

Royal Scientific Society

HRH Princess Sumaya bint El Hassan

Talent Development in Science and Mathematics within the BMENA Region

I

Ladies and Gentlemen:

I would like to welcome you all to the Royal Scientific Society and express our delight at having such an august and varied group of innovators here in Amman. Your work at this conference matches the very core aims of the RSS and our wider campus as we strive to bring excellence in science to our country and to our region. I know that we all share an appreciation of the enormous challenges that face us. We are fast running out of time and we have run out of excuses, for it is now imperative that we end our long and debilitating technological isolation.

We must build a legacy for the next generation. If we fail to do so, then that generation and the wider world will not remember us kindly. The sad fact is that our Arab States have a shockingly low ranking in research and development and in scientific innovation. In 2007, our overall spending on R&D was a mere 0.15% of the aggregated gross domestic product (GDP), compared with an average of 2.5% in Europe and 1.4% in the world. Worse still is the fact that most of this spending—up to 97%—was provided by the public sector.

In the decade from 1990 to 2000, there were around 500 scientists and engineers involved in R&D per million people in the Arab States. In the United States the comparable figure was 4,000 per million, while in Europe it was 2,500. We should ask ourselves how things got so bad.

The real impact of this gap is nothing less than a lost generation of talent and innovation. According to the Jordanian Department of Statistics, between 600,000 and 670,000 Jordanians lived and worked outside Jordan in 2008. That story is repeated throughout the region as our brightest and best look to migrate to more inspiring and rewarding job markets. Institutions such as the RSS are trying to make sure that future generations will have the option and the impetus to stay at home. But we must all work together to achieve this.

Recent events beyond our control have provided us with an added sense of urgency. The ongoing Global Economic Crisis shows us that steady growth and easy employment are no longer guaranteed for graduates of any nation. This realization has increased the desire of our talented young people to build a sustainable information-based economy at home. In Jordan, the El Hassan Science City (EHSC) is providing opportunities for talented and innovative youth—both directly and indirectly—by offering a model for other innovators and educators. The old certainties of prosperity and employment in other parts of the world may no longer be with us, but this is an exciting time for our region as we capitalize on a generation with hope, drive, and a thirst for knowledge. We must invest in them and in the new technology that will allow us to achieve sustainable and meaningful growth.

II

Ladies and Gentlemen:

We must make it clear to our brightest and best that we respect knowledge and innovation. Our goal must be to captivate talent and to nurture entrepreneurship, inquiry, and skill. We cannot afford to lose our future; therefore, we must offer our young scientists nothing less than the complete nurturing environment that they deserve. It is vital that we ensure that the rewards for our young innovators are appropriate to their efforts. For many Arab students, the bottom line must determine where they operate and whose economy they enrich, We must all help to establish a rational and equitable salary structure in the region—a salary structure that rewards talent and fosters entrepreneurship.

I firmly believe that education is the key to our happy transition to a prosperous future. But we must acknowledge the issues that face any society in transition. Fear, apprehension, and an occasional distrust of “new ways” are all factors that modern societies faced at some time and may well face again. We must be aware of these difficulties, but we must not allow them to dampen progress. We will succeed in our mission by managing change in the right way. We must acknowledge and respond to criticism, we must assuage fears, and we must maximize potential in a manner that respects our societies’ particularities and addresses their concerns. It is important to accept the fact that many people in our part of the world feel threatened by perceptions of a lack of entitlement to the booty of man’s scientific achievements. They are, perhaps, forced to feel inadequate in a global-knowledge economy. However, it is in all our interests that these perceptions be tackled and that very real institutions and mechanisms be established to allow local knowledge-based economies to flourish in our region, as, indeed, they have before.

The Information Age offers unprecedented opportunities for less developed economies. We can celebrate the fact that this new age is a leveler that can bring hope to the marginalized. It disregards gender, class, and other affiliations and focuses instead on unlocking potential through learning and application. It was forged on the links between education and industry, and we must ensure that we make an appropriate match. Our scientific curricula must be responsive to the ever-changing needs of local and regional job markets. That means building and maintaining a constant consultative process between employers and alumni, on the one hand, and educators, on the other. From the very beginning of the education cycle, we must encourage creative thinking in students by providing project-oriented teaching that relates directly to the world off campus.

III

It would be difficult not to notice our young people’s desire for education and their hunger to succeed in a more interconnected world. The success of our graduates in the wider world highlights our potential for a better future. Human capital is our greatest natural resource, yet it has been exported for far too many years. Here in Jordan, we are striving to create a new centre of research and discovery to help contribute to future human development. Our mission at El Hassan Science City is to create an institution that both builds on our region’s heritage of scientific achievement and recognizes the links that strengthen education, research, and application.

The dynamic structure of EHSC has informed my thinking on education for employment. I have seen firsthand how direct and meaningful contact between faculty and industry benefits each side. Teaching methods and content become more relevant to the world beyond the academy, and local employers are made aware of the quality of human capital that

is available on their own doorstep.

Innovation, continuity, and change—these are the three keywords that have driven EHSC since its launch in April 2007. Together, they form a mantra that emphasizes our determination to push for nothing short of excellence in what we wish to achieve. We are embarking on an ambitious project for the development and expansion of our 100-acre campus.

In this regard, we have three primary objectives:

1. to provide state-of-the-art laboratories, classrooms, training, and incubator buildings for our constituent organizations;
2. to create a public realm that fosters collaboration and interaction and that unites diverse departments and buildings, and
3. to express our mission of sustainability and scientific innovation through designing and landscaping the infrastructure.

We hope that our campus's Innovation Avenue will re-create, in microcosm, the environment that enabled science and creativity to flourish in our region for many centuries. We believe that research and training must lead to enterprise creation. In addition, we will focus on a commitment to implementation and investment so that great ideas can make a real difference in the marketplace.

We share your mission at this conference, and we know that, by working together, we can identify the opportunities for, and barriers to, progress in our region. We must combine quantitative data with qualitative analysis and demand no less than the most stringent peer review available so that we may position ourselves for real and meaningful growth through innovation. We must take a clinical look at our innovative capabilities and make every effort to remedy our inadequacies. We will seek collaborative opportunities with scientists and researchers in the developed world, but before we make demands of them, we must demand from ourselves nothing less than an absolute commitment to excellence.

We must also prepare to examine systemic deficiencies within our societies. The truth is, our long decline in contributing to mankind's progress has less to do with a lack of wealth than it has to do with societal and systemic deficiencies. We must not shy away from assessing technology and innovation. With your honest assistance, we must assess how scientists, policymakers, and the private sector interact in our region and how they connect with global innovation.

Perhaps most importantly, we must ensure that we hold onto our brightest and best by helping to foster a strong work ethic, one that can overwhelm the stultifying social status one. This is a challenge that faces many economies in transition and one that we recognized very early on. It is vital to encourage the sort of social upheaval in our region that will see more value being attached to technical and scientific prowess than to social status. Luckily, we have a generation that is ready for this change.

Finally, if we are truly serious about science and innovation in our region, then we must allow the forensic spotlight to penetrate our institutions of learning. We must subject our educational processes to proper accreditation and quality assurance norms. These should be realistic, considering our available resources, but there can be no exceptions in this process. It is vital that all curricula be rationalized in accordance with modern scientific criteria.

Conclusion

Ladies and Gentlemen:

Islam broke down borders in our region during its Golden Age. Its spread across the Middle East, North Africa, Persia, and Spain set aside much more than simply political boundaries. The creation of this vast political and social space created an environment in which science and scholarship thrived and in which learned men and women from all creeds and backgrounds worked together to create knowledge. This empire of ideas drew in knowledge and discovery from beyond its borders and added to the knowledge base of the entire world. We must be prepared to do the same.

Today, we Arabs have much to learn from the West. Of course, we lag behind in technology and in innovation, and we continue to show our willingness to bridge this gap. But before we can even consider joining the West in leading future innovation, we must learn from Western ability to work together. Multilateralism is not a great strength in our region. Indeed, it is barely a reality. Resource-rich countries spend vast amounts on building a gleaming infrastructure for research and development, but the nurturing of true innovation requires more than dollars.

After the Second World War, Europe built a dynamic future out of the ashes of annihilation. Today, despite the intense pressures of politics and financial meltdown, Europeans of every trade, profession, and political persuasion are working together to maximize potential and streamline innovation. We must do the same in the Arab World. Our resource-rich countries must work with both talent-rich and resource-poor economies for the benefit of all. We must look at investing to stabilize our youthful and ambitious region. By working together, we can—and will—achieve great things.