

Brussels, March 14, 2013

A vision for the future of IICT

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Portugal has the privilege among European countries of entertaining excellent relations with countries displaying tropical climatic conditions over their entire territory or in parts of it, be they linked by historical ties or more recent specific interests. These relations constitute an advantage not only for political reasons but act also as economic, social and cultural factors of development. They have to be maintained, and possibly enhanced in view of their potential positive role in time of crisis. Science and Technology constitute a tool for such enhancement when taking into account the increasingly knowledge-based character of our global Society. The IICT should be considered as an asset in this respect and it should be fully exploited for promoting national interests

Should the IICT remain a State Laboratory? The answer is in our view positive. The IICT responds to several of the criteria which qualify an S&T institution as a State Laboratory:

- It could assist the Government in the formulation and implementation of national policies, notably the foreign policy
- It could assist the Government in discharging international obligations, notably within the frame of the European Union and of specialized organizations linked to the United Nations' system
- It could operate specialized facilities which not only correspond to its own needs but also offer a benefit for tropical countries

Should it evolve in order to fulfill in the most efficient way its tasks within the Portuguese S&T system?

Again the answer is positive and requires being qualified:

- It should continue its previous efforts for ensuring that the focus is clearly related to the needs of tropical countries, the Institute should be mission-driven.
- It should reinforce its cooperation with other Portuguese S&T institutions in order to offer to tropical countries the right spectrum of competences. The most notable issue in this respect is the health sector which has acquired such a great importance for these countries.
- It should be attentive in maintaining an adequate knowledge base inside the Institute in order to remain competitive at world level. Again, cooperation with universities and other R&D organizations could greatly assist in this respect. A careful balance between inner breeding and

input from the outside should ensure the right reservoir of human resources, not forgetting that Life Long Learning has become a must in a fast evolving Society.

- Tropical countries, notably in Africa, have a very low level of indigenous R&D due to the lack of scientists and of R&D infrastructures: Africa as a whole represents only 1.5% of the world scientific publications. Advanced training is essential in this respect and the IICT could contribute through its knowledge and its specialized infrastructures to international networks aimed at responding to this pressing need. This is something new for State Laboratories while it is routine for many universities. If the mission is carried out in well integrated networks involving higher education institutions, it could add value for the State Laboratories.
- The Institute has begun enjoying an increase in financial resources obtained through competitive bidding, originating from public or private sources. This trend should be pursued; experience in many European R&D institutions which obtain a large share of their budget through contracts shows that, if carefully steered, this process does not affect the scientific quality of the institution; on the contrary, it could help in reinforcing the mission-driven character of the work performed. In the case of the IICT, the source of contracts should be mostly international, enhancing the need for excellence.
- The Institute has been a pioneer in promoting North – South - South cooperation schemes as opposed to the traditional North-South scheme which remains for some people a somewhat outdated credo. This trend should be pursued evolving gradually towards a South – South – North scheme where emerging economies such as Brazil, China, India and South Africa should play an increasing role

Tropical Agriculture, in the widest sense of the term, should be one of the main pillars of the IICT's future activities. Why? Three reasons militate in this direction:

- As the periodical "African Business" puts it in its March 2013 edition "*Agriculture [is] still the best bet*". Despite the fact that new technologies such as the Information Technologies are fuelling the rapid growth not only of Africa but also of other tropical countries, agriculture-led growth has the greatest impact on reducing poverty. Agricultural-sectors should be chosen in view of their contribution to poverty eradication and to economic development.
- Climate change will affect largely tropical countries and, as a recent study of the University of Hertfordshire has shown, climate change will induce more crop diseases, thus affecting food

security in many countries. The competencies developed at Oeiras for the particular case of diseases of coffee should be applied to this wider issue

- Loss of biodiversity due to agricultural practices and to the impact of climate change constitutes a global issue which does not spare tropical countries. A joint effort of developed, emerging and developing countries is clearly required; the IICT should reflect about its possible contribution to this challenge.

The exploitation of the archives of the past for orienting the research of the future should be the second main pillar of the activities of the IICT. It constitutes another challenge which should be met by reinforcing the links between those dealing with this historical patrimony and those working on problems of tomorrow. In itself, the exploitation of this enormous wealth of archives from the past is a task of national and international interest well-suited for a State Laboratory but the interest goes beyond this horizon: data retrieved from this historical patrimony could assist, among others, in determining the evolution of biodiversity and in reflecting about the transformation of agricultural practices. Cartography of the past could contribute understanding the impact of climate change on landscapes and water areas.

In summary, many challenges lie ahead for ensuring a bright future for the IICT. The moribund institution visited in 1995-1996 has displayed in the last decade a strong capability of adapting to a fast evolving environment. It should continue to do so in the future decades.