



## **Sharing Knowledge Across the Mediterranean (5)**

**Recommendations adopted on 3rd March 2010**

### *Introduction*

More than ever, meeting the challenges of today's changing world requires the acquisition, dissemination, application and sharing of new knowledge. This is particularly true in Middle East and North Africa (MENA), where the challenges of demography, food production, aridity, climate change and urbanization are especially severe. In parallel, the MENA region must meet the challenge of developing alternatives to traditional carbon-heavy energy sources. In this context, it is regrettable that many MENA countries are investing only a fraction of a percent of their GDP in R&D. The SKF therefore applauds the ambition of the Jordanian government to increase its R&D to the percent level.

### *Energy sources*

There is global consensus on the need to reduce the dependence on carbon-heavy technologies for energy production, in order to combat climate change and to diversify energy sources. The SKF therefore supports the decision of the Jordanian government to develop nuclear power, a natural development in view of the country's uranium deposits and the need to guarantee energy security. The Jordanian ambition is to provide capacity sufficient to satisfy its domestic needs and export to other countries in the region. The success of this plan will require training technical staff as well as a technically-literate elite and general population. The SKF therefore applauds the plans of the Jordanian government to develop its system of higher education with the aim of nurturing technical expertise as well as educating its elite in science and technology.

MENA countries are well placed geographically to provide alternative energy via the production of solar and wind energy, and European countries north of the Mediterranean are developing technologies for solar and wind energy production. They are also likely customers for spare capacity in MENA countries, providing a promising export opportunity. There is a need to share knowledge about renewable energies across the Mediterranean, e.g., between Spain, Morocco and Jordan

### *Electrical Grids*

There is a need to develop advanced electrical grid technologies, to balance dynamically supply and demand (smart grids) and to transport power with minimal losses over large distances (e.g. using high temperature superconductivity). The SKF offers a framework to enable the sharing of developments in the realization of such a grid.

### *Water*

The supply and distribution of water is a regional problem affecting all countries of the Mediterranean. In this connection, the SKF applauds the support of the Jordanian government for the Red Sea-Jordan valley project, and urges support from other countries inside and beyond the region. The SKF offers a framework to enable experts from the different countries in the region to meet and work together to propose to their governments a common initiative, with the support of experts from outside the region, to draw up a master plan taking into account the doubling of the regional population by the year 2040.

### *Food*

The SKF emphasizes the importance of the problem of food security in the MENA region. It recognizes the high quality of the scientific initiatives under way, and underlines that their successful implementation will require that the special local and regional human context be taken into account.

### *Education*

Education plays a central role in the transition to a knowledge-based society, particularly in the MENA region. At the school level, there is a need to share best practice in curriculum content and teaching methods within and beyond the region. At the university level, SKF supports initiatives to provide new opportunities through programmes such as Erasmus Mundus and the SESAME and CERN training programmes. It urges that these opportunities be expanded to include longer-term training options and joint research programmes with European universities. The education and training of technicians at advanced level is a major challenge for the success of mega-projects, such as the Jordanian nuclear programme. Close co-operation with European countries is strongly encouraged, e.g., via distance and lifelong learning as exemplified by CNAM. The SKF applauds the recent initiative to establish high-level university curricula in such areas as project management, safety and regulation, which are carried out with the support of European countries.

### *SESAME*

Investment in research has historically been low in the MENA region and in Africa. The SESAME project offers a unique opportunity for MENA scientists to collaborate in leading-edge science with many applications, if the project can be completed in a timely fashion. The SKF is impressed by the support given to the SESAME project by the Jordanian government, which has provided the infrastructure and administrative framework needed for completing the project. However, many Member States have yet to match the commitment of the Host State and the contributions made by European countries such as Germany, the United Kingdom, Italy and France. The year 2010 is crucial for the future of SESAME. The SKF applauds the recent initiative of Israel, supported by Jordan, to trigger commitments by other SESAME Member States towards the completion of the construction of the project. This is expected to be accompanied by support from countries outside the region, such as Europe and the United States.

### *International research centres*

The SKF welcomes the readiness of CERN to open its research facilities to MENA scientists, and encourages Algeria, Jordan, Lebanon, the Palestinian Authority and Tunisia to seize this opportunity, as has already been done by Morocco and Egypt. The SKF notes that collaborations at CERN provide unique avenues for the sharing of knowledge between scientists from the north, south and east of the Mediterranean, as well as opportunities for

training students who may remain based in their home countries. The SKF is proud of its initiative to establish fellowships at CERN for students from Morocco, and offers its support to the establishment of similar programmes by other MENA countries. The SKF encourages other international research centres to consider the CERN example of global openness. The model of large international research collaborations may be applicable to other areas such as climate science, and the SKF encourages in particular CERN to share its experience with other international organizations such as the WMO.

### *Bridging the digital divide*

Addressing the digital divide in the field of research and education starts by enabling the national research and education communities to connect to the global dedicated research and education network infrastructure. The connections of the Mediterranean and African countries are improving, but many administrative and political obstacles remain, according to the experience of local researchers and the findings of the Feasibility Study for the AfricaConnect initiative. Raising the awareness of the need for and enforcement of telecom regulations reform through internal and external channels should be a priority for policy makers in order to develop networks within these regions. The exemplary approach of Jordan authorities in granting their National Research and Education Network access to dark fiber from the National Electrical Power company stands as a model for the benefits of networked collaboration.

### *The Computing Grid: an advanced possibility for collaborative services*

In the field of research and education, SKF strongly supports the development of National Grid Initiatives –based on the rapidly improving network connections– to provide the framework for integrating computing and storage resources and building a human network of expertise. The integrated initiative in South Africa can be used as a blueprint for MENA and sub-Saharan countries. SKF recognizes the potential of the SA Grid certificate authority to enable the secure deployment of National Grid Initiatives in Africa. Projects like EUMedGrid-Support are needed to integrate national efforts into sustainable regional infrastructures and foster collaboration and interoperability to encourage inclusiveness. The SKF supports the call for a sub-Saharan task force for the deployment of e-infrastructures in the region.

Capacity building is a pillar for the success of this program. SKF recognizes the potential of projects such as MangoNet and EPIKH to build a network of skilled individuals in MENA and sub-Saharan countries alleviating the dependence on foreign expertise as well as the brain drain.

### *Human mobility*

Governments should realize that human mobility and the establishment of knowledge-based economies are essential drivers of innovation and economic development, with diasporas playing key roles. Whilst some improvements are within reach, e.g., the establishment of European scientific visas, some problems remain, e.g., with complicated procedures and visas enabling the free movement of researchers within the MENA region. The SKF recommends the certification of MENA and European institutes participating in joint education and research projects to facilitate visa procedures for their scientists along the same lines as existing arrangements for industrial partners in R&D and business.

# Partners

