it is done intentionally or unintentionally, directly or indirectly).</b>	A fine of EGP 200 to EGP 20,000. In case of repetition, the punishment shall be imprisonment and the aforementioned fine. Each day of discharge is considered as a separate violation.	69, 87
<b>Disposal, treatment or burning of garbage and solid waste in non-designated areas (away from residential, industrial and agricultural areas or waterways as defined in ER articles 38 and 39).</b>	A fine of EGP 1,000 to EGP 20,000 . In case of repetition, the punishment shall be imprisonment and the mentioned fine.	37, 97

# 03

## ANNEX - General import and export framework

### 3.1 Institutional framework for import and export

Table 4 lists the most important entities in relation to the import and export activities in Egypt, including their role and function. This list does not include entities related to approvals and testing of importation and exportation of products outside the industry sector.

*Table 4 Entities in charge of trade regulations<sup>5</sup>*

Institution	Role	Function/ Procedures/ Documentation
<b>1. Egyptian Customs Authority<sup>67</sup></b> – Operates under the Ministry of Finance	To collect customs tariffs and taxes, control the movement of imports and exports, to determine the value of exports and imports, to define tariff headings in accordance with the international classification and ensure compliance with the Customs Law.	<ul style="list-style-type: none"> <li>• Customs procedural certificate – Dealers card</li> <li>• Certificate of practicing the profession of customs clearance</li> <li>• Import Declaration form (SAD)</li> <li>• Import Valuation Declaration</li> <li>• Export Declaration Form “Form 13”</li> <li>• Import Release Certificate</li> <li>• Export Release Certificate</li> </ul>
<b>2. General Organization for Export and Import Control (GOEIC)<sup>89</sup></b> – operates under the MTI	Specializes in quality control of imports and exports of industrial and non-industrial products, and issues certificates of origin and commercial registrations. Also, their role is to keep a Registry of Exporters, a Registry of Importers, and a Registry of Agents and Commercial Mediators.	<ul style="list-style-type: none"> <li>• Import License</li> <li>• Export License</li> <li>• Production Requirements Card (Needs/Supplies)</li> <li>• Certificate of Origin</li> </ul>

<sup>5</sup> ITC (n.d.). “Import and export procedures guide”. International Trade Center and USAID. Retrieved online

<sup>6</sup> Egyptian Custom Authority (2020). “About Egyptian Custom Authority”. Retrieved online

<sup>7</sup> WTO (2005). “Trade policies and practices by measure”. World Trade Organization. Retrieved Online

<sup>8</sup> GOIC (2020). “GOIC Activities”. Retrieved Online

<sup>9</sup> WTO (2005). “Trade policies and practices by measure”. World Trade Organization. Retrieved Online



Institution	Role	Function/ Procedures/ Documentation
<b>3. Export Development Authority (EDA)<sup>10</sup></b>	A unifying entity for parties concerned with export, its role is to increase the rate of exports through electronic promotion, promotional missions, organizing business meetings, building and developing export capabilities through training and technical support.	<ul style="list-style-type: none"> <li>• Export support activities</li> </ul>
<b>4. Foreign Trade Training Center (FTTC)<sup>11</sup></b> – Export Development Authority – operates under the MTI	FTTC is a non-profit organization established by MTI as the first specialized training center for export promotion.	<ul style="list-style-type: none"> <li>• Certificate of “Practicing importation”</li> <li>• Certificate of “Practicing exportation”</li> </ul>
<b>5. Egyptian Tax Authority<sup>12</sup></b> - operates under the Ministry of Finance	Authority responsible for collecting taxes in Egypt.	<ul style="list-style-type: none"> <li>• Tax ID Card</li> <li>• VAT Registration Certificate</li> </ul>
<b>6. Industrial Development Authority (IDA)<sup>9</sup></b> – operates under the MTI	Authority responsible for implementing the industrial policies set by the MTI to stimulate and encourage investments in the industrial sector, develop and implement land development policies for industrial purposes, and facilitate and simplify procedures for obtaining industrial licenses.	<ul style="list-style-type: none"> <li>• Industrial Register (Manufacturing Certificate)</li> </ul>
<b>7. Industrial Control Authority (ICA)<sup>14</sup></b> - operates under the MTI	Uphold production to quality, according to health and technical specifications.	<ul style="list-style-type: none"> <li>• Manufacturing percentages certificate</li> </ul>
<b>8. Federation of Egyptian Industries<sup>15</sup></b>	Is the umbrella organization for all chambers of industry. Advocates the common interests of its members and defends their positions to governmental and legislative bodies, as well as other local and international associations.	

According to the ECA Figure 3 includes a summary of the procedures required for importation and exportations.

<sup>10</sup> EDA (2020). “About Export Development Authority”. Retrieved Online

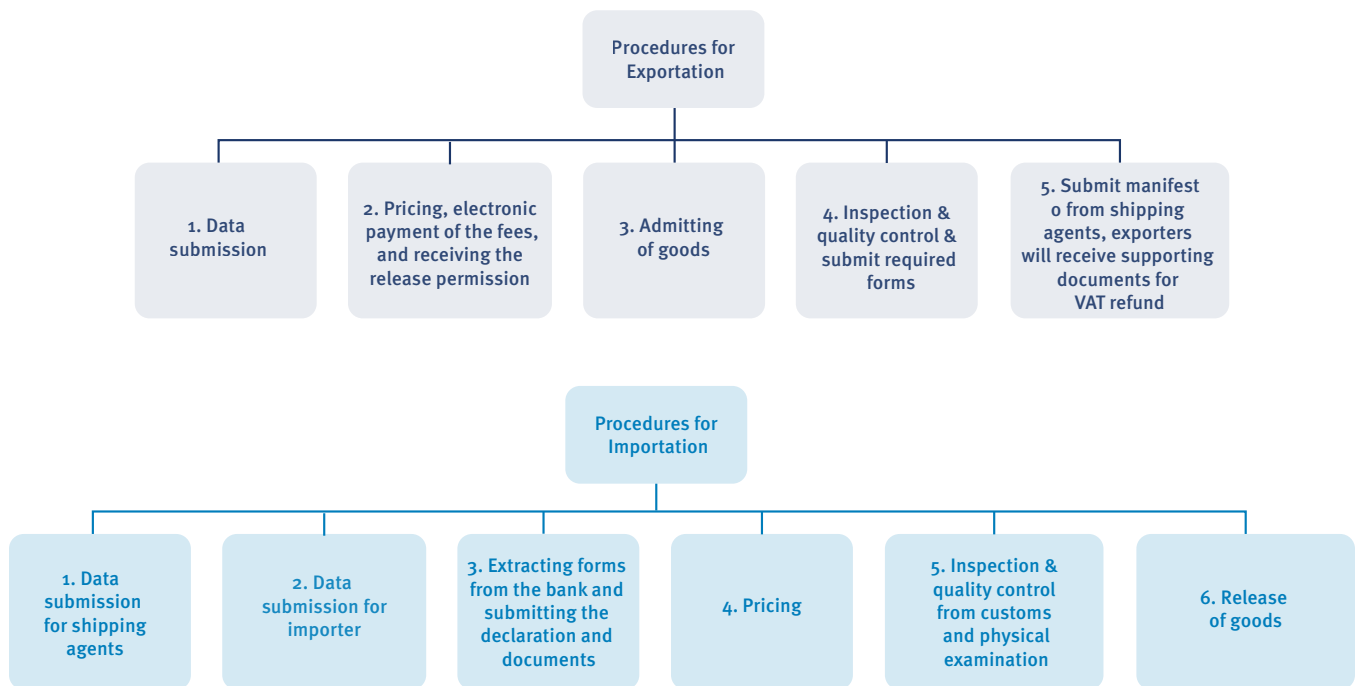
<sup>11</sup> FTTC, background of Foreign Trade Training Center, 2007

<sup>12</sup> Egyptian Tax Authority, About the Egyptian Tax Authority, 2015

<sup>13</sup> Industrial Development Authority (n.d.). “About the industrial development authority”. Retrieved Online

<sup>14</sup> MTI (2016). “About the Industrial Control Authority”. Retrieved online

<sup>15</sup> Federation of Egyptian Industries (2020). “About FEI”. Retrieved Online



**Figure 1** Summary of procedures for importation and exportation of goods<sup>16</sup>

## 3.2 Legal framework for import and export

The legal framework for importation and exportation is as follows:

1. **Law No. 66 of 1963** concerning customs tariffs as amended by **law No. 95 of 2005**.
2. **Law No. 118 of 1975** concerning import and export regulations with its executive regulations in the **Ministerial Decree (MTI) No. 770 of 2005**.
3. **Law No. 67 of 2016** concerning Value Added Tax (VAT) replacing the previous law for sales tax.
4. **Ministerial Decree (MTI) No. 43 of 2016 concerning** register of qualified factories to export to Egypt for selected items.
5. **Law No. 121 of 1982** concerning importers registers as amended by **Law No. 7 of 2017**.
6. **Ministerial Decree No. 40 of 2017** concerning activating the Single Activation Document “SAD”.
7. **Presidential Decree No. 419 of 2018** concerning customs tariffs.

Main aspects of these laws regarding import and export framework will be discussed below:

1. **Law No. 66 of 1963 concerning customs tariffs as amended by Law No. 95 of 2005<sup>17</sup>**

The amended law aims at unifying procedures at custom points by establishing and developing databases to achieve full digitalization of customs procedures, and increasing transparency of customs revenue procedures. The main provisions of Law No. 66 of 1963 are:

- Taxes and tariffs shall be collected according to the rules and rates set forth by the Customs Authority.
- Items shall be classified according to the provisions, and the general explanatory rules.
- Upon re-importation of goods exported temporarily for completion of their manufacture, customs taxes

<sup>16</sup> ECA (2020). “Procedures Course”. *Retrieved Online*

<sup>17</sup> GAFI (2019). “Customs Laws”. *The General Authority for Investment and Free Zones. Retrieved Online:*

shall be collected on the end imported product, plus all transport and insurance expenses.

- Upon re-importation of goods temporarily returned to the country of origin for repair, customs taxes shall be collected at the rate of 12 per cent of all repair costs, plus all transport and insurance expenses.
- Customs taxes shall be collected at the rate of 22 per cent on machines, equipment, apparatus and instruments, excluding passenger cars, as imported by hotel and tourist establishments.
- Assembly industries may request authorization for treating their products under the Customs Department's rule to tax their products according to provisions mentioned in Article 6 of the Presidential Decree No. 300 of 2004.

Main amendments by **Law No. 95 of 2005** are:

- Reduced customs on production lines, installations and project extensions to 5 per cent.
- Machines and equipment temporarily released for use or rent in the country will be subject to a customs tax of 2 per cent of the existing customs tax per month or part of the month at the time of release or a maximum of 20 per cent of the annual customs tax value.
- Exempted commercial samples and industry models from all customs duties in order to reduce the tax burden on the industrial sector.

## **2. Law No. 118 of 1975 concerning import and export regulations with its executive regulations in the Ministerial Decree (MTI) No. 770 for the year 2005<sup>18 19</sup>**

This law regulates imports and exports in Egypt. While the decree reduced the list of imports requiring inspection for quality control to 101 classes from 5,700, allowing for some importers to supply their own certificates of conformity from internationally accredited laboratories inside or outside Egypt.

Import related regulations according to Law No. 118 are as follows:

- Importing goods is allowed by both the public and private sectors. Individuals may import goods for their personal use from their own resources or through intermediary agents.
- MTI may confine importation activities to agreement countries and may reserve the import of certain essential commodities to public sector bodies.
- Commodities subject to specific import controls may not be imported unless they are examined to ascertain their conformity to the conditions and specifications decreed by the law, or unless they are accompanied by a certificate of examination approved by the Egyptian authorities, conforming their fulfillment of the regulations.

Export related regulations according to Law No. 118 are as follows:

- The MTI shall issue a decision organizing export operations whether from local production or from previous imports and shall issue certificates of origin and lay down the procedures to be followed.
- The MTI may restrict the export to agreement countries and also the export of certain essential commodities to the public sector.

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<sup>18</sup> American Chamber of Commerce Egypt (2020). "Guide to Doing Business in Egypt". [Retrieved Online](#)

<sup>19</sup> Office of Agricultural Affairs of the USDA (2014). "Food and Agricultural Import Regulations and Standards – Narrative". *The Food and Agricultural Import Regulations and Standards (FAIRS)*. [Retrieved Online](#)

- Exports can only be practiced by persons whose names are recorded in the register ad hoc in the MTI. Persons whose names are to be recorded in this register should belong to one of the following categories:
  - Shareholder companies from the Arab Republic of Egypt and having their head offices located there.
  - Public organizations, cooperatives and their unions.
  - Persons and companies fulfilling the conditions to be defined by a decision from the minister of foreign trade.
  - Persons exporting commodities for personal use are to be exempted from registration in the exporters register.
  
- The following matters are to be defined by a decision from the MTI:
  - The conditions, forms, proceedings and documents relating to registration and its renewal in the register, modifications of the data striking out and cancellation.
  - Duties of registration, renewal and modification of data, and extracted copies, provided that they do not surpass the following limits:
    - EGP 50 duty of registration in the exporters register.
    - EGP 15 duty for renewal of registration every three years.
    - EGP 5 duty for modification or insertion of date.
    - EGP 3 duty for copy extracted from the register.
  
- The interdiction or restriction of the export of certain commodities from the Arab Republic of Egypt abroad may be established by a decision of the minister of foreign trade and industry. The export of such commodities shall be in compliance with the conditions and forms decided by the minister.
- A duty may be imposed on certain exports, not exceeding 100 per cent of their value, on consideration of allowing the realization of a reasonable profit to the exporter. The duty and its increase are not applicable on export permits issued before their imposition. Commodities on which the duty is applicable, its amount, mode of collection, cases of its refund or total or partial exemptions from it are to be defined by a decision of Egypt's minister of foreign trade.
- The exporter may, in virtue of a decision of the Egypt's minister of foreign trade or whoever is empowered by him, be required to present a guarantee for effecting export operations. Such a decision shall specify the kind of guarantee, the period of its return, and in which cases it may be confiscated.
- The commodities to be specified by Egypt's minister of foreign trade shall be subjected to the specific control on exports and imports.
- Commodities subjected to control cannot be exported before the obtainment of an investigation certificate attesting their conformity with the conditions and specifications to be laid down by a decision Egypt's minister of foreign trade after agreement with the competent authorities. The export of such commodities must take place within the period in the said certificate. In case this period lapses without the export being made a new certificate should be obtained.

#### Decree related amendments:

- The process of inspection and certification is centralized under GOEIC.
- GOEIC is the sole authority responsible for processing customs documents of import and export consignments, as well as issuing the final results of inspections through a certificate of conformity.



- Created the modern customs centers at major ports, operating with state-of-the-art information technology systems. Known as data warehouses, these systems facilitate communication between customs, inspection agencies, port authorities, shipping lines, and freight forwarders.

### **3. Law No. 67 of 2016 concerning Value Added Tax (VAT) replacing the previous law of sales tax<sup>20</sup>**

According to the law all the local and imported goods and services are subject to VAT except those specifically exempted. As defined by the law “services” are defined as any imported or local work done and not classified as goods. There are a total of 57 exempted goods and services including the following:

- Tea, sugar, and milk
- Gas, electricity, and water
- Banking services implemented by banks
- Medicine and active substances used in manufacturing (locally or imported) medicine
- Health services except for plastic surgery or weight-related services (unless serving a medical purpose)
- Public education and scientific research services
- Public hospitals, medical care services, public clinics and non-governmental organizations (NGOs)
- Free radio and TV transmission services
- Sale and lease of vacant plots
- Advertisement services

**VAT rate.** As of July 1, 2017, the VAT rate increased from 13 per cent to 14 per cent. While machinery and equipment used to produce taxable or non-taxable goods and services are subject to a 5 per cent VAT rate. Exported goods and services are subject to zero VAT rate.

**Penalties, sanctions and offenses.** According to Law No. 67, an additional payment will be due for each month or part of month from tax payment deadline. This additional payment is amounted at 1.5 per cent of the unpaid VAT and the table tax amount. Penalties for breaching the laws are between EGP 500 and EGP 5,000 and penalties to be folded if repeated after three years. Tax evasion sanctions are as follows:

- Imprisonment from 3 to 5 years
- Penalty payment of EGP 1,000 to EGP 10,000.
- Payment of the tax, table tax, and additional tax
- Sanctions to be folded if repeated after three years

### **4. Ministerial Decree (MTI) No. 43 of 2016 concerning register of qualified factories to export to Egypt for selected items<sup>21</sup>**

The Decree obliges all factories wishing to export to Egypt to register with GOEIC, and the acceptance of such registration is accepted or rejected by GOEIC or MTI. The imported products for trading purposes will not be released unless they are produced by the registered factory, from trademark-owning companies or distribution centers.

<sup>20</sup> EY (2016). “Egypt issues VAT law no. 67 of 2016”. EY Global Tax Alert Library. [Retrieved Online](#)

<sup>21</sup> Contecna (2016). “Egyptian Ministerial Decree no.43/2016 on the registration of foreign factories”. [Retrieved Online](#)

Documents required for factory registration with GOEIC are as follows:

- A certificate proving the legal identity of the factory and the license issued for it.
- A list of products of the factory and its trademarks.
- The product trademark and the trademarks produced under license from their owners.
- An official statement that the factory applies a quality control system issued by a recognized entity, which is certified by one of the accredited bodies from the International Laboratory Accreditation Cooperation (ILAC), or the International Accreditation Forum (IAF), or an Egyptian or foreign governmental entity approved by the Egypt's minister of foreign trade.

Documents required for owners of trademarks' registration with GOEIC are as follows:

- A certificate with the trademark registration and the products produced under it.
- A certificate from the trademark-owning company listing the names of the distribution centers allowed to supply these trademark products.
- A certificate that the trademark-owning company applies a quality control system, issued by a recognized body, which is certified by one of the organizations accredited by the International Laboratory Accreditation Cooperation (ILAC), or the International Accreditation Forum (IAF), or an Egyptian or foreign governmental entity approved by Egypt's minister of foreign trade.

In case of doubt about the validity of the introduced documents, the registration will be accepted only upon confirmation.

The list of selected items according to Ministerial Decree **No. 43 of 2016** are as follows:

- Milk and milk products
- Preserved and dried fruits
- Oils and fats
- Sugar confectionaries
- Chocolates and food products containing cocoa
- Pastas and cereal foods, bread products and pastries
- Fruit juices
- Natural water, mineral water and aerated water
- Beauty and make-up products, preparations for oral or dental hygiene, personal deodorants and antiperspirants, perfumed preparations
- Soap and washing preparations used as soap
- Cutlery and kitchen utensils
- Baths, shower baths, sinks, wash basins, bidets, lavatory pans, toilet seats and covers
- Toilet paper and similar, baby and sanitary napkins
- Refractory bricks, blocks, tiles for household use
- Tableware glass articles

- Iron and steel bars and rods
- Household electrical appliances (stoves, fryers, air conditioners, fans, washing machines, blenders and heaters)
- Home and office furniture
- Bicycles, motorcycles and vehicles with auxiliary motors
- Watches
- Lightening equipment for household use
- Toys
- Textiles, clothing, carpets, blankets, furnishing fabrics
- Floor coverings
- Footwear

#### **5. Law No. 121 of 1982 concerning importers registers as amended by Law No. 7 of 2017<sup>22 23</sup>**

The law requires all persons or companies importing goods into Egypt to register with the GOEIC within the MTI. While Law No. 121 requires that all registered importers be Egyptian nationals, the amendment law allows non-Egyptians to hold up to 49 per cent of a trading company importing into Egypt for limited liability companies and joint stock companies. While manufacturing and service companies operating in Egypt may be 100 per cent foreign owned and are exempted from registering in the Importers Registry, in order to import goods which are needed for their business.

According to the amendment law, new requirements must be fulfilled to register in the Importers Registry such as:

- To be registered with the Commercial Register for at least 1 year prior to registration in Importers Registry.
- To have a volume of work not less than EGP 5 million as per submitted tax returns.
- To have the company's head office established in Egypt.
- In case of a limited liability company and partnerships, the paid-in capital must not be less than EGP 2 million.
- In case of a joint stock company and partnerships limited by shares, the issued share capital must not be less than EGP 5 million.
- To have the company's manager in charge of the importation to be an Egyptian national.
- To have a cash deposit or bank letter of guarantee in the amount of EGP 500,000 for the purpose of registration.
- Personnel entrusted with the importation process must get certain training approved by MTI.

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<sup>22</sup> Amereller (2017). "New Amendments to Egypt's Importers Register Law". Retrieved online

<sup>23</sup> WTO (2005). "Trade policies and practices by measure". *World Trade Organization*. Retrieved Online

## 6. Ministerial Decree No. 40 of 2017 concerning activating the Single Activation Document “SAD”<sup>24</sup>

This digital system was introduced to facilitate trade processes by reducing time and costs for all parties. This system was initiated in all Egyptian ports and customs sites. The model is designed to be used in all customs clearance systems for goods, whether imports, exports or through transit system.

## 7. Presidential Decree No. 419 of 2018 concerning customs tariffs<sup>2526</sup>

The presidential decree’s aim is to encourage national industry by increasing import tariffs for over 300 goods, in various categories along with curbing the demand of foreign currency by decreasing importation. The decree’s aim is also to update the classification of goods to comply with the Harmonized Commodity description and Coding system (HS) (which is discussed further in sub section 4.2)

The decree also established a Supreme Council for Customs Tariffs led by the Ministry of Finance who will assign a number of ministries to be members of the council. The council will be in charge of proposing needed amendments to customs tariffs and the customs system in view of economic changes.

## 3.3 Planned laws

As Egypt moves forward to digitize the clearance system, the parliament approved a new customs bill in August 2020 that streamlines procedures. The new law includes the following<sup>2728</sup> :

- Creates a new electronic cargo tracking system.
- Reduces the number of documents from 11 to 6 that exporters and importers have to submit to the ECA.
- Creates a new system for settling customs disputes by allowing customs payers to submit an appeal to an administrative entity before resorting to arbitration.
- Exemption of custom duties for all medical supplies and equipment imported by university and governmental hospitals

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<sup>24</sup> Ministry of Finance (n.d). “General Framework of the Draft State Budget for Fiscal Year 2019/2020”. Retrieved online

<sup>25</sup> Thebes Consultancy (2018). “Amendment of Custom Tariffs”. Retrieved Online

<sup>26</sup> SIS (2018). “Presidential decree on new customs tariffs, establishment of supreme council for customs tariffs” State Information Sytem. Retrieved Online

<sup>27</sup> Moneim, Doaa (2020). “New draft customs law finalised, waiting parliament green light: Egyptian Customs Authority chairman”. Ahran Online. Retrieved Online

<sup>28</sup> Mubasher (2020). “Egypt’s parliament approves new customs law”. Mubasher Online. Retrieved online



# 04

## ANNEX - 4 Plastic Focused Initiatives

There are various initiatives in Egypt that tackle or interact with the plastic value chain. This section will discuss these initiatives and Table 5 summarizes these initiatives in terms of scope, date, and implementing entities.

*Table 5 Summary of initiatives for plastics in Egypt*

Initiative	Implemented by	Plastic value chain	Summary	Impact/ Refection
National Initiative of Reduction of Plastic Bags Consumption “Enough Plastic Bags”.	Ministry of Environment, UNEP, and CEDARE	Generation of waste	This initiative is ongoing from 2017 to 2020, with the objective of raising the public’s awareness regarding the hazards of plastic waste	Decreases the amount of plastic waste and encourages the usage and production of alternatives
“Go Green” Initiative	Ministry of Environment	Generation of waste	This initiative started in 2020 to spread awareness amongst Egyptians to save the environment	Decreases the amount of plastic waste and encourages the usage and production of alternatives
VeryNile and Ministry of Environment Collaboration	VeryNile and Ministry of Environment	Generation of waste	This initiative started in 2020 to ban the use of plastic bags in Zamalek	Decreases the amount of plastic waste and encourages the usage and production of alternatives
Strategy to curb single-use plastic bags production.	Ministry of Environment, Ministry of Trade and Industry, and the Federation of Egyptian Industries	Generation of waste	This strategy was formulated in 2019 to curb the production of single-use bags and encourage the production of biodegradable bags	Decreases the amount of single-use plastic bags
Abolishing plastic bags proposal	Member of Parliament	Generation of waste	This submitted proposal aims at banning the use of plastic bags in Egypt – under development	Decreases the amount of plastic waste and encourages the usage and production of alternatives

### 1. National Initiative of Reduction of Plastic bags Consumption “Enough Plastic bags”.

As a part of a global move to reduce plastic consumption, the Ministry of Environment launched an initiative funded by the European Union in 2017, through a partnership between the Ministry, the United Nations Environment Programme, and the Centre for Environment and Development for the Arab Region and Europe (CEDARE), under the framework of SwitchMed Regional Programme, funded by the European Commission. The initiative’s objective is to raise awareness in the Egyptian community to reduce the number of plastic bags being used. The goal is to coordinate with fast-moving consumer goods (FMCG) chains, hypermarkets, pharmacies, and sports clubs to raise the consumer awareness using environment-friendly alternative bags<sup>27</sup>. Part of the initiative included activities, such as a public advertisement campaign to raise awareness on the hazard of plastic bags and the distribution of 4,500 eco-friendly biodegradable plastic bag<sup>30</sup>. This initiative ran from 2017 to 2020.



*Environmentally friendly bags distributed by The Ministry of Environment – Egypt Independent 2018*

### 2. “Go Green” initiative<sup>31 32</sup>.

The initiative was launched in 2020 by the minister of environment Yasmine Fouad. The objective of the three-year initiative is to spread awareness amongst Egyptians to preserve the environment. It is meant to address 36 environmental issues such as the disposal of plastic waste, deforestation, and reducing greenhouse gases. The initiative will be implemented through a set of activities in the Egyptian governorates, such as workshops, planting trees, waste collection, and integrating environmental awareness material in school and university curriculums.

The first activity under the “Go Green” initiative was an initiative to clean up the Red Sea. The 10-day initiative collected around 40 tons of waste from the seabed which was transferred afterwards to a sanitary landfill for safe disposal.

### 3. VeryNile and Ministry of Environment Collaboration<sup>33 34</sup>

The Ministry of Environment has teamed up with youth volunteer group VeryNile in 2020 on a new initiative to ban the use of disposable plastic bags in the affluent neighborhood of Zamalek. VeryNile organizes clean-up campaigns on the Nile and works to raise awareness about environmental protection in support of the ministry. These campaigns are sponsored to fund the equipment, for example Attijariwafa Bank funded and distributed 4,500 cotton-made bags in Zamalek, while the Embassy of New Zealand and the International Organization of Migration funded the equipment used in Nile clean-ups.

<sup>29</sup> Centre for Environment and Development for the Arab Region and Europe (CEDARE), Egyptian Minister of Environment Launches the “National Initiative of Reduction of Plastic bags Consumption”, 2017

<sup>30</sup> Jehad, el Sayed (2018). “Egypt’s initiative to eliminate plastic bags”. *Egypt Today*. [Online Article](#)

<sup>31</sup> Nassar, Marwa (2020). “Egypt’s “Go Green” Initiative marks step forward towards SDGs”. *CSR Egypt*. [Online article](#)

<sup>32</sup> Magoum, Ines (2020). “EGYPT: About 40 tons of waste collected from the Red Sea”. *Afrik 21*. [Retrieved Online](#)

<sup>33</sup> Aziz, Mahmoud (2020). “Egypt’s environment ministry launches campaign to limit use of plastic bags in Zamalek”. *Ahram Online*. [Retrieved Online](#)

<sup>34</sup> VeryNile (n.d). “About VeryNile”. [Retrieved Online](#)

#### **4. A strategy to curb single-use plastic bags production.**

In late 2019, there was news that the Ministry of Environment was formulating a strategy to curb the production of single-use plastic bags. The strategy was reported to be a joint effort between the Ministry of Environment, Ministry of Trade and Industry, the Federation of Egyptian Industries and other entities. The strategy's main driver is to curb single-use plastic bags, which reached 2 million tons per year, through formulating incentives for producers of single-use plastics, alongside providing plastic producers with EUR 6 million in subsidies to build new production lines of biodegradable bags. Furthermore, the European Union has granted the ministry USD 2 million to fund scientific studies for the initiative<sup>35</sup>.

#### **5. Abolishing plastic bags proposal<sup>36</sup>.**

In mid-2019, a member of parliament submitted a proposal regarding the ban of single-use of plastic bags in Egypt to the prime minister and the Ministry of Environment. In the proposal, it was suggested to offer more environmentally friendly alternatives such as fabric bags.

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<sup>35</sup> *Enterprise, the state of the nation (2019). "Egypt working on strategy to curb production of single-use plastic bags". [Online article](#)*

<sup>36</sup> *Egyptian Streets, "Egyptian MP Proposes Abolishing Plastic bags in Favour of Eco-Friendly Alternatives", 2019*

# 05

## ANNEX - FEI Organizational chart

