Use of AI in Predicting Trends in Vegetation Dynamics in Africa

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INTRODUCTION OF THE START-UP ENVIRONMENT AFRICA

The African continent offers through its dynamic demographic outlook rich promises for investors and entrepreneurs. The growth rate of the African population is exponential. In 1950 the African population was 250 Million inhabitants, 900 million in 2010, and 1,3 m billion today (National Institute of Demographic Studies, INED). Current forecasts point to a population that should reach 2.3 billion (INED) and 4.5 billion at the end of the century according to the United Nations (UN).

In 2050 Nigeria will be the third most populous country of the world with an estimated population of 433 million inhabitants compared with that of the USA, 423 million inhabitants of European Union, 500 Million inhabitants, China, 1,3 billion, and the India 1,6 billion.

Authors estimate that in 2050, Africa's GDP will be close to that of the European Union (Severino and Hadjenberg, 2016). At the same time the population will exceed two billion inhabitants. Two economic sectors seem particularly attractive: agro-business and Telecom. Africa jumped step infrastructure in fixed-line telephony to fully enter the era of mobile phones. The African continent is therefore in mobile telephony today, the second largest market in the world behind Asia. In the field of agro-food and the agro-business market estimated at 313 billion dollars in 2010 will reach 1000 billion in 2030 according to Severino and Hadjenberg (2016).

Such dynamism coupled with the emergence of a middle class and the emergence of a new generation of entrepreneurs, SME owners, of investors, constitute an extremely favorable environment for the development of start-ups in Africa. However, these undeniable assets should not mask the diseases plaguing the continent and that we will discuss.

BACKGROUND: THE EVILS SUFFERED BY AFRICA

Chronic Political Instability

In the fall of the colonial system, peace and stability were two of the main challenges African countries faced because of their political and institutional history. Although the colonial period was short-lived,

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it had strong impacts and participated in the complete remodeling of the continent as it is underlined in many works including « General History of Africa, vol. 7 » (UNESCO). It created new states, redefined the stakes of power, reoriented economic structures crystallized new interests... The risk, under these conditions, was to see the continent sink into interminable border wars after the end of colonial regulation (Shillington, 1995).

A posteriori, Africa does indeed appear to be *"the region of the world most affected by armed struggles or political crises that bear the seeds of war"* (Shillington, 1995). As it can be seen on the map, (Figure 1) a significant number of African countries which is far from exhaustive was affected by some form of conflict between the first independence and the early 1990s. (Tableau Public, 2019). Compared to Europe and the United States, Africa has experienced a higher number of conflicts. Their number also remained high until 2002, a period from which they seem to decrease (Tableau Public, 2022).

Since 2010, West Africa has experienced an intensification of violence and an increase in conflicts (Amnesty International). While the growth prospects seem very encouraging, these difficulties could hamper its future development and fuel the question about the economic and social advances made by the countries of the sub-region (Mali, Burkina Faso, Nigeria, Ghana, Sierra Leone, etc.). West Africa has indeed been destabilized by outbreaks of violence, the resurgence of conflicts and the rise of religious extremism, in particular in Mali and northern Nigeria (RFI, 29.09.2013). Drug trafficking and maritime piracy have also quickly taken root there, contributing to the lasting weakening of countries like Guinea-Bissau. The main challenge for the sub-region will be to overcome violence and fragility in its most vulnerable areas to let continue the impressive progress made over the past decade in strengthening democracy and economic development.

There is dramatic record characterized by an infant mortality rate of 74 per 1000 compared to an average of 44 per 1000 worldwide and 6 per 1000 in the United States and Europe. While life expectancy is 70 years on average globally, it is only 63 years in Africa (INED).

FOCUS OF THE ARTICLE: A CONTINENT RICH IN NATURAL RESOURCES BUT AN ABSENCE AND A LACK OF REDISTRIBUTION OF BENEFITS

African countries have a significant share of the world's reserves of natural resources, which in itself represents a reason of hope for the future of the continent. According to information gathered by the correspondent of the Turkish press agency Anadolu (https://www.aa.com.tr/), a significant volume of minerals (oil, natural gas, diamonds, gold, uranium, cobalt, platinum, copper, tantalum) used in the production of manufactured products are extracted from the subsoil of the African continent. Africa has long been despoiled by foreign hands and even today, new discoveries of deposits are attracting the appetite of large international groups. The largest cobalt resources are utilized in the manufacture of mobile phones and laptops; they are extracted in Rwanda and the Democratic Republic of Congo (DRC). The DRC alone supplies more than half of the world's cobalt ore needs. When it comes to gold and diamonds, some African countries are among the biggest players in the sector. Botswana, South Africa and the DRC are among the largest diamond producers in the world along with Russia and Canada. For gold, it is South Africa and Ghana. Used as fuel in nuclear power plants, uranium is one of the continent's other assets. Niger and Namibia are placed respectively in 4th and 5th position in the list of uranium producers in the world after Kazakhstan, Canada and Australia. In addition, rhodium and platinum, two elements that are the essential components to produce car catalytic converters, come mainly from South Africa.