

Sharing Knowledge across the Mediterranean 6th Conference

Malta, May 5th to 8th, 2011

Recommendations

Science in Malta: Participants applaud the importance given to science, technology and innovation by Prime Minister Gonzi, and congratulate him and the Malta Council for Science and Technology on the rapid increase in its budget. We underline the long-term importance of a balanced portfolio of basic and applied research. We also underline the importance for small countries such as Malta of access to international research networks, which provide excellent value for money.

Energy for Development: It is essential to focus on the needs of the populations of developing countries, particularly in Africa, for energy, notably electricity. To this end, it is necessary to develop energy infrastructure, transport and distribution at both the national and regional levels. It is also essential to develop technical competences and share best practices in governance, with a view to the efficient management of resources. Research in the region on renewable sources of energy is of high priority, as is research on novel sources of energy. All use of nuclear energy must respect the highest technical and safety standards.

Water: This is a crucial issue in the Middle East and much of Africa, so sharing knowledge and practices and capacity building in Integrated Water Resource Management are key. It is important to integrate water management with the national social agendas on poverty, education and the environment. Desalination is and will be one of the main water resources in Mediterranean and Middle Eastern countries that will help to sustain advanced societies at the edge of desert. It is therefore essential to develop affordable desalination, as well as efficient use and reuse of water via integrated renewable energy and water systems. Adequate water supply will require cooperation in water production, so it is necessary to study carefully projects like the Red Dead Sea project and alternatives, and to promote a regional master plan.

Fighting the Digital Divide: The Grid is successful, and its use in developing countries should be promoted. For this reason, issues impeding African participation in the European Grid Initiative (EGI) should be resolved. We applaud the emergence of multinational academic and research networks, but note that there remain problems with regional and national connectivity. Tools to overcome these include breaking down national telecom monopolies, or negotiating special prices and using existing capacity of dark fibre along electrical power lines, pipelines, railways, and roads. The explosion of mobile phone use in Africa opens exciting possibilities for developing a mobile based e-science. High priority should be given to monitoring and encouraging local scientific applications, e.g., via EPIKH (Exchange Program to advance Infrastructure Knowhow).

International Research Programmes: We encourage European international centres to be open to scientists from MENA and Africa. To this end, we support the extend of the fellowship programme recently established by the Sharing

Knowledge Foundation (SKF), the Royal Moroccan Academy of Sciences and CERN to other countries in the region. We encourage advanced computer centres to consider donating computers being replaced to suitable facilities in MENA and Africa. In parallel, we encourage regional networking via schools and meetings, and the emerging collaboration between Morocco, Algeria and Tunisia in high-energy physics, which we hope will include regional experimental initiatives. It is important that regional governments should avoid bureaucratic delays in processing funding requests and formalizing international agreements. We applaud the good technical and financial progress with SESAME, and initiatives to support and encourage early X-ray research in the laboratory. The ICTP already plays a valuable role in the region, and we encourage it to establish in-house groups working with other international centres, besides CERN, e.g., SESAME.

Feeding the World:

The general decline in overseas development aid for agriculture implies that a greater effort is needed at the national and local levels to improve and sustain agricultural productivity. Changes are required in institutional, managerial and financial resources for the agricultural sector. Agricultural productivity could be enhanced through technical interventions (seeds and fertilizers), access to finance, access to competitive markets and increased commitments from governments to agricultural development. Development and dissemination of drought and flood tolerant crop cultivars, provision of weather-index crop insurance for farmers, expansion of irrigation and water management activities and strategic grain reserves at the national and regional levels are needed to cope with climate variability and climate change. Seed trade, greater access to credit and provision of small subsidies to farmers need to be promoted. Strengthening agricultural research and extension and promoting farmer empowerment through associations and sharing best farming practices can greatly assist farmers. Investments in agriculture important for the growth of developing economies should be focused on modernization with social impacts through joint ventures, by addressing the underlying problems related to producers and transferring the much needed technologies and skills for promoting various sub-sectors. Greater access to markets by farmers should be facilitated by reducing transaction costs. Advances in communication technologies should be quickly implemented for the farming sector through provision of weather and climate information as well as market information through mobile phones and mobile internet. Greater emphasis on improved technologies such as aquaculture and their implementation at local levels can provide additional sources of protein and ensure food security.

Scientific Mobility: We note the progress reported in a recent workshop on scientists' visas run by the European Commission. A framework now exists with guidelines to handle 'Scientific visas'. However, this is interpreted and applied very differently in different Member States of the EU and even, in some cases, not applied at all. This suggests (a) identifying entry points for incoming scientists and (b) handling such visas by EU countries in strict conformity with approved European directives. Under current procedures, visiting scientists are tempted to use tourist visas to enter the Union, which may place them at odds with existing

labour legislation. We therefore urge that EU embassies and consulates set up a fast track for dealing with scientists' visas separately from general tourist applications. In this connection, we note that scientists' visas for entering the USA remain more favourable and flexible than for entering the EU, suggesting that there is room for improvement. We urge wider access and a more proactive approach to developing exchange programmes between teaching and research institutions, e.g., the Erasmus and Marie Curie schemes. They have the potential to provide the human capital needed to realise the stated aims of the EU and its partner countries in the region. To this end, a dedicated 'EuroMed' Erasmus scheme would be desirable. In parallel, we emphasize the importance of South-South mobility.

Managing Catastrophes: This meeting served to highlight awareness of the risks associated with earthquakes away from plate boundaries, particularly in the Mediterranean region. In order to mitigate these risks, it is important to develop local expertise to survey and identify areas at risk, and to seek local techniques for damage limitation. It is also important to develop the capability to model accurately and quickly tsunamis in the Mediterranean.

Financial Fluxes and Competitivity: The conditions for economic development are evolving rapidly as a result of the changing political prospects in MENA and the improved financial prospects in Africa. We note the importance of information technology, specifically the Internet, the World Wide Web and mobile telephony in facilitating the 'Arab Spring'. Several different future scenarios are now accessible to the region. In order to benefit from the opportunities, innovation is essential, and countries should strive to benefit from the globalization of R&D and develop further human investment in science in MENA. We also emphasize the importance of transnational collaboration, and the need to avoid disruption and delay in multi-year scientific programmes.

General Recommendations: We stress the importance of science, and the need for a direct line to the top level of government, as is the case in Malta. GNP percentages for R&D should be increased throughout the region, in particular to develop competences. We encourage the diasporas to play a full role in this process, and countries to develop structures that make the most of their contributions. The usage of vital resources such as water, food, energy and biodiversity must be planned holistically, taking into account the local social contexts. Suitable financing and best governance practices are essential.