

Human Characteristics Affecting the Solid Waste in the Center of Nasiriyah District

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Abstract: *The human characteristics affecting the amount of solid waste in the study area were studied through field visits to the industrial and medical activities, as well as interviews with area and various personal interviews with workers in commercial residents of the residential neighborhood in collecting information about solid waste disposal, including the times of its removal by workers municipality, solid waste treatment, etc., and population and municipal data were collected by government departments in the center of Nasiriyah district. Our research included two axes, the first one specialized in studying human characteristics and their actual contribution to increasing the amount of solid waste and its impact on the soil, including the size of the official and squatter population and calculating the amount of waste that the Iraqi individual raises to both neighborhoods per day, month to raising the amount of waste Waste represented by the educational and cultural year, and the social factors that would contribute income per capita, the nature of the area and the nature of level, holidays and public and private occasions, the standard of living its streets, political and security factors. While the second axis included the study of municipal services in terms of their level of service, number of workers and mechanisms, and calculating the amount of waste raised and presented by the municipal departments distributed in the study area.*

Keywords: solid waste, human characteristics, workers, population

Introduction

Human characteristics have a clear impact on the components of the ecosystem, being one of the basic and direct characteristics to in it, which are directly proportional The .the progress of man and his development using modern means in his various activities continuous increase in the preparation of the population over the years and their pressure on the environment resources, as well as the improvement of the economic situation represented by the rise in the standard of living and the increase in income are all factors that contributed to the emergence of environmental problems, including the generation of solid waste in abundance in the study area that the research aims to reveal the characteristics and sources of pollution Soil with solid waste and its spatial and and through , temporal variation. To reach the goal, follow the deductive approach and the standard analytical approach when comparing the information resulting from the use of data.

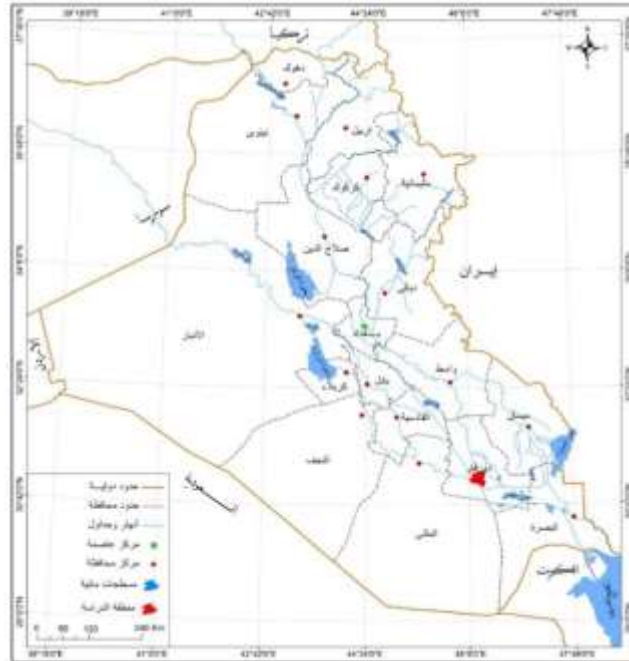
Theoretical guide to research

Do human factors have a direct impact on the variation in the characteristics of solid waste in the :**the research problem -First** study area?

Human factors clearly affect the variation in the characteristics of solid waste in the study area :**Research hypothesis -Second**

The study aims to reveal the characteristics and sources of soil pollution with solid waste and its :**The aim of the research -Third** spatial and temporal variation in the study area, in order to find out the problems that the soil suffers from

In the southwestern part of Dhi The study area is located in southern Iraq, as shown in map 1 :**Fourthly, the limits of the research** Gharraf and from the south - is bounded from the north by the district of Al As for the geographical location, it . Qar Governorate As for the temporal limits, which is the time period .E 46:20 –Arc Long 46:10 and N 31:7 – 31:0 Longitude by the direction of Ur based on the data used by the study, which is population and climatic data, visuals and maps, in addition to the period that started (July 14, 2020 to August 14, 2022). While the objective limits were the study of the environmental assessment of the variation in through the study of the characteristics ,the characteristics of soils contaminated with solid waste in the center of Nasiriyah district of human factors affecting the nature of soil affected by solid waste.



The map 1 geographical boundaries of the study area

Source: Republic of Iraq, Ministry of Water Resources, General Authority for Survey, Map Production Department, Digital Unit, The administrative map of Iraq at a scale of 1/ 10,000,000



2 Map The administrative boundaries of the study area

Source: Ministry of Construction, Housing and Public Municipalities, Directorate of Municipalities in Dhi Qar, map of the administrative governorate of Ya Qar, scale 1/250,000

A number of factors contributing to the increase in the amount of waste and its volume doubled over time through the activities household commercial, industrial and medical activities as well as carried out by the residents of the study area of all kinds, including :activities, can be summarized as follows.

Population size

The center of Nasiriyah district includes the city of Nasiriyah and its adjacent sides, which are separating boundaries between them and the areas adjacent to the district center. The area of the center of Nasiriyah district is 418 km², while the city of Nasiriyah the municipal boundaries in the study area is 76.8 km² with a population of 752,107 thousand people, as the population of the study area was divided into three sections. The first section included the official residential neighborhoods served by the municipality, whose population reached 632,617 thousand people, while the second section included informal neighborhoods, whose population reached to approx 8309 One thousand people, while the third section included villages and slums that were recently included in the basic design of the study area. In view of the increase in the population and the encroachment of many of them towards the villages to settle there, whose population has reached 36,481 thousand people, and it is clear from this that the high population numbers that can be increased later have a clear and significant effect in increasing the amount of waste and doubling its size over time in a way that deviates from The control of the municipality department from lifting it due to the increase in the population and the small number of workers, which is reflected in negative effects on the soil unless it reaches a result that alleviates this problem and contributes to its treatment, in addition to the presence of the population in areas that are not completely serviced by the municipality, such as some neighborhoods and villages, which are clustered Waste is burned by its inhabitants, and thus destroys the elements of the environment, including the soil factor, with many toxic elements and the proliferation of microorganisms in it. Therefore, it is possible to calculate the amount of waste that the population throws out per day, month and year by calculating the amount of waste that the Iraqi individual throws, which was estimated at 1.5 kg / person / day, according to the Ministry of Municipalities and Public Works in the municipality of the center of Nasiriyah district, as the amount of waste per day for residential neighborhoods 948925.5 kg/person/day, 28467765 kg/month and annually amounted to kg/year. As for slums, the amount of waste thrown out by residents per day amounted to 207522.5 kg / person / day, and monthly it amounted to 6,225,675 kg / month, and annually it was estimated 74,708,100 kg / year, as for the villages and neighborhoods of Nasiriyah district center and included in its basic design, the amount of waste per day amounted to 50971.5 kg / person / Day, monthly 1529,145 kg/month, and annually (18349740 kg/year).

Social factors

There are many social factors in the study area that would burden the soil through the accumulation of solid waste on its surface and the concentrations of toxic chemical compounds on it, including

Educational level and environmental culture

The educational level plays a prominent role in varying the quantity and quality of solid waste through its concentration on the soil as he is more aware of the amount of calories that, of the study area. Organic and inorganic, and the scientific culture he enjoys enter his body through his desire to buy consumer foodstuffs in order to preserve his health, and this naturally contributes somewhat to the lack of waste generation. Also, organic waste is more susceptible to mold due to its high humidity, which becomes a focus for the reproduction of bacteria and pathogenic fungi and the gathering of insects, rodents and stray animals, meaning that there is Its members) often persuade some families to choose. waste of a direct relationship between the educational level and the amount birth control, and as a result, the amount of waste will be reduced. The educational level also generates an environmental culture, which is to preserve their environment from pollution, including pollution by solid waste, through their correct handling of waste either placing them in plastic bags and transferring them to large containers, if any. At the end of every street or alley, or, collection collecting it and throwing it into the small containers of each house, and through field observation, we notice that there is a clear wheel shortcoming on the part of municipal workers in not sorting between the types of waste, so they are collected together in one and thrown into the sanitary landfill site randomly

Public and private holidays and occasions -B

Customs, traditions, private and public occasions, celebrations and religious holidays are contributing factors to the increase in the pollution, as this relationship was considered strong in terms of its temporal volume of waste and have a direct impact on soil the correlation with the evolution of the total volume of waste. The residents of the study area condemn the Islamic religion, so Adha) and on those holidays most of the population -Fitra and Al-region witnesses many religious forums and holidays such as Eid (Al resort to slaughtering sacrifices, and despite the presence of a massacre in the study area equipped and equipped with some services and contains two veterinarians, but Unable to accommodate the large numbers of the population, and in the absence of the law and health control, it made some residents by shop owners (butchers) resort to illegal slaughter almost everywhere and not choosing the as well as by not holding them accountable or imposing the law on them. Looking at the, appropriate places for slaughter environmental consequences and impacts and the waste such as wool, guts, blood, etc., and throwing them into nearby containers or throwing them in empty yards as shown in pictures (1) and (2). Insects, flies and worms to contaminate the soil of the study area with the remnants of excessive slaughter, as explained in the previous chapter. ban and 'As for the blessed months (Rajab, Sha the study area is witnessing a great demand for food purchases of all kinds and forms. , Ramadan), and through field observation Food banquets in abundance due to the large gathering of individuals among themselves and family visits in that month, and thus

many wastes are generated and their size increases, especially organic waste resulting from food leftovers, plastic cans, water bottles In that and soft drinks, as well as restaurants scattered in the study area, which serve open buffets and fill the shelves with food. holy month, in order to reach a high level to attract customers to them, large quantities of waste are generated. As for the sacred month of Muharram, the study area witnesses the influx of large numbers of people walking towards the holy Karbala on the road the city of Nasiriyah) to perform religious rites in the forty days of Imam) that connects Basra Governorate to Dhi Qar Governorate Hussein peace be upon him, and in those days and through field observations we note that There is great extravagance and waste in eating and drinking picture (3) which generates large quantities of solid waste

Khalil peace be upon him Square-The unjust slaughter in Ibrahim Al **Picture 1**



2 Picture Effects of slaughtering residues on the soil 2021 ,Both photos were taken on November 22

Picture 3 Solid waste in the holy month of Muharram



cups, Organic and inorganic, represented by bottles of mineral and carbonated water, as well as food containers made of cork, water abundance of food and drink preparation by the owners of the food leftovers, burning wood, coal waste, and others, and given the

Husseini processions and the people of the hosts in the way they distribute them and the great demand of the population to revive religious rites

Standard of living income per capita

a direct relationship between the level of income and the generation of solid waste, and that the per capita income is not fixed, but varies from one family to another according to the nature of the place and the living and economic level of the population from one neighborhood to another. Because most of their residents are unemployed, and this is of course a contributing factor to the increase in the generation of solid waste in the study area, which is affected by it in quantity and quality, unlike some to buy goods and merchandise in large quantities and this in the end works to complicate accept families with high incomes, as they the quality Solid waste mixes with each other on the surface of the soil, which doubles its damage and toxicity. The level of per capita income in the study area is estimated 173.1 thousand⁽¹⁾, but it is not distributed equally among all members of the community is calculated by dividing the which ,in the study area, so it does not necessarily mean that all residents receive this same income national product by the population of the country ⁽²⁾ Many studies have proven that every increase in per capita income is offset also by an increase in the rate of solid waste generation and an increase in its volume worldwide to reach 1.26 kg / person / day. ⁽³⁾ The study area has gone through different living standards during the past years, sometimes when the income level rises and sometimes it decreases. As it rises, the volume of solid waste increases, especially in the eighties, which prospered the living situation and resulted in an increase in waste, followed by the wars of the nineties and the imposition of the siege, which worsened the economic situation of the region and passed a clear austerity stage Therefore, the amount of waste decreased, but the situation changed after and the siege was removed, the value of the Iraqi dinar rose, and the economic situation of the population improved, through 2003 which the amount of solid waste increased.

area and the nature of its streets The nature of the

Some neighborhoods and villages in the center of Nasiriyah district and its winding streets, especially slums, contribute to an increase of vehicles into in the volume of solid waste on the soil of the study area, due to their lack of paved roads that facilitate the entry them. Traffic is one of the factors contributing to the disposal of solid waste, or even the mechanism of transporting it from the areas where it is dumped in the sanitary landfill. The reality in which we live today testifies that the where it is generated to the areas study area has many slums, some of them inside and outside the city limits. Some of them are irregular and unplanned neighborhoods -that have gradually expanded to become overcrowded with population, thus forming entire neighborhoods of slums, including Al Zuhairiya, and others. Revival of the study area and took a -Muhawiyah, Al-Mustafa, Al-Kanauzah, Al-Muhaideya, Al-ilat, Al'Za -Thawra, Al-Askari, Al-Sumar, Al ,Fida-Husseini, Al-Shuhada, Al-large part of its official area, as in the neighborhoods of Eridu, Al Shamiya-Jazirah and Al-Mansuriya and other neighborhoods towards Al.

Kenazawa, and the -Through field observations, it was noted that most of those neighborhoods and villages (such as Mahdia, Al do not have paved (Dahab, Al Mohawiyah Dud, Al Niaz, Sayed-Boufayyadh, Al Kassah, Umm Al slums of Sayed Khudair, Al including the villages of ,It has a muddy texture .covered and winding lands-roads and that most of their streets and squares are dirt Mahadia slums-Al Kanauzah, and-Habiliyah, Al-Dahab, Al Sayed⁽¹⁾ s vehicles to 'which makes it difficult for the municipality , walk in it and collect its waste, especially in the winter, when it rains, these wastes may mix with mud, rainwater and sewage services municipality), as in the picture(), and waste accumulates on its surface and reacts and oxidizes because most of them lack) by climatic factors, including rain water and moisture, so harmful chemical compounds are concentrated on the surface of the soil temperatures and by waste juice, some of which settle in the soil and the other flows into its interior to pollute or decompose by high it, as It has been observed that the residents throw various types of waste near their homes, which gives a bad image of these Waste surrounds it from all directions, thus forming a focal point for gathering animals and as in pictures 4, 5and 6 ,neighborhoods insects and a center for the emission of foul odors, and as he also noted the presence of large piles of rubble waste construction waste spread over a large area that may reach 5 m. Size and height, figure 7. This comes from building some houses and throwing distort the appearance of the city, which causes the soil to lose its construction waste close to their homes, so they accumulate to fertility in addition to diseases that transmit the population. We conclude from this that the more the roads are paved and have in those flexibility for vehicles to enter without obstructing them, the lower the percentage of waste through the ability to raise it neighborhoods and reduce its environmental harm.



-Kassah and Umm Al-The zigzag roads in Al 4 Picture
Dud slums

Kenazwa-Picture 5 The deterioration of municipal services in Al Tan 's photos were taken during field work on 3/8/2021



The accumulation of household waste in an agricultural village Picture 6



Picture Hills of rubble waste in 7 Kanazawa-AI



Fifth: Political and Security Factors

It is one of the factors affecting the solid waste sector, as the precarious situation that the country is witnessing and what security days, it will affect the efficiency of municipal causes turmoil in the region's situation and the closure of many of its streets for several services in the exercise of their work in the removal of solid waste. As in the case of the study area, it went through security turmoil that lasted for several months in late 2019, when there was a great revolution by its residents to obtain their rights, so they expressed By burning many tires to stop any service activity in their anger by cutting off many streets and bridges of the study area, and that it, and thus it has negatively affected the environment, aesthetics and health of its residents. Many of its streets were deformed with smoke and their soil was also polluted by burning, which led to obstruction of work in that city, so all its institutions and departments stopped, which affected the The difficulty of municipality workers to continue their daily work of removing waste due to the blocked contributed to the accumulation of waste in the neighborhoods and streets of the area. On the other hand, the roads. This work

Haboubi Square in particular, as it represents the center-residents staged large demonstrations in the study area in the city square Al of the city of Nasiriyah, as well as the nearby streets represented by the Nile Streets and Haraj Market. To reside there and establish food and drink, and thus it generates a lot of solid waste, including organic waste resulting from food leftovers, mineral and gas of waste water bottles, as well as pieces of coal, cartons and others. The low quality of their work due to the increase in the volume daily^(*).As in pictures 8 and 9 .

Sixth: The deterioration of municipal services

area are represented in cleaning streets, removing waste, rubble and scrap, filling swamps, and The municipal services in the study distributing containers, picture (10), and the latter varies from one residential sector to another, as the study area witnessed the sized containers reached (4000)-to residential neighborhoods in 2016 only, as the number of small distribution of containers containers made of plastic, and (150) large containers made of iron ⁽¹⁾ They were distributed inefficiently among the residential neighborhoods, which forced some neighborhood residents to buy containers themselves in order to preserve their environment

Picture 8 Burning tires in the study area



Picture 9 Effects of burning



municipality's work in waste Picture 10 of the



Table 1 shows the activities of the municipality in raising the waste of the study area, which estimated the total amount of waste raised by the departments of Nasiriyah Municipality for the year 2020 363720 tons / year, while the amount of waste raised was estimated 288000 tons / year. Thus, the amount of waste that was not raised in the city of Nasiriyah is estimated at 75,720 tons/year* and this is a large amount that may increase over time as a result of the population increase in the manner that exits

Table 1 Municipal activities in raising waste quantities (tons/month) in Nasiriyah district center for the year 2020

swamp rum	Street cleaning km/i	scrap lift/ton	Lifting rubble/ton	Waste lift/ton	Months	T
2500	40600	--	820	32100	January	1
2000	40600	--	750	32100	February	2
1000	40450	--	700	32050	March	3
2000	40550	--	780	32400	April	4
700	40700	--	850	32000	May	5
800	40500	--	900	32150	June	6
850	40800	--	750	32200	July	7
1500	41000	--	800	32250	Father	8
600	40000	--	700	32150	September	9
850	40800	--	750	32200	October	10
1000	41000	--	720	32000	November	11
1200	41200	--	800	32250	December	12
385850	9320	--	488200	15000	Total	

Environment, Source : Republic of Iraq, Ministry of Municipalities, Directorate of Nasiriyah Municipality, Department of unpublished data, 2020

The municipality of Nasiriyah removed it, thus generating many dangerous diseases and unpleasant odors for the residents of the area because it contains gases and toxic elements and the proliferation of microorganisms and their activity. As a result of the s services in removing its waste, and the suffering of many residential 's discontent with the deterioration of the municipality' people to the apparent neglect towards some neighborhoods from the accumulation of waste for many days without being removed due residential neighborhoods, which prompted the residents to throw some solid waste in front of the municipality of Nasiriyah as a direct message to them unless they improve their situation with the population

The municipality of Nasiriyah is responsible for providing several services to the population, including the waste removal service, through a number of people and departments affiliated to it, but it is not at the required level, which would create a clear gap in the study area by dealing with the nature of waste and the delay in the process of removing it by a period of (4) A maximum of days in this was through field work and the repetition of the question to some neighborhood residents about ,some residential neighborhoods which increases the volume of solid waste and accumulates to interact and , s commitment to work'the extent of the municipality The distribution . oxidize in that period with environmental factors causing serious environmental effects on the soil of the study area

of these services will be through a number of partitions and sections, which are (16) service sections distributed over the entire (2) residential city, table

Table 2 Municipal departments in Nasiriyah district center and the amount of waste raised and raised for the year 2020

Residential Neighborhoods(*)	Municipal department name	T
Sumer the first, Sumer the second	Sumer	1
Mansourieh, Prince District	Mansourieh	2
Zawiya-Muntazah, Al-Economists, Baghdad Street, Al Thawra, The-Al	revolution	3
Ur the first, or the second, the competencies, the nurses, the local administration, the good news, the awaited imam	ur	4
Shoufa-Industrial District, Agriculture House, Modern Village, Al	industrial district	5
The first validity, the second validity	Salhia	6
Mahidia, the first taliya, the-Shoula, Al-Shumoukh, the old housing, Al-Al second talia	Gum	7
Rafidain-Eridu and Al	Rafidain-Eridu and Al	8
400th, the call Dud, the-Kassa Umm Al-Sadr City, Al-Al	ASSADAR city	9
-Zahra, al-Hakim, al-Sacrifice, redemption, internal security forces, al Mukhtar-Tahrir, journalists, al-Khadra, al	behind the fast	10
Industrial Housing, Al Bu Fayadh	industrial housing	11
Arabiya-Seef, Al-Al ,Jazeera-Seray, Al-Eastern, Al	city square	12
Habiliyah-Hussein District, Al-Shuhada, Al-Al	Hussain martyrs	13
The first suggestion, the second suggestion, the third suggestion	the University	14
Residential buildings, railways, messenger	Residential buildings	15th
sanitary landfill site	Landfill Sanitary Department	16
tons/year 363,720	The total amount of waste disposed	
tons/year 288000	The amount of waste raised by municipal departments	

Municipality, Department of Environment, Source: Republic of Iraq, Ministry of Municipalities, Directorate of Nasiriyah unpublished data, 2020

As each section includes two or more areas from the north to the south of the city within the city limits (within the basic design⁽¹⁾ . workers in the study area, Table 3, it is clear that the Nasiriyah district center suffers from a severe As for the number of municipal shortage of workers, as their numbers throughout the city reached 1156 ,cleaners.

Table 3 Relative distribution of the number of workers by municipal service departments in Nasiriyah District Center for the year 2020

(%) percentage	Number of employees (cleaners)	Municipal department name	T
7	77	Sumer Services Department	1
4	45	Mansourieh Services Department	2
3	29	Revolution Services Department	3
8	87	Ur services department	4
2	26	Industrial District Services Department	5
6	75	Salhia Services Department	6
8	96	Al Shumoukh Services Department	7

6	70	-Divide the services of Eridu and Al Rafidain	8
6	74	Sadr City Services Department	9
9	104	the express service department Behind	10
5	55	Industrial Housing Services Department	11
22	253	City Square Services Department	12
4	51	-Shuhada Neighborhood and Al-Al Hussein Neighborhood Services Department	13
3	31	University Services Department	14
4	49	Building Services Department	15th
3	34	Sanitary Landfill Services Department	14
100	1 156	Total	

Source: Republic of Iraq, Ministry of Municipalities, Directorate of Nasiriyah Municipality, Department of Environment, unpublished data, 2020

The deficit was recorded in the range of 2007 cleaner workers □ and this definitely does not meet the actual needs of the city's population for each person. The city square services sector issued 253 cleaners workers, at a rate of 22%, this comes because the city square sector is a commercial sector, as it leaves many of mixed waste such as commercial waste, household waste and medical waste, due to the concentration of many shops and medical complexes such as laboratories, medical clinics and pharmacies, followed by Al-Sorayai Department 104 cleaning workers, at a rate of 9%, while the third municipal section was Al-Shumukh services department, with 96 cleaning workers, at a rate of 8%), while the lowest part of the number of workers was in the industrial district 26 workers. At a rate of 2% And this actual number of workers does not meet the actual need because of the increase in neighborhoods in the city of Nasiriyah. As for the nature of their work, they are divided into two parts: the first part is the morning shift starting at 7 am - 1 pm, and the second part starts from 3 pm - 10 pm, and this division is in the city square only (1) □ Either in The rest of the municipal departments work from 7 a.m. to 1 p.m. The reason for this is that the city square sector is a commercial sector and generates a lot of solid waste, as mentioned previously. Through field observation, it is clear that the municipality of Nasiriyah suffers from a clear confusion in its performance, as a result of the weakness in its human cadres, due to the lack of salaries allocated to workers and the long and difficult working hours, so they played many Of the residents of the area from such work, and moving towards other jobs is easier and more secure for them. As a result, the municipality used the establishment of temporary cadres to meet its urgent need to fill the deficit of workers, especially since the city of Nasiriyah began It expands and new neighborhoods emerge due to the population increase, thus generating large quantities of solid waste . As for cleaners and vehicle drivers, all of them are paid daily wages, and are not on permanent owners, as the number of drivers within the Nasiriyah Municipality Directorate reached (165) drivers (1) , and that these wages are not paid regularly, but may be delayed from 2-3) Two (2) months and in other circumstances it may be delayed more than that. Through this, these matters may inevitably reflect on the psychology of workers, which affects the accuracy of their work and thus pushes them to rise up and strike or not complete the work to the fullest.

As for the mechanisms used in the collection and transportation of waste at the level of the city district center , it is clear from Table (4) that there is a clear discrepancy in terms of their number and quality , and their number reached (204 mechanisms) throughout the study area . The number of working machines is 158 , all of which are governmental. As for the number of idle machines, it has reached (46) , and these mechanisms vary in their load capacity, and the reason for their variation from one region to another is due to many reasons, the most important of which is the number of people in the sector and the amount of waste generated, which vary. These mechanisms are among the (57) waste compactors , The valid ones are 40 mechanisms, and it is assumed that this number is sufficient to address the problem of solid waste collection and transportation in the study area, because the standard of the Ministry of Municipalities and Public Works has identified 20 specialized mechanisms per 100,000 people (*) Compared to the population of Nasiriyah district center the official serviced neighborhoods) of 632,616 people , it needs 125 specialized mechanisms,

Table 4, the number of specialized and non-specialized mechanisms available in the municipality of Nasiriyah for the year 2020.

The ratio (%)	The number of idle machines	The ratio (%)	The number of valid mechanisms	the total number	its type	mechanics	T
8.3	17	19.6	40	57	Specialist	press	1
4.4	9	4.9	10	19	Specialist	Dunbar	2
2.4	5	5.3	11	16	Specialist	container transport vehicle	3
1.4	3	2.9	6	9	Specialist	sweeper	4
0.4	1	4.4	9	10	Specialist	tipper	5
				111	Total		
2.9	6	4.9	10	16	specialist-non	shuffle different sizes	6
0.4	1	4.9	10	11	specialist-non	crider	7
---	-----	4.9	10	10	specialist-non	bulldozer	8
0.9	2	5.3	11	13	specialist-non	tipper	9
----	----	4.9	10	10	specialist-non	country	10
---	----	2.9	6	6	specialist-non	excavator (various)	11
----	-----	4.9	10	10	specialist-non	crane	12
0.9	2	4.9	10	12	specialist-non	tanker	13
---	----	2.4	5	5	specialist-non	disguise water	14
100	46	100	158	93	Total		
				204	total summation		

Source from the researcher's work based on: Republic of Iraq, Ministry of Municipalities and Public Works, Directorate of Nasiriyah Municipality , Services Department, unpublished data, 2020 .

Accordingly, the number of deficits in the number of presses reached 68, the percentage of which is unemployed (8.3 %), and the lack of financial allocations for their maintenance, and this is the reason for the imbalance in the activities of the municipality . And public works are not commensurate with the number of residents and the amount of waste generated in the city of Nasiriyah . It is clear from the foregoing that there is a weakness in the municipality's services, despite the modest efforts provided to the serviced population, but this is not commensurate with their numbers. In addition to a clear shortage in the number of specialized solid waste mechanisms, as most of them are unemployed with poor maintenance, and this negatively affects the management of the daily cleaning process in the district center . Nasiriyah , which leads to its accumulation between alleys, main streets and residential communities, which prompts citizens to get rid of it, either by burning it or throwing it next to the waste container to the generation of waste on the soil of the study area and the doubling of its size, which loses the soil's fertility and makes it unsuitable for agriculture, in addition to forming a focus for the concentration of loose animals and to be a breeding ground for worms and rodents and a suitable place for the proliferation of microorganisms, including bacteria and pathogenic fungi. Those open sites that the residents are accustomed to throwing garbage there are in their view as specific places, that is, whenever they are filled with waste and raised by the municipality, the residents may return to them and throw their garbage there again and so on until the soil is polluted with many toxic chemicals that interact with climatic conditions to increase their percentage and toxicity It causes many diseases to the population, especially the animals that feed on that waste.

Those places that the residents used to throw garbage serve as a clear and specific place to throw it in, not to mention the social and psychological factors, holidays and occasions that increase its size, and this confirms the validity of the hypothesis of the problem of the study, which is ((human factors clearly affect the increase in the amount of waste on the soil of the district center Nasiriyah

Conclusions

in increasing the amount of solid waste in linking the study area, and this is Human factors play a clear role the result of the lack of awareness and poor awareness of the population about the dangers of such waste and the impact it leaves on the surface of the soil, including significantly affecting the physical properties of the soil, chemical properties and microbiological properties.

The increase in population is the main factor through which the rest of the human factors appear. They are the only cause of soil whose numbers began to increase dramatically by pressing and depleting the soil of the study area and ,pollution with waste transforming it into polluted soil unfit for life.

Soil is the most harmful to waste pollution because everything that pollutes air and water pollutes the soil. The solid surfaces on water bodies pollute the water and thus are used for agriculture, and thus infect the soil with many pollutants.

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A personal interview with a daily wage municipality worker (Ali Muhammad Nasser) on 10/18/2021.