

مجلة الاقتصاد الجديد



مجلة علمية، سداسية، دولية، محكمة تصدر عن مخبر الاقتصاد الرقمي في الجزائر-
جامعة خميس مليانة- الجزائر

ردمك: 2170-1776



مجلة
الاقتصاد
الجديد

REVUE NOUVELLE ECONOMIE

REVUE SCIENTIFIQUE, INTERNATIONALE, SEMESTRIELLE, EDITIONE PAR LE LABORATOIRE
DE L'ECONOMIE NUMERIQUE EN ALGERIE – UNIVERSITE DE KHEMIS MILIANA – ALGERIE

ISSN: 2170-1776



المجلد 12 - العدد 02 (2021)



29



VOL 12-N 02(2021)

فهرس المحتويات

	العنوان	تاريخ الإرسال	تاريخ القبول	المؤلف المراسل	
1	Waste recycling as a strategic option to support Algeria's national economy and preserve the environment	2020-09-05	2020-10-25	امحمد اممر بوزيد (amrb171@yahoo.fr)	1-24
2	THE VALIDITY OF FAMA AND FRENCH THREE-FACTOR MODEL IN AN EMERGENT MARKET: EVIDENCE FROM QATAR QTOCK EXCHANGE - An anlytical study in the short run-	2020-09-03	2020-10-26	omar boukeltoum (boukeltoum.omar@univ-medea.dz)	25-44
3	The University's Incentive System And Its Prevailing Culture	2020-08-27	2020-10-26	Ahmed yahiaoui (magisahmed@gmail.com)	45-58
4	The Role of business processes reengineering in costs reduction at the Algerian public industrial foundations	2020-09-01	2020-12-28	Laibi Imed eddine (i.laibi@univ-soukahras.dz)	59-78
5	The Relationship Between Select Macroeconomic Variables and Non-Hydrocarbon Tax In ALGERIA	2020-08-31	2020-10-26	TOUFIK HADJMAOUI (hadjmaoui_toufik@yahoo.fr)	79-98
6	The relationship between gains or losses from financial instruments and return on assets: An analytical study at sample of commercial banks in Algeria (2010-2017)	2020-08-24	2020-10-26	ABDALLAH SAB (sababdllah760@gmail.com)	99-117
7	The problem of Municipal solid waste management in Algeria	2020-08-31	2020-10-26	bilal ahmadouche (bilal.ahmadouche@gmail.com)	118-131
8	The impact Oil Price on Inflation Rate in Algeria during the period 1986 – 2018	2020-08-24	2020-12-28	امحمد بن البار (m'hamed.benelbar@univ-msila.dz)	132-147

	العنوان	تاريخ الإرسال	تاريخ القبول	المؤلف المراسل	
9	THE IMPACT OF THE CONTINUOUS IMPROVEMENT APPLICATION ON THE ACHIEVING OF ORGANIZATIONAL EXCELLENCE IN ALGERIAN COMPANIES CASE STUDY OF ELSEWEDY CABLES IN AIN DEFLA	2020-08-28	2020-12-28	fatma zohra medani (fatma.zohra.medani@univ-dbkm.dz)	148-167
10	The Impact of Personal Selling on Customer Purchasing Behavior – Case Study of the Mobile Operator MOBILIS	2020-08-25	2020-12-28	Aicha Amri (a.amri@univ-bouira.dz)	168-185
11	The impact of IFRS adoption and Employment rate on Foreign Direct Investment in Algeria economy during the period 1990-2017	2020-10-08	2020-11-10	Ibrahim FERZIZI (i.ferzizi@univ-boumerdes.dz)	186-203
12	The effect of factors related to the characteristics of the office on the quality of the audit: view of the authors of financial statements.	2020-09-08	2020-10-31	abdelkader magrament (magra.aek@gmail.com)	204-223
13	The Economic Consequences of the Political Instability in MENA Region	2020-08-24	2020-10-26	hachemi Sidjillali (sidjillalieco@hotmail.fr)	224-237
14	The benefits of the cooperative relationship between the Algerian distributor and the foreign producer	2020-08-24	2020-10-26	hakima cheurfa (cheurfa.hakima@univ-alger3.dz)	238-263
15	The Balanced Scorecard's contribution to the company's performance	2020-10-13	2020-12-28	Rim HASSANI (rymhassani@yahoo.fr)	264-278
16	Solar energy in Algeria between exploitation policies and export potential	2020-08-31	2020-10-26	Tarek Fares (fares12t@yahoo.fr)	279-293
17	Quality Management In Tourist Facilities And Their Impact On The Algerian Tourist-Case Study: Louiseis	2020-05-01	2020-10-21	BARKANE AMINA (aminaberkan@yahoo.fr)	294-314

	العنوان	تاريخ الإرسال	تاريخ القبول	المؤلف المراسل	
	Travel And Travel Agency – Tipaza				
18	Possible reflections of the Services Liberalization Agreement on banks(Applied study of the situation of banks operating in Sidi Bel Abbes)	2020-08-27	2020-10-26	توفيق عادي (addadi.tawfiq@gmail.com)	315-333
19	Opportunities for Algeria to be located in the world's green energy markets through the exploitation of renewable energies REALITIES AND PROSPECTS	2020-08-27	2020-12-28	بوسبعين تسعديت (tassa86dz@yahoo.fr)	334-353
20	Measuring The Algerian Customer's Satisfaction With The Quality Of The 4G Mobile Service By Using The "Kano Model" Study Case The Companies "Ooredoo, Dezzy And Mobilis"	2020-08-26	2020-10-24	أسماء جدي (asmablidia@yahoo.fr)	354-372
21	EVALUATE COSTS RESULTING FROM WORK ACCIDENTS USING THE S.O.F METHOD CASE STUDY: BCR ENTERPRISE AT SETIF	2020-08-30	2020-10-26	messaoud bouibaoune (BOUIBAM@YAHOO.FR)	373-391
22	Etude de l'influence des caractéristiques de l'entreprise sur la qualité des informations financières diffusées par les sociétés algériennes cotées en bourse	2020-11-07	2020-11-24	Abdelwahab BELHADDAD (abdelouahab.belhaddad.hec@gmail.com)	392-415
23	Digital Islamic Finance Strategy in Al Baraka Banking Group in Algeria	2020-08-31	2020-10-26	فريدة بوغازي (faridaboughazi@yahoo.fr)	416-435
24	Determinants of corporate cash holdings: Evidence from Algeria	2020-09-01	2020-10-26	Mouhyddine BOUGOFFA (bougoffamouhyddine@gmail.com)	436-452
25	Credit risk management by commercial banks in Algeria: Field survey of banks in the municipality BEJAIA	2020-08-30	2020-10-26	NACER-EDDINE MOUFFOK (nacermouffok2003@yahoo.fr)	453-469

	العنوان	تاريخ الإرسال	تاريخ القبول	المؤلف المراسل	
26	Building learning organization; theory and practices	2020-08-29	2020-10-26	RAHMA KERBACHE (kerbacherahma@gmail.com)	470-484
27	(An exploratory study on the use of online shopping among the Algerian consumer (Risks and solutions	2020-09-11	2020-10-17	رضية برامقي (bramguiradhia@yahoo.fr)	485-501

Waste recycling as a strategic option to support Algeria's national economy and preserve the environment

رسكلة النفايات كخيار استراتيجي لدعم الاقتصاد الوطني الجزائري و المحافظة على البيئة

Amar Bouzid M'hamed¹, Hafci Bounebaou Yacine²

¹ Economic Geography and International Exchange Laboratory,
University Centre of Tipaza, Algeria, amrb171@gmail.com

² Economic Geography and International Exchange Laboratory,
University Centre of Tipaza, Algeria, hafsiyacine3879@yahoo.fr

Received: 5/9/2020

Accepted: 25/10/2020

Published: 15/1/2021

Abstract:

The importance of waste management of all kinds , which is considered one of the most important causes of environmental pollution, therefore the necessity to pay attention to waste recycling process, which is of great environmental and economic importance , as it can provide additional revenues to State treasury, in addition to other benefits, in addition to other benefits, most importantly, including the environmental dimension in the State's management strategies .

To identify the process of waste recycling and its economic and social importance Through this study we tried to highlight the importance of this sector and The extent to which it has contributed to the national economy. And has been reached Recycle as much waste as possible contributes to the diversification of sources of national income and creating new jobs and durable, with preservation of the environment.

Keywords: waste Recycling, national economy, environment.

Jel Classification Codes: Q53

ملخص:

إن أهمية تسيير النفايات بشتى أنواعها تعتبر من أهم أسباب تلوث البيئة، لذا من الضروري الاهتمام بعملية رسكلتها ، لما لها من أهمية بيئية واقتصادية كبيرة ، حيث بإمكان هذه العملية توفير مداخل إضافية لخزينة الدولة، زيادة على تحقيق منافع أخرى أهمها إدراج البعد البيئي ضمن استراتيجيات الدولة في التسيير.

لأجل التعرف على عملية رسكلة النفايات و أهميتها الاقتصادية والاجتماعية والبيئية حاولنا من خلال هذه الدراسة إبراز أهمية هذا القطاع و مدى مساهمته في دعم الاقتصاد الوطني ، و قد تم التوصل إلى أن رسكلة ما أمكن من النفايات بإعادة تصنيعها يساهم في تنويع مصادر الدخل الوطني و خلق مناصب عمل جديدة و دائمة، مع المحافظة على البيئة.

الكلمات المفتاحية: رسكلة النفايات، الاقتصاد الوطني، البيئة.

تصنيف JEL : Q53.

Corresponding author: Amar Bouzid M'hamed, e-mail: amrb171@gmail.com.

1. Introduction:

Man is that being that Allah distinguished him over all creatures as he gave him thought and reasoning as well as love for distinction and good management, and he was succeeded in the earth with goods on it and treasures beneath it, in order to live and build it up and his life continues in ease and well-being due to the increase in population, urban expansion, industrial, commercial and agricultural growth. This led to a significant increase in the volume of consumption, which in turn led to an increase in the volume of waste and exacerbated this phenomenon, which has become one of the most important problems that pose a great challenge to countries at the global level, especially developing ones. The phenomenon of increasing waste has become heralds of serious health and environmental consequences at the global and regional levels. If it is not properly dealt with, waste issue has known a great attention from decision-makers and public opinion, due to the large increase in its quantities and the exacerbation of negative phenomena, which is a problem related to how societies produce and consume them, where currently the weight of waste produced by the individual exceeds in many developing countries one and a half kilograms per day, and the average amount of industrial waste is also very high. Economic growth aims to increase the consumption and the production of goods, regardless of the environmental and social dimensions, and the erosion and destruction of natural resources. Therefore, many countries have realized that waste recycling needs to develop new economic models aimed at achieving sustainability by using fewer resources and changing the prevailing practices to benefit from waste products in order to support the national economy and preserving the environment.

In order to be able to study this subject, we raise the following problem:

What role does waste recycling process play in supporting the national economy and preserving the environment?

In order to be able to study this issue, we raise the following problem: What role does waste recycling process play in supporting the national economy and preserving the environment?

To answer this problem, we ask the following sub-questions:

- What is meant by waste, and what are its various sources?
- What is meant by waste recycling process?
- What is the economic, social and environmental importance of waste recycling?
- What are the obstacles and mechanisms for developing waste recycling process in Algeria to contribute in supporting the national economy and preserving the environment?

Study hypotheses: To answer the raised questions and the main problem of the study, we rely upon the following hypotheses:

- waste recycling process has an important economic, social and environmental role, if it is used in good ways;
- waste recycling diversify the national sources of income and contribute to the creation of new and permanent job positions, especially among young people wishing to work.
- waste recycling will achieve significant economic growth if it is used in good ways;

The importance of the study: The research is considered one of the recent issues, especially with the collapse of oil prices and the search for new revenue sources, as we will try to address the importance of waste recycling and its role in the contribution to national income and preserving the environment.

Objectives of the study:

This study aims to highlight the following themes:

- The concept of waste recycling;
- The importance of waste recycling in getting rid of waste, through reuse, repair and recycling;
- The importance of waste recycling in the diversification of national income sources and the contribution to creating new and permanent jobs, especially among young people who want to work.

Study Approach:

In this study, a descriptive and analytical approach was relied upon, through the theoretical presentation of the various basic concepts associated with waste recycling process, and statistical methods for the analysis of the collected data.

In this regard, the following elements are addressed:

- The concept of waste, its sources and its various types.
- The concept of waste recycling.
- Steps in the waste recycling process.
- The economic, social and environmental importance of waste recycling.
- The reality of the process of waste recycling in Algeria.
- Obstacles to the waste recycling process in Algeria.
- Mechanisms for stimulating and developing waste recycling process in Algeria to the contribution in supporting the national economy and preserving the environment.

2. Definition of waste, its sources and types:

- Waste represents all the remnants resulting from production, financing, or use processes, and more generally every material, every substance or product and every movable that the owner or possessor disposes of or intends to dispose of, or is required to dispose of or remove. (Abdelkader Abed and Ghazi Saffarini, 2008: Page 237)
- Waste means the garbage, street dirt, and all other remnants that have been abandoned because they are not usable or consumable, as they have no value for their owner (Ahmed Abdel-Wahhab, 1997, page: 37)

- Waste is material of no economic value, from the point of view of its owner or producer, that is, it is transported, insignificant and neglected things whose owner wants their legal disposal to protect public health (Muhammad Makhanfar, 2014: page 09)
- Waste includes all materials that result from human activity that are no longer needed, and therefore he wants to get rid of them, and consequently they are considered environmental pollutants, unless they can be disposed of in a way that does not leave harmful effects (Alain Régent, 2004, page 201).
- Waste is generally attributed to a consumable substance which, due to its physical, chemical and biological properties, becomes useless, and for this it is disposed of. Waste may be solid or liquid, and it is classified into hazardous and non-dangerous. As hazardous one poses a potential threat to humans due to its flammable and explosive properties, it is important to disposing them in an easy way that preserves the environment (Ahmed Muhammad Al-Ghamry, 2009, page: 09)

Table No. (01) : Quality and sources of waste

Quality of waste	places of birth	Source
Food waste, garbage, ash, .special waste	Single and multiple families with their levels	Homes
Food waste, demolition and construction waste, special .waste	Restaurants, markets, administrative buildings, hotels, shops, printing shops, car repair shops, medical facilities, institutions And .so on	Department stores and municipalities
Food waste, garbage, ash, demolition and construction .waste, special waste	Construction, light and heavy industries, chemical factories, .mining And so on	Factories
.Special waste	Streets, alleys, parks, parks, beaches, highways, .reconstruction areas	Open areas
.Waste treatment facilities	Sewage and industrial .wastewater treatment plants	Treatment sites

Source: محمد صابر، الموسوعة العربية للمعرفة من أجل التنمية المستدامة، ط 1، الدار العربية للعلوم، لبنان، 2006، ص 341.

3. Concept of landfill process:

Waste recycling has several definitions according to the type of process that will be carried out on the material to be recycled as well as on the nature of the material itself, so we mention some definitions, including the following:

- The process of waste recycling means the process of recycling and using waste, whether domestic, industrial or agricultural, in order to reduce the impact of this

waste and its accumulation on the environment. This process is done by classifying and separating the waste on the basis of raw materials and then recycling each material separately (Fatiha Muhammad Al-Hassan , 2006: page 26).

- Waste recycling process is defined to be the reuse of waste to produce other products of lesser quality than the original product (Hamza Al-Jabali, 2016: page 220).

- Waste recycling process is defined to be the recovery of some types of waste such as paper, glass, metals, and plastics, then preparing them through industrial processes, in order to be reused as raw materials for the manufacture of new products. Although the industrial processes that waste recycling process goes through, such as separation, purification, melting, etc., may lead to some damage to the environment in addition to the expected economic cost, it has a lot of benefits, including preserving natural resources and energy such as oil, gas and minerals, and reducing the amount of municipal waste that is buried and its environmental consequences such as air pollution, groundwater pollution, and others (Faris bin Dabbas Abd Al-Rahman Al-Swailem, 2016: 78)

- Waste recycling process was also known as "the process that refers to returning waste or remnants of used materials such as empty bottles, plastic bags, damaged devices and others to the places where they are produced or sold, and this is known as the point of sale, instead of throwing them in exchange for money and reducing environment issues, and converting them into new products. It should be noted that products resulting from waste dumping must bear a specific mark that guides the customer or consumer that this product is recycled (for the customer) and that this material can be recycled and used for the consumer (Kamer Al Bakri Ahmad Nizar Al-Thawri, 2005: page 32).

- Waste recycling is defined from an economic point of view as “returning all or part of the waste resulting from economic processes, whether production or consumption, to be used again in production processes, as the process of recycling offers a great possibility to reduce the pressures resulting from the scarcity of resources, whether at manufacturing or disposal of products (Samia Jalal Saad, 2005, page 11).

- Waste recycling process has been known as one of the most important cleaner production technologies that lead to full utilization of waste and the establishment of many industries, as recycling is one of the areas of cleaner production (Salah Mahmoud Al-Hajjar, 2003: page 90).

- Waste recycling is the return of all or part of waste resulting from economic processes, whether production or consumption, to be used again in production processes, as the process of waste recycling provides a great possibility to reduce pressures resulting from the scarcity of resources, whether when manufacturing or disposing of products (Mohammadi Fawzi; Ahmed Ramadan; Afaf Abdel Aziz, 2001: Page 237).

- Waste recycling is a concept based on collecting waste from different industries, introducing them as secondary raw materials and manufacturing them, through industrial processes to produce a new product with different specifications. That is, the original material in it is the waste produced from an industry or other industries instead of being discharged into the environment. This means that waste recycling process is considered an industrial process, its inputs are the elements of environmental pollution (waste), where its outputs are new products (Walid Hamash, 2011: page 10)

Generally, specialists agreed that waste recycling process is the process that results in the reuse of the material and its conversion back to its semi-primary components in preparation for re-processing products of almost the same nature, but for the purpose of other uses than it was previously, or for the manufacture of other new products.

4. Steps of the landfill process:

Waste recycling process is an interconnected process that begins with collecting waste, then sorting it, disassembling it and transferring it to manufacturing units, and this is done according to the following steps: (Muhammad Muslim; Abdel Qader Masoudi, 2018: page 10)

4.1 - waste collection : modern methods in the process of collecting waste for the purpose of recycling it are the establishment of collection centers, by allocating a small area that is equipped to receive recyclable materials, and it is purchased at a nominal price and pressed to facilitate shipment, in addition to the placement of collection containers near to commercial centers, in order to be collected by the nearest collection center.

4.2 -Waste screening: In the event that there is a plan or program for recycling, measures and procedures are taken to collect the waste partially or completely sorted at the source, in order to reduce the efforts made in the sorting work and reduce the associated costs. The sorting process may take place from homes, industrial institutions and commercial centers, by placing each type of waste in a special box, but what is common in most developing countries is that the process of separation or sorting takes place in collection centers near landfills or incinerators, where appropriate machines and equipment are used. To separate the main components, there are several methods used to sort solid waste (Amina Tetrawi, 2017: page 06), including :

✓ **The manual method** which depends on human labor to separate waste according to its type, and provides workers with various preventive tools (non-perforating gloves, protective mouth masks, headgear ...). The sorting place is covered from sunlight to prevent waste reaction With it and the danger that may occur. The sorting place must have suitable containers to put the sorted waste in them, and provide them with stickers bearing the data for each type of screened waste, their weight and other data. This traditional method is still used only developing countries.

✓ **Magnetic sorting** : According to this method, the waste is placed on a moving hall that is exposed to a magnetic substance that attracts metals that are subject to magnetic attraction.

✓ **Aerial sorting** : Air sorting: where waste is isolated according to its density and size, and it is thrown into the air to isolate similar materials according to the throwing distance. For reference, sorting waste at the source is of great importance as the waste remains somewhat clean and not mixed with others, in addition to reducing the financial cost of the process. This also depends on the educational and cultural level, awareness of the population, awareness programs, incentives and penalties..

Once the waste is collected and sorted, it is directed to manufacturing, entering the production process as a single raw material or adding a certain percentage of the original raw material, directing each type of solid waste sorted into the factory for its uses, Among the most popular residues that can be recycled is paper that is recycled for everyday newspapers, plastic, glass, metal materials that can be recycled several times, biofuels such as food residues, tree residue products, and fields that are recycled for organic fertilizer.

After the sorted materials are directed toward manufacturing, new products or materials are introduced that are marketable and usable, so that the waste is utilized through the process of being spilled.

4.3. Economic methods for waste treatment : It requires seeking for various possible outlets for the disposal of this waste to choose the appropriate economic alternative; in this context we believe that the most appropriate methods to achieve the desired goal are:

✓ **Preventive methods** : represented in various practical measures that achieve minimization of waste production, that is, to do everything that can be done to reduce the production of waste to a minimum. These measures are mainly embodied in the various health, productive, social and economic prevention methods. The corrections needed to be introduced are evident in the stages of production processes, and the elimination of various wasteful methods in work, life and living behavior, and we believe in this the need for everyone to be aware and feel their direct or indirect responsibility in producing waste and thus causing harm to humans and to the environment. Therefore, it is imperative for everyone to contribute effectively to reducing their production as much as possible. Only with this the volume of waste production decreases, and thus we may control the basis of the problem and thus the possibility of treating it with the least possible loss.

✓ **Remedial methods** : They are represented in various methods that enable waste disposal and removal, and considering that we call for an economic treatment. The appropriate methods in this context are collected in :

– **Recycling** It is normal for most industrial processes to generate a certain percentage of defective production, meaning “production units that do not meet the quality standards and which are restarted. The necessary additional work that aims to introduce the necessary corrections to these defective units so that they become sound and are disbursed through normal channels is called recycling, as recycling here is considered as a basic method in the hands of productive institutions that it uses in order to reduce the volume of waste through the correction and evaluation that it enters in pursuit of achieving the required specifications in the defective units until they become sound. The materials are optimally utilized and achieve rationality in disposal and use in all stages of production process to ensure the lowest percentage of defective and spoiled production (Charles Horningon, 2008: p. 427).

It is necessary to point out that the production of defective units is very natural, but the necessary control must be imposed so that the rate of their production is commensurate with the requirements of economic production because “a certain percentage of damaged units (or defective) may be better in many cases than trying to prevent their existence at all - From an economic point of view - because the attempt to prevent the damaged (or defective) entails an additional costs. We must also compare, before carrying out the commissioning operations, between the additional cost and the selling value of the materials after being recycled, because the goal, as we have indicated, is not a cartel operation. By itself, it is rather that the production is achieved to its full specifications and at the lowest possible cost. (Abdel-Hay Marei, 1985: pg. 191).

- **Retrieval:** It means reuse or recycling, and it means “converting waste materials (waste) into new commodities for reuse. It is a basic method that appeared as a result of the development of studies and research that are no longer limited to solely addressing the problem of waste disposal in a healthy way." But it has turned to the issue of economic benefit from these wastes, whether by recovering some of their contents and recycling them again or converting some waste materials (into acceptable commodities) and this is what made it globally guarantees one-third of the industry's needs of raw materials, so it is a major mean of evaluating waste as it achieves a relative value for various wastes. The highest is the manufacture of new materials from similar used materials and the lowest value is the conversion of waste materials into completely different commodities for which new uses can be created, and it is also a way to reduce the use of virgin raw materials and preserve the nature and environment and thus reduce production costs because the cost of washing an old bottle for reuse is much less (Arab Institute for Urban Development, 1986: page 333).

The recovery process, along with methods of preventing waste production, are two important means for industrial enterprises to ensure the flow of production with all the required conditions and specifications at the lowest possible cost in addition to the effective contribution to preserving public health and the environmental

environment, thus reducing the social cost associated with waste harm. (John E. Young, 2009 Page 38).

4.4- Waste markets: Policies to preserve the environment and the social environment push to use every possible thing in order to value waste by taking it back for reuse and this is what generates the need for a "waste market" in which the producers of waste or their representatives meet with buyers who seek to benefit from this Materials; A market in which all forms of usable waste are displayed as they are directly or after being manufactured again. Waste market has developed to the point that "German industrialists can dispose of their waste via a site on the Internet. A relationship with an interested contractor to offer him his waste (products) and with this exchange, the global network has set its first step in the path of (ecological and economic recovery. (John E. Young, 2009: p. 39)

The market exists, and entering it is not difficult for industrial companies, especially those that produce large quantities of waste.

4.5. final waste disposal : To face the growing danger resulting from the increase in production quantities and their diversification, the alarm began to sound, and this is what made the interested parties studying various alternatives to waste treatment and removal methods to choose the most appropriate method, healthily, environmentally and economically. Because the waste, whatever its type, its source, and how its volume was and in all its cases, is characterized by the ability to treat, whether that is as previously indicated by collection, sorting and dispatching, or by conversion, additional manufacturing and reuse, or by methods of removal and final disposition such as burning or fragmentation or by filling or burial or by throwing and discharging it in a medium open.

5. The economic, social and environmental importance of waste recycling :

The importance of waste recycling lies in many aspects, such as the environmental, economic, social and health aspects. We mention the following aspects: the economic, social and environmental importance of waste disposal

5.1. The economic importance of waste recycling Waste recycling plays an important role in reducing economic expenditures, helping countries to face challenges related to high prices of raw materials such as oil and coal, as it is possible to reduce dependence on importing primary resources for many industries, and thus reduce production costs as a result of reducing the tax and customs bill. In some cases, landfills may be dispensed with and used in other investments and projects that benefit the individual and society. This also contributes to saving large financial resources, as the construction of sanitary landfills requires huge financial resources, in addition to reducing costs of waste collection, transport and disposal. .

On the other hand, waste recycling helps reduce the consumption of natural raw materials used in various industries, thus reducing the energy consumption required for the manufacturing and production processes. It also contributes to reducing costs of treating diseases resulting from the accumulation of waste and the spread of harmful insects and toxic pollutants. Recycling of waste also contributes to

achieving high returns for the tourism sector by attracting tourists to clean and healthy areas.

Waste recycling process contributes to reducing the unemployment rate among young people who want to work, by providing new job opportunities in collecting and sorting solid waste and transferring it to private factories in waste recycling operations. It also helps to change the behavior of community members and raise awareness of the risks they cause. Waste, so that the individual can be directed to implement the idea of sorting waste at the source to be recycled.

The following points are the most important economic aspects of waste recycling:

- **Providing financial resources for the construction of landfills and directing them to other investments:** Establishing sanitary landfills to receive waste as a method for their disposal requires huge financial resources for preparing, operating and managing landfills, and therefore the process of recycling waste and not burial contributes to preserving financial resources and directing them to other beneficial investments. The individual and society as a whole, in addition to reducing the costs of waste collection, transportation and disposal.

- **Reducing dependence on importing raw materials:** the waste recycling process, if the appropriate technology is available, contributes to reducing the import of significant quantities of some raw materials for many industries, which results in reducing the cost of production as a result of the decrease in the import bill and the associated taxes, customs fees and insurance premiums, and transportation.

- **Low financial spending for treating diseases caused by solid waste:** the process of safe and environmentally sound disposal of solid waste contributes to its chain of reducing diseases resulting from the spread of unpleasant odors to them and the multiplication of flies and rats, and throwing them randomly into water bodies and their impact on agricultural soil "which leads to a decrease in public health fiscal spending on treating people suffering from waste-origin diseases.

- **Reducing the cost of production of products:** The use of raw materials resulting from the recycling of some waste such as glass, paper and aluminum contributes to reducing the amount of energy required for the production process as a result of the reduction in the private bill and the use of energy, whether it is water, electricity or gas, which will positively affect the price of the final product.

- **Providing new investment opportunities for the owners of capital:** waste recycling process contributes to raising the wheel of investment towards development, as it enables capital owners to invest in this field by establishing small or medium enterprises that provide raw materials for large institutions or work to manufacture complete products directed Marketing and thus obtaining financial returns through kickback and the provision of the raw material necessary for the production processes;

- **Realization of huge financial returns as a result of developing the tourism sector :** waste recycling process contributes to reducing pollution of all kinds (visual, water and air pollution). This encourages tourists to head towards areas

known for their cleanliness, and therefore the establishment of waste disposal factories in these areas constitutes for them a competitive advantage that distinguishes them from other regions, which results in activating economic activity in them as a result of operating hotels, restaurants and parks for receiving these tourists. From this, the tourism sector revenues will increase for operating these facilities and imposing appropriate taxes on them.

- Making the national economy more flexible in the face of external changes:

This has actually been achieved in some developed countries, as the more capacity the national economy has in the field of waste disposal, the greater its flexibility in the face of external changes related to the high prices of raw materials or their scarcity. Germany's example of saving a large amount of biogas and electricity as a result of recycling organic waste, which enabled it to face foreign markets and high energy prices, which made its national economy a fair degree of flexibility in facing external factors.

5.2 - The environmental importance of waste recycling: waste recycling process mainly contributes to reducing the proportion of all types of pollution, by reducing the accumulation of waste that contribute significantly to environmental pollution, due to pollutant gases emissions and toxic elements to the air, water and soil, in addition to its role in reducing the pressure from collection places and burial of waste (landfills). The overall process of waste recycling contributes to reducing the impact of human activity on the planet.

The process of waste dumping reduces diseases, depression, and mental disorders resulting from the accumulation of waste and not disposing of it in the right ways, and provides a safe, clean environment free from unpleasant odors, toxic gases, harmful insects, and rodents.

In most cases, selling recovered materials is the primary goal that any commercial unit or group of people pursue as its business. In order for the material to be recoverable, it must fulfill some conditions, the most important of which are (Walid Hammash, 2011: page 104)

- To have the doors to ongoing marketing.
- The amount of the cost of transportation (distance between the plant and the location of the recovered material) .
- Recovered metals or materials must be actually usable .
- The quantity and value of recovered materials should be sufficient to produce positive results after the sale.

The following are some of the most important environmental aspects of the waste recycling :

- Reducing the pollution: with all its known types (air, water, soil, visual pollution ...), as the waste streaming process contributes to reducing the manifestations of the accumulation of waste mountains and the consequent visual pollution, and gaseous pollution resulting from the interaction of waste with each other, burning them, emitting gases polluting the air and polluting the water as a result of throwing them into valleys and seas, or as a result of leakage of liquids

resulting from their interaction with groundwater, pollution of the soil resulting from burial in it, and the resulting weakening of its agricultural capacity.

- Reduction of pressure on landfills and the exploitation of land for other investments: the waste recycling process contributes to reducing pressure on landfills on the one hand, and reaching its final elimination whenever possible. For example, we find that a country such as Germany or Switzerland has reached a strict environmental law. It is prohibited to bury organic waste that can be used in the generation of biogas and the manufacture of organic fertilizers. Work began with it more than 10 years ago and it is allowed to bury only biologically stable materials that cannot be used and do not emit any gases or liquids and convert many landfills into public gardens, parks, and thus reduce the area of land used as landfills..

- Preserving natural resources and energy and reducing their depletion: waste recycling process contributes to reducing the demand on natural resources used as raw materials in the production process by providing the latter through the recycling process, in addition to reducing the energy rates used in the manufacturing process to a very large degree compared to the energy needed. In the production process when the raw material used is an original material and the resulting reduction in the percentage of air pollution resulting from the rise of different gases, where we find that :

- ✓ Recycling One ton of glass saves over one ton of raw materials from which they are made as follows: 1,33 tons of sand 196,409 kg of sodium carbonate and large quantities of limestone, 68,49 kg of Golden.

- ✓ 1 ton of paper residue resulting in the provision of 4,100 kilowatt-hours of electricity, in addition to a significant shortage of air pollutants.

Two bottles provide enough energy to heat up water to make five cups of tea .

- ✓ Aluminum flaps provide 95 % of the energy consumed when manufactured from its original material .

- ✓ The energy saved from recycling a bottle would be enough to ...

- ✓ Running a 100-watt light for four hours..

- ✓ Turn on a 20-minute TV.

- ✓ Running a washing machine for 10 minutes .

- ✓ Plastic recycling provides twice as much energy to burn in waste incinerators .Plastic bags and other plastic products dumped in the ocean and seas kill about a million marine organism annually.

- ✓ Plastic takes 100 to 300 years to decompose.

- The contribution to increasing animal and plant biodiversity and its reproduction: waste recycling process contributes to increasing animal and plant biodiversity and its reproduction by providing a suitable environment for its living by reducing the percentage of water, air and soil pollution, as we find that not throwing waste randomly into valleys, for example, contributes to the reproduction

of plants and aquatic animals, some of which have become extinct in many regions spread across the world, such as the transformation of Lake Fuji Yama in Japan into a biologically dead lake due to the dumping of industrial waste from one of its nearby factories, which affected the life of the creatures that were considered the latter as a suitable environment for its diversity and multiplication.

5.3. The social and health importance of waste disposal: (Bekouch Fahima, 2009: Page 17)

Garbage recycling has a significant social and health importance. In the following, we mention the social and health aspects of waste disposal :

- **Reducing the unemployment rate by providing employment opportunities:** waste recycling process contributes to reducing unemployment rate, especially among young people who want to work, by providing new job opportunities for collecting, sorting and transporting waste and transferring it to factories in order to capitalize and convert them into raw materials or industrial products, or through the establishment of mini-companies based on the production of products based on raw materials in the form of sent waste as a result of its low price compared to the price of the original raw material, which reduces the unemployment rate and guarantees the provision of financial income for many families and thus improves their standard of living;

- **Reducing the incidence of diseases resulting from solid waste:** waste recycling process contributes to the reduction of the incidence of people suffering from incurable diseases that often leave severe injuries and permanent disabilities as a result of the proliferation of quantities of waste and not disposing of it in an environmentally sound manner, which leads to an increase in the production capacity of workers and creates a generation physically and intellectually sound and reducing the percentage of lost opportunities in the productive process to the lowest levels as a result of their illness;

- **Reducing the spread of bad odors and the proliferation of insects and rodents:** the process of waste recycling contributes to providing a safe and clean environment, especially in residential communities, as a result of limiting the spread of odors and the proliferation of insects and rodents and the consequent cases of depression and mental disorders among a large segment of the population, as indicated by several scientific studies.

6.The Reality of the waste recycling process in Algeria :

Waste production in Algeria is witnessing a continuous increase as a result of demographic growth and improvement in the standard of living of the population, as Algeria produces about 8.5 million tons of household waste annually 700 thousand tons of industrial waste, 300 thousand tons of hazardous waste, and 125 thousand tons of medical waste annually. The current production rate of household waste is 1 kg per person per day, and it is expected that the production of household waste in Algeria will reach 12 million tons annually in 2025. (National Agency of Waste, 2019)

6.1 - Methods used to waste recycling in Algeria: despite the huge volume of waste in Algeria, especially in the fields of paper, glass, plastics and metals, the percentage of what is capitalized is very low. Starting from 2002, Algeria adopted, in its environmental policy, new waste management reforms based on: (Aida Mostafawi, 2017: page 171) promoting the activity of recycling and correcting waste through the establishment of the "National Waste Agency": an executive agency under the tutelage of the Ministry of Water Resources and Environment to support Waste Regulatory Provisions, created by Executive Decree 02-175 of May 13, 2002, related to waste facilitation, control and removal. This agency was established to achieve the following objectives:

Providing assistance to local groups in the field of waste management;

- Processing data and information on waste, and establishing and updating a national waste information bank;

- Initiate and complete studies, research and experimental projects, as well as publishing and distributing scientific and technical information, in addition to initiating awareness and information programs and participating in their implementation. This is with regard to the activities of sorting, collecting, transporting, treating, valuing and removing waste.

- Establishing a policy for the recovery and evaluation of packaging of materials (ECO-GEM) in accordance with Law No. 01-19 related to the management and control of urban waste removal, and in accordance with the provisions of Executive Decree No. 02-372 of November 11, 2002, related to packaging waste. Its objectives include:

- The evaluation his packaging waste;

- To assign an approved institution to undertake the obligation;

- To be involved in the public system of recovery and valorization created for this purpose.

- Making a retrieval policy and the evaluation of packaging materials in order to:

- Create new jobs, known as green jobs;

- Promote waste treatment, recycling and remediation activities;

- Reduce the volume of runaway waste;

6.2. waste recovery process : according to the Ministry of Environment and the Provincial Development, Algeria will recover a significant amount of waste as shown in the following table:

Table 02 : Estimated amount of waste for recovery in 2019 in Algeria

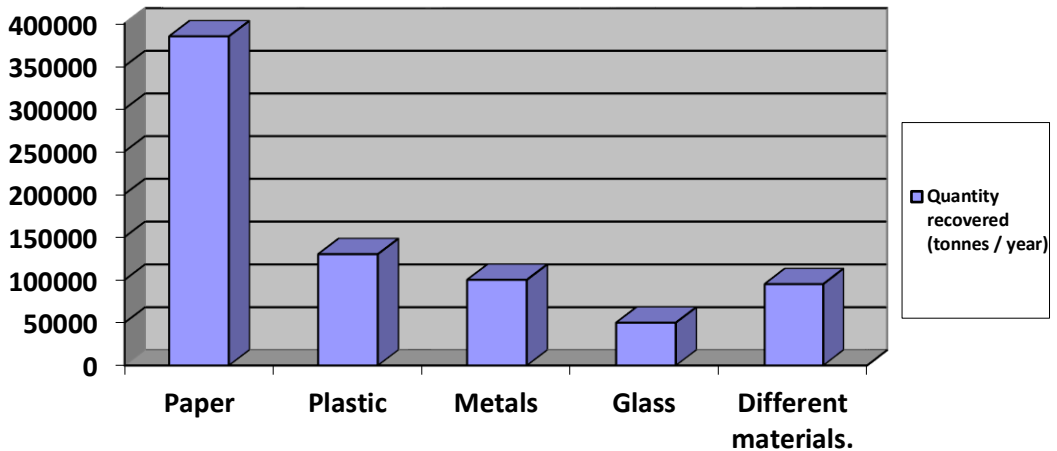
Quantity recovered (tonnes / year)	Type of waste
385 000	Paper.
130 000	Plastic.

100 000	Metals
50 000	Glass.
95 000	Different materials.
760 000	Total

Source : 2019 إحصائيات وزارة البيئة وتهيئة الإقليم .

The above table data accurately depicts the following figure :

Figure (01): Estimated amount of waste for recovery in 2019 in Algeria



According to the above table and figure, we note that the amount of waste recovered in 2019 was estimated at 760 thousand tons. This waste included paper, which represents the largest part of the possibility of recovery and recycling, with a volume of 385 thousand tons per year, plastic was estimated at 130 thousand tons per year, while minerals are estimated at about 100 thousand tons per year, in addition to glass, which amounts to 50 thousand tons per year, while other materials amounted to 95 thousand tons per year, but this quantity is very weak compared to what really can be recovered.

6.3 Return process companies in Algeria:

In Algeria, there is a group of companies that are active in various industries, and that carry out the activity of waste recycling to be used as raw materials needed in its basic production process. Among these companies we mention:

- The Foundation for Paper (Tonic emballage).
- Papirec Paper Foundation.
- The Replast Plastic Foundation.
- Foundation for Plastic ENPC.
- Oranian Foundation for Glass.
- Sametex Plastic manufactures broom strings.
- Poly Propylène Plastic Foundation.
- Tetra Pack Brick Recycling Foundation.

6.4- The National Program for Waste Management in Algeria: Within the framework of the National Plan for Environmental Action and Sustainable Development, with the aim of improving public health and the quality of life for citizens, the Ministry of Environment and the Region's Authority in Algeria has prepared a national program for the management of solid waste, aiming at the following points (Mohamed El-Nimr, 2009: page 220):

- Reducing the amount of waste;
- An economical, compact and environmentally clean solid waste management;
- A comprehensive and integrated management of the waste sector;
- Defining the powers between both the observation and the operational side of the field;
- Achieving maximum effectiveness and maintaining the social balance between the public sector and the private sector, and embodying responsibility in the field of waste management;

The most important components of this program are summarized as follows:

- **The necessity to work on integrated planning for waste management:**

According to Article 01-19 related to management, control and removal of waste, as municipalities are required to ensure:

- Preparing and implementing municipal plans for managing municipal waste, including studying the diagnostic process for management systems, studying feasibility from an economic point of view, the possibility of creating a market for the retrieval and valuation of waste, studies on site selection, environment, and equipping burial centers.

- Continuous improvement of collection and waste evacuation conditions through the Continuous improvement of collection conditions and waste evacuation through the following procedures :

- The regulation of submitting waste conditions to the collection and evacuation process.
- Defining standards and conditions for collection and evacuation of waste.
- Blocking the waste collection process.
- Establishing condition standards in which the obligations of the collecting company are specified.
- Putting containers in the reach of citizens, and sensitizing them about the importance of health conditions and respecting the times of waste collection.
- The process of improving management efficiencies, by reorganizing the municipal administration responsible for managing urban waste for private investment through concessions, setting up a training program and providing technical assistance to local groups, in addition to setting up suitable equipment for the collection process, and a combined treatment of municipal waste.

- Achieving technical landfill centers for household waste, consisting of:

- Impermeable basin system;
- Household waste fetching and handling systems placed in the dump;
- System for capturing and removing gas from the decomposition of the organic part of the waste
- Tools for scattering, stacking and covering waste.

- remove random emptying : Put a monitor and a part device that allows avoiding random switching.

Selective sorting: By establishing selective waste screening systems at the national level (paper, plastic, metal), this is done through the following arrangements:

- Organizing collection networks for each type of waste by placing suitable containers at the neighbourhood level.
- Establishment of small institutions specializing in this field, financial support and tax exemption⁴
- Creation of small waste transformation units.

- Establishing a system for the recovery and valuation of packaging waste: the packaging is an important part of the waste composition in Algeria, and it is a mine of unused raw materials, as it is estimated at 200 thousand tons annually, where only 4000 tons are recovered.

- Create specialized networks to recover packaging waste;
- Establishing a joint program between the Ministry of Environment, the Region's Preparation, and the Ministry of Labor and National Solidarity "The White Algeria Program", for the promotion of activities for the recovery and recycling of waste, especially packaging waste;
- Adopting financial and tax measures to encourage and develop recovery activities and waste valuation;
- Re-consideration of the current fertilization units (Tlemcen, Bani Murad).
- Establishing waste recycling stations.

7. Obstacles of the process of waste dumping in Algeria:

Waste dumping process faces a set of multiple problems that hinder its implementation, success and development in spite of its importance, and thus this prevents the achievement of its objectives despite its economic, environmental and even social importance. These can be summarized as follows: (Amina Tetravi, 2017: page 06)

- The absence of a sorting system for solid waste, as the screening process is essential for the success of the investment without causing pollution, as well as facilitating the process of separating the various components;

- The absence of an organized commercial market for the sale of recyclable waste, which led to the establishment of a black market specializing in the sale of all solid waste such as aluminum, copper, paper, cardboard, ...;
- The lack of legislation and laws regulating the method of waste disposal in terms of defining the means, duties and rights of the parties that carry out the waste.
- The multiplicity of donors for licenses and permits to benefit from waste, which leads to the emergence of competitors for investors in this field, which makes the chance of profit very small;
- The difficulty in the commercialization of products that are subject to recycling process due to the lack of acceptance by consumers because of its low quality compared to products made from the original natural raw materials;
- The high cost of importing waste recycling technology;
- Failure of some companies that carry out the dispatch to respect the internationally agreed upon standards in terms of the percentage of mixing the original raw materials with the materials resulting from the cartel, which makes the products unacceptable and distorts the reputation of the companies;
- Deceptions practiced during the collection and sorting of waste in order to direct it to the factories of the cartel, for example, they wet the paper to increase its weight to raise its financial value;
- The lack of financial and moral incentives from the government to encourage investment in corporate finance;
- The absence of the role of the media in instilling an apostasy culture among members of society by encouraging residents to sort their waste at source and to buy products made from sent materials;
- Neglecting the role of the private sector in the waste recycling process;
- The lack of tires included in waste recycling process, which leads to poor management and operation of factories.
- The decrease in the percentage of international cooperation and partnership among the countries of the world in order to reduce the problem of waste in its mass through the dissemination of international experiences in this field;
- Health risks that consumers may be exposed to as a result of some establishments reusing plastic and glass bottles for packing foodstuffs;
- The lack of official programs and accompanying measures for the method of waste disposal, as the Algerian Telecom Corporation, Sonelgaz Company and the Railways Company incurred billions of dinars financial losses as a result of citizens stealing copper cables for the transmission of electricity and telephone communications, and stealing iron sheets fixed to the train transmission line in order to sell them to copper and iron dealers, and they re-export it to European countries for its capitalization;
- The absence of an environmental culture among the community members has led to the lack of development of the method of recycling waste, as recycling companies find a problem in dealing with the population in order to sort their

waste, thus reducing the rate of profit and making investments in this kind not economically feasible.

8. Mechanisms for stimulating and developing the waste recycling process in Algeria to contribute to supporting the national economy and preserving the environment

In order for the waste recycling process to succeed in Algeria, to contribute to supporting the national economy and preserving the environment, the following points need to be satisfied: (Bekouch Fahima, 2009: page 10)

- Establishing a clear national and local strategy in a formal manner that encourages waste recycling as an environmentally and economically appropriate method of waste disposal;
- Providing the institutional and regulatory framework for managing investments in waste recycling;
- Providing the legal framework for the process of corruption that defines the duties of institutions operating in this field and the penalties they may be subjected to in case they violate the applicable standards, and the establishment of directorates and departments that work to monitor the activity of institutions operating in this field in terms of their compliance with manufacturing standards.
- Encouraging the import of technology that uses recycled raw materials instead of exporting them. For example, encouraging the import of technologies related to the recycling of copper and iron and their reuse instead of exporting them.
- Reducing taxes and customs duties on importing vehicle equipment;
- Providing financial incentives to investors in this field, such as providing free or affordable collection and transportation of waste in order to reduce the cost of investment and maximize profit to ensure the continuation of the activity.
- Granting financial loans to investors in the field of capitalization at low interest rates with extended repayment periods;
- Applying the principle of "polluter pays" and imposing strict and sophisticated control over the activities of waste producing companies in order to push them to be capitalized and used in the production cycle through what is known as feedback.
- Establishing financial funds that assist associations and institutions working in the corporate organization;
- Developing a broad media strategy aimed at spreading environmental awareness among the various members of the society to make them aware of the danger of waste and the importance of its recycling to reduce its danger;
- Reducing the method of burning and burying waste in order to encourage investment in merchantability and make use of the largest possible amount of it.
- Encouraging environmental forums at the university level and spreading the culture of recycling among students by demonstrating the environmental and economic importance of this method and pushing them towards establishing mini-companies in this field after graduation;

- The conclusion of partnership contracts with leading countries in the field of Rasulah to transfer and exchange experiences;
- Providing regulated markets for the sale of recyclable waste by legal means;
- Work to instill a culture of buying products made from materials sent by consumers in order to contribute to reducing the risk of solid waste accumulation;
 - Encouraging the private sector concerned with corporate activity, such as for the municipalities to grant financial and organizational incentives to increase collection rates and produce materials of a higher quality and assist them in promoting the produced materials as environmentally friendly materials.
 - Work to establish data banks on the quantity, type and characteristics of solid waste and the rate of its production across the various municipalities in order to facilitate the task of making decisions about whether or not to invest in its capital by those who wish to do so;
 - Establishing a financing mechanism for waste disposal by establishing a fund to be financed by industries that generate a lot of waste, such as companies producing packaging and packaging materials, by charging nominal fees for them.

Conclusion:

Through this study, it was found that waste recycling process is considered a stand-alone industry through the use of waste, by reducing as much as possible the waste by recycling it to obtain a new product or new raw materials, and this is to contribute to the national economy by diversifying the sources of national income in order to contribute to the creation of new and permanent job positions among young people who want to work, by providing new job opportunities in collecting and sorting solid waste and transferring it to private factories in waste recycling operations. It also helps to change the behavior of community members and increase awareness of dangers caused by waste, so that the individual can be directed to apply the idea of sorting waste at the source to be recycled. It also contributes to reducing costs of treating diseases resulting from the accumulation of waste, the spread of harmful insects and toxic pollutants. The process of waste recycling also contributes to the high returns of the tourism sector by attracting tourists to the regions; a clean and a healthy environment.

Waste recycling process, if the appropriate technology is available, also contributes to reducing the import of significant quantities of some raw materials for many industries, which results in reducing the cost of production as a result of the decrease in the import invoice and the associated taxes, customs fees, insurance premiums, transportation and reducing the financial cost of importing materials. The priority, and the strategic role that waste recycling process plays in ridding the environment of various waste and promoting the technology sector in an environmentally friendly economy.

Results:

From the previous analysis, a set of results can be deduced, namely:

- Investing in the recycling sector that would boost the national economy by diversifying national income sources, contributing to job creation, reducing the environmental burden, and promoting the technological sector in an environmentally friendly economy;
- Recycling process is the reuse of waste with the aim of producing goods similar to goods in their original form, so that basic raw materials are produced;
- Recycling projects will contribute to reducing the amount of landfill contained in land areas and reduce toxic emissions harmful to the health and to the environment.
- Balancing between industrial necessity and the need to maintain a healthy remaining environment by developing a circular economy;
- Circular economy approach is that economy in which there is no place for waste, in order to achieve comprehensive development that contributes to achieving sustainable development.
- Algeria is working on setting up a program for the necessity of manufacturing waste as an important alternative to enter the circular economy.

Recommendations:

In light of the findings of the study, several recommendations can be made as follows:

- Developing an integrated strategy towards recycling waste, which must be adopted as a new industry, encouraging private companies to localize this industry and creating an investment climate to attract foreign investors to develop it;
- Promoting a recycling culture among youth by holding industrial courses and seminars, as these industries start through the selection process being held at home;
- Recycling is one of the most important processes that should be highlighted in a way that helps reduce the presence of post-use waste;
- The necessity of research and development in the field of recycling as a tool to protect the environment;
- Taking the recovery industry and living waste as new points for economic growth.

Bibliography List :

References in Arabic:

Books:

- 1- عبد القادر عابد (2008) ، غازي سفاريني : أساسيات علم البيئة ، ط 1 ، دار وائل للطباعة والنشر، الأردن.
- 2- أحمد عبد الوهاب (1997) قضايا النفايات في الوطن العربي، الدار العربية للنشر والتوزيع، القاهرة، مصر.

- 3- أحمد محمد الغمري ، أحمد علا أبو العطا (2009): الإدارة المتكاملة للنفايات ، ط 1 ، المكتبة العصرية للنشر والتوزيع، القاهرة ، مصر.
- 4- فتيحة محمد الحسن (2006) ، مشكلات البيئة ، مكتبة المجتمع العربي للنشر والتوزيع ، الأردن.
- 5- حمزة الجبالي (2016): التنمية المستدامة استغلال الموارد الطبيعية والطاقة المتجددة، دار الأسرة للإعلام ودار الثقافة للنشر، الأردن.
- 6- فارس بن دباس عبد الرحمان السويلم (2016): النفايات المنزلية بين التدوير والأضرار الصحية والبيئية، العبيكان للنشر والتوزيع، المملكة العربية السعودية، الطبعة الأولى.
- 7- كامر البكري ، أحمد نزار الثوري (2005): التسويق الأخضر ، الأردن : دار اليازوري للنشر والتوزيع.
- 8- سامية جلال سعد (2005): الإدارة البيئية المتكاملة، القاهرة ، امبرشن للطباعة.
- 9- صلاح محمود الحجار (2003): السحابة الدخانية ، المشكلة ، الأثر ، الحل ، سلسلة تكنولوجيا الإنتاج الأنظف ، دار الفكر العربي ، القاهرة، مصر.
- 10- محمدي فوزي؛ أحمد رمضان؛ عفاف عبد العزيز (2001): الموارد واقتصاديا، الدار الجامعية، الإسكندرية، مصر.
- 11- تشارلز هورنجون (2008): "محاسبة التكاليف – مدخل إداري"، ج 22 تعريب د . حامدة حجاج وآخرون، دار الريخ، السعودية.
- 12- عبد الحي مرعي (1985): "في محاسبة التكاليف لأغراض التخطيط والرقابة"، مؤسسة شباب الجامعة، مصر.
- 13- جون إ. يونج (2009): " الإستفادة من النفايات"، ترجمة شويكار زكي الدار الدولية للنشر والتوزيع، مصر.

Memos, letters, theses :

- 1- محمد مخنفر (2014): الآليات القانونية لتسيير النفايات المنزلية في التشريع الجزائري، مذكرة مقدمة ضمن متطلبات نيل شهادة الماجستير ، كلية الحقوق والعلوم السياسية، جامعة سطيف 2، الجزائر.
- 2- وليد حماش (2011): تسيير النفايات الصناعية كمدخل لتحقيق التنمية المستدامة في المؤسسة الاقتصادية، مذكرة مقدمة ضمن متطلبات نيل شهادة الماجستير ،كلية العلوم الاقتصادية والتجارية وعلوم التسيير ، جامعة سطيف 1، الجزائر.
- 3- وليد حماش (2011): تسيير النفايات الصناعية كمدخل لتحقيق التنمية المستدامة في المؤسسة الاقتصادية، مذكرة مقدمة ضمن متطلبات نيل شهادة الماجستير ، كلية العلوم الاقتصادية والتجارية وعلوم التسيير، جامعة سطيف 01، الجزائر.
- 4- محمد النمر (2009): التسيير المستدام للنفايات المنزلية :دراسة حالة مدينة قسنطينة، مذكرة مقدمة ضمن متطلبات نيل شهادة الماجستير ، كلية العلوم الاقتصادية والتجارية وعلوم التسيير، جامعة قسنطينة، الجزائر.

International and national events and seminars :

- 1- محمد مسلم؛ عبد القادر مسعودي (يومي 23 - 24 أفريل 2018): إسهامات رسكلة النفايات في تحقيق التنمية المستدامة، الملتقى الدولي الخامس حول: استراتيجيات الطاقات المتجددة ودورها في تحقيق التنمية المستدامة، جامعة البليدة 2، الجزائر.
- 2- أمينة تيطراوي (يومي 6-7 ديسمبر 2017): تطبيق آلية إعادة تدوير النفايات في المؤسسات الصغيرة والمتوسطة ودورها في تحقيق الاستدامة البيئية، الملتقى الوطني حول إشكالية استدامة المؤسسات الصغيرة والمتوسطة في الجزائر، جامعة الوادي، الجزائر.
- 3- بكوش فهمية (من 20 إلى 23 أفريل 2009): "تدوير النفايات الصلبة وأهميتها البيئية والاقتصادية"، المؤتمر العلمي الدولي السنوي التاسع لاقتصاديات البيئة والعولمة، جامعة الزيتونة الأردنية، كلية الاقتصاد والعلوم الإدارية: **Reviews:**

1- عايدة مصطفى (2017): تسيير النفايات المنزلية في الجزائر بين النص القانوني والواقع العملي، مجلة آفاق العلوم، العدد 8، جامعة الجلفة، الجزائر.

Bodies and organizations:

- 1- المعهد العربي لإنماء المدن (1986): "النظافة العامة والتخلص من النفايات في المدن العربية" الرياض.
- 2- موقع الوكالة الوطنية للنفايات، الجزائر، الرابط <https://and.dz/presentation/apropos> تم الإطلاع عليه يوم 25-11-2019.

References in foreign language:

- 1- Alain Régent, (2004) ,Déchets et pollution impact sur l'environnement et la santé, Dunod, Paris.
- 2- Atkinson.A.A., R.S.Kaplan ,E.M. Matsumura and S.M. Young. (2012)."Management Accounting :information for decision-making and strategy execution .6 th ed.
- 3- Europe Direct , (2010). "Being Wise With Waste : the EU's approach to Waste Management". ISBN 978-92-79-14297-0. doi 10.2779/93543,. <http://europa-eu> .
- 4- Forbid, G.T. (2012). "Thermal Recycling Of Plastic Waste Using Pyrolysis-Gasification Process For Energy Production". PhD. Thesis .Faculty Of Environmental Science And Process Engineering .Germany ..
- 5- Pasiouras, F. (2013)."Efficiency And Productivity Growth Modelling In The Financial Services Industry". John Wiley & Sons, Ltd ..
- 6-Lytle, B. (2013) "4Methods of Proper Waste Management".Article. <http://www.gogreenamericatv.com/4-methods-of-proper-wastemanagement>
- 7-Smith, S. (2011)."Environmental Economics :A Very Short Introduction". Oxford University Press In , NewYork.
- 8-UNEP, 2011."Decoupling Natural Resource Use and Environmental Impacts From Economic Growth : International Resource Panel ".<http://www.unep.org/resourcepanel/decoupling/files/pdf/decouplingreport-english.pdf>
- 9- Zhu ,J. (2015) "Data Envelopment Analysis : A Handbook Of Models And Methods". International Series In Operations Research & Management Science 221. Springer Science + Business Media NewYork..

10- Remy, A.A(2012) "Solid Waste Management : World Perspective And The Cameroon Case Study" . Master's Thesis, Department Of Environmental Engineering And Management , University Of Fernando Pessoa, Portugal.