Directorate General for Scientific Research and Technological Development (DG-RSDT) – Aourag Hafid, Director General – Algeria



21.10.2014

Tags: research, innovation, science, investment, government

The director general for Scientific Research and Technological Development discusses the authorities' efforts to incentivize R&D and to harmonize sectoral development strategies to achieve national economic growth outcomes. He also identifies bottlenecks in the human capital base and the importance of raising the intellectual and scientific level of the local research community so as to be able to realize the 2020 vision of establishing a region-wide biotechnology hub.

Can you please introduce yourself and describe the mandate of the DG-RSDT?

The DG-RSDT is basically responsible for the coordination of scientific research in Algeria across the full spectrum of sectors on the basis of a comprehensive strategy that takes into consideration the socio-economic realities of the country. Each business sector deploys its own particular development strategy and vision for the future and our role is essentially to harmonize this by establishing a single strategy for Algeria as a whole.

Every five years we develop plans aimed at resolving specific shortfalls and identifying areas in which the country should be investing more. We then formulate ways to support those chosen areas through promotion of selected research projects. This entails introducing new capacity to

develop scientific research, technological development and innovation across those sectors that we decide to target.

Finally we award scholarships to promote specific scientific projects. In this way, researchers from both private and public sectors are eligible to submit their applications to one of our branches. Final agreement is subject to the decision of a mixed committee comprising stakeholders from both industry and academia and the selection process is identical for all sectors. Each research project receiving funding from the scheme can last a maximum duration of 3 years.

One of the priorities of the Directorate General has been to generate innovation and scientific production in the domain of healthcare. What practical steps have you been taking on this front?

We are launching three types of projects: one for graduate researchers, a second for university professors and clinicians, and a third for hospital practitioners. These are, after all, the main stakeholders that implement programmes, receive bids and identify research opportunities in the healthcare arena. The DG-RSGT meanwhile monitors and manages the operating budgets of approved projects. Once the Directorate General has agreed to the opening of a new research laboratory, we allocate three budgets: one to build up the relevant infrastructure to support the lab, the second to actually equip the laboratory itself, and the third to render it operational. The funding is then awarded every third year, subsequent to a successful assessment and audit every second year.

Currently Algeria possesses more than 120 of these research laboratories across 10 life science areas: public health, the healthcare environment, infectious disease, non-communicable diseases (NDC), genetic disorder and immunopathology, technical exploration, biotechnology, biological health research, bioinformatics and pharmaceuticals. As you can see, they are highly targeted.

TheDG-RSGT has indeed been investing heavily in medical science. We actually maintain five research centres each equipped with their own full-time permanent staff. Of those five centres, one is dedicated to thematic scientific research in health, while another, based out of Constantine, specializes in biotechnological research and is responsible for MOUs signed with multinational firms with a view to establishing Algeria as a regional biotech hub. Furthermore, we are now in the process of constructing two additional research centers on drug toxicity and pharmacology in Tlemcen.

Obviously if Algeria really aspires to build its own bio pharmaceutical industry, it will first need to put in place the right foundations to enable success – namely a skilled workforce and appropriate

infrastructural facilities. The DG-RSDT believes in these ambitions and is therefore committed to creating a real backbone to support the Algerian pharmaceutical industry through quality human resources and leading-edge technology. By way of example of some of the initiatives we are supporting, the DG-RSDT is already sponsoring a data sample for sequencing the Algerian genome so as to identify the nation's predispositions to various disease types and responsiveness to different molecules.

What is the role of the private sector in terms of fostering innovation?

Private sector firms are increasingly demonstrating a willingness to start developing research and innovation capabilities in Algeria. Two years ago, the state issued a decree promising tax exemptions for any entity ready to invest in R&D in the healthcare arena, irrespective of whether private or public, foreign or local. So far, private sector firms are showing that they are ready to invest in this niche and the DG-RSGT is equally ready to leverage its own structures to support them. We study any projects that they submit and, in accordance with what we have identified to be priority areas for the national interest, back them with our own financial weight.

In collaboration with Sanofi, the DG-RSGT has created a "National Award for Health Research". What is the rationale behind this initiative?

This is an award aimed specifically at young researchers. We wanted to provide an opportunity for undergraduates and graduates to gain international recognition for their work. Under the scheme, a jury composed of Sanofi executives is given discretionary power to award an international label to high quality research projects submitted. The beauty of this is that it creates competition within the research community and thus should help drive up standards in an area that has been lagging behind for many years.

In the same vein, the DG-RSGT decided to establish mechanisms for continuous research that would further bolster the development of Algeria's research community. We therefore built five research and diagnostic support units (URSAD) right next door to some of the most performing medical schools in the country and equipped those units with the very latest generation, high performance technology. The idea is that, in addition to advancing research and responding to patient needs, these structures can be leveraged to train up students and provide them with valuable practical exposure.

What arguments would you put forward to attract international students and researchers to Algeria?

Healthcare and pharmaceuticals are protected industries in Algeria. Nearly 10,000 high-level students are currently studying medicine-related field. Student demand is therefore already very strong. There is however still a shortage in top-level professors and lecturers to train them. Before embarking on large-scale infrastructural interventions to support the growth of the pharmaceutical industry, it is necessary to broaden and deepen our human resources and knowledge base. We aspire to a 100% Algerian industry and a real transfer of technology and know-how, so any stakeholders able to facilitate this will be warmly welcomed.

What does Algeria still need to do to able to evolve into vibrant destination for researchers, pharmaceutical innovators and biotech producers?

It's all about creating the right enabling environment. The bottom-line of socio-economic development is job creation. The Algerian healthcare and life sciences industry's first handicap lies in a lack of a professional and technically skilled labour pool to meet the requirements of the sector. If we want to develop a competent industry, it is essential to create corresponding vocational education apparatus. We are already coordinating closely with the Ministry of Higher Education to alleviate these bottlenecks. We have made much progress and achieved very promising results, but there is still more to do.

How can Algeria realize its ambition of becoming a region-wide centre of excellence for biotechnology and innovation? And what role do you see the DG-RSGT playing in ensuring that this goal is reached?

We've recently conducted a review of the country's preparedness for assuming the mantel of regional biotech hub. The most important factors relate to the state of Algeria's human resource base and the country's position in terms of scientific production. In 2000, Algeria was ranked 83rd in the world for pharmaceuticals. Today, in 2014, we have risen to 61st position. The strategy we have in place in terms of training and human resources is also paying dividends. Algeria is manufacturing more products locally and simultaneously building up its labour force. The growth trajectory is therefore overwhelmingly positive and we should not expect these changes to take place overnight.

What we now need is for private sector pharma to invest more in research and development so as to allow the Algerian healthcare sector to reach the next level of development and scale the value chain. This is precisely why we have been incentivizing investments in innovation and technological transfer. Increased recruitment of Algerian health practitioners and scientists will also serve to raise the intellectual and scientific level of the local industry. The other aspect that we need to

improve if we are to reach our ambitious targets is the management of resources. This means smarter management, targeted spending and less wastage.

What are your priorities for the next five years?

My primary concern is to raise the number of researchers at the country's disposal. The world average is roughly 1080 researchers per million inhabitants. Worldwide, Japan leads the way with 5200, the US have 4800 and France around 3800. Consequently, the level of creativity and innovation is all of these countries necessarily high. In Algeria, we count a mere 480 researchers per each million inhabitants. It is imperative that we at least reach the global average. I am, nonetheless very optimistic. Destiny does not depend on luck. Algeria has made decisive choices and the country's destiny is already underway.

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