

GAZA SOLID WASTE MANAGEMENT PROJECT (ADDITIONAL FINANCE RBF)



JSC Semi Annual Report: Environmental and Social Compliance

(January 2021 - June 2021)



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List of Acronyms

AFD	French Development Agency
ARAP	Abbreviated Resettlement Action Plan
EQA	Environmental Quality Agency
ESMP	Environmental and Social Management Plan
ESIA	Environmental and Social Impact Assessment
EU	European Union
ERW	Explosive Remnants War
HSEQ	Health, safety, environment Quality
IDB	Islamic Development Bank
GSWMP	Gaza Solid Waste Management Plan
JD	Jordanian Dinar
JSC-KRM	Joint Service Council – Khan Younis, Rafah and Middle area
MDLF-PDSU	Municipal Development and Lending Fund- Project Development and Safeguards Unit
MSW	Municipal Solid Waste
OP	Operational Policy
OSHA	Occupational Safety and Health Administration
PARC	Palestinian Agricultural Relief Committees
PAPs	Project Affected Persons
PCBS	Palestinian Central Bureau of Statistics
PEL	Environmental Law of Palestine
PWA	Palestinian Water Authority
SW	Solid Waste
ST cell	Short-term cell
TS	Transfer Station
UNDP-DEEP	United Nation Development Program- Deprived Families Empowerment Program
UNMASS	United Nation Mine Action Service System
UNRWA	United Nations Refugee Work Agency
UXO	Unexploded ordnance
WB	World Bank
WHO	World Health Organization
WWTP	Wastewater Treatment Plant



1. Al-Fukhary (Sofa) Sanitary landfill

Al-Fukhary (Sofa) landfill is a sanitary landfill over an area 235,000 m², it is located east of Khan Younis Governorate (800 m from the eastern border of Gaza Strip), and it receives 600 ton/day of municipal waste from three governorates (Khan Younis, Rafah, and Middle Area) which mainly consist of food waste, paper and cardboard, plastics and nylon, tin cans and aluminum, glass, leather...etc. The landfill site is fully secured by a fence, and only one entrance gate is available for incoming and outgoing trucks which managed by a control room, as well the site is secured by two guards and a CCTV system. A second gate is available but closed, it is used only for some specific purposes. The Landfill site is also included the old waste dumping site which is semi-closed by a clayey layer with a side slope 1:2 and height 30 m above the ground, and it also included excavated soil stockpile which is located over an area 85,000 m² with a height up to 14 m. Figure (1) provides schematic of the new sanitary landfill with all major facility elements.

1.1 The landfill Site Components

Al-Fukhary (Sofa) Sanitary landfill consist of:

- Entrance area including weighbridge and control room;
- Building (190 m² on 3 levels) for JSC-KRM operation personnel staff;
- Maintenance Workshop (528 m²); Storm water drainage and storage pond (10,531 m³ capacity);
- Disposal cell 1, divided in cell 1A and 1B (excavated up to 20 m below natural ground level), and slope 1:2 for sides with horizontal perm 5m width;
- Leachate pre-treatment (aeration lagoon, usable volume 6800 m³), it is excavated to 2.75 m below natural ground level;
- Peripheral road (length 1,735 m);
- Old Dumpsite (40,000 m²);
- Stockpile of excavated soil (85,000 m²); and
- Fence is surrounding all the site.

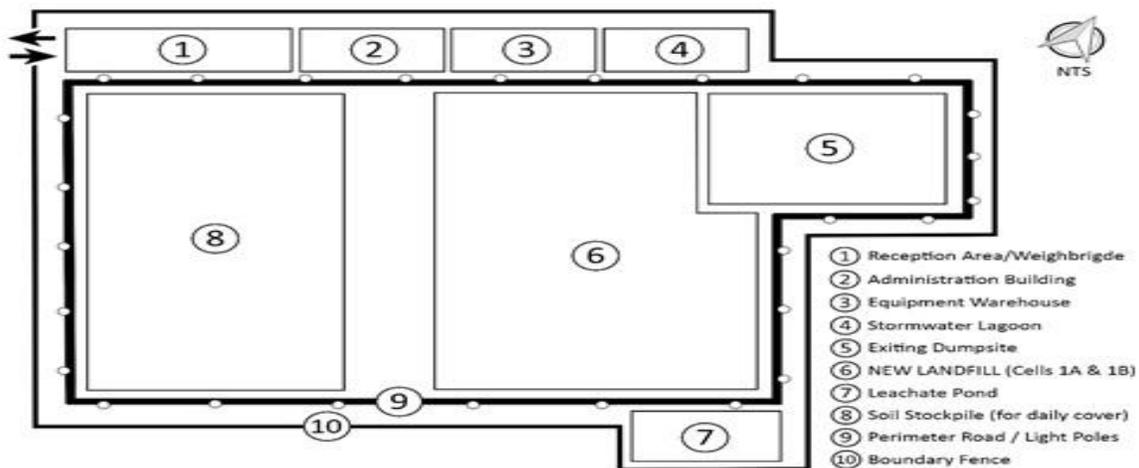


Figure 1. Schematic of Sofa Sanitary Landfill in Al-Fukhari



1.2 Operation of Al-Fukhary (Sofa) Sanitary Landfill

Al-Fukhary (Sofa) Landfill is a sanitary landfill which managed by JSC-KRM since July 15th, 2019. During the reporting period; it received an average **500** ton/day or **15,005** Ton/month of municipal waste from 17 localities in middle and south of Gaza Strip. An average of **50** of incoming waste vehicles are received to the landfill on the daily basis; their access is managed by the control room employee which proceed with the weighting of incoming waste and controlling the access of vehicles to the landfill. The waste is dumped at the disposal cell based on a specific filling sequence, flagman (observer) is directing the vehicles for unloading of waste regarding to the landfill manager instructions, whereas Bulldozer is leveling the received waste. At the end of any working day, the waste is covered by a thin layer of daily clay cover (20-30 cm of sub-soil).

External storm water is collected by a storm water ditch which is installed surrounding the landfill site, and it is directed by gravity to the storm water lagoon; The stormwater lagoon is lined by a geomembrane. The stormwater is sprayed against the dust in the dry days and pumped to the nearest landfill land to be used for irrigation of crops.

Leachate, which resulted from the internal storm water and the waste liquid, are collected through the geo-composite network (AFTIX) and pumped to the leachate lagoon; the leachate lagoon is lined by a geomembrane. Leachate was planned to be treated biologically and physically and sent to the adjacent WWTP for additional treatment regularly.

1.3 Landfill Organization and Staffing

The landfill is totally managed by JSC-KRM, there are **13** fixed term employees working on different managerial and technical tasks to accomplish the daily operations of the landfill, according to the following table (1):

Table 1 Existing Al-Fukhary Landfill Staff

#	Position/ Task	Number of Employees
1	Landfill Manger	1
2	Weighbridge Employee	2
3	Heavy Machinery Driver	4
4	Worker	2
5	Flagman (observer)	2
6	Guard	2

The landfill manager is directly reporting to JSC-KRM executive manager and he is leading the other employees according to the bylaws of the JSC-KRM and the instructions of the operational plan.



2. Operation Progress

2.1 Waste Quantities

During January – June 2021, the landfill received **90,034.085** tons of Municipal Solid Waste (MSW); the average received waste is 500 ton/day or **15,005** ton/month. Table (2) shows the monthly received quantities during the reporting period.

Table 2 Existing Al-Fukhary Landfill Quantities

Month	January	February	March	April	May	June	Total (Ton)
Quantity	15,371	13,353	14,345	14,942	15,021	17,092	90,034

The control room and the weighbridge are located near the entrance and are to be managed at all times. The following data are obtained from all vehicles entering the site which carry waste time and date, vehicle registration details, weight and type of waste.

The control room employee asks about the type of wastes entering the site initially, and the observer (flagman), who manage the filling of waste at the disposal cell, observes the type of waste as a second level of observation. The landfill was designed to receive only municipal solid waste, as well JSC-KRM regulations state a list of waste which is not acceptable to be received at the landfill. The list of prohibited wastes is printed and installed in front of the landfill gate. Table (3) shows the list of prohibited waste

Table 3. List of prohibited waste in Al-Fukhary (Sofa) Landfill

Joint Service Council (JSC-KRM) shall not be obliged to collect, transfer or dispose of hazardous solid wastes classified according to the Basel Convention of 1992 including:

- A. Untreated Health-Care Waste.
- B. Residues from industrial waste disposal operation which contains heavy metals, or residues from pharmaceutical facilities.
- C. Wastes from production, formulation and use of inks, paints, oils, dyes, varnish.
- D. Detergents.
- E. Waste terry residues arising from refining, distillation, and any pyrolytic treatment.
- F. All types of Batteries.
- G. Tires.



Figure 2. Reception of Waste at Al-Fukhary Landfill



2.2 Waste Compaction

Al-Fukhary (Sofa) Landfill receives an average 478.5 ton/day. The Filling sequence is followed as planned in the operational manual. The density of the first layer was 935 kg/m³, and 1,090 kg/m³ in the second layer and 1260 kg/m³ in the third layer. Hence, Landfill equipment including Bulldozer (D8) were used in the second layer, but they were not used in the first layer in order not to damage the liner. Table (4) shows the volume of each layer and the received quantities as well the density. Waste compaction aims at expanding the life span of the landfill.

Table 4. Waste density at Al-Fukhary Landfill

Layer	Duration		Quantity (Kg)	Volume (m ³)	Density (Kg/m ³)
	from	to			
1 st Layer	(15 / July / 2019)	(19 / March / 2020)	134,783,686	144,135	935
2 nd layer	(19/ March /2020)	(17/ Sep /2020)	103,939,490	94,540	1,090
3 rd Layer	(17/ Sep /2020)	(10/ March /2021)	118,417,000	93,816	1,262
4 th Layer	(10/ March /2021)	Expected to be in the next semester			

2.3 Daily Coverage of Waste

The construction of Al-Fukhary Sanitary landfill resulted in excavation of 1,350,000 m³ of excavated material. Part of the excavated soil is stockpiled within the boundary of the landfill site to be used during operation of the landfill as daily cover. The waste is covered by a 20 - 30 cm layer of sub-soil at the end of each working day to prevent odors, pests, and for better atheistic conditions. The average daily volume used for the daily cover is 140-200 m³, so that the clay volume used for the daily cover in the reporting period is 23,749 m³.

2.4 Groundwater Monitoring

Four groundwater piezometers were installed during the construction period around Al-Fukhary sanitary landfill, the frequency of testing is 6 months. The quality of groundwater was tested chemically before operating the new landfill, and it was found that all samples are slightly basic and have a high concentration of Chloride (CL). The concentration of Nitrates (NO₃) is slightly high in one sample only. Other parameters were tested, and they were found they are under the limit of EQA regulatory standard of the drinking water. The high concentration of Total Dissolved Solids (TDS) is reasonable and expectable due to the high turbidity of all samples of the new piezometers and the high concentration of Chlorides. In 2018, a water sample was also collected from a near groundwater well owned by (Hassan Mohammed Al Amour) to be compared with the previous collected samples from Al-Fukhary site. The well is far about 800 m from the existing dumpsite. It was found results of both the site GW and the outside GW are close. Table (5) shows the groundwater quality during the reporting period.



Table 5. Groundwater quality results – Al Fukhary Sanitary Landfill (March, 2021)

Well Number	Depth	pH	EC	TDS	COD	BOD	CL	NO ₃	NH ₃ -N
	m	-	μS/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
EQA Regulatory Standards of drinking water	-	6.8-8.5	-	1500	NA	NA	600	70	0.5
Well (1)	30.15	7.25	13800	8800	120	20	3100	32	NIL
Well (2)	28.3	7.2	8600	5450	40	<10	1450	40	NIL
Well (3)	29.4	7.33	19400	13100	200	30	4500	45	NIL
Well (4)	30	7.38	15300	9700	150	22	3500	56	NIL
Water well from surrounding lands (far about 800 m from the existing dump site) - 2018	-	7.052	14,080	9,855	150	<10	4,293	51	Nil

2.5 Stormwater and Leachate Management

Leachate is collected through the geo-composite layer (AFTIX) to the lower point by gravity, and it is pumped to the leachate lagoon which is lined and has a capacity 6,800 m³. The leachate is pumped automatically. The leachate was planned to be treated biologically by aeration before sending to the adjacent WWTP for additional treatment, but this plan is not meeting the requirements of WWTP for the received wastewater.

In order to decrease the formation of leachate, the collection of external stormwaters was designed by constructing a ditch surrounding the landfill. The collected stormwater is collected by gravity to the stormwater lagoon which is lined and has a capacity 10,500 m³. The collected stormwater is still not planned for any purposes, but it can be used for irrigation of green areas inside the landfill site, and evaporation of the remaining quantity.

Leachate quality was tested in September 2020 in two points (Sub location and from the leachate lagoon); results are shown in Table (6).

Table 6. Leachate Quality at Al-Fukhary site (March, 2021)

#	Parameter	Unit	Sample (Sub)	Sample (Lagoon)
1	BOD ₅	mg/L	1100	1400
2	COD	mg/L	7000	10000
3	TSS	mg/L	350	700
4	pH	-	8.46	7.9
5	NO ₃	mg/L	1	11
6	T-N	%	400	1680
7	TDS	mg/L	19000	24000
8	CL	mg/L	5500	5600
9	SO ₄	mg/L	160	230
10	NH ₄	mg/L	350	1630
11	TOC	%	-	-
12	CN	-	ND	ND



13	As	mg/L	ND	ND
14	Fe	mg/L	1.05	1.25
15	Mn	mg/L	0.38	0.2
16	Ni	mg/L	0.43	0.64
17	Pb	mg/L	0.03	0.08
18	Cd	mg/L	0.04	0.05
19	Zn	mg/L	2.5	2.8
20	Cr	mg/L	0.35	0.36

During the reporting period, the quantity of leachate pumped to the leachate lagoon is 2,399 m³ with a monthly average 400 m³/month. Table (7) shows the monthly pumped volumes of leachate. Hence, during the reporting period, only 8 Rainy days were reported.

The leachate treatment facility adjacent to the leachate lagoon is under construction, and it is expected to start the operation in the next semester.

Table 7. Leachate Volumes at Al-Fukhary site

Month	January	February	March	April	May	June	Total (M ³)	Average (M ³ /month)
Volume	341	0	339	295	725	699	2,399	400

2.6 Dust Control

Dust is noticed at dry days due to the passage of waste trucks, inside the cell or besides the soil stockpiling place only, since the other paths and roads inside the landfill are paved. The dust is managed basically by water spraying by a jitter- vacuum or washing vehicle they were used for 59 days during the report period. Although there are no complaints received from neighbors, but the dust is controlled once it is noticed in dry days. The used water is taken from the stormwater lagoon.

2.7 Pest Management

A pest management plan has been prepared for Al-Fukhary Landfill during operation. The plan categories the source of pesticides and level of required measure as shown in Figure (2). Hence, the pest management time is associated with the pests breeding seasons which are mainly between April and October, so pest management activities started at the beginning of April, in a frequency once a week (2 L of BTI/ week).

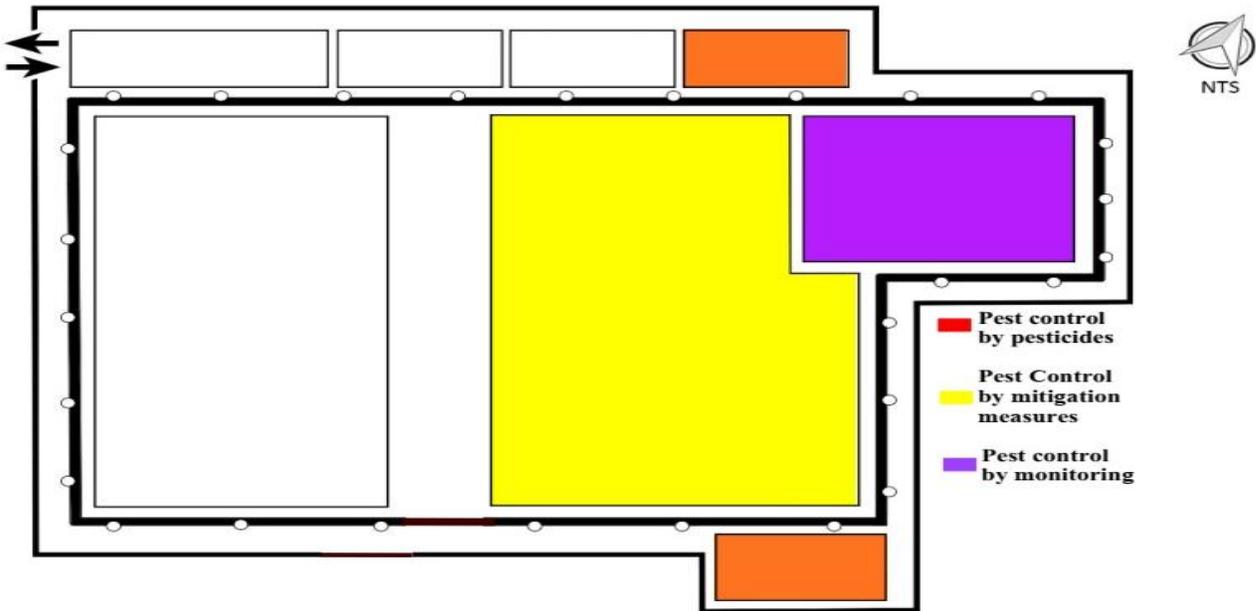


Figure 3. Levels of pest management at Al-Fukhary (Sofa) Sanitary landfill

2.8 Flora and Fauna

The landfill site is secured by a fence (height 2.2 m), and has only one gate for accessibility, yet number of stray dogs were noticed within the landfill perimeter site from the early days. Their number was not exceeding 10 dogs in the beginning, but they increased to be more than 20 dogs at one point. The stray dogs were harmless at the early stage, until two incidents occurred at the landfill site in April 2020; when workers reported aggressive behavior by some stray dogs.

Solution Development:

MDLF and JSC-KRM start looking at solving the problem of stray dogs since April 2020, and with the reported aggressive behaviors of some animals the JSC sought the advice of the Mufti (authorized Islamic jurisprudence expert) of Khan Younis Governorate, who permitted the possibility of putting the aggressive dogs to sleep given their aggressive behavior. On the other hand, World Bank Policies pressed to explore harmless solutions such as finding shelter for the dogs.

After research, an NGO named (Sulala) was found to be the only animal shelter in Gaza (dogs and cats only), and the NGO welcomed receiving the stray dogs in their place in Gaza City.

About SULALA:

- SULALA started their activities in 2006 for few months in a limited scale in a place located in Al-Zahraa town - Middle Area. Sulala resumed in 2016, and in January 2020, Municipality of Gaza made available a governmental land (Area 2,000 square meter) for the use of SULALA in order to commence and expand their activities, and to work jointly with the Municipality of Gaza to receive and care for the stray dogs, knowing that stray dogs constitute a problem across Gaza strip where large numbers wandered the city streets especially at night.



- SULALA built a shelter for dogs in the lot, and they already have more than 200 dogs in that shelter. SULALA relies on volunteers, who care for animal rights in their work, where the volunteers provide care and food for the animals and collect donations for this cause.
- The person in-charge at SULALA has a good experience in caring for animals, and the initial communication revealed a clear personal commitment of Mr. Saeed Al-Err for helping animals; a cause he dedicated his time and effort to serve.

On June, 2021, JSC-KRM landfill workers and guards collected 7 dogs and transferred them to the Shelter in Gaza City under the project's environmental officer supervision.

The Landfill guards were requested to prevent any of stray dogs to access to the landfill from the gate, knowing that the gate is the only possible place for accessibility of dogs, and also to report any new animals entering the site to repeat the exercise with respect to coordinating with the animal shelter.



Figure 4. Transferring the animals to SULALA

2.9 Health and Safety of Workers

The health and safety of workers is the top priority at Al-Fukhary site. Workers were provided by training related to precaution measures regarding to COVID-19, as well they were provided by daily safety instructions. Workers at al-Fukhary landfill was provided with a full PPE (Vest, Safety Shoes, Masks, hats, gloves). In addition, the sterilization of internal roads and facilities landfill twice a week using chlorine.

No injuries were reported during the reporting time, knowing that Insurance on workers and landfill equipment was issued. Only two workers infected by Covid-19, and list of procedures were followed such as a request from the infected worker to stay at home until recovery, and also workers who workers with him to stay at their homes for few days. All workers are tested in terms of temperature at the beginning of each day before entering the landfill site, as well there was strict instructions to use the PPE and the personal sanitizers.



Figure5 . Sterilization of internal roads and facilities landfill

First Aid Boxes are also provided in the maintenance warehouse and the admin building for any potential accidents. Furthermore, fire extinguishers are provided in the maintenance warehouse; it is used for only fires at the workshop or the admin building.

2.10 Grievance Redress Mechanism (GRM)

The landfill is one of the facilities, which are included inside the comprehensive GRM system in JSC-KRM, and this system is known for all the community around the landfill and the drivers and workers who could pass to the landfill. The available GRM tools which are active to receive complaints from the landfill are:

- Complaint box: there is a complaint box installed on the control room wall, in front of the main path for all the vehicles, and all the community and workers could reach it easily.
- Phone Number: the direct mobile number for the landfill manager is registered on the adhesive brochures, which were distributed on all the SW collection vehicles (39 Municipal vehicle +11 UNRWA vehicle and 15 JSC-KRM vehicles), and they can contact him directly in anytime.
- E-complaint application: this tool is available for all people, and it is uploaded on the official website of JSC-KRM (www.jsc-krm.ps) and its link is published through all the printings and during the community meetings.
- Facebook Page: JSC-KRM has an active F.B. page and all the local community around the landfill used to follow it and send their complaints through the inbox to the JSC-KRM manager.

Immediately after receiving any complaint from any of the above tool, the person in charge will register it in the complains database file then refer the complaint to the related department in the JSC-KRM or if it is related to the municipality service, it refers to the related municipality to take an action.



As soon as the operational phase in the landfill started, the complaints categories in the GRM system has been updated to include the potential complaints, which may receive from this facility as shown in Figure 6.

During the reporting period, there were no complaints about the landfill operation, but complaints mainly about the waste collection activities.

The screenshot displays the E-GRM system interface. At the top, there is a green navigation bar with the following menu items: JSC-KRM, Municipalities, Projects, Activities, Media Center, Complaints (highlighted), and Contact Us. Below the navigation bar, the main content area is divided into two columns. The left column contains a form for submitting a complaint, with sections for 'Full Name', 'Mobile', 'Email', 'Complaint Information', and 'Details'. The 'Complaint Information' section includes a 'Complainant' field, a 'Select Type of Application' dropdown menu (currently set to 'AlFukhari Landfill'), a list of complaint categories with checkboxes, and a 'Details' field. The right column contains 'Council facilities' information, including 'Main Office', 'Khan Younis Department', and 'Middle Area Department', each with their respective addresses and phone numbers.

Figure 6 . The potential complaints related to the landfill as shown in the E-GRM

To sum up:

- Complaints monthly report is submitted by JSC member municipalities (who are joining the female group).
- Monthly reports are submitted since March 2021.
- JSC-KRM are also preparing their compliant report on a monthly basis.
- Most of complaints are associated with the primary and secondary collection.



JSC-KRM started to use “Citizen Complaints Cards” for encouraging people to submit their complaints during the household visits by the awareness team / waste collection workers.

Table 8. Types and numbers of received complaints (1st January 2021 - 30th June 2021)

Type	Complaint Title	#
1 Collection Services from Containers	1. Rubbles and sands in the container	34
	2. Burning the containers and the wastes	22
	3. Littering wastes around the container	15
	4. Random waste collection point	1
	5. Containers need maintenance or replacement	2
	6. Request to move container from place to place	0
	7. Request a new container	3
	8. Delays on evacuation the containers on time	4
	9. Collection workers violating safety measures	0
	10. Odors from waste containers	0
	11. Leachate/oil spill from container or JSC collection vehicles	0
2 Al-Fukhari landfill	1. Odors from Al-Fukhari landfill	0
	2. Pests and rodents breeding in Al-Fukhari landfill	0
	3. Al-Fukhari Landfill fire accident or Gas emissions	0
	4. Change in the characteristics of groundwater wells	0
	5. High speed of the vehicles in the road to the landfill	0
	6. Solid waste trucks without coverage in Sofa road	0
	7. Littering wastes on the side of the road to the landfill	0
3 Deir al-Balah landfill	1. Odors from Deir al-Balah landfill	0
	2. Deir al-Balah Landfill fire accident	0
4 Medical waste treatment unit	1. Odors from the medical waste treatment unit	0
	2. Pests and rodents breeding in the medical waste treatment unit	0
	3. Gas emissions the medical waste treatment unit	0
5 Medical waste collection services	1. Delays on collection of waste from clinics and health centers	0
	2. Collection workers violating safety measures	0
	3. Leachate spill from medical waste collection vehicles	0
6 Rafah transfer station	1. Odors from Rafah transfer station	0
	2. Pests and rodents breeding in Rafah transfer station	0
	3. High speed of the vehicles in the road to Rafah transfer station	0



	4. Change in the characteristics of groundwater wells	0
7 Others	1. Difficulty in unload the containers due to road damage and maintenance	6
	2. The container location has been changed from its designated place	1
8 Invalid Complaints	1. Complaints related to primary collection services and referred to the municipalities (not related to JSC-KRM services)	57
Total		88

Table 9. The distribution of the received complaints on the channels (1st January 2021 - 30th June 2021)

GRM Active Channels	No.
1 E-Complaints System (Website)	6
2 Phone Calls	0
3 Awareness Team	3
4 Waste Collection Workers	74
5 Facebook page	5
Total	88

The distribution of the received complaints on the channels
(1st January 2021 - 30th June 2021)

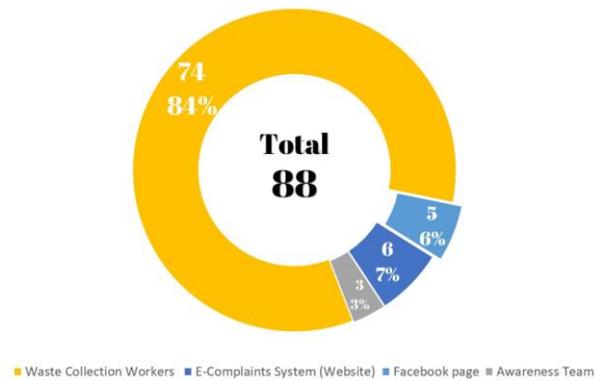


Table 10. Numbers of received complaints by types, status and location (1st January 2021 - 30th June 2021)

Location of Complaints	No.
1 Khan Younes	27
2 Deir Al-Balah	47
3 Al-Nusirat	12
4 Al-Qarara	2

Status of Complaints	No.
1 Solved and Closed	31
2 Referred to the Municipalities	57

Type of Complaints	No.
1 Collection Services from Containers	81
2 Al-Fukhari new landfill	0
3 Deir Al-Balah landfill	0
4 Medical waste treatment unit	0
5 Medical waste collection services	0
6 Rafah transfer station	0
7 Others	7
8 Invalid Complaints	57



Summary of complaints Municipalities (March – May 2021)

This section shows the received complaints by municipality, they were collected by the women’s committee through an excel form.

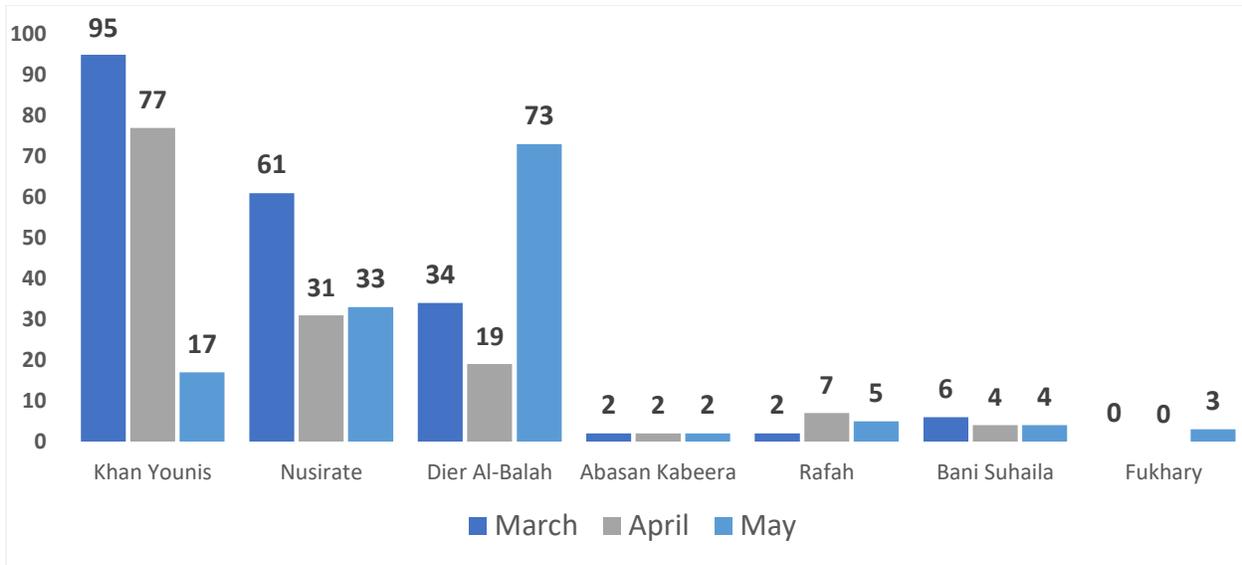


Figure 7. Number of complaints related to waste management in municipalities (Mar- Jun 2021)

The figure shows that the highest number of complains during May was in Dier Al-Balah, and it is expected due to the aggression on Gaza governorates that time, so most cleaning workers were not able to reach the containers at suitable times.

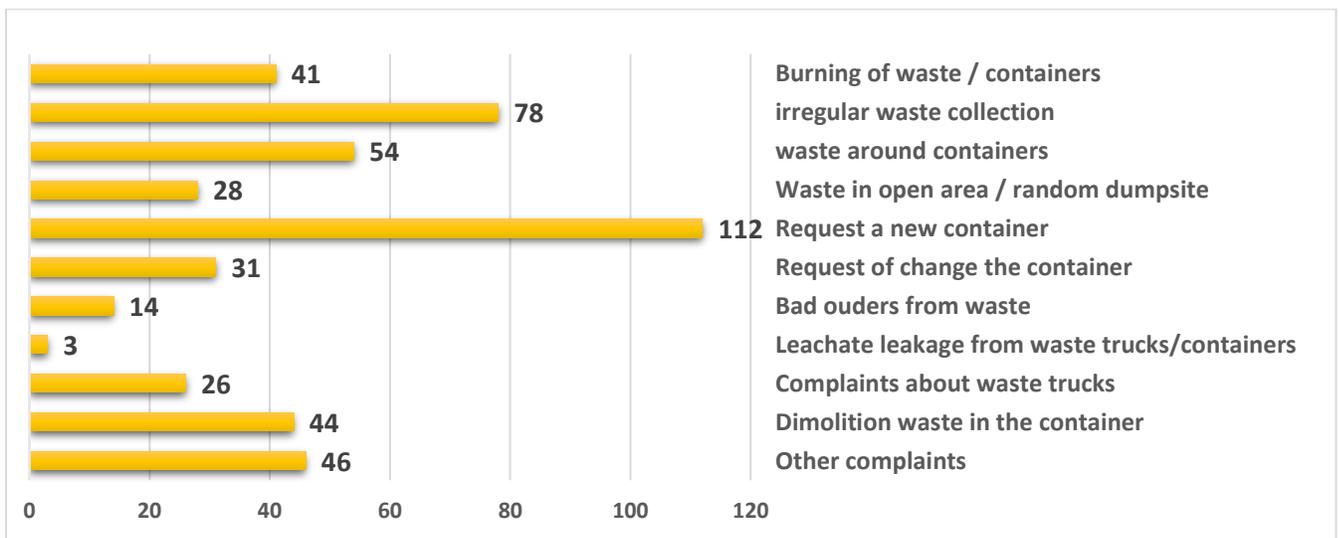


Figure 8. Municipalities complaints by type (March – June 2021)

The figure shows that (23%) of complaints were requesting new containers, while (10%) is other complaints that are not related to JSC-KRM services, but related to primary collection services and referred to the municipalities. JSC-KRM team always ensures that the municipality had received the complaint and solved it.



2.10 Stakeholder Engagement and Communication Activities

This section shows the progress regarding the indicators of stakeholder engagement and wider communication activities during the report period as follows:

2.10.1 Female project beneficiaries aware of solid waste management practices

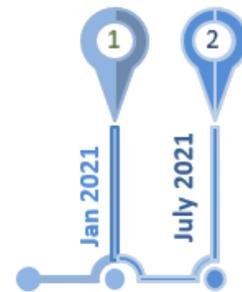
Two actions are required under this aggregate indicator: -

First action

It was taken during January 2021 under this indicator was distributing a short survey targeted (100) women from the three governorates. The survey investigated the awareness of women about waste collection, landfilling, medical waste, transfer station, GRM system, and awareness campaigns. It was distributed and analyzed during January 2021. Table (11) shows the geographical distribution of respondents.

Table 10. Female awareness survey respondents

Area	No.
1 Khan Younis	30
2 Rafah	25
3 Bani Suhaila	10
4 Abasan Kabeera	10
5 Dier Balah	15
6 Nussirat	10
Total	100



First Survey Results & Analysis

This survey aims at measuring the awareness level of solid waste collection and disposal mechanisms, for (100) females from different areas in Khan Younis, Rafah and middle area.

The targeted areas are female residents of the following municipalities: Khan Younis, Rafah, Bier AlBalah, Nussirat, Bani Suhila, Absan AlKabeera, with a relative weight of (30%; 25; 15%; 10%; 10% and 10%) respectively.

The survey included 10 questions about waste collection, landfilling, medical waste, transfer station, GRM system, as well as awareness campaigns.

The following data shows the general results of each question then the geographical projection of the selected six areas.



Question (1): Who collects Solid Waste in Gaza Strip?

The results as shown in figure 9; (41%) of the females said that only the municipality is responsible for SWC; while (35%) said its municipality, UNRWA and JSC, while only (24%) said it's the municipality and UNRWA ones.

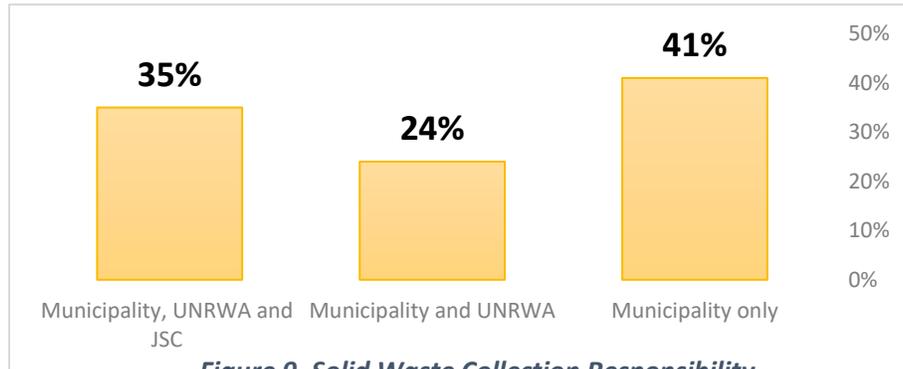


Figure 9. Solid Waste Collection Responsibility

In figure (10) the geographical distribution is shown; as Abasan and Bani Suhila have not any camps so they exclude UNRWA from their selection; while in Nussirat as it's considered a camp (80% of female's responded that it's the responsibility of UNRWA and municipality without noticing the role of JSC).

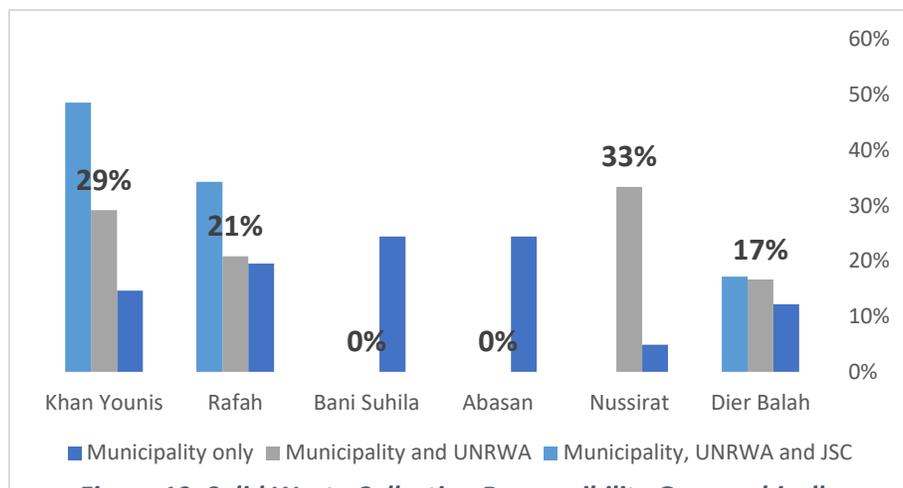


Figure 10. Solid Waste Collection Responsibility Geographically

It's worth to remark that none of Nussirat, Bani Suhila and Abasan mentioned the JSC role in SW collection which alarms us to exert more efforts in awareness and communication in these areas.

Question (2): Are you satisfied with the waste collection mechanisms in your area?

The results as shown in figure 11; (62%) of respondents are moderately satisfied, while (25%) are highly satisfied and (13%) are not satisfied.

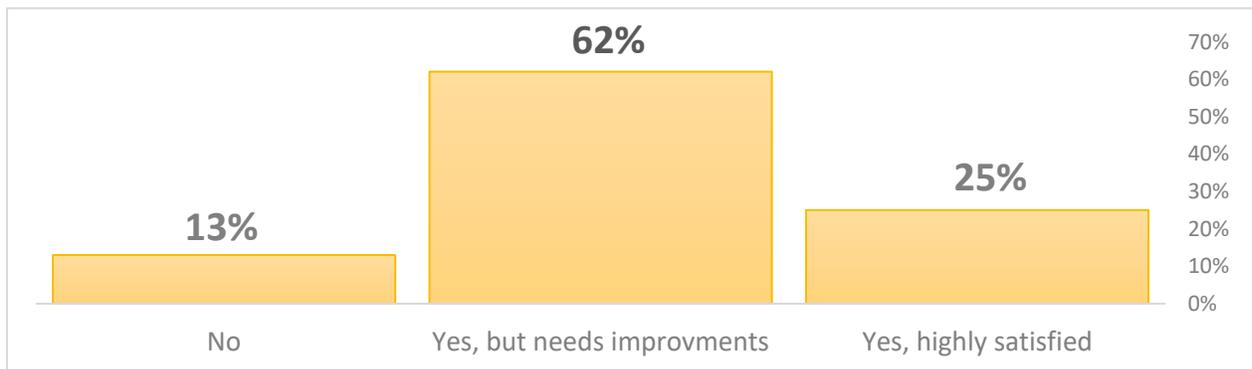


Figure 11. Satisfaction with SWC mechanisms



In figure (12) the geographical distribution is shown; due to the choice no. (2) the comments of females were as follows: Nussirat and Abasan AlKabeera need more waste containers, while Khan Younis; more cleaners are needed.

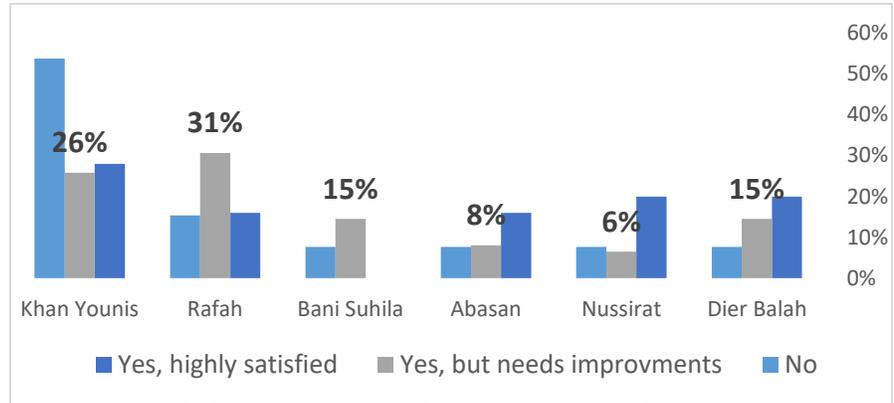


Figure 12. Satisfaction with SWC mechanisms Geographically

Question (3): Do you know where the waste goes after it is collected from the relevant authorities in the Gaza Strip?

The results as shown in figure (13): (74%) of respondents said that the waste is being buried in a landfill after collection; while (17%) though that it is being burned; while (8%) said that it is thrown at the sea.

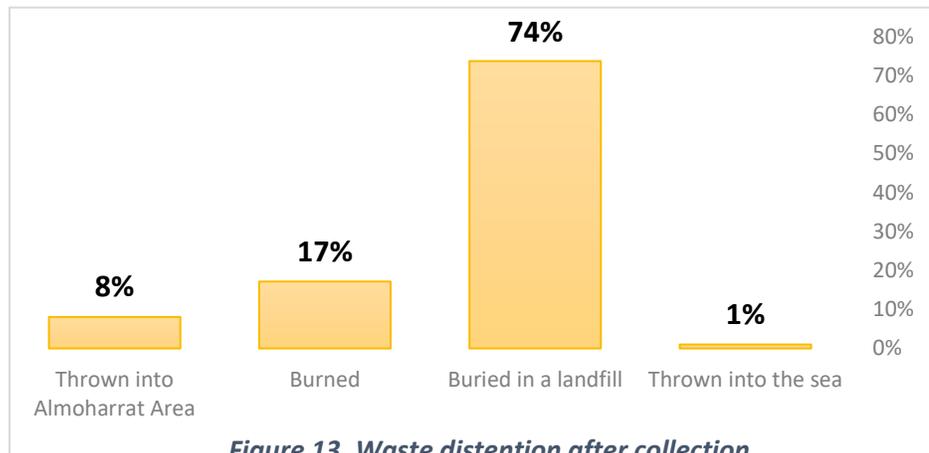


Figure 13. Waste distention after collection

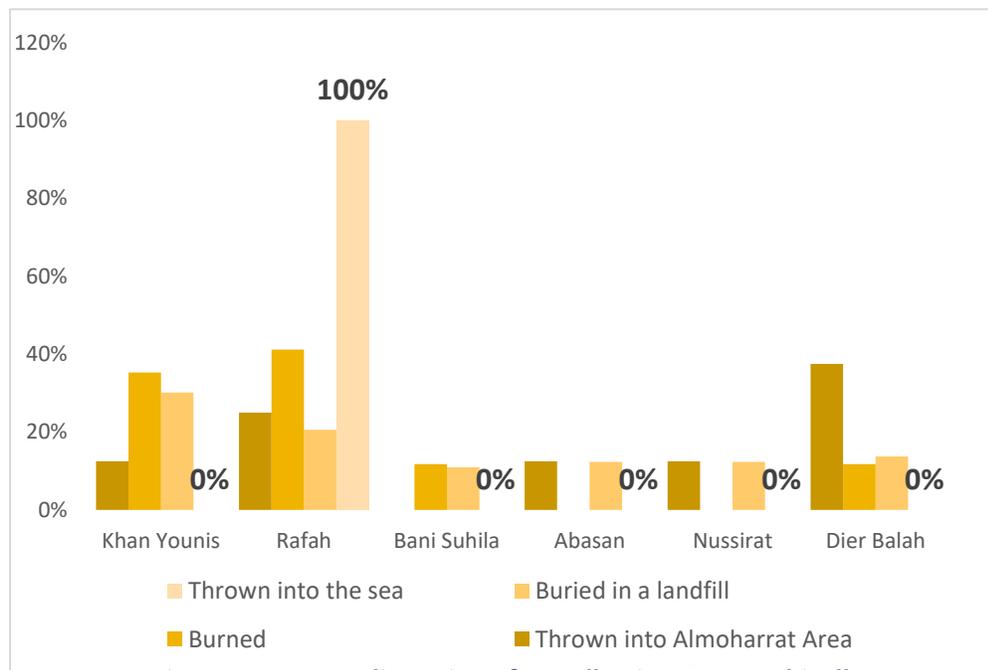


Figure 14. Waste distention after collection Geographically

Due to the geographical distribution, only one respondent said it was thrown into the sea, while most answers go around buried in the landfill. But more efforts need to be exerted in Rafah as (30% of the area sample said it is burned).



Question (4): Do you know how transfer station works? And its importance?

The results as shown in figure (15): only (34%) know about transfer station, but when revising the short answers, they were left empty and none wrote its importance.

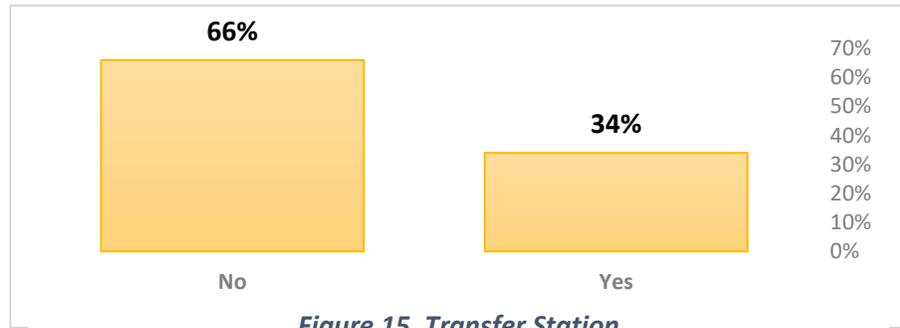


Figure 15. Transfer Station

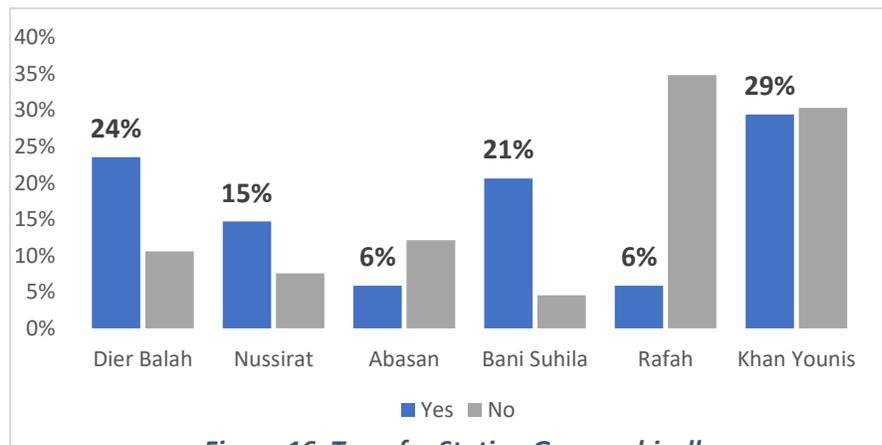


Figure 16. Transfer Station Geographically

Figure (16) shows the answers in geographical distribution; Rafah is (35%) of the respondents do not know the transfer station while it's already located in Rafah and only Rafah governorate residents benefit from it, so more awareness is needed there.

Question (5): Do you know how to deal with medical waste?

The results as shown in figure (67%) of respondents don't know how medical waste is being disposed, and most of who said yes, their answers were "burn it". So, more efforts are needed in this area.

Also as shown in figure (17); Rafah respondents (92% of them) are not aware of medical waste disposal. Even the respondents in other governorates who said yes, their answers were that medical waste is being burned or collected in special containers then burned in empty areas.

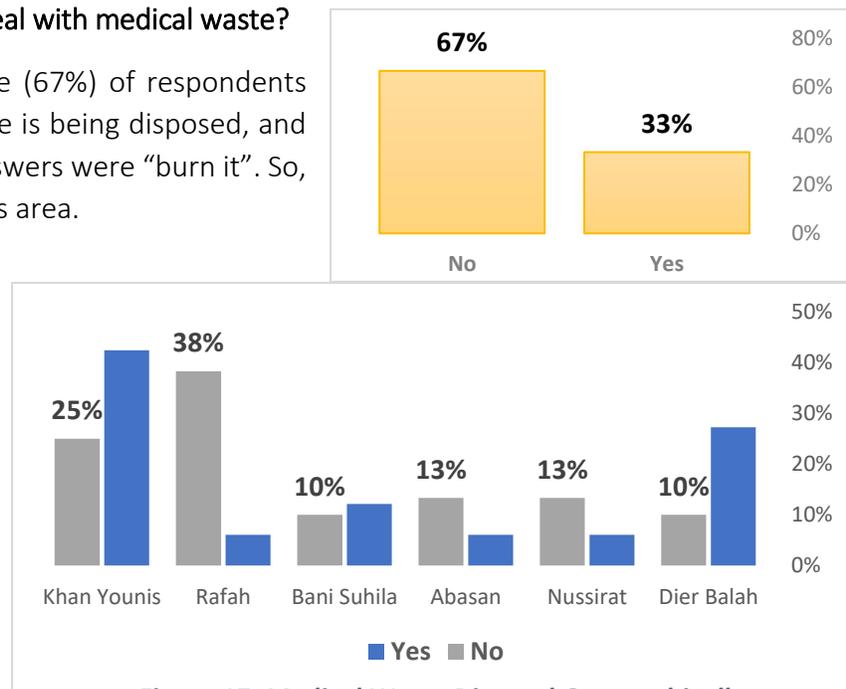


Figure 17. Medical Waste Disposal Geographically



Question (6): Are you subscribed to the municipality's Facebook page and to the Joint Services Council for Solid Waste Management?

Figure (17) shows that (73%) of respondents are subscribed to municipality Facebook page, while only (11%) are subscribed in both. It could have agreement with member municipalities to publish the JSC KRM Facebook page through their own pages or more paid advertisement is needed.

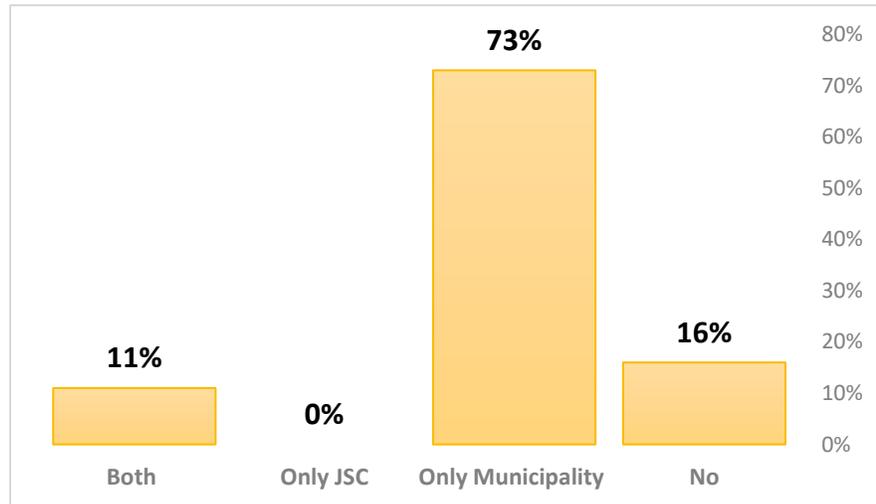


Figure 18. Facebook Subscription

Through figure (18) it is obviously that none of the respondents is subscribed only to JSC Facebook page at any municipality.

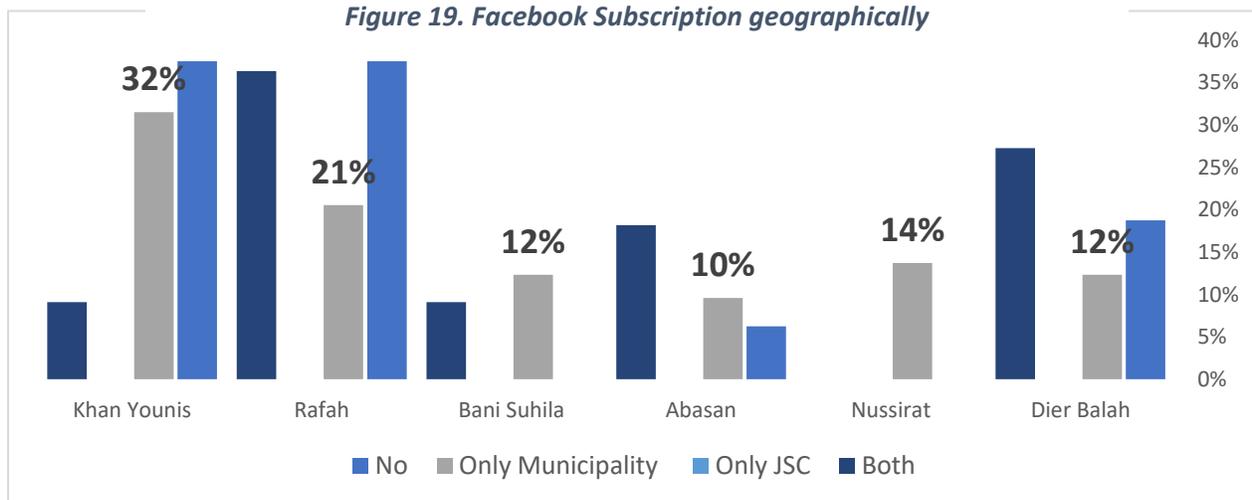


Figure 19. Facebook Subscription geographically

Question (7): Has any waste awareness campaign been implemented in your area during the past two years?

As shown in figure (20) the results are natural. (50%) of respondents said that there were implemented awareness sessions while the second half said no.

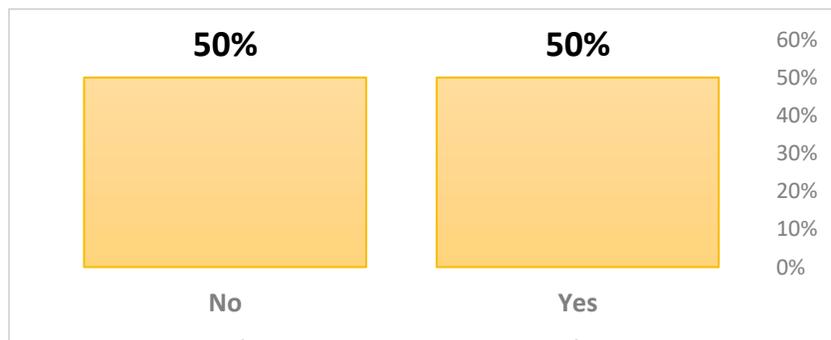
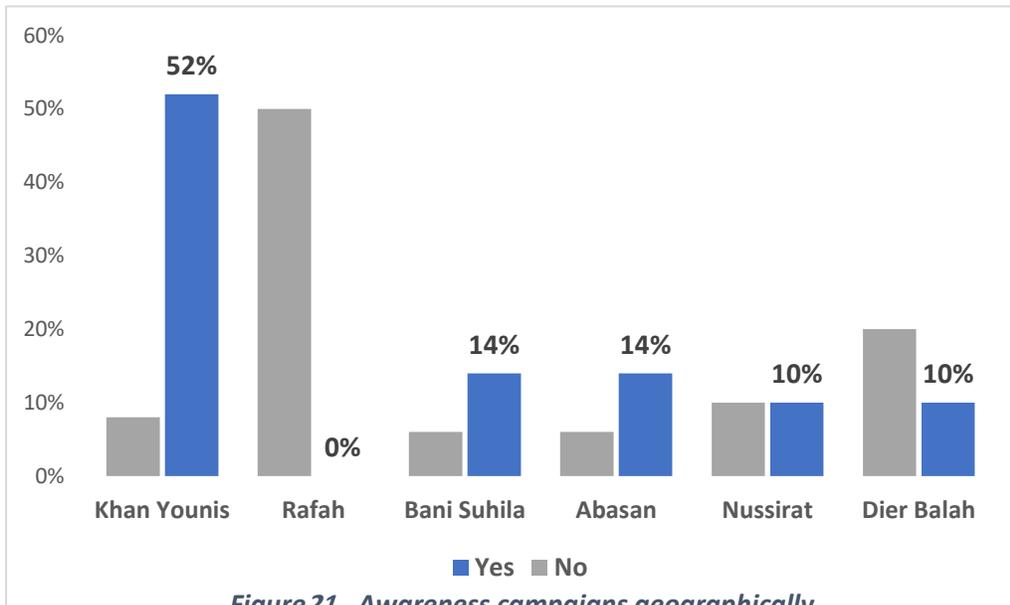


Figure 20. Awareness campaigns



From figure (21); it is noticed that none of Rafah respondents have participated or heard about awareness campaign, while the highest percentage is in Khan Younis.

Figure 21 . Awareness campaigns geographically

Question (8): If the council/ municipality organizes online consultative meetings, will they respond to attend online?

Figure (22) shows that (60%) of respondents can attend the meetings online which is good indicator in case of emergencies.

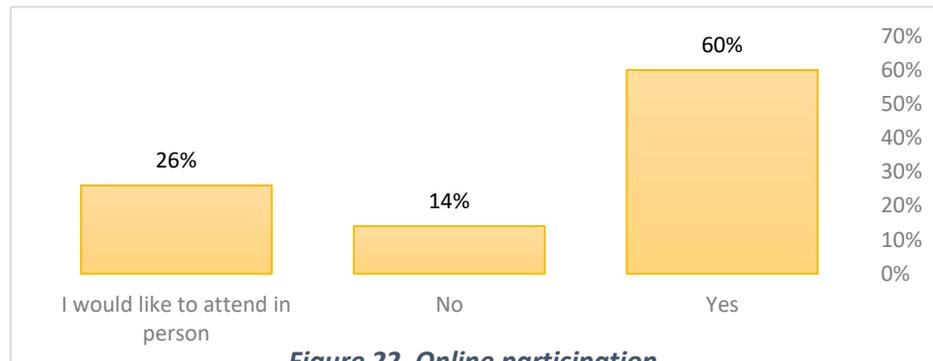
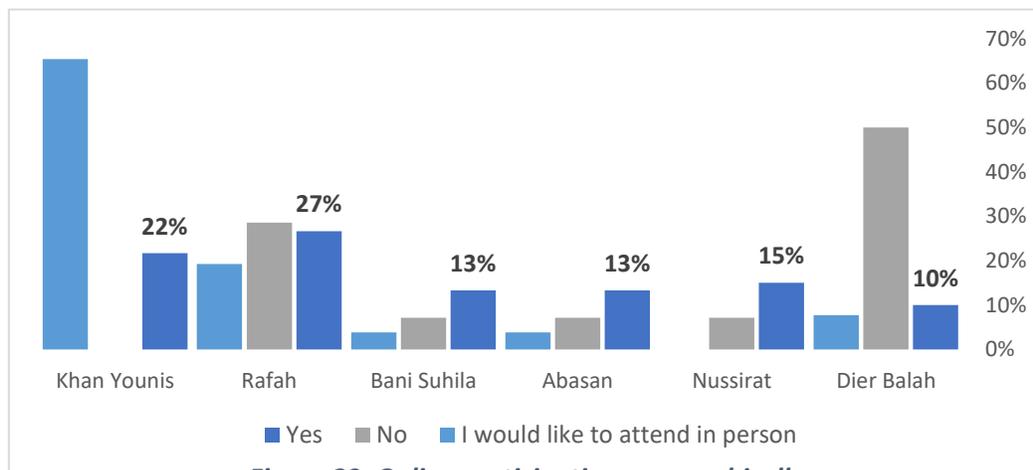


Figure 22. Online participation



As it is shown in figure (23): Khan Younis sample prefer to attend the meetings in person, while Rafah is encouraged to participate online.

Figure 23. Online participation geographically



Question (9): Do you know how apply for a complaint in waste collection?

As shown only (37%) of respondents know how to apply for a complaint in waste collection, but all the shared answers were through the municipality system or cleaners. None has mentioned the GRM of JSC. So, more efforts are needed in promotion through a plan start by mayors and their procedures to enforce employees using it, awareness sessions to citizens using neighborhood committees, influencers women’s group, NGOs and Schools.

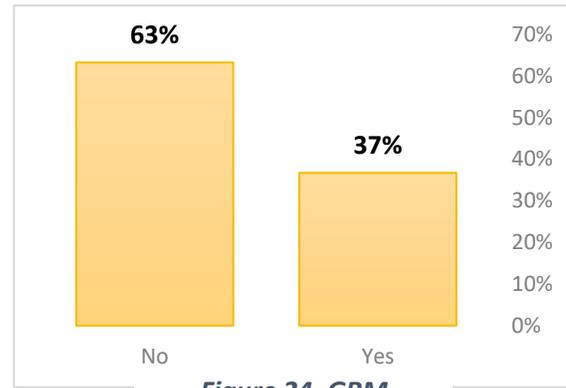


Figure 24. GRM

From figure (24) more efforts need to be carried out in Rafah for publication and raising awareness.

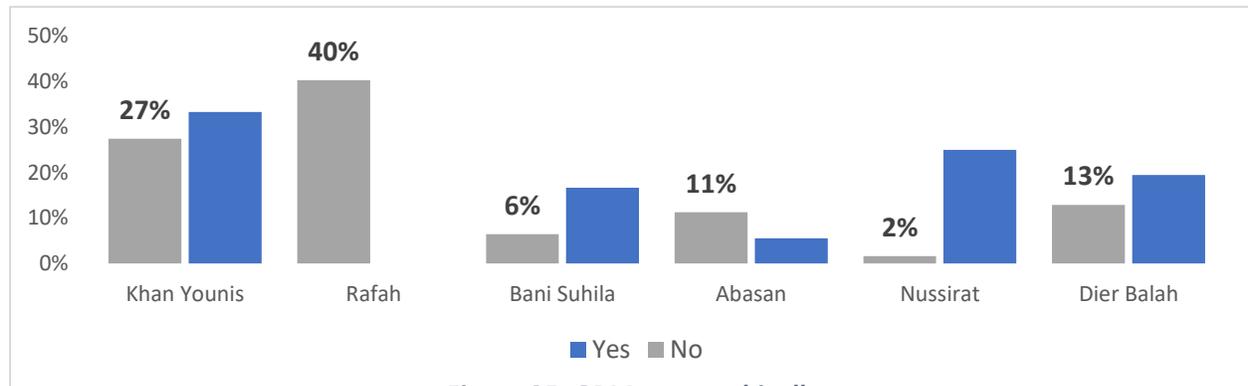


Figure 25. GRM geographically

Question (10): What are the costs paid by municipality/ council for the continuation of the waste collection and disposal service?

This question is about the cost paid by municipality/ council for the continuation of the waste collection and disposal service. And as shown in figure (19): (79%) of respondents said that it goes for salaries for sanitation workers and waste truck drivers; fuel for waste collection trucks, and truck maintenance and fees for waste disposal and landfill.

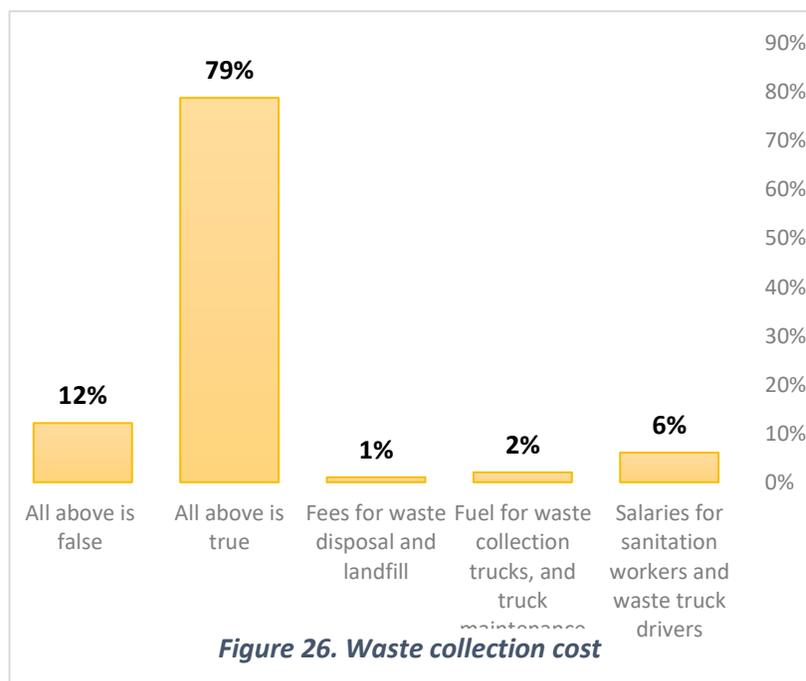


Figure 26. Waste collection cost

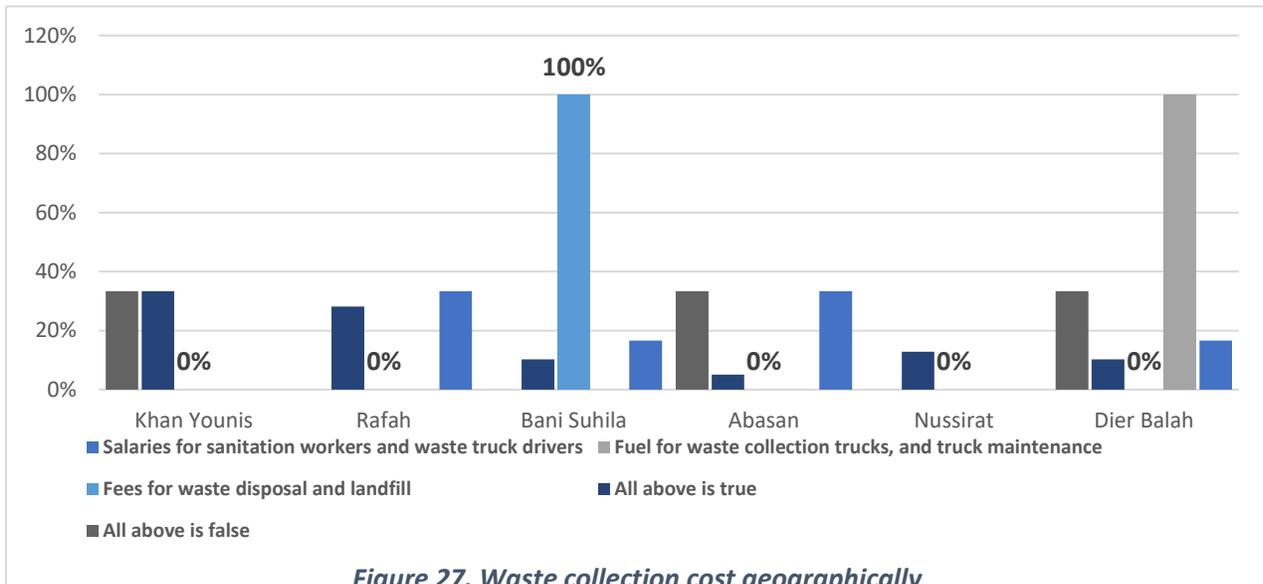


Figure 27. Waste collection cost geographically

Second Action

It will be taken during July 2021, a short survey targeted (100) women from the three governorates will be distributed and analyzed. The survey aims at exploring whether the awareness of female has increased after the six months awareness and what is still needs intervention.

2.10.2 Increased the participation and role of women in decision making of the JSC-KRM through formation of a “women's committee”¹

The group aims at engaging women from the partner municipalities on different levels as; decision making, consultation, and sharing information, as they will meet periodically.

The group was created on November 2020 from seven females who work in member municipalities and two JSC awareness staff (Total nine members). And each of municipality representative had created a larger group of influencers’ women (8 – 12 women) to help in designing and implementing the communication activities.

The expected activities with the women’s committee are:

- Women’s committee will receive trainings about JSC-KRM services, and the benefits accrued to the beneficiary population under GSWMP.
- JSC-KRM will conduct regular meetings and consultations with this committee.
- All recommendations taken by this committee will be discussed with the JSC executive director.
- A representative of the female group will participate in the JSC Board of directors’ meetings.
- Observe needed actions/ roles that may enhance the work of JSC to be officially required.

¹ Note that this is the aggregate indicator No. 2 {Increase the participation and role of women in decision making of the JSC-KRM through formation of a “women's committee”} in the first table is having almost the same scope of work with both indicators No. 3 {Increased level of awareness and learning for women with regard to solid waste management practice} and No. 4 { Increased participation and role of women in decision making of the JSC-KRM through formation of women committee.} in the second table.



- Increase the level of awareness and learning for women with regard to solid waste management practices through a developed action plan.

The following table shows the action plan that were discussed and approved by them on January 2021:

Table 11. Women’s committee action plan

Activity	Date	Action
1. Conducting group sessions targeting women in the neighborhood committees across (Khan Younis, Rafah, Deir Al-Balah)	Jan, Jul 2021	Focus group for 10 – 15 women (invitations to be sent to 15 influencer women from NGOs / neighborhoods served by JSC). Unified presentation will be prepared for all FGs and will include: (SWM aspects (Waste collection, Transfer station, Landfill, Medical Waste, Recycling and Composting), Overview about JSC and Municipality, Complaining channels.)
2. Conducting group sessions targeting women in the neighborhood committees across (Nusierat, Bani Suhaila, Abasan Kabeera)	Feb, Jul 2021	
3. Create Influencer’s group in each municipality	Jan. 2021	The targeted women in the previous FGs will be our sub-groups members. They will be part of the large Female group.
4. Conduct Survey: Female project beneficiaries aware of solid waste management practices	Jan, Jul 2021	Questionnaire (10 questions) will be prepared by Eng. Samir. It will target 100 women in JSC service areas as the following: Khan Younis: 30, Rafah: 25, Deir Al-Balah: 15, Nusirate: 10, Bani Suhaila: 10, Abasan Kabeera: 10
5. Conduct Activities by using the influencer Women groups	Mar, Sep 2021	Conduct a social activity for women in the area (free day, competition, awareness campaign ...etc). Online activities are also recommended (social meeting about waste to share some of key messages) Key messages can be shared through influencers.
6. Participation of Women Group in the JSC Board Meetings		Representative of the female group to participate in the Board meetings.
7. Preparation of complaints reports related to waste	Start by March. 2021	At the end of each month, a summary sheet should be filled about the number of waste complaints, No. of solved complaints, types, areas ..etc.
8. School Outreach program and Household’s awareness programs	Sept. 2021	TBD in later meetings
9. Site visits to Al-Fukhary Landfill	Feb., April, August, Oct.	In Feb. a site visit will be organized for the female large group. Later site visits can be suggested.
10. Any other activities requested from the member municipalities		For any suggested activities other than what were already mentioned, a request can be submitted to BOD



The showed photos below are for the meetings of women’s group.



Photo: Second meeting using zoom, (24.12.2020)



Photo: Third meeting for Females group and landfill visit, (12.01.2021)

In addition, they will be used to engage larger layer of females of the local society by the following:

- **Conducting focus groups for females.**

The municipalities representatives had created influencers group in their municipality area with average of (10) women of community representatives (CBOs, neighborhoods, youth, private sector, people with disabilities) for each municipality. Focus groups were held in each municipality as shown in the table (12).

Table 12. Dates of Focus Groups at partner municipalities

Area	FG Date
1. Khan Younis	14.01.2021
2. Nussirat	18.01.2021
3. Abasan Kabeera	28.01.2021
4. Rafah	01.02. 2021
5. Bani Suhaila	07.02. 2021
6. Beir AlBalah	10.02. 2021
7. AlFukhary	04.03. 2021



Photo: FG for females in Khan Younis, (14.01.2021)



Photo: FG for females in Abasan, (28.01.2021)



Photo: FG for females in Nussirat, (18.01.2021)



Photo: FG for females in Rafah, (01.02.2021)



Photo: FG for females in Bani Suhila, (07.02.2021)



Photo: FG for females in Dier Al-Balah, (10.02.2021)

- **Surveying for females**

The women committee had distributed the survey that was mentioned in the previous indicator.

- **Outreach activities for females (school program, household program ...etc)**

The women committee along with the awareness team from JSC-KRM had implemented many activities in person or online, as table (13) shows the number of attendees for the community meetings in different governorates.

Table 13. Summary for outreach activities

#	Date	CBO/Neighborhood	Place	Number of Attendees
1.	20. 01. 2021	Watan Youth Center	Khan Younis, Manarah	50
2.	22. 02. 2021	Watan Association for Heritage and Family Development	Khan Younis, City center	26
3.	03. 03. 2021	Human Development Association	Khan Younis, AlQararah	18
4.	15. 03. 2021	Al-Batn Assamin Neighborhood	Khan Younis, AlBatn Assamin area	19



5.	15. 03. 2021	Manarah Life Youth Center	Khan Younis, Qizan Najjar	15
6.	24. 03. 2021	Heart Beat Youth Center	Khan Younis, Camp	22
7.	10. 02. 2021	Hawaa' Association	Rafah	28
8.	20. 02. 2021	Youth Capacity Development Association	Rafah	25
9.	15. 03. 2021	Bara'a Assocation	Rafah	35
10.	09. 03. 2021	Bisan Kindergarten	Middle Area, Dier AlBalah	32
11.	14. 02 .2021	AlRahma Neighborhood	Middle Area, Nussirat	35
12.	16. 02. 2021	Star Kids Kindergarten	Middle Area, Nussirat	14
Total				319

Note that the activities were stopped after March 2021, due to the new procedures of MoH of COVID19 after it's propagation in Gaza governorates, then Ramadan month and after that the aggression on Gaza. So, no activities were made between March and June 2021.

Some of activities photos:



Photo: Star Kids, Nussirat



Photo: Youth Association, Rafah



Photo: Al Manarah, Khan Younis



Photo: Watan Association, Khan Younis



Photo: Human Development, Khan Yunis



Photo: Heart Association, Khan Yunis



Photo: AlBatan Assamin, Khan Yunis



Photo: Manarah Center, Khan Yunis



Photo: AlBaraa Association, Rafah



Photo: Bisan Kindergarten. Middle Area

- **A representative of the female group will participate in the JSC Board of directors' meetings.**
During the report period, only one JSC BOD meeting was held and the female representative had attended it as shown in the below photo, the participation included the activities conducted throughout the municipality women committee.

Photo: JSC BOD meeting





2.10.3 Targeted communication programs for women.

This indicator includes the outreach activities for:

- **School outreach program:**

Due to school outreach program, a meeting was held with Ministry of Education, but the activities were suspended due to COVID-19 pandemic.

- **Household outreach program:**

- The awareness team participated in many sessions for neighborhoods in January, February and March in Khan Younis and middle area they were targeting both men and women with a total of (70) attendees for both.
- Then in June 2021, a program was made targeting the households in Khan Younis, Absan AlKabeera and Nussirat. The awareness team has visited (402) house in these areas
- The visits were used for many purposes: Increase awareness of SWM and its disposal, emphasize of the importance of paying the bills to ensure financial stability of service provided, know the complaints of residents and collects them using a manual template, as well as encourage them to use GRM and website for solving the complaints.
- The challenges faced during these visits: The financial situation in GS as whole is getting worse and most people are not affordable to pay for the basic services, many residents are illiterate to technology.
- The problems households elaborate during these visits related to Rubbles and sands in the container; Littering wastes around the container; Random waste collection point; and many complaints related to primary collection services. These complaints were addressed and the JSC-KRM has contacted the municipalities for ensuring that complaints have been addressed.
- The table (5) below shows the summary for households' outreach activities for the month of June 2021.
- The photo (20) shows a manual complaint template collected by awareness team (Citizen Complaints Cards). This has been used due to reluctance of most residents to deliver their complaints through GRM system, so this will encourage them to provide a complaint then with time, it is expected that the culture will be changed and residents will use GRM.

Table 14: Summary for household outreach activities (June 1-30)

Area	# of houses	Women	Men	Children
1. Khan Younis	86	135	108	250
2. Absan AlKabeera	154	210	221	318
3. Middle	162	171	330	387
Total	402	516	659	955



شكوى		
اليوم	التاريخ	
اسم مقدم الشكوى		
رقم التواصل		
العنوان بالتفصيل		
البلدية		
نوع الشكوى	خدمة الجمع - خدمة الترحيل - مكب الفخاري - مكب دير البلح - محطة ترحيل رفح - خدمة جمع النفايات الطبية	
تفاصيل الشكوى		
ملاحظات		

Photo 1: Manual complaint collected by awareness team (Citizen Complaints Cards)



Photo 2: Households visits during June 2021 in Khan Younis, Absan AlKabeera and Nussirat areas.

- NGOs outreach program:
 - MoU were signed with the Culture & Free Thoughts Association, the largest NGO in the south area to be a partner with JSC-KRM in increasing awareness level.
 - For more information about the association, please click on the [link](#).

- JSC KRM has received students of Summer Camp (Safe Water) with total of (17) attendees. After their visit to the landfill and knowing the procedures of work, they have produced the following cloth bag for raising awareness of the reduction importance.



Photo: MoU Signature



Photo: MoU with CAFTA



Photo: Safe Water camp



مجلس الخدمات المشترك لإدارة النفايات الصلبة في محافظات خان يونس رفح والوسطى

June 14 at 4:43 PM

مجلس إدارة الخدمات المشترك ينظم زيارة لمكب النفايات الصلبة لطلاب مخيم مياه أمانة خان يونس- وحدة التوعية المجتمعية

استقبل مجلس الخدمات المشترك لإدارة النفايات الصلبة في محافظات خان يونس ورفح والوسطى بالشراكة مع بلدية خان يونس مجموعة من طلاب مخيم مياه أمانة الممول من مؤسسة HOPE Foundation للاطلاع على آلية عمل المكب، وقدمت أ. هيا الأغا الأخصائية المجتمعية في المجلس شرحاً مفصلاً عن عمل المجلس وعلاقته بالبلدية، وآلية عمل المكب والتخلص من النفايات التي يتم جمعها، وآلية التواصل لمعالجة وحل المشاكل المتعلقة، وخلال جولة داخل المكب أوضح رئيس قسم المكب م. تامر الزمر مراحل إنشاء المكب وفق المقاييس الدولية لبلدي رغبة البلديات الشريكة في وسط وجنوب قطاع غزة وباللغة (17) هيئة محلية، مشيراً إلى الأليات المتبعة في ترحيل النفايات والتخلص منها على أسس صحية سليمة. وفي مقابلة مع أحد الطلاب فقد عبر عن تفاجئه بعدم وجود روائح كريهة داخل المكب، ومن طريقة جمع النفايات من المنزل حتى التخلص منها، مشيراً إلى أنه سيجد أهل وأصدقائه عن هذه الزيارة وعن ضرورة دفع فاتورة الخدمات لكي يتم الحفاظ على صحة المجتمع.

#مجلس_الخدمات_المشترك #صندوق_تطويع_البلديات #البنك_الدولي #الوعي #نظام_الشكاوى

#JSC #KRM #MDF #WRG #Awareness #GRM



Photo: Cloth bag produced by the camp children

- University outreach program:

Initial understandings have been raised with AlAqsa University (the largest one in Gaza governorates) and the signature is expected to be during September, 2021.

2.10.4 Bridging the solid waste service satisfaction gap between male and female headed households²

This aims at bridging the knowledge gap and increasing the awareness level of both male and female. Four activities were conducted under this indicator.

- Meetings with neighborhoods
- Conducted online meeting (10.02.2021) for the residents of Abasan AlKabeera municipality and shared it on Facebook live.
- Conducted meetings with neighborhoods in different areas targeted (85) male and female.
- Usage of social media venues for raising awareness.
- Baseline Survey
 - Conducted a survey for random groups of (100) women and men.
 - Survey targeted three governorates covered by JSC-KRM service (Khan Younis, Rafah, and Middle Area).
 - Sample Size is 91 respondents (45 males, and 46 females) as the following table:

Table 15: Respondents of First Survey

Governorate	Area	Male	Female
1. Rafah	1. Rafah (around TS)	9	8
	2. Shuka	2	2
2. Khan Younis	3. Khan Younis	17	17

² This is indicator No. 1 in Detailed Gender Indicators and M&E Arrangement.



	4. Qarara and Bani Suhaila	3	3
3. Middle Area	5. Dier Balah	6	6
	6. Nusirat	3	4
	7. Zawayda	2	2
	8. Musadar	1	1
	9. Wadi Salqa	2	3
Total		45	46

Question (1): Are you satisfied with the waste collection mechanisms in your area?

The results as shown in figure 28; most of people satisfied with the service, half of them think that also improvements can be made.

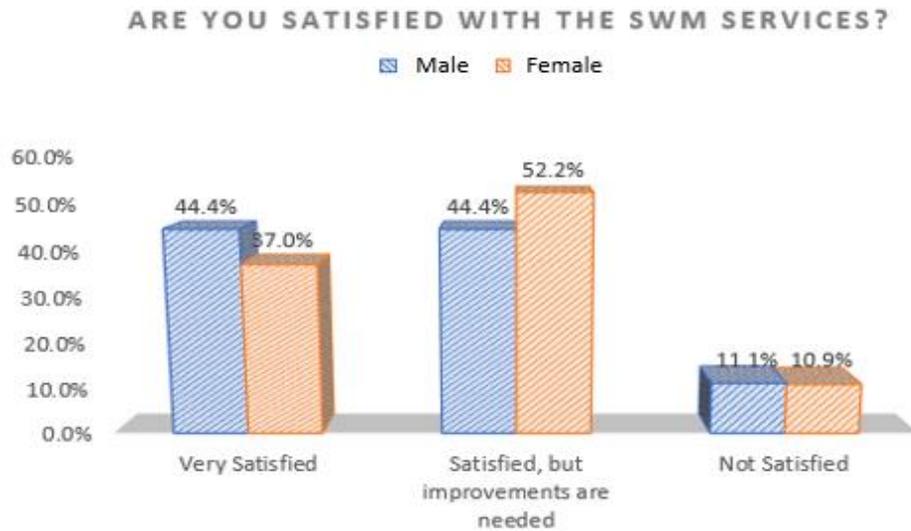


Figure 28: Satisfaction with SWC mechanisms

Question (2): Do you suffer from waste containers in your area?

The results as shown in figure 29; nearly half of respondents have no problems in containers.

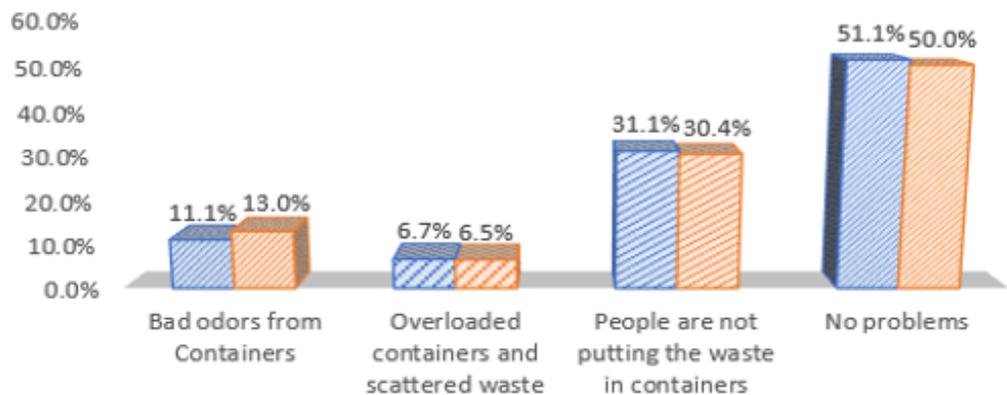


Figure 29: Satisfaction with SWC containers



Question (3): Do waste workers annoy you?

The results as shown in figure 30; almost none of men and women had been annoyed from the workers

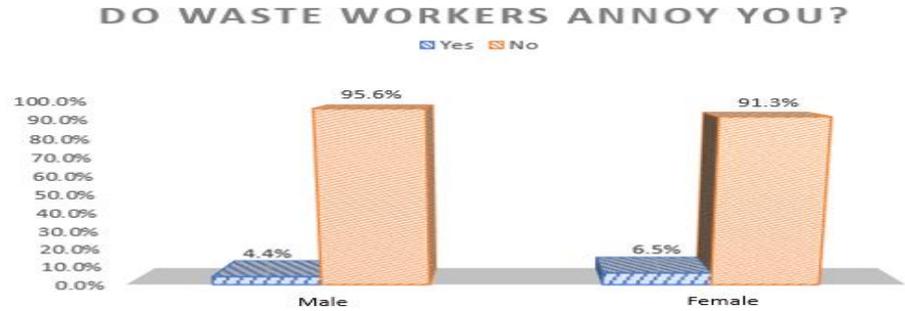


Figure 30: Satisfaction with SWC workers

Question (4): Who collects Solid Waste in Gaza Strip?

The results as shown in figure 31; most of male (75.6%) said that it was collected by municipality, UNRWA and JSC, while (58.7%) almost half of women found it the same.

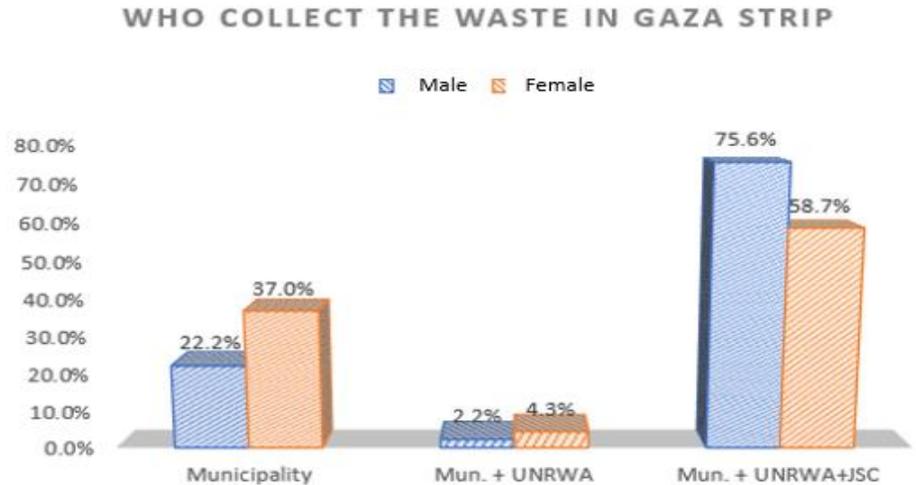


Figure 31: Solid Waste Collection Responsibility

Question (5): Where do you think wastes transferred to?

The results as shown in figure 32: (100%) of men respondents said that the waste is being buried in a landfill after collection; while (87%) of women agreed on that.

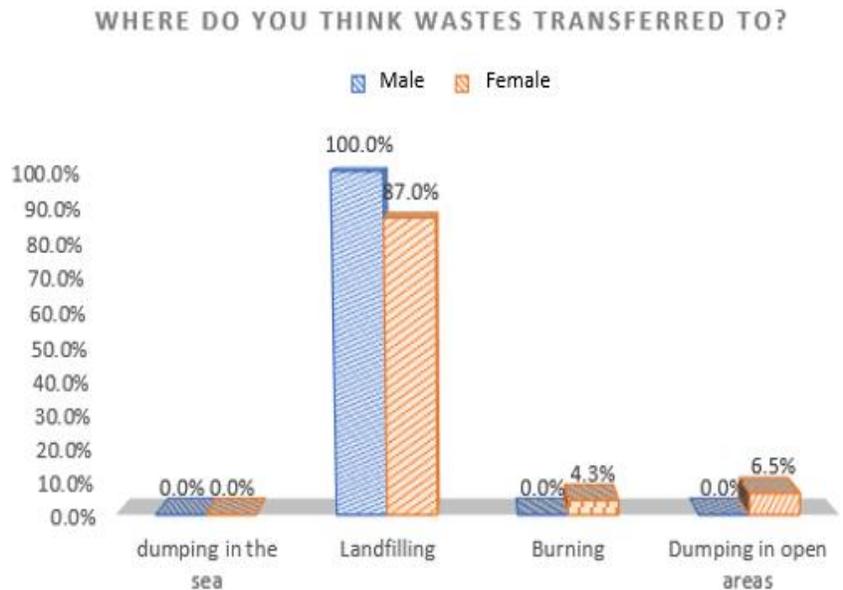


Figure 32: Waste distention after collection



Question (6): What are the solid waste management expenses?

This question is about the cost paid by municipality/ council for the continuation of the waste collection and disposal service. And as shown in figure (33): almost all of respondents said that it goes for salaries for sanitation workers and waste truck drivers; fuel for waste collection trucks, and truck maintenance and fees for waste disposal and landfill.

WHAT ARE THE SWM EXPENSES?

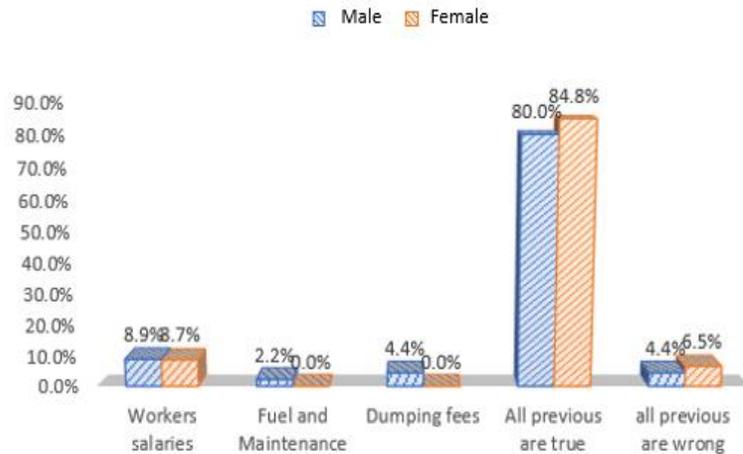


Figure 33: Expenses of Solid waste management

Question (7): Do you know how to submit a complaint?

As shown, most of respondents know how to apply for a complaint in waste collection.

DO YOU KNOW HOW TO SUBMIT A COMPLAINT?

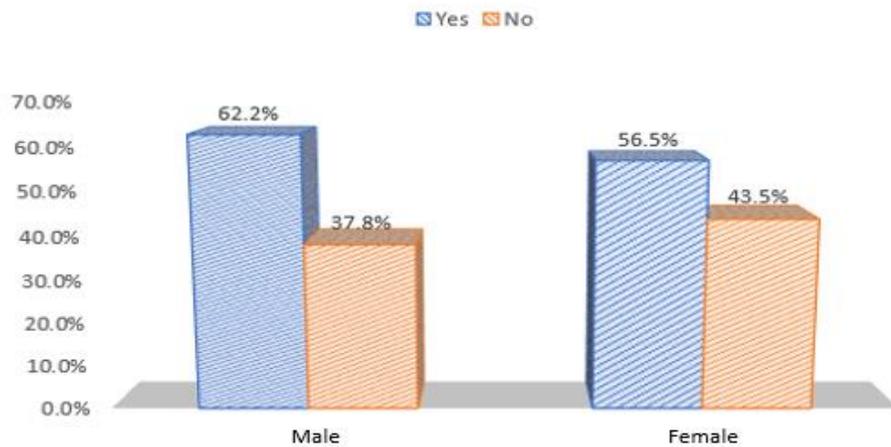


Figure 34: complaints submission

Question (8): Have you targeted by any waste awareness campaigns within the last two years?

As shown in figure (35), more than half of women respondents said that they were targeted while almost the same percentage of men said that they were not targeted.

HAVE YOU TARGETTED BY ANY OF WASTE AWARENESS CAMPAIGN WITHIN THE LAST TWO YEARS?

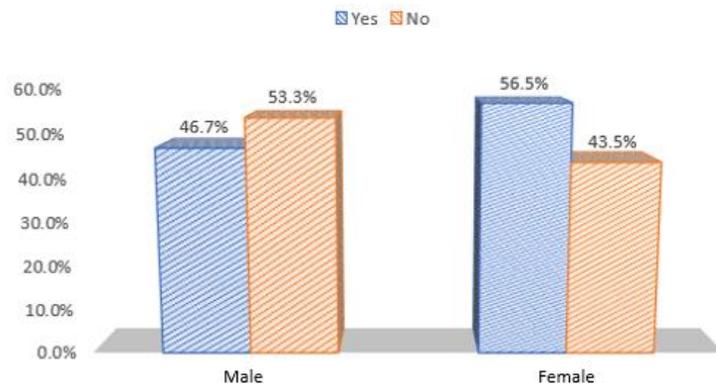


Figure 35: Awareness campaigns

Question (9): Are you following the municipality's and JSC-KRM Facebook pages?

Figure (36) shows that (44%) and (63%) of men and women respondents are not subscribed to both, while only (6.7%; 8.7%) are following the FB page for men and women respondents respectively.

ARE YOU FOLLOWING THE FB PAGES OF MUNICIPLAITY AND JSC-KRM

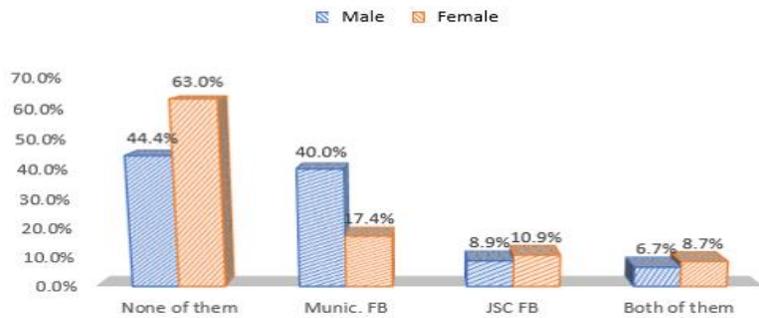


Figure 36: Facebook Subscription

Question (10): If the council/ municipality organizes online consultative meetings, will they respond to attend online?

Figure (37) shows that almost half of respondents can attend the meetings online which is good indicator in case of emergencies.

DO YOU MIND IF YOU INVITED TO ATTEND A VIRTUAL AWARENESS MEETING

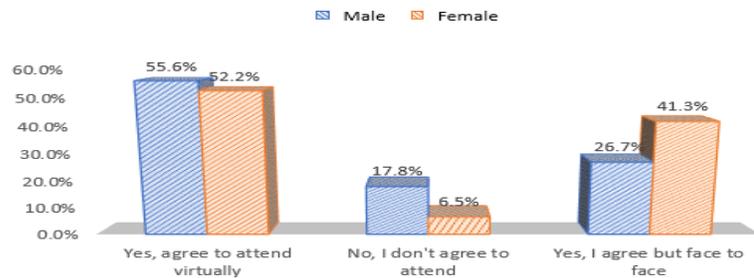


Figure 37: Online participation

• **Second Survey**

It is expected to distribute a survey during July 2021, it targets (100) men and women from the three governorates. The survey aims at exploring whether the awareness of both male and female has increased after the six months awareness and what is still needs intervention.





Table (16) shows the list of groups/institutions who visited the landfill site during the reporting period. Hence, for any site visit, visitors are invited to the hall for a presentation then they have a tour at the landfill site.

Table 16. Summary of Site visits during the reporting period (January – June 2021)

#	Date of Site visit	Institution / Group Name	Number of Males	Number of Females
1	14.01.2021	Influential Women Group	0	7
2	08.02.2021	Governmental Work Committee	13	0
3	13.02.2021	Culture and Free Thought Association	0	2
4	27.02.2021	Previous mayors of Khan Yunis	2	0
5	03.03.2021	A group of influential women in Nuseirat	0	16
6	03.03.2021	A group of influential women in Rafah	0	18
7	03.03.2021	A group of influential women in Khan Yunis	0	11
8	18.03.2021	A group of influential women in Al-Fukhary	0	14
9	20.03.2021	University students from Rafah	0	16
10	08.03.2021	UNRWA	6	0
11	07.04.2021	University students from Rafah	0	18
12	12.06.2021	Children from “Safe Water Camp” by HOPE	0	16



Photo: Influential Women Group



Photo: Governmental Work Committee



Photo: Culture and Free Thought Association



Photo: Previous mayors of Khan Yunis



Photo: A group of women, Nuseirat



Photo: A group of women, Rafah



Photo: A group of women, Khan Yunis



Photo: A group of women, AlFukhary



Photo: University students from Rafah



Photo: UNRWA

2.10.5 Communication Material

On June 2021 a bid was published in the local newspapers so that the material of communication can be used online (virtually) with main key messages for different target groups. The items are as followed:

- Produce (15) Videos: using motion graphic with a duration 20-30 seconds; suitable audio commentary, and sign language interpretation, these videos will be published on the different WhatsApp groups; schools FB pages and other platforms.
- Sponsor advertainments: on social media platforms, reach 50,000 for the month
- Design and print (8000) brochures with (4) different designs (content).
- Design (16) awareness messages for Facebook platform; that are derived on a weekly basis
- Supply (2,500) Cotton Reusable Tote Bags; those will be distributed on women in different areas.
- Produce and print (1,000) Puzzles and coloring books that will be distributed on school children and/or children of visited houses in households' program.
- Supply (100) Notebook with environmental notes; that will be distributed on the NGOs and the visited delegations



3. Sofa Landfill Access Road

Sofa road is used as access road to Sofa Solid Landfill, it has an access from Salah Al Dein Street and ends at the armistice borderline. Access road status is considered as not good due to the deep damage in large parts of its body. Figure (9) shows the location of the road. The length of the road is approximately 2.5 Km (from Salah Al Dein Street to the access gate of the landfill), knowing that the remaining length (from the access of the landfill to the borderline) will not be taken into account within this project. The width of existing access road varies from 4m to 6m in some parts.



Figure 38. Access Road layout

Improvements of the Sofa landfill access road were implemented. Such improvements consist of road widening in some narrow parts without removal of any trees, structures or infrastructures, and paving/rehabilitate of some damaged parts and expanding the pavement width up to 7.5 m, and final pavement cover were paved for all the road. Moreover, the rehabilitation included the cleaning of the access road from any dumped waste along the road.

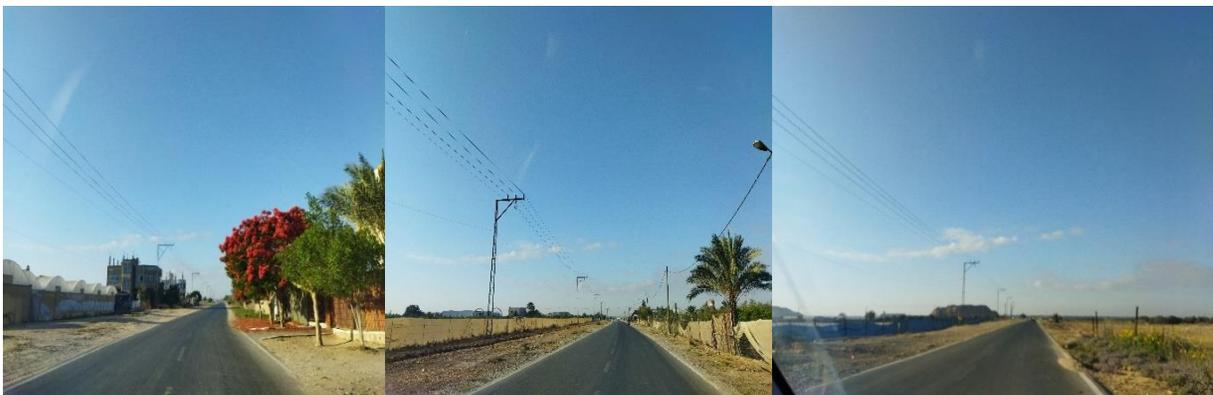


Photo: Sofa Landfill Access Road



Annex1: Summary of Environmental and Social measures to be taken in Al-Fukhary Sanitary Landfill

مصفوفة الإدارة البيئية والاجتماعية لموقع مكب الفخاري (صوفا) أثناء مرحلة التشغيل³

ملخص الاعمال المنجزة	إجراءات التخفيف المقترحة	التأثير المحتمل
تم اتباع إجراءات التشغيل باستثناء إجراءات التشغيل المتعلقة بمعالجة وضخ العصارة. حيث من المتوقع أن يبدأ العمل بنظام معالجة العصارة عن طريق معالجتها معالجة بيولوجية وفيزيائية ومن ثم ضخها لمحطة معالجة الصرف الصحي المجاورة بحلول النصف الثاني من عام 2021.	يجب اتباع إجراءات التشغيل القياسية (SOPs) ودليل التشغيل	التأثيرات العامة
تم دمك النفايات وتغطيتها بشكل يومي بالتربة الطينية بسمك 20 - 30 سم. حيث تم استخدام كميات تربة طينية تقدر بمعدل 170 كوب يوميا لتغطية النفايات. وتم أخذ هذه الكميات من التربة من كميات التربة المشونة في موقع مكب النفايات وهي بالأصل ناتجة عن حفر مكب النفايات.	الالتزام بدمك النفايات والتغطية اليومية	تأثيرات الرائحة
تم تغطية النفايات بشكل يومية بالتربة الطينية المخزنة بالقرب من خلايا الطمر والناتجة عن حفر الخلايا.	الالتزام بالتغطية اليومية لمنع الاحتراق الذاتي للنفايات	تلوث الهواء بسبب الغبار او الدخان
تم منع النفايات المحترقة من الوصول الى خلايا الطمر، حيث يمنع دخول النفايات المشتعلة إلى خلايا الطمر منعاً بات، وذلك لمنع انتشار الحرائق في خلايا الطمر.	رفض أي نفايات محترقة يتم استقبالها في خلية التخلص لمنع انتشار الحرائق	
تم اتباع خطة تعبئة بخلايا الطمر كما هو مفصل في دليل التشغيل، بحيث يتم ضمان الحفاظ على طبقات النفايات مرصوفة بشكل هندسي وميول تم حسابها مسبقاً أثناء مرحلة تصميم المكب. ويتم التأكد من صحة التعبئة في نهاية كل طبقة بعمل الخرائط المساحية.	تأكد من اتباع الجدول الزمني وفقاً لخطة التعبئة بخلايا الطمر، وكذلك الغطاء اليومي.	
يتم صيانة جميع المركبات وفق جدول الصيانة الخاص بالأليات مع العلم أن الصيانة تتم داخل ورشة الصيانة في مكب النفايات.	يجب صيانة جميع المركبات والمعدات الثقيلة العاملة في المكب وفقاً لجدول الصيانة الموصى به من قبل الشركة المصنعة / المورد. يجب إصلاح أي مركبة يتم اكتشاف انبعاث دخان منها على الفور.	
تم رش المياه عند ملاحظة الغبار وتم التركيز على ذلك بالأيام الجافة، حيث تم خلال شهر مارس الرش عدد 59 مرة. مصدر المياه هو بركة تجميع مياه الامطار.	رش الطرق الداخلية بالمياه وخصوصاً بالأيام الجافة عند ملاحظة الغبار	

³ كل ما ورد من إجراءات هو حسب دراسة الأثر البيئي والاجتماعي للمشروع والذي تم إعدادها في عام 2020.



ملخص الاعمال المنجزة	إجراءات التخفيف المقترحة	التأثير المحتمل
تم وضع يافطات تحذير حول موقع تخزين التربة.	يجب وضع يافطات تحذير حول موقع تخزين التربة المستخدمة في التغطية اليومية	
يتم اجراء صيانة بشكل دوري لكل من مضخات العصارة وشبكة تجميع العصارة.	يجب صيانة مضخات وشبكات تجميع العصارة بشكل جيد لضمان التشغيل الجيد	التأثيرات على المياه الجوفية والتربة
تم فحص جودة المياه الجوفية كل ستة أشهر. تم مقارنة النتائج الحالية مع المعايير الفلسطينية ولم يلاحظ أي اختلاف. تم العمل على فحص المياه الجوفية في 4 آبار حول مكب النفايات في شهر مارس، وسيتم نشر النتائج على موقع المجلس الإلكتروني بشكل منفصل.	اجراء فحص لجودة المياه الجوفية والسطحية بشكل دوري	
المكب مؤمن بسياج من جميع الجهات ويوجد كاميرات مراقبة. لا يسمح بدخول غير المصرح لهم بالدخول، ولم يلاحظ أي سرقة للعصارة من الموقع.	تأمين الموقع بالسياج ومراقبة المكب بالكاميرات ومتابعة عدم تسرب العصارة	
تم تدريب جميع العاملين في المكب وتم التوقيع على مدونة سلوك لجميع العاملين بالمكب.	يجب أن يتلقى عمال المكب تدريباً كافياً على قائمة النفايات المسموح بها والمحظورة التي سيتم استلامها / رفضها في موقع المكب بناء على اللوائح الداخلية للمجلس	مخاطر استقبال النفايات الخطرة
تم مشاركة قائمة النفايات المحظورة مع البلديات وكذلك تم طباعتها وتعليق يافطة على مدخل المكب بها.	يجب مشاركة قائمة النفايات المحظورة بوضوح مع البلديات	
يتم اتباع خطة السلامة الخاصة بتشغيل المكب وكذلك خطة الاستجابة للطوارئ	يجب اتباع خطة السلامة الخاصة بتشغيل المكب، وكذلك خطة الاستجابة للطوارئ.	مخاطر السلامة والصحة والنظافة المهنية
تم اجراء تدريب حول الإجراءات الاحترازية لـ COVID 19 وبروتوكول الصحة للعاملين. كما تلقى العمال تدريباً حول محتوى مدونة قواعد السلوك.	يجب اجراء برنامج تدريب أكثر تحديداً للعمال حول أساليب العمل الآمنة وممارسات النظافة الجيدة. ضرورة تحديث البرنامج بما يتناسب مع أداء العاملين.	
يُمنع ملتقطو النفايات من دخول مكب النفايات، ولم يلاحظ ملتقطو النفايات في الموقع منذ تشغيل المكب.	منع الدخول غير العاملين إلى مكب النفايات وخاصة ملتقطي النفايات.	
لا يسمح بالتدخين في المكب	لا يسمح بالتدخين داخل المكب	



ملخص الاعمال المنجزة	إجراءات التخفيف المقترحة	التأثير المحتمل
تم تزويد جميع العمال بمعدات الحماية الشخصية	يجب تزويد جميع العاملين بالمكب بجميع معدات الحماية الشخصية	
لم يسجل أي إصابات منذ تشغيل المكب. تم إصابة عدد 2 عامل في المكب بكوفيد 19 2021، وقد تماثل للشفاء. ويتم يوميا قياس درجة حرارة العمال قبل دخولهم للمكب.	يجب توثيق جميع الإصابات، كما يجب كتابة تقرير بعد وقوع أي حادث	
يتم اتباع خطة إدارة الآفات. يلتزم العمال بمعدات الحماية الشخصية، والمبيد المستخدم هو PTI المسموح به من قبل وزارة الصحة. وتيرة الرش أسبوعيا.	يجب اتباع تعليمات خطة إدارة الآفات اثناء عملية التشغيل	اثار الآفات
لا توجد شكاوى من المناطق المجاورة للمكب بشأن وجود ضوضاء	في حالة تلقي مدير المكب شكاوى من المناطق المجاورة بشأن وجود ضوضاء داخل المكب، يجب وضع حواجز صوتية بين مصدر الضوضاء وموقع الجار المشتكي.	تأثير الضوضاء
تم تطبيق التغطية اليومية	ضع الغطاء اليومي للحفاظ على الظروف الجمالية"	التأثيرات البصرية والجمالية
يتم استخدام معدات مختصة بدفع ودمك النفايات	قم بدمك النفايات في خلايا الطمر لزيادة العمر الافتراضي للمكب اقصى ما يمكن	
عدم تجاوز السائقين للسرعة القصوى 20 كم / ساعة داخل المكب، كما تم تركيب حواجز على الطريق الداخلي لمكب النفايات	يجب ألا يتجاوز السائقون حد السرعة 20 كم / ساعة داخل موقع المكب	حركة مرور البات النفايات الواردة والصادرة
تم وضع حواجز وإشارات مرور	تركيب حواجز وإشارات المرور لتقليل سرعة القيادة	
نتواصل مع مؤسسة سلالة للتعامل مع الحيوانات داخل المكب	التواصل مع جمعيات الرفق بالحيوان للتعامل معهم.	الحيوانات والنباتات على سبيل المثال توزيع الكلاب / الطيور في موقع المكب
تم إنشاء نظام الشكاوى الإلكترونية التابع للمجلس في عام 2018. ويمكن أيضا استخدام قنوات أخرى مثل هواتف الاتصال.	يجب ان يكون هناك قنوات لاستقبال الشكاوي الخاصة بالتشغيل داخل المكب	الإزعاج للمجتمع المحلي



ملخص الاعمال المنجزة	إجراءات التخفيف المقترحة	التأثير المحتمل
يتم مشاركة المعلومات والصور حول تقدم العمل على وسائل التواصل (صفحة الفيس بوك الخاصة بالمجلس)	استخدام الوسائط المتعددة ووسائل التواصل الاجتماعي لمشاركة الصور ومقاطع الفيديو حول العمل اليومي لمشاركتها مع المجتمع.	
زار بعض أصحاب المصلحة موقع المكب في الأشهر الماضية مثل بعض المنظمات غير الحكومية ورؤساء البلديات ومجموعات الشباب ولجان المرأة. يتم الإعداد لعقد لقاء مجتمعي حول مكب النفايات في شهر أبريل 2021.	قم بدعوة أصحاب المصلحة لزيارة المكب لتعزيز العلاقة وتبادل المعرفة مع الأطراف ذات الصلة.	
يتم تأمين جميع العاملين في المجلس	تأكد من أن جميع العاملين في المجلس مشمولون بالتأمين	
لا توجد قضايا للاستغلال الجنسي والاعتداء والتحرش الجنسي	يجب السيطرة على الاستغلال والاعتداء الجنسيين والتحرش الجنسي	
تم تحديث مدونة قواعد سلوك العمال وتوقيعها من قبل كل عامل	مراجعة قواعد سلوك العاملين بالمنشأة وتحديثها عند الحاجة وفقا للحوادث والسلوكيات والمخاوف المسجلة والتأكد من أن جميع العمال على علم بها.	
تم توفير جميع مواد التنظيف والتعقيم المطلوبة للعمال	توفير كافة مستلزمات النظافة المطلوبة للعمال وإلزامهم باستخدامها بشكل خاص قبل تناول وجباتهم داخل المنشأة.	
تم توفير أدوات الإسعافات الأولية للعاملين في الأماكن المناسبة	توفير جميع أدوات الإسعافات الأولية المطلوبة وتخزينها في مكان مناسب يسهل الوصول إليه.	حقوق العمال
يتم عقد الاجتماعات مع العمال بشكل دوري	عقد اجتماعات دورية مع العمال للاستماع إلى مخاوفهم وتشجيعهم على استخدام نظام الشكاوى.	
يوجد مكان استراحة مناسب لجميع العاملين في الموقع.	توفير مكان راحة مناسب لجميع العاملين بالموقع ، وتخصيص ساعة راحة لجميع العاملين	
لا يوجد أطفال يعملون في الموقع	منع أي طفل دون السن القانوني من العمل في الموقع. يجب إجراء التحقق من العمر عند إشراك عمال المشروع ويجب مراقبته بحيث لا يقل عمره عن 18 عامًا.	



Al-Fukhary Sanitary Landfill



Disposal Cells

