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SOCIAL AND COMMERCIAL BENEFITS OF GEOINFORMATION

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1. It is a secret for nobody that Africa is struggling to keep an honorable position in the concert of nations, - I should say concert of regions – in a context of growing global economy. Depending on one's position about Afro-pessimism, the global economy perspective can be perceived either as a threat to our future, or as a historical opportunity to build Africa as dreamed at by our venerable first leaders. To my point of view, the most dangerous enemies of Africa are not those who proclaim their Afro-pessimism, but rather the inert mass of those claiming nothing, sitting in the stillness, and pulling backward the courageous sons of Africa trying to have the community of African nations moving forward. As far as the global economy is concerned, a lack of reaction is equivalent to a planned death for the continent, as it appears that the globalization is a irreversible phenomenon. An example of the globalization effects are illustrated by the last argument between the US and the EU about the banana business. Given the positions adopted on the issue, does Africa have any alternative but being and staying excellent? To my opinion, the message was clear enough to take away our illusions about a privileged treatment of African products (or products from the developing world) on the basis of social considerations. Africa probably have an alternative: targeting first its own 778 million people large market, especially when the raw materials' prices escape from its control?

2. They are probably not that wrong, those who are scared by the globalization perspective, taking into account the invasion of Africa by goods produced out of the Continent. In this sense, the Abuja treaty, calling for regional integration of economies as Phase One towards a full-fledged African Economic Community, is a good political response to the challenge facing our continent. But why talk about political economics when I am expected to talk about geoinformation?

3. The reason is that:

- the globalization process is a consequence or is empowered by streamlines of inter-related sets of information, turning our world into a small village as it is so often said.
- in this information age, geoinformation appears to be an enhancing factor for decision making, able as it is to influence the course of events in a positive way or in the opposite, but in any case for the interest of those who use it.

4. There is no need to insist on the abundance of information flows, thanks to the new technologies of information and communication. It is also obvious that this abundance of information carried by the communication technology can take us into a virtual world, no matter where we are staying: at the office, at home, on the road, at sea or flying. But abundant flow of information does not necessarily mean relevant information. This was understood by the community of internet specialists who device specialized browsers to facilitate and shorten our efforts in looking for the relevant information.

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[1] Prepared by André B. Bassolé, Chairman of the Advisory Committee, EIS Network in Africa, consultant , for the Economic commission for Africa. If quoting or citing, kindly credit the Economic Commission for Africa.

5. There is also no need to elaborate on the usefulness of information for decision making. Nevertheless I would like to quote Paul C. Rump who wrote in his source book on state of the environment reporting the following: "**Access to improved information does not guarantee better decisions. However, it should reduce the risk of unsustainable policies and actions**". It is very true, since there is no way of imposing the use of the relevant information to decision makers. But the decision maker who voluntarily neglects to use the right information provided to him/her can be blamed, even should be blamed.

6. In the domain of information, there is a need to be more specific about the type of information under consideration. Indeed information has a huge content and in the absence of specification about the type of information we are talking about, the statement can lead to vague and finally boring intellectual developments. In geomatics, we distinguish between spatial data and attribute data, the two being combined in a Geographic Information System (GIS) to generate geoinformation, a set of meaningful pieces of information put together, with the capacity of facilitating, solely or together with other sources, non arbitrary and responsible decision making.

7. Geoinformation is therefore the result of a data collection and integration work, that of an analysis combining spatial data and descriptive data on the basis of selected criteria, aiming at facilitating the decision making process. In this sense, geoinformation is very useful for socio-economic development, since it is assumed that the goal of all the development policies is well-being of populations. At local level, geoinformation will allow for a precise knowledge of the available resources, their quality, their geographic extent and their predictable duration in a given environment of management. At national level, sectoral information can be generated to provide the best basis for sustainable development planning, or a specific issue can be studied and illustrated in all its dimensions through geoinformation. A combination of social infrastructure data can be made with census data and provide a picture of the spatial distribution of the population, natural resources in relation with the national socio-economic investment efforts. At sub-regional or continental level, a global view revealing a outstanding phenomenon can be shown by using appropriate analytical tools with geoinformation. A typical example is the management of watershed generally developing beyond national boundaries.

8. Unfortunately, all this is easily said, but the reality is most of the time different. The difficulties limiting a spread use of geoinformation analyses in the decision making process are of various nature. The most common in African countries is the lack of expertise, the lack of coherence in datasets and the different processes followed for producing geoinformation, in relation with institutional considerations. The result is a situation where datasets are fragmented in the country, of different formats, making them impossible to integrate. The same applies for the sub-regional and continental levels where trans-boundary phenomena are difficult to show because of the differing characteristics of the information sources.

9. The relation of all these considerations with national and sub-regional economies can be considered at two levels:

- the economic consequences of irrelevant decisions taken without the help of geoinformation

management tools.

- the waste of resources resulting from a bad coordination of geomatics activities at country or sub-regional levels

10. The first level can be further divided into conscientious refusal to adopt the conclusions of analysis on one hand, and lack of geoinformation management facilities for supporting decision making on the other hand. It is sad to say, but often in our countries, experts are asked to give an advice about a situation requesting a decision, but when the technical advice of the expert is not what was expected by the decision maker, this advice is simply ignored. The use of geoinformation analysis sometimes goes along the same line, and consequences of such behavior are generally heavy for the economy and the populations. In this regard, I would like to draw your attention on the fact that an Information Working Group set up by WRI and USAID, with the contribution of African Experts, is undertaking the development of case studies in West Africa, under the coordination of the EIS Network in Africa, in view of assessing the quality of relationship between GIS analyst and decision maker and facilitate the dialogue between the two. Coming back to the case of no geoinformation use, geoinformation management facility may not exist; the risk is then the same like in the precedent situation. The impact is expressed in terms of hazardous decisions taken, with more or less risky consequences for the country.

11. The second level of economic implication is the waste of resources. When there is no coordination in the geoinformation management sphere, duplication of data collection generally takes place, through duplication of efforts, which can be translated in monetary terms, beside the inherent direct costs. The worse is that data collected in isolation for a narrow geoinformation management purpose cannot be used in combination with data collected differently from other sources. Considering that data collection and integration accounts for 60 to 70% of the total cost of setting up a stand alone geoinformation system, it is easy to have an idea of the total loss in macro economic terms. The resulting fragmented data sets are almost useless in a global perspective, or need to follow a long and costly transformation before being able to be exchanged. Sometimes the transformation process is not worth doing, since it may be more costly than restarting the collection process from scratch.

12. In order to avoid these situations in countries and sub-regions, it is necessary to set up geoinformation management policies leading to a harmonized development of the geoinformation management facilities that can be linked and lead to the emergence of national, sub-regional and continental geoinformation infrastructures (sometimes called spatial data infrastructures or integrated data infrastructures). With such an infrastructure, geoinformation is made available online, because of an harmonization process that allowed to combine contributing datasets and because of regulations agreed upon that govern the generation, access, use and dissemination of geoinformation.

13. One of the main issues to address in this sphere is how to treat geoinformation in economic terms? There are two streams in the approach to economics of geoinformation:

- the concept of geoinformation as a public good

- the concept of geoinformation as a commercial product.

Depending on the most influencing option, the policy of geoinformation adopted can lead to quite different settings.

14. The first stream flows from the surveying and mapping field. In the surveyors and cartographers community, the map is considered as a public good and every country should mobilize the necessary resources to produce it. Still, there is an optional and stronger branch in this stream coming from the army where maps are perceived as sources of strategic information and therefore their dissemination should be done very cautiously. The common denominator here is that maps fall into the sovereignty domain of nations. When we consider that more than 60% of the spatial component of geoinformation comes from existing maps, one can easily understand how this way of thinking influences the expansion and use of geoinformation. In this context the production of geoinformation will be guided by a social motive, or by national security concern. In any case, setting up a geoinformation infrastructure in such a context is not seen as a development tool, but at best as a social duty. From a user point of view, the positive aspect in this stream is that the price of maps and consequently that of geoinformation should be subsidized in order for the community of users to afford them.

15. The second stream stems from the information technology sphere where information is seen as a good, bearing a commercial value. In this environment, the value of information is assessed through the improvement or the enhancement it generates in decision making, or the cost avoidance opportunity it offers. Geoinformation being part of the information family, it should be treated according to the supporters of this idea, as a commercial good whose value is regulated by the law of demand and offer. A consequence of this option is the fact that geoinformation should bear no restriction on its access if the free market rules are to be applied. Under this vision those who can afford geoinformation will get it, no matter what the cost is.

16. This way of picturing the streams of ideas about geoinformation is somewhat exaggerated, but it shows the complexity of the issues facing Africa in the field of geoinformation management. We have a lot of surveyors (I have myself a surveying background) but not all of them are worried about losing their jobs or having to go through new training programs if maps are to be produced by computer! The young information technology supporters we have now are well aware of the need to cooperate with mapping agencies to produce accurate geoinformation. The economics of geoinformation resides in the value added to information. In that sense one can understand the position of classical surveys departments vis-à-vis the geoinformation specialists. The former are at the origin of ground data collection and their transformation into meaningful maps on paper. The latter reap the good fruits by secreting the cream from the paper map, using high technology to generate enhanced products readily usable for decision making. Fortunately, by now, this dichotomy tends to be an abstraction, since our national mapping agencies have developed skills in geomatics and acquired adequate equipment.

17. The economic benefit of a wide spread use of geoinformation is better seen at continental level. Imagine if all the countries were using the same continental geoinformation datasets covering

economic sectors like industrial production, agricultural products, natural resources, national currency rates, in addition to local time information, air traffic programs, meteorological conditions etc, The availability of continent wide information would facilitate exchange and trade within the continent and reverse our continental import /export ratio. It would all together, by cost avoidance, reduce the waste of financial resources due to the consequences of inappropriate decisions taken. It would create more opportunities because of less time spent looking for the right information and speed up the development programs.

18. Coming back to the globalization phenomenon, I would say that Africa should not miss the opportunity to make the best use and draw the highest benefit from its information potential. The dream in this area is to progressively build a continental geoinformation infrastructure. Such an infrastructure would feed all the information needs for national, sub-regional and continental level programs in fields like:

- Environmental impact assessment;
- State of the environment reporting;
- Trans-boundary ecosystems management;
- Natural hazards forecasting;
- Famine early warning;

and many more

19. This dream should not wait too long to become a reality if we take into consideration 4 major things:

- the recent initiatives taken by ECA and the others partners organizations and countries like South Africa;
- the increasing level and size of the expertise in Africa;
- the recent progress made in information and communication technologies;
- and the availability of the international community to support the development efforts deployed internally for the continent.

20. The African Information Society Initiative seems to me a good policy framework. The Committee on Development Information (CODI), together with active organizations on the continent like the EIS network in Africa, UNEP, OACT, AARSE are some of the actors that should contribute to the accomplishment of that dream.