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Research Article

Evaluation of Environmental Indicators in the City of Piranshahr

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Abstract:

Expanding urbanization and its specific problems such as environmental degradation pollution of water, air, soil, increase mental illnesses and so much more is threatening the city's society. This is contrary to sustainable urban development and the environment and today, cause has been urban management, with a host of challenges faced in the field of population density, housing shortages, pollution and environmental destruction, social conflict, and providing services and infrastructure facilities. In this regard, the Healthy City Project plays an important role in the creation of public participation in the sustainable development of cities. Environmental indicators are a necessary tool to achieve environmental progress, supporting policy assessments and public information. The present study has been an analysis of environmental indicators Piranshahr According to available statistics, the physical structure of the city, and has been providing solutions for quality indicators in order to achieve a suitable space for improvement available.

Keywords: Environment, Index, Piranshahr, pollution

1.0 Introduction:

Environment and move towards sustainable development including issues that are of interest to politicians and policy makers in each country at the macro level (Bray, 2004: 34). Environmental information is an essential element in the implementation of environmental policy and management processes (Environmental indicator report 2012). Today, they can have a significant impact on public health problems like lack of waste water collection and treatment systems, lack of access to safe water unsuitable management of resources, and Indiscriminate increase waste and domestic sewage (Dong & Gong, 2012). Now living in urban areas is associated with many problems. Such as : (pollution, congestion pedestrians and vehicles Uncontrolled urban development that takes place due to population growth and Migrate to the damaged Environment and is created the of environmental pollution for Citizens. The worsening environmental pollution has caused urban green spaces disappear and land use changes. Therefore, the need to bond with the natural landscape and

plays an important role in human life (Kalamova & John stone, 2011). On the other hand, motor vehicles in addition to pollution from combustion of fuel in city traffic and pedestrians and the use of asbestos in brake linings break cause scatter in the air and vehicle traffic on streets and dusty roads and sandy causes scattering dust and pollution for residents of urban areas (Peng, et al, 2011). The urban congestion air pollution are closely related so that the traffic load increases increase the amount of air pollutants such as CO Gas Co, unburned hydrocarbons sulfur dioxide, nitrogen oxides SO₂ and Knox. It increases fuel consumption types of pollutants especially in the city center and the increased traffic will exacerbate it (Millimet. & Roy, 2011). Also rapid growth of traffic load, an increase in blood lead levels (Madina & Jose, 2008). Lead can affect almost all organ systems (Report of the Department of Transportation and Terminals, 2007). The aim of this paper is to review the status of environmental indicators Piranshahr.

2.0 Materials and Methods:

This research is a quantitative research method used is descriptive - analytical. According to the study, data collection has two methods documents and surveys. Census data were collected in the form of documents and libraries, and to verify the landmarks in the neighborhood of 15-fold City Piranshahr, required data were collected by way of field survey, including the harvest field, completed questionnaires and interviews with residents of neighborhoods. The analysis of data was used for statistical software, SPSS. And draw maps also was used of ARCGIS software.

3.0 Results and Discussion:

3.1 Status of Green spaces in Piranshahr:

Piranshahr city has the fifth piece of the park, which are included in the total area of 12.77 hectares or 2.41 percent of total of net area of the city. The per capita green space in the city is 1.9 square meters per person (Consulting engineers, Boom Negar Pars, 2011). The spatial distribution of the park and taking the radius of the access standard 375 meters for it is shown, how to position them on the map, the street network and service coverage. The results of this analysis and the contribution of each of the 15 local branches in the center of the cover as shown in the following table: According to the table have 13 neighborhoods and 16 the maximum surface area, and the neighborhoods 23, 11,42,33,32 and 41, the lowest level of coverage the service centers.

3.0

Table 1: Coverage 15 District city Piranshahr than Park Service

Regions	Neighborhoods	Less than 375m ²		More than 375m ²		Points, surface area, by applying coefficient of quality
		Level m ²	Percent of level of area	Level m ²	Percent of level of area	
1	3					
1	6	180428.2659	41.86	250616.9238	58.14	141.86
2	1	137611.8284	29.57	327819.3827	70.43	129.57
2	2	108688.322	20.15	430773.875	79.85	120.15
1	4	109529.0576	19.08	464955.3558	80.92	119.08
2	4	60654.2854	16.81	300167.0449	83.19	116.81
1	2	75167.5122	15.08	423353.0746	84.92	115.08
1	5	51993.063	9.67	485824.209	90.33	109.67
3	1	46235.4639	5.55	786368.5835	94.45	105.55
2	3	24916.225	4.33	550798.0418	95.67	104.33
1	1		0.32	325441.4679	99.68	10.32
4	2		0.00	449980.3776	100.00	100.00
3	3		0.00	775707.2904	100.00	100.00
1	3		0.00	797023.9678	100.00	100.00

Reference: Master Plan of Piranshahr (2012).

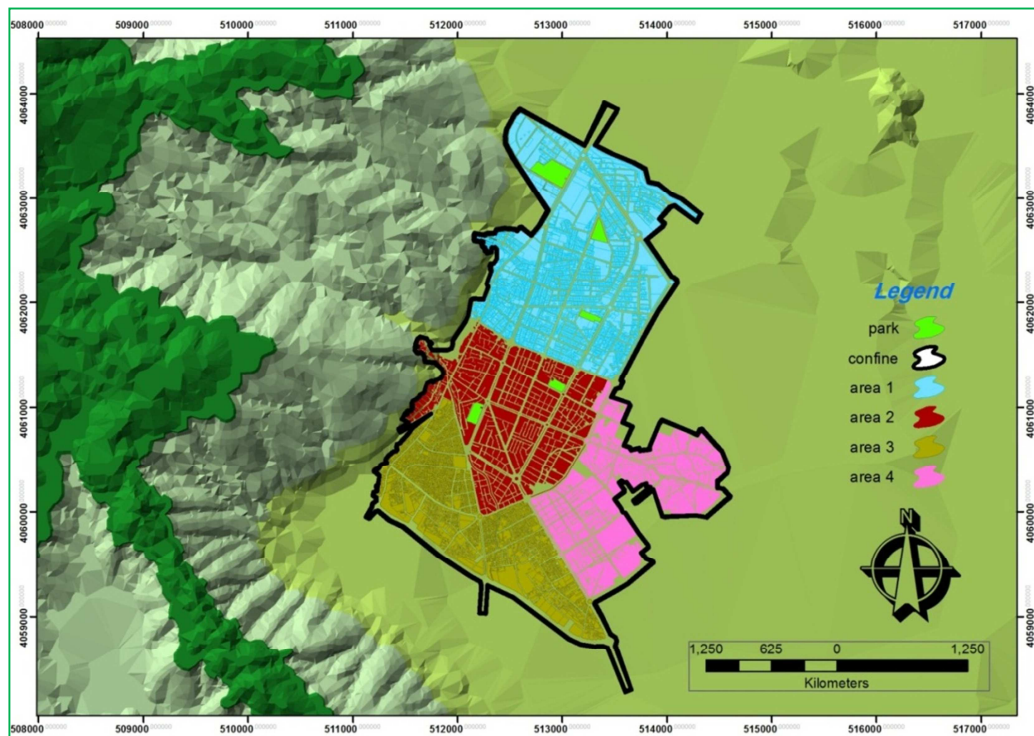


Figure 1: divisions of physical Piranshahr city and position of urban green space

3.2 Status of air pollution in Piranshahr:

Air quality is often determined by measuring the parameters of carbon monoxide CO, sulfur dioxide SO₂, NO₂ nitrogen dioxide and particulate matter compared with standards (Eltayeb & Moise, 2010). Due to the increasing number of vehicles in urban areas, and an increase in construction in the city, it is expected that the level of air pollution, especially in areas of increased jobs and city center, and in case of traffic problems in the streets in high-traffic, air pollution, will be considered as one of the problems of urban areas (Dong & Gong, 2012).

Sources of air pollution in the city Piranshahr:

Natural factors: In some cases, atmospheric and climatic conditions, causes the dusty air from the neighboring countries, the Western provinces of the country, that this process causes an increase in aerosols and air pollution in West Azerbaijan Province and the influence of the air Piranshahr (Department of Environmental Protection, West Azarbaijan Province, 2013).

Heating sources:

Heat energy in residential areas factories, offices, etc is provided by the combustion of fossil fuels such as kerosene gas oil and LPG. The use of fossil fuels in heating systems during in complete combustion causes increasing CO,SO₂, sulfur dioxide and smoke particles in the air Piranshahr especially in cold seasons.

3.3 Motor Vehicles:

Motor vehicles which are in addition to pollution from fuel combustion due to traffic and pedestrians in the city and applying the brakes the distribution of asbestos in brake pads in the air. The vehicle traffic, on the streets and alleys of the dirt and sand leads the dispersion of dust and pollution for residents of urban areas Piranshahr.

One of the main causes of air pollution in cities is vehicle traffic in the city with population growth and increasing demand for cars is increasing day by day the number of cars in the city and eventually the cities with the traffic problem are facing (Dean & Lovely, 2009). In addition the number of vehicles is effective road width, and location of service centers in the city the amount of traffic. In Piranshahr

located in shopping malls hospitals clinics and...Mainly in the city center however streets and access roads to the city center, was not of sufficient width and increased traffic problems the lack underpasses convenient parking and air bridges. Currently radius Azadi Square (the center) to within 400 yards and streets leading to the square has a lot of traffic mostly at the end of the day.

3.4 Workshops and industrial units:

A part of the contamination air In Piranshahr which makes up a smaller share than other sources is the result of activities, workshops and industrial units within the suburb. Units of air pollution on the city In Piranshahr are located at 4, cellulose, metal, non-metal minerals and chemicals.

One of the other pollutants the most important and biggest source of pollution In Piranshahr is sugar factory. The factory is located 5 km from the city of River side Lawn Piranshahr, pollutants dumped into the river and is causing problems for residents of the villages around and around Sewage Sugar Factory, not only caused contamination lawn River (one of the sources of the river Zab), but has deep changes in natural resources and landscapes around the river and the FISHERIES SCIENCES. Also at this area and are named on the river, sand and asphalt factories of the industrial effluent turbidity and sand makes it endangers aquatic life. Also, smoke from chimneys asphalt, is sometimes like a cloud over the city, causes, increasing environmental pollution in the city. Well units producing wooden doors and windows, in addition to air pollution within the plant, due to cutting, dyeing, etc. Air pollution has been a major problem for such noise unit is adjacent to residential contexts. Activity of carpentry units in

the city and in the surrounding residential houses is considered as one of the causes of heterogeneous residential tissue.

Casting units, doors and windows, building and construction materials and metal due to welding operations, Karbyt work, metal melting furnaces and Pollutant emissions and air pollution due to the workshop. Activity of in adjacent tissues such as residential units are mainly caused noise nuisance for residents in these areas.

Currently, the production units in areas of the city blocks and joists are active in addition to noise pollution due to depletion of materials (sand, cement, etc) always cause the incidence of air pollution in urban areas.

One of the other pollutants, which are considered the most important and biggest source of pollution Piranshahr is sugar factory. The plant is located 5 km from the town of Piranshahr the riverside lawn Pollutants dumped into the river is causing many problems for residents of the villages around and around not only sugar factory waste caused river pollution lawn (one of the sources of the river Zab), but deep change has had on the surrounding natural resources and river landscapes and aquatics.

3.5 Status of drinking water in Piranshahr:

In Piranshahr water prior to the operation of the water mains supply is the source of " Kohneh Khaneh" and spring "Zrgtn". Currently, the main source of water a fountain and five wells. Tricyclic these wells are located within the city and two other rings in Piranshahr, 4 kilometers from the town Is at operation 22 hours per day from the wells. City drinking water wells In Piranshahr profile is as follows:

Table2: Profile of wells drinking water In Piranshahr city

Well depth	83	92	48	40	98
Flow rate(liters per second)	17.5	18	20	13.5	16

Reference: Department of Water and Waste water in Piranshahr, 2012

Table3: Number and average consumption of water consumers, In Piranshahr, this paration

Type-of-subscribers	Domestic	Commercial	Industrial	Other
Number	9703	630	-	473
Average consumption	52/5	16/5	-	166

Reference: Department of Water and Waste water in Piranshahr, 2012

Table4: Amount of water subscribers and per capita water consumption

Monthly(m ³)	Annual(m ³)	Per capita consumption (liters per second)
300600	3580000	61/7

3.6 Quality of drinking water in Piranshahr

Lack of water is estimated to be about 70 liters per second; the main problem is at water supply lines to the city's long history, water pipes. In Piranshahr number of subscribers drinking water is 10,806 units, of which 9,703 subscribers, or roughly 90 percent, the Interior (Department of Water and Wastewater, In Piranshahr, 2012). The following table shows the number and average use of the subscriber to dissociation. Type of water tanks is Ferroconcrete and its capacity of 10,000m³ In Piranshahr. At some areas, the water is longevity, almost thirty years according to the water company are under repair major failure the supply and distribution of water at In Piranshahr is however counters in formal and areas where the level they are located above the main reservoir.

3.7 Status of sewage disposal in Piranshahr:

The amount of waste produced have been estimated about 70 tons which will be collected by hand and traditional. A number of temporary garbage city's 13 points, the approximate area of 1000 square meters, of which the depot waste places mentioned by machinery, are transfer red to the main location, the landfill area of 3 acres adjacent to the factory asphalt. Waste out of the area (within the boundaries of the city) as well as by the municipality are collected and transported to a landfill site. Mode of land fill is the wasted pot and covered with clay Weight landfill is 90,000 so far. Piranshahr municipalities, are ongoing, comprehensive plan for

municipal solid waste management to environmental and health problems and reduce costs, according to which the stage has been exploited to organize landfill, waste separation, the source construction of the plant recycling and production of organic fertilizers (compost) (Piranshahr Municipal Finance , 2013).

3.8 Study of solid waste in Piranshahr

The amount of waste in Piranshahr a large extent will be increased each year in parallel with the population growth and development of urban services. Per capita waste production in different areas of the city not equal and uniform, and cultural characteristics social and municipal functions has an effect on output per capita. At periphery town, despite the low economic level, per capita waste generation rate is high. In this area, the collection and disposal of waste, manure, due to livestock in residential areas, as well as domestic and urban waste, which can be one of the causes of waste per capita is high in these areas. It also focuses on some parts of rural and urban living style and culture of the rural nature of effected production, collection and disposal of these areas For example, livestock and poultry, both within and outside the home, it can have negative effects, should the beauty of the city, and most importantly, the environment, health, and urban areas. Areas of industrial, commercial and automotive services such as smoother, painting machine shop to be decentralized and scattered across the city, it is a serious problem in the management of solid waste collection and disposal centers . Lack of respect, health standards, the

collection and disposal of such materials, solid waste, according to their nature, can be hazardous and irreparable losses, the foundation is, for humans and the environment. In total, about 100-120 tons of waste is generated daily in the city. Based on population, per capita waste production is estimated at about 1/3 kg, which is almost three times the country's per capita production and per capita waste production in Europe is about 6 times. This shows Excessive waste is produced in proportion to its population Piranshahr (Department of Environmental Protection Piranshahr, 2012: 101). Process recycling of waste city has been clear in the Chart 1.

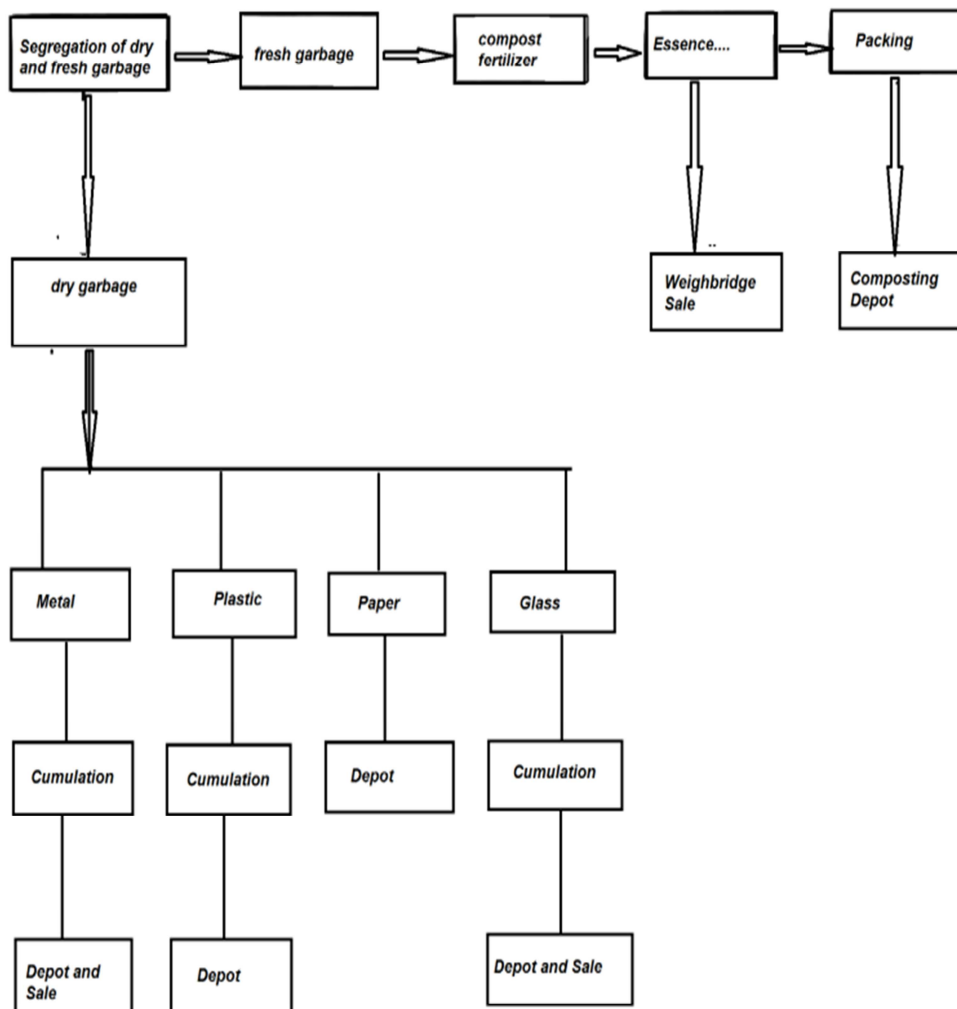


Chart 1: process recycling of waste in City of Piranshahr

4.0 Conclusions:

In this paper we deal with the study of environmental factors Piranshahr through questionnaires distributed in 15 neighborhoods of the city, analyzing and extracting the data obtained was determined at the health indices in the neighborhood. According to these that environmental factors are the most important aspects of sustainable development and measurement of indicators, not possible because of lack of information, tools, and evaluation measures in urban areas (such as air pollution) In Piranshahr were investigated to the situation of urban green space in the city, and the pollution of air pollution sources of air pollutants and strategies to reduce this type of pollution, water scarcity, water quality, Waste Disposal, and the strategies used to reduce the risks of waste. In summary we can say partly in Piranshahr all areas of the city facing a shortage green spaces, recreation and leisure and drinking water, the city was not of acceptable quality because of old concrete pipe sand water storage tanks. Also check with the criteria, which causes air pollution in the city was known, was abundant and the noise in the community is increasing because there are some industries and factories. There is a factory near the town of economic opportunities is also an environmental threat. In terms of waste, the city was far higher than the national and international standards, and action must be taken to address this problem and to improve the culture of the people.

4.1 Suggestions:

Creating city health department, in the municipality of Piranshahr. Health of urban housing in the community and enable the related applications such as: School Health, Shop Health, Acquaint citizen's standards of health, Creating gymnasium, Development of public transport, Creating in situations and cultural-training center.

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