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GLOBAL OPEN DATA FOR AGRICULTURE AND NUTRITION (GODAN) BY

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ABSTRACT

The 21st century ushers in a far-reaching transformation of the global economy, and in particular the agricultural sector, which is spearheading the economic development of the African continent. This is due, in particular, to a combination of factors resulting mainly from the global warming as well as the population growth the continent would experience by 2050.

As we know, most of the world's population growth will occur mainly in Africa, where the population of several countries is expected to double in the next 30 years. This change puts considerable pressure on the agricultural sector, which will have to increase food availability by more than 60% compared to the current level.

Furthermore, climate change is also a barrier to increased productivity, causing water scarcity, increased land degradation and greater crop vulnerability.

Also, the ageing of farmers - 58 years on average in Africa - is raising concerns about the future of the sector.

What can be done to address these challenges? We need to invest more in innovation. In particular, with regard to technologies related to weather, markets, as well as geospatial data. To this end, we propose more extensive access and adapted solutions to the needs of smallholder farmers, as they constitute nearly 90% of African farmers.

In this discussion we intend to report on several initiatives in this regard, building on close collaboration between the government and research sectors - data sources - and the private sector, a major user and developer of applications, equipment and methods that are better adapted to today's reality. We shall equally give a brief overview of such initiatives and draw the most relevant conclusions to keep stimulating this drive towards progress.

I. INTRODUCTION

In all fields, since the beginning of humanity, progress has emerged from the know-how of our forefathers, but above all from human curiosity and its ability to analyse the environment, to learn and better understand its evolution, and finally, from technology, which makes it possible to store, analyse and disseminate knowledge.

The world has undergone major transformations in this area over the course of the current generation. The advent of the internet has in itself been a revolution, allowing for the first time instant access and global sharing of knowledge. Smartphones have taken this revolution to the very depths of our countries and continents, producing a true democratization of knowledge.

This democratization, which is still imperfect, will eventually make it possible to overcome three digital divides: Rapidly decreasing costs and the greater availability of powerful information management systems will increasingly enable emerging economies to benefit from applications and equipment previously reserved for wealthier countries. The second divide, present in Africa, as in most of the world, is the split - which some would describe as growing - between small agricultural producers, traditional and typically operating on small farmlands, and the large industrial farms, which is taking an increasing share of the sector. The third digital divide is the gender divide. Indeed, women actors in the agricultural sector in Africa generally have less access to technology, despite the fact that they constitute the largest part of actors in the sector.

II. DEVELOPMENT OF THE TOPIC

The significant reduction in information processing costs has been falling sharply, particularly over the past two decades. Similarly, the processing power available to the general public has increased considerably during this period, opening up new avenues for sustainable economic development.

One may think of the significant use of mobile phones, which has resulted in a significant progress in the sharing and democratization of knowledge. Similarly, the availability and use of sensors at all levels, from IOT to satellite imagery, have also enabled rapid progress, allowing significant productivity increases in the following areas: Reduction or reversal of land degradation, better water management (precision irrigation and better use of rainfall), reduction of input costs (precision agriculture) and increase in income (market data).

In addition, the new generation, more educated than the previous, more tech-savvy, is receptive to new technologies, those that can make the agricultural sector more attractive, less strenuous and more profitable. It is therefore essential that we succeed in democratizing knowledge by democratizing data, making them more available, easier to assimilate and, above all, used by those for whom they are intended: farmers.

III. CONCLUSIONS AND RECOMMENDATIONS

To overcome the challenges related to global food security, we will need to take the following steps:

- 1- Establish, as a matter of basic principle, the openness and dissemination of data resulting from research in Agriculture and Nutrition.
- 2- Develop data dissemination programmes, particularly in relation to women and smallholder farmers.
- 3- Support for targeted training programmes for both decision-makers and intermediaries, whose mandate is to support farmers (such as agricultural extension workers, managers of cooperatives, farmer associations, etc.).
- 4- Facilitate the organization of activities aimed particularly at youth, in terms of using data for increased productivity, such as hackathons, webinars and other events.

- 5- Development of policies promoting data-driven agriculture.
- 6- Greater participation of the private sector, particularly at the pre-competitive level, in all aspects of the agri-food system.
- 7- Regional awareness raising towards a better distribution of agricultural knowledge among women and young people.