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Analysis of sustainable development indicators-case of some Maghreb Countries (Algeria, Tunisia and Morocco)-

تحليل مؤشرات التنمية المستدامة –حالة بعض دول المغرب العربي (الجزائر، تونس والمغرب) –

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Abstract

Abstract :

This study aims to analyse the reality of sustainable development in Maghreb countries (Algeria, Tunisia and Morocco)**;** through addressing some economic, social, environmental and institutional indicators, in order to evaluate the extent progress achieved by this countries in different sustainable development fields.

The results of study concluded that these countries still suffer from many challenges at the level of different indicators, which hinders the achievement of sustainable development goals.

Keywords : sustainable development, economic indicators, social indicators, environmental indicators, institutional indicators.

ملخص

الملخص

تهدف هذه الدراسة إلى تحليل واقع التنمية المستدامة في دول المغرب العربي (الجزائر، تونس والمغرب)، وذلك من خلال تناول بعض المؤشرات الاقتصادية، الاجتماعية، البيئية والمؤسسية، بهدف تقييم مدى التقدم الذي حققته هذه الدول في مختلف مجالات التنمية المستدامة.

ولقد توصلت نتائج الدراسة إلى أن هذه الدول لا تزال تعاني من العديد من التحديات على مستوى مختلف المؤشرات مما يعيق تحقيق أهداف التنمية المستدامة.

الكلمات المفتاحية: التنمية المستدامة، المؤشرات الاقتصادية، المؤشرات الاجتماعية، المؤشرات البيئية، المؤشرات المؤسسية.

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1. INTRODUCTION

Since the adoption of the Sustainable Development Goals (SDG), many countries have achieved positive developments; through incorporate the sustainable development dimensions into national plans and strategies.

The sustainable development achievement remains a major challenge in Maghreb countries. Despite significance improvement in many areas, Maghreb countries are still faced with socio-economic inequalities issues such as increase unemployment particularly among youth and women, risks of poverty, shortage of food security, weak of health and education services.

Maghreb economies' lack of diversification and competitiveness is exacerbating these difficulties further by reducing countries' ability to generate enough growth, create more sustainable jobs and ensure inclusive development (UNECA, 2020)

1.1 Statement of problem

What is the reality of sustainable development in Maghreb Countries?

1.2 Research question

- What is the situation of sustainable development indicators in Maghreb countries?
- Does Maghreb countries achieved sustainable development goals?

1.3 objectives of study

- To analyse the sustainable development indicators in Maghreb countries.
- To evaluate the extent progress achieved by Maghreb countries in different sustainable development fields.

1.4 Methodology

The study assess the achievement of sustainable development in Maghreb countries (Algeria, Tunisia and Morocco) using the qualitative method, through employ some sustainable development indicators.

2. LITERATURE REVIEW AND THE STUDY CONTRIBUTION

2.1 Literature review

Albert Ahenkan (2014) evaluated the achievement of SDG and the main challenges of SD in Africa using the qualitative paradigm. The study concluded that the progress of SD in Africa is mixed across indicators. Most of African countries have significantly made progress in building strong economies, strengthening democratic institutions, improving agriculture and

reducing poverty. However, there is many challenges facing the SD in African countries such as climate change, population growth, and unemployment, which need for major policy shifts and implementation of policies in these countries.

Rehaili seif eddin (2016) analysed the future of renewable energies and sustainable development in Maghreb countries (Algeria, Tunisia and Morocco) by using some sustainable development indicators. The study found that there is an improvement in the level of some indicators for both Algeria and Morocco, in contrast to Tunisia, which recorded a decline in most indicators.

Dhaoui Iyad (2018) examined the achievement of SDG in 22 MENA countries by combining the six dimensions of health, education, services, employment, equality and environment. The result showed that some oil economies, Tunisia and Liban have the highest score. While, The main problem for oil countries is quality in some countries and environment. As for the diversified economies the most problem face it is employment. The LDCs countries have difficulties in majority of dimensions. The result of the relationship between SDGI and GDP per capita showed that there is no consistency for GCC countries in contrast to the rest of countries.

Edgar et al (2019) investigated the main challenges of sustainable development which facing by the MENA countries by analysing some sustainable development indicators. They found that although the positive changes achieved by MENA countries such as renewable energy, but the SDGs remains limited. The biggest challenges facing in some of the MENA countries are the targets to reduce undernourishment. Most Arab countries suffering from the instability in the food security and sustainable agriculture, as well as scarcity water.

2.2 Contribution of the research

The studies that combined each of Algeria, Tunisia and Morocco are quite limited, we usually find these countries among specific divisions such as MENA countries, African countries and Mediterranean countries. That did not give the details of the extent progress achieved by these countries (Algeria, Tunisia and Morocco) in the field of sustainable development. For this reasons, the current study explores and analyses sustainable development in Maghreb countries by focusing only on Algeria, Tunisia and Morocco.

Based on this the study used a sets SD indicators, which are economic indicators, social indicators, environmental indicators, in addition to institutional indicators, which not provided in the previous studies.

3. RESULTS AND DISCUSSION

In order to assess the achievement of sustainable development in Algeria, Tunisia and Morocco, the study adopts the qualitative paradigm, through using some indicators.

3.1 Data set:

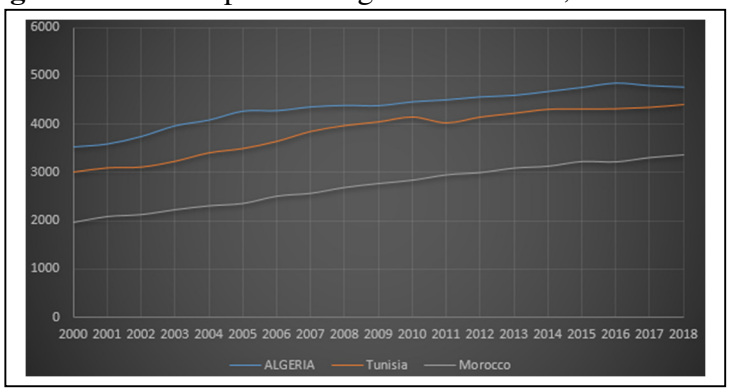
The study utilized secondary data. The data collected from different sources contained in reports, journal articles and websites. The data used covers different periods, depending on its availability.

3.2 Economic indicators

- **GDP per capita**

The reform program succeeded in reversing the long past decline in GDP growth, but the recovery is still slow and subject to large fluctuations provoked by weather and oil price variability (see Fig.1).

Fig.1. GDP Per Capita of Maghreb Countries, 2000-2017



Source: (The World Bank Indicators, 2020).

Algeria: from 2000 till 2016, the GDP per capita recorded a successive increases, where it achieved the highest value 4846.42 US dollar in 2016 as a result of a strong recovery in hydrocarbon production and higher-than-expected public spending (World Bank, 2017) . During the next two years (2017 and 2018), the GDP per capita recorded a decline, due to a slight decline hydrocarbon production and the continued modest non-hydrocarbon growth (Consulate General of Algeria in New York, 2020).

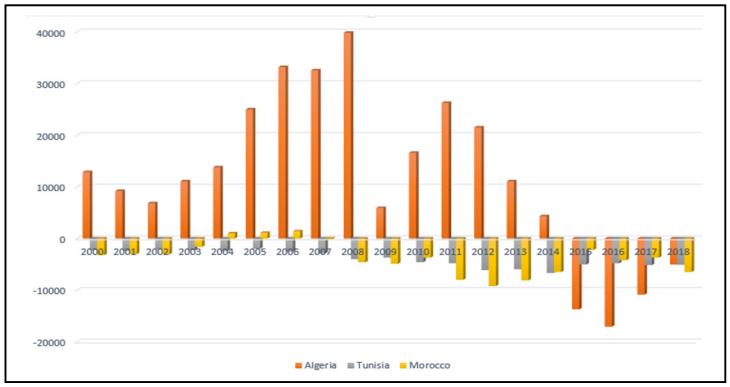
Tunisia: during the period 2000-2018, the GDP per capita registered a continues increases, where it increased from 3001.78 US dollar in 2000 to 4401.06 US dollar 2018, mainly due to the performance of manufacturing, distribution, transport and communications sectors, which considered as a main drivers of growth in Tunisia (IMF, 2016, p. 5)

Morocco: from 2000 to 2018, the country's GDP per capita knew a continuous increase, where it significantly increased from 1976.09 US dollar in 2000 to reach 3357.36 US dollar in 2018. Many strategies were launched such as "Emergency Plan" for the industrial sector, " The Green Plan" for agriculture, " The National Energy Strategy", " The Plan Azur" and "The Vision 2020 for tourism", and more recently, "The 2014-2020 Industrial Acceleration Plan". These plans underpinned the growth acceleration that Morocco has experienced since the year 2000 (Vincent , 2015, pp. 45-46)

- **Trade balance**

Fig.2 shows the trade balance in Algeria, Tunisia and Morocco) over the period of 2000-2018.

Fig.2. Trade Balance in Maghreb Countries, 2000-2018



Source: completed by the author based on the data of:

- (Centre National de L'Informatique et Des Statistiq, 2010)
- (Direction Générale De Douane, 2015)
- (IMF, 2001-2019)

Algeria: during the period 2000-2014, the trade balance registered a surplus despite the decreases recorded in some years due to the fluctuations registered in oil prices and the drop of oil exports. Where the balance of trade recorded a successive increasing from 2003 to 2008 to reach the USD 39819

million in 2008 which is the highest surplus ever realised by Algeria since the independence. This improvement is due to the increase in oil prices, which led to the rise of the oil exports revenues. Concerning the period of 2015-2018, the balance of trade registered a steep continues deficit to reach the biggest deficit in USD 17063 million in 2016, this decline was mainly due to the fall in the oil prices. In 2018, the trade balance deficit knew a significant improvement, and that due to the increase in export volume by 16.98% compared to the 2017 (ANDI, 2018)

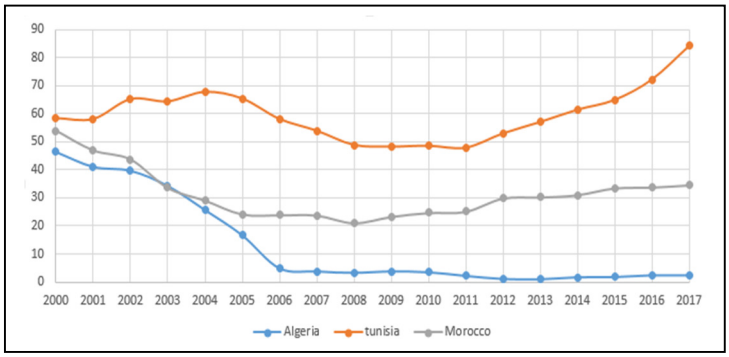
Tunisia: it is obvious from the fig.2 that the balance of trade in Tunisia registered a successive deficit and it has remained high during the period of study, where the trade deficit increased from USD 2251 million in 2000 to USD 5085 million in 2018. This deficit is mainly as a result of uncontrolled imports, especially of consumer goods, and a downturn in exportation in some sectors such as extraction industries, and the longstanding surplus on the services balance has fluctuated substantially since 2011 as a result of the decline in tourist activity and transport after the 2015 terror attacks (OECD, 2018, p. 24)

Morocco: during the period 2000-2018, the balance of trade recorded a deficit except of some years (2004-2006). The reasons of this deficit recorded are due to the spread between imports and exports has been widening since 2007.

- **External debt:**

The Fig.3 shows the external debt evolution in Maghreb countries during the period of 2000-2017.

Fig.3. External debt (% GDP) in Maghreb Countries, 2000-2018



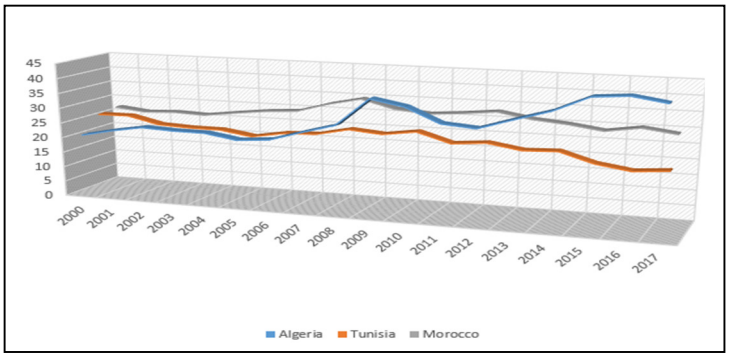
Source: completed by the author based on the data of: (IMF, 2001-2019)

Algerian external debt slowdown from 46.4 percent of GDP in 2000 to 2.4 percent of GDP in 2017, this slowdown is because the government ceased the external borrowing, and substitute it with unconventional financing, where the government changed the banking law and borrowed directly from the central bank. It also used monetary financing to buy back some of its own debt to public enterprises and debt owed by public enterprises to public banks, and as well as to finance the National Investment Fund, which led to a decrease in the proportion of external borrowing (IMF, 2018, pp. 39-40). As for Tunisian, the external debt remaining high despite the decreases registered in some years. Where the external debt-to-GDP ratio has risen to 84.2 percent of GDP in 2017, from 58.4 percent of GDP in 2000. Whereas, the external debt in Morocco decreased from 53.9 percent of GDP in 2000 to 21.1 percent of GDP in 2008 to increase again continuously to 34.5 percent of GDP in 2017. The vulnerability to external indebtedness in both Tunisia and Morocco has been worsened by countries' weak economic performance; the growth slowdown in the regions has been associated with increased accumulation of external debt (African Development Bank Group, 2018, p. 18).

- **Gross fixed capital formation:**

From the fig.4, we note that the gross fixed capital formation (GFCF) as a percentage of GDP in Maghreb countries was fluctuating between rising and declining during the period 2000-2017. Algerian GFCF increased from 20.68% of GDP in 2000 to 41.44% of GDP in 2017, due to the decline in private consumption and investment, which pushed the government to sustained public consumption at the expense of public investment, causing gross fixed capital formation to plunge (Stephen J & et al, 2019, p. 110). In Tunisia, the GFCF was 23.39% of GDP in average, decreasing by 27.54% in 2017 compared with 2010, although the reforms made by the government to create an enabling environment for business. As for Morocco, the GFCF registered 24.48% of GDP in average, where it dropped from 30.03% of GDP in 2016 to 28.46% of GDP in 2017.

Fig.4. GFCF (% GDP) in Maghreb Countries, 2000-2018



Source: (The World Bank Indicators, 2020).

3.2 Social indicators

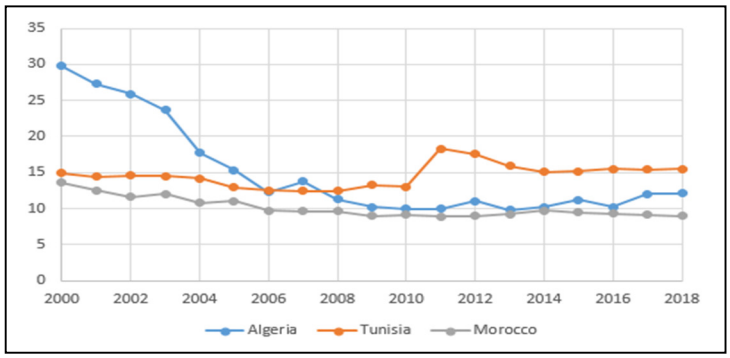
- **Unemployment:**

The unemployment rate of Algeria has been declining, falling from 29.8% in 2000 to 9.8% 2013, but the youth unemployment remained high. In 2014, the unemployment rate started to increase to reach a level of 12% in 2018, reflecting the sluggish non-hydrocarbon growth. Unemployment is particularly high among educated, youth, and women (The World Bank, 2017)**.**

From 2000 to 2018, the unemployment rate for Tunisia was 14.61% in average. Tunisia unemployment rate fluctuated substantially, where it recorded the highest rate 18% through 2011-2012 period, due to the political and economic uncertainty which affected the employment situation and led to a decline in tourism earnings and lack of visibility for investors, who have either postponed their project or withdrawn their capital, depriving the economy of thousands of jobs (The Economic Commision for Africa, 2014, p. 8). The unemployment rate has been downward track since 2013, where it has declined from its peak of 18.3% in 2011 to 15.5% in 2018.

As for Morocco, the unemployment rate fell gradually from 13.6% in 2000 to 9% in 2018, but remains particularly high among youth and graduates (26 percent and 17.1 percent, respectively) (IMF, 2019, p. 5)

Fig.5. Unemployment rate (%) in Maghreb Countries, 2000-2018

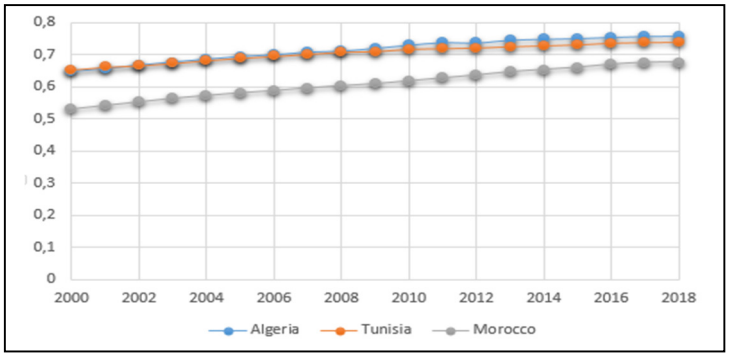


Source: (The World Bank Indicators, 2020).

- **Human development index:**

During the period 2000-2018 Algeria, Tunisia and Morocco experienced different degrees of progress toward increasing their HDIs.

Fig.6. HDI trends for Maghreb Countries, 2000-2018



Source: (Human Development, 2019)

Between 2000 and 2018, Algeria's human development index (HDI) value increased from 0.646 to 0.759, an increase of 17.49%, Algeria was classified as the first Maghreb country with a high HDI according to the latest annual report of the United Nations Development Programme (UNDP) on the world ranking of countries, where it ranked 82 out of 189 countries. Tunisia is among the countries, which are close to Algeria in HDI trend, which has ranked 91 in 2018, placing it in second rank of Maghreb countries with high HDI. As for Morocco's HD score is improving from 0.531 in 2000 to 0.676 in 2018, but it remains with the group of countries with medium HD, which

occupied the 121 rank in 2018. Table.1 shows the progress achieved by Maghreb countries in the various HDI.

Table 1. Human development indicators for Maghreb countries in 2018

Countries	GII	IHDI	MPI
Algeria	0.442	0.604	0.008
Tunisia	0.300	0.585	0.005
Morocco	0.492	-	0.0085

Source: (Human Development, 2019).

❖ **Gender inequality index (GII):**

Algeria's GII for 2018 is 0.443, ranking it 100 out of 162 countries in the 2018 index. In Algeria 39.1% of adult women have accessed at least a secondary level of education in contrast with 38.9% for male. Women face significant barriers in accessing the job market, representing only 14.9% of the labor force (BTI, 2018). For every 100,000 live births, 140.0 women die from pregnancy related causes; and the adolescent birth rate is 10.1 births per 1,000 women of ages 15-19 (UNDP, 2019, pp. 5-6)

Tunisia has a GII value of 0.300, ranking it 63 among 162 countries. Women with at least secondary level of education is 42.3% compared to 54.5% for men. Female labor force participation as a share of the total is a low 24.1%, compared to 69.6% for men. For every 100,000 live births, 62.0 women die from pregnancy related causes; and the adolescent birth rate is 7.8 births per 1,000 women of ages 15-19. (UNDP, 2019, p. 5).

Morocco's GII performance as particularly low (0.492), ranking it 118 out of 162 countries. Gender inequality is strongly driven by imbalances in literacy (64.59% for adult female and 83.30% for adult men). For every 100,000 live births, 121.0 women die from pregnancy related causes; and the adolescent birth rate is 31.0 births per 1,000 women of ages 15-19 (UNDP, 2019, p. 5). Labor force participation for women is 21.4% compared to 70.4% for men.

❖ **Inequality-adjusted HDI (IHDI):**

When the value of HDI is discounted for inequality, the HDI for Algeria and Tunisia falls to 0.604 and 0.585 respectively, which represent a loss of 20.4% and 20.8% respectively, and that due to the inequality in the distribution of the HDI dimension indices (life expectancy at birth, expected years of schooling, means of schooling and GNI per capita). As for Morocco, due to a lack of relevant data, the IHDI has not been calculated for this country (UNDP, 2019, p. 4).

❖ **Multidimensional poverty index(MPI):**

The MPI identifies how people are being left behind across three key dimensions: health, education and standard of living, comprising 10 indicators (UNDP, 2019)

Table 2. Multidimensional poverty index for Maghreb countries in 2018

Countries	Survey year	MPI value	Health	Education	Standard of living
Algeria	2012/2013	0.008	29.9	46.8	23.2
Tunisia	2011/2012	0.005	25.7	50.2	24.1
Morocco	2011	0.085	25.6	42.1	32.3

Source: (UNDP, 2019, pp. 320-321)

According to Arab multidimensional poverty report 2017, Algeria and Tunisia were classified as countries with very low levels of both acute poverty and poverty, whereas Morocco was classified with countries that have low levels of acute poverty but medium levels of poverty (Kalid Abu Ismail et al, 2017, p. 13). The MPI value in Algeria and Tunisia was 0.008 and 0.005 respectively, compared to 0.085 in Morocco. Form table.2 we note that the education dimension contributes the most to acute poverty, and health dimension follows it except in Morocco where the standard of living occupied the second rank as a contributor to the acute poverty. Years of schooling and nutrition are the highest contributors to acute poverty in the education and health dimension.

In Algeria, 5.8% of the population is considered vulnerable to fall back into poverty, while 2.1% of the population in multidimensional poverty. The

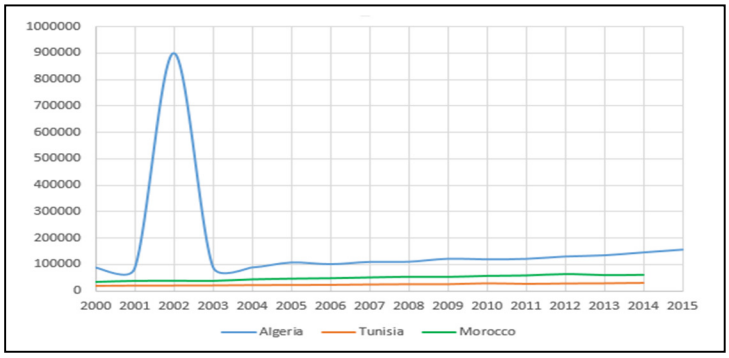
national poverty rate was 5.5%, with 0.5% of the population living in extreme poverty. Poverty measured as living on less than $1.90 a day at 2012-2013 international PPP-adjusted price affected 5.5% of the population lived below the national poverty line. As for Tunisia, 15.2% of Tunisians live on an income below $1.9 per day (2011-2012), 1.3% of the population are multidimensional poverty and 3.7% of the population are vulnerable to fall back into poverty. In Morocco, 4.8% lived on less than $1.90 a day (2011 PPP), 18.6% of the population are classified as multidimensional poverty, while 13.2% of the population are vulnerable multidimensional poverty.

3.3 Environmental indicators

- **Co2 emissions:**

Fig.7 shows the co2 emission trends in Maghreb countries during the period 2000-2014.

Fig.7. Co2 emissions trends, 2000-2014



Source: (The World Bank Indicators, 2020)

The level of co2 emissions for Algeria has increased dramatically over the period 2000-2014, where it increased from 87861,32 kt in 2000 to 145400,22 kt in 2014 growing at average annual rate of 4.37%. The electricity production is the main source of co2 emission, and due to Algeria's reliance on fossil energy for electricity generation. The transport sector considered as the second main source for co2 emissions, where it is a significant contributor to co2 emission, that is due to obsolescence of cars, where more than 57% cars exceeding the age of 20 years (ONS, 2015, p. 55)**.**

As for Tunisia, the co2 emissions grew substantially from 19922,811 kt in 2000 to 28829,954 kt in 2014 rising at an average annual rate of 2.98%. The energy sector was the main contributor to national CO2 emissions

(38.7%), followed by the transport sector (25.2%) and industrial activities (21.3%) (Souhir Abbes, 2018, p. 177). Electricity and heating network production (7.6 million tonnes of CO2) represents the main source of CO2 emissions due to combustion (MTEATDD, 2014, p. 26).

From 2000 to 2012, Co2 emissions of Morocco recorded a successive increasing, where it increase from 33905.08 kt in 2000 to 62731.36 kt in 2012, which is the highest level of co2 emission, and then decreased to 59863,775 kt in 2015. The main sources of CO2 emissions in Morocco are energy use in electricity generation (37%) transport (28%), industry (15 %), commercial and residential buildings (11% and 8% respectively) (Grzegorz Peszko et al, 2019, p. 18)

- **Water scarcity:**

The Maghreb has climates changing from north to south, a divided and dispersed hydrography (some average-sized rivers only in Morocco), and an important endorheic zone (especially in the Sahara). It has scare resources but very few transboundary exchanges (FAO, 2003, p. 51).

Table 3. Renewable internal freshwater resources per capita, 2002-2014

years	Algeria	Tunisia	Morocco
2002	351.67	424.97	984.56
2007	328.35	407.10	930.57
2012	300.49	386.74	872.39
2014	288.95	379.19	848.14

Source: (The World Bank Indicators, 2020)

Algeria has one of the highest average population growth rates in the world (around 1.7%) and scare natural water supplies (Nadjib Drouiche et al, 2012, p. 272). The annual per capita renewable water resources dropped from 351.67 cube meters in 2002 to 288.95 cube meters in 2014, well below the threshold 1000 cube meters per person in the population. Agricultural irrigation is the primary water-consuming sector followed by the domestic and industrial sectors (METAP, 2018).

Tunisia is considered to be one of countries in the Mediterranean basin least well-endowed with water resources (Mohamed , 2009, p. 1). The renewable water resources per capita knew a decline from 424.79 cube meters in 2002 to 379.19 cube meters in 2014. This is below the accepted annual per capita water scarcity threshold of 1000 cube meters, 84% of withdrawn water is allocated to agricultural irrigation and 16% to household tourism and industrial uses, agricultural water use has double over the last 15 years (The World Bank, 2018).

In Morocco, 80% of territory is arid to semi-arid. Due to a combination of strong population growth in the 20th century, economic development, a strong decline since 1980 in precipitation (-15% to -20%) and commensurate decline in river runoff (-30% to 40%), water resources availability is already under severe pressure (World Bank Group, 2017, p. 5). The renewable water resources has dropped from 984.56 cube meters in 2002 to 848.14 cube meters in 2014, which is under the threshold 1000 cube meters. Agricultural irrigation is allocated 83% of withdrawn water leaving 17% for municipal, tourism and industrial uses (METAP, 2018).

- **Forests**

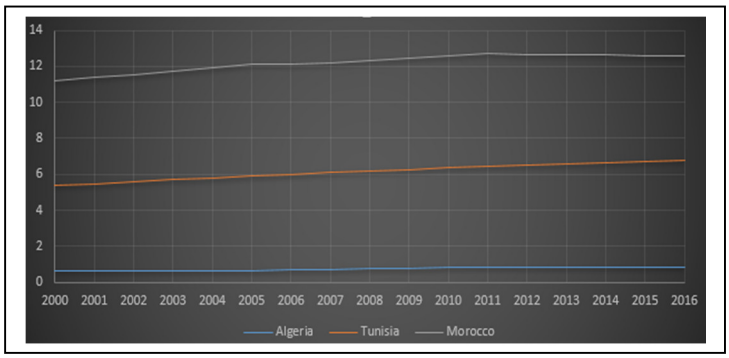
Algerian forests are classified as Mediterranean forests. These forests are deeply disturbed (Saifi Merdas et al, 2017, p. 117), in Algeria, total forest is approximately 4.1 million ha, of which 440,000ha that is historically cork oak forest and that is ecologically suitable for the cork oak forest (FAO, 2018). The forest area in Algeria increased modestly from 0.66% of land area in 2000 to 0.82% of land area in 2016. The Algerian forests has suffered greatly in recent decades due to anthropogenic pressure. Moreover, the forest area affected by fires, with an average of 1912 fires per year destroying 36205ha, or nearly 1% of the forest, Algeria presents a relatively high fire risk (FAO, 2018).

As for Tunisia, according to the World Bank data there has been a slight increase since 2000 in forestation from 5.39% of land area to 6.77% of land area in 2016. Similarly, annual deforestation has increased from 400 ha (1996-2010) to 800 ha for the period 2011-2014 (Hamed, 2015, p. 1).

As for Morocco, the forestland represent only 12.6% of total land area in 2016, growing at average rate of 0.13% during the period 2000-2016. Moroccan forests have been suffering a disturbing degree of degradation for

several years, with annual losses of about 30 000 ha. Human pressure continues to grow and Moroccan forests seem to be strongly affected by the complex interactions between natural and human factors. In general, forest stands are degraded and often sparse and fragmented. The undergrowth is overgrazed and soils have become more vulnerable to water erosion, a phenomenon particularly marked in forests on slopes and in semi-arid bioclimates (FAO, 2003).

Fig.7. Forest area (% land area), 2000-2016



Source: (The World Bank Indicators, 2020)

3.4 institutional indicators

- **Internet users**

The internet uses in Maghreb countries driven by increased smartphone usage (see table 3). Between 2000-2019, the number of users internet in Algeria has increased from 0.49% to 59.6%, reaching performance of nearly 121 times. The number of internet users increased from 50000 in 2000 to 25.43 million in 2019, growing by 50.76%. For the same period, the number of internet users in Tunisia reached 7.9 million in 2019, is capturing a growth of 7.8% and penetration rate of 67%. As for Morocco, the number of internet subscribers reached 23.74 million in 2019, recorded growth of nearly 23.64% and penetration rate of 64.8.%.

Table 3. Internet users (%), 2000-2019

Countries	Indicates rates increased	Performance
Algeria	0.49% to 59.6%	120.63
Tunisia	2.75% to 67%	23.36
Morocco	0.69% to 64.8%	92.91

Source: (World Internet Stats, 2020)

According to Speedtest Global index in October 2019, Morocco had the fastest mean download speed over fixed broadband in North Africa during Q2-Q3 2019 at 15.38 Mbps, Tunisia placed in the fourth place at 8.64 Mbps and Algeria fifth at 4.55 Mbps (Isla, 2019). Meanwhile, Tunisia ranked 65th out of 137 countries in the mobile internet speed on the Speedtest Global index with 23.86 Mbps. Morocco was the 75th at 21.58 Mbps, followed by Algeria in the 135th at 6.19 Mbps. The final ranking of Algeria was mainly impacted by low mobile and broadband internet speeds, low affordability of mobile and broadband internet, poor e-government development, and the second lowest score in cybersecurity. (Surfsharrk, 2019, p. 21). Morocco had the highest 4G availability, with consumers able to access 4g LTE in 83% of surveyed location. Tunisia had the second highest 4G availability at 64% and Algeria fourth at 45.5% (Isla, 2019).

- **Mobile cellular and fixed telephony subscriptions**

Telecommunications market in Algeria is undergoing an evolution, particularly in fixed telephony; the latter has grown both in terms of service quality and number of subscribers since the year 2000 (MPTTN, 2020), the number of the subscribers to fixed line in Algeria reached 9,91 per 100 inhabitants in 2017, recorded growth of 74.62%. According to MPTTN, the density of fixed telephony reached 7.50% in 2017, compared to 8.26% in 2016; this drop is due to the citizen's approach to the mobile phone (MPTTN, 2020)**.** The mobile phone market in Algeria has developed since the enactment of the general law n^{o} 2000-03 of August 5th 2000, which allowed opening this sector to competition. The number of subscribers to mobile phone had witnessed an increasing from 0.28 per 1000 inhabitants to 111.67

per inhabitant in 2000. This is due to the pre-card payment system favoured by the Subscriber to its low consumption and ease of mobility, for that reason, each operator suggests the most attractive and innovative offers than the other competitive one's such as second pricing system and periodic reductions (Leila, 2019, p. 125).

Total fixed telephone penetration in the Tunisia is reaching 11.26% in 2018, the number of fixed line subscribers increased from 0.96 million in 2000 to 1.30 million in 2018. The mobile phone in Tunisia has expanded rapidly, Tunisia ranked fifth in the MENA region in Q1 2018, reflecting the relatively high level of maturity in the Tunisian mobile market (GSMA, 2018, p. 4). There were 14771 mobile subscribers in 2018, with density increasing from 1.03% in 2000 to 127.71% in 2018, following strong growth of the market since the introduction of competition in 2001 (GSMA, 2016, p. 4)**.**

Fixed telephony contributes negligibly to the Telecommunications sector, and its role has been steadily decreasing in step with the rise of mobile voice and broadband services (Arabisklondon, 2018, p. 10). After 2010, Morocco's fixed line subscriber decreased from 3.75 million to 2.2 million in 2018, with a penetration rate of 6.10%. Mobile telephony is the most robust segment of Morocco's telecommunications and IT sector. An increasingly competitive market landscape has promoted innovation and service development in the segment (Arabisklondon, 2018, p. 9). The total penetration mobile phone users in Morocco is almost 124.17% in 2018, the number of subscribers reached nearly 45 million in 2018.

4. CONCLUSION

The purpose of this study has been to assess trends and progress of sustainable development in Maghreb countries (Algeria, Tunisia and Morocco), by using some SD indicators.

The result of the analysis of the economic indicators showed that Algeria's economy is still highly dependent on hydrocarbons and is therefore vulnerable to changes in world oil price, which affected the Algerian economic performance. The economic performance for both Tunisia and Morocco characterized by fluctuation and instability.

Although the improvement witnessed by the Maghreb countries in the level of some social indicators such as human development index ranking, reduction of poverty and employment. However, these countries are still faces

challenges in this filed such as the inequality in the distribution of the HDI dimension indices, the weakness in the education and health sectors which contribute to the poverty in both Algeria and Tunisia. As for Morocco the standard of living is consider as the most contribute to the poverty.

The environment situation in Maghreb countries is still suffer from many problems such as high levels of co2 emissions particularly in Algeria, water scarcity, and forest depletion due to many factors (human factors and natural factors).

The telecommunication sector in Maghreb countries knew an improvement since 2000, due to reforms made by these countries and the increase of smartphone usage. Morocco has the fastest mean download speed on mobile and fixed line in North Africa, while Algeria placed in the final ranking due to low mobile and broadband internet speeds, low affordability of mobile and broadband internet…etc.

In light of the results of our study, the following recommendations are required:

- Develop and implement strategies effective strategies to reduce macroeconomic imbalances, and promote more inclusive growth, and create jobs especially for young people, and construct an agricultural industry to sustain food security.
- Improve the quality of education and the quality of health services.
- Develop and implement a new strategy for managing and improving of scare water resources that. Reduce air pollution from energy sources and transport by phasing out leaded gasoline and high-sulfur fuels, and enhancing the adoption of clean process and renewable energy technologies, strengthening environmental institutions and public participation.
- Develop the national strategies for the digital quality life, through improving internet speed, training in information technology.

5. Bibliography list:

- World Bank Group. (2017). Managing Urban Water Scarcity In Morocco. Washington: World Bank.
- African Development Bank Group. (2018). North Africa Economic Outlook 2018: Macroeconomic Developmenys and Poverty,

Inequality and Employment, Agriculture Production anf Food Security. Tunisia: African Development Bank Group.

- ANDI. (2018). Foreign Trade Statistics: 2018, http://www.andi.dz/index.php/en/statistique/bilan-du-commerce-exterieur, consulted on 22/01/2020.
- Arabisklondon. (2018). Morocco: Telecommunicatios&IT. London: Arabisklondon.
- BTI. (2018). Algeria Country Rport, https://www.bti-project.org/en/reports/country-reports/detail/itc/dza/, consuled on 02/02/2020.
- Centre National de L'Informatique et Des Statistiq. (2010). Les Réalisations Des Echanges Extérieurs De L`Algérie Période 1963-2010. `Algérie: Centre National de L'Informatique et Des Statistiques.
- Consulate General of Algeria in New York. (2020). Overview of The Algerian Economy. https://www.algeria-cgny.org/overview-of-the-algerian-economy1-2/, consulted on 02/02/2020.
- Direction Générale De Douane. (2015). Rapport Périodique: Evaluation De la Balance Commercial de L`Algérie Période: 2005-2015. Algérie: Direction Générale De Douane.
- FAO. (2003). Forest and The Foresty Sector: Morocco. Retrieved 02 15, 2020, from Food And Agriculture Organization Of The United Nations: Forests and the foresty sector: Morocco
- FAO. (2003). Review Of World Water Resources By Country. Rome: Food And Agriculture Organization Of The United Nations.
- FAO. (2018). Algeria and FAO: Partnering for sustainable agricultural development and food security. Rome: Food And Agriculture Organization Of The United Nations.
- Grzegorz Peszko et al. (2019). Environmental Fiscal Reform In Morocco: Options and Pathways. Washington: World Bank Group.
- GSMA. (2016). Digital Inclusion and Mobile Sector Taxation In Tunisia. London: GSMA.
- GSMA. (2018). Reforming Mobile Sector Taxation In Tunisia: Maximising The Economic and Social Benefits of The Mobile Sector Through A More Efficient Tax System. London.

- Hamed, D. (2015). Tunisia Case Study: Prepared for FAO as Part Of The State Of The World's Forests 2016 (SOFO). Rome: FAO.
- Human Development. (2019). Human Development Index and Its Components, http://hdr.undp.org/en/data, consulted on 01/02/2020.
- IMF. (2001-2019). IMF Country reports: Algeria, Tunisia, Morocco. Washington.
- IMF. (2016). IMF Country Tunisa Report. Washington: International Monetry Fund.
- IMF. (2018). IMF Country Algeria Reports. Washington: International Monetary Fund.
- IMF. (2019). Morocco: IMF Executive Board Concludes 2019 Article. Washington: International Monetary Fund.
- Isla, M. (2019). An Analysis of Internet Speeds and 4G In North Africa, https://www.speedtest.net/insights/blog/north-africa-internet-speeds-2019/, consulted on 16/02/2020.
- Kalid Abu Ismail et al. (2017). Arab Multidimensional Poverty. United Nations: United Nations publication.
- Leila, K. (2019). The Impact of Fixed and Mobile Telephones On Economic Growth In Algeria During The Period From 1963 to 2015. Advanced in Economics and Business, 7(3), 124-136.
- METAP. (2018). Water Quality Management: Algeria. Washington: World Bank.
- METAP. (2018). Water Quality Management: Morocco. Washington: World Bank.
- Mohamed , E. J. (2009). Tunisia's Experience In Water Resource Mobilization and Management. World Development.
- MPTTN. (2020). Core Indicators of ICT Development, https://www.mpttn.gov.dz/en/content/standard-indicators, consulted on: 19/02/2020.
- MTEATDD. (2014). Convention Cadre Des Nations Unies Sur Les Changements Climatiques : Premier Rapport Biennal De La Tunisie. Tunisia: Ministère tunisienne de l'Equipement, de l'Aménagement du Territoire et du Développement Durable.

- Drouiche, Nadjib et al. (2012). Towards Sustainable Water Management In Algeria. Desalination and Water Treatment Journal, 50, 1-3.
- OECD. (2018). OECD Economic Surveys: Tunisia. Organisation for Economic Co-operation and Development.
- ONS. (2015). Statistiques Sur L'Environnement. Algérie: Office National Des Statistique.
- Saifi Merdas et al. (2017). Reforestation In Algeria: History, Current Practice and Future Perspectives. Reforesta Journal(3), 116-124.
- Abbes, Souhir. (2018). Growth In Transport Sector CO2 Emissions In Tunisia: An Anaysis Using a Bound Testing Approach. INT.J Global Energy Issues Journal, 41, 176-197.
- Stephen J, K., & et al. (2019). The Lure of Authoritarianism: The Maghreb After The Arab Spring. United State of America: Indiana University Press.
- Surfsharrk. (2019). Digital Quality of Life: Global Research of 65 Countries Digital Quality of Life. Tortola, https://surfshark.com/dql, consulted on 18/02/2020.
- The Economic Commision for Africa. (2014). Tunisia: Economic Situation and Outlook in The Current Transition Phase. Ethiopia: The Economic Commission for Africa.
- The World Bank. (2018). Water Quality Management: Tunisia. Washington: World Bank.
- The World Bank Indicators. (2020). World Bank Data Indicators, https://data.worldbank.org/indicator, consulted on 12/01/ 2020.
- UNDP. (2019). Inequalities In Human Development In The 21st Century: Briefing Note For Countries On The 2019 Human Development Report: Morocco. New York: United Nations Development Programme (UNDP).
- UNDP. (2019). Inequalities In Human Development In The 21st Century: Briefing Note For Countries On The 2019 Human Development Report: Tunisia. New York: United Nations Development Programme (UNDP).

- UNDP. (2019). Inequalities In Human Development In The 21st Century: Briefing Note For Countries On The Human Development Report: Algeria. New York: United Nations Development Programme (UNDP).
- UNDP. (2019). The 2019 Global Multidimensional Poverty Index (MPI), http://hdr.undp.org/en/2018-MPI, consulted on 08/02/ 2020.
- UNECA. (2020). First report on SDG implementation in Maghreb countries,https://www.uneca.org/publications/first-report-sdg-implementation-maghreb-countries, consulted on 10/01/2020.
- Vincent , C. e. (2015). Morocco's growth diagnostic: identifying Morocco's binding constraints to broad-based growth. ADF, Government of Morocco, MCC.
- World Bank. (2017). Algeria's Economic Outlook, https://www.worldbank.org/en/country/algeria/publication/economic-outlook-april-2017, consulted on 15/01/2020.
- World Internet Stats. (2020). Internet World Stats: Usage and Population Statistics, https://www.internetworldstats.com, consulted on 15/02/2020.