# IDB Science Development Network (SDN)

## Present Development & Future Prospects

www.sciencedev.net

By

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## Words of IDB group chairman

Science and technology can be considered as critical for solving the problems of socio-economic development and for producing a high quality of life in which people are transformed from a social burden to a productive contributor.

Today, the driving force behind the global economy is knowledge - and more specifically knowledge of science and technology. This means economically successful nations rely more on the quality of their human resources, rather than their natural resources, to compete in an increasingly competitive world.

We are moving from a production-based society into a knowledge-based society where human resources are becoming more important than raw materials, whose prices are in constant downfall, and where capital is no longer sufficiently profitable unless it is accompanied by the "added values" of intellectual input and innovation. In other words, human resources development is the cornerstone of the entire development process.

As a development Bank, the role of the Islamic Development Bank has not been limited to providing resources and financing operations, it has also been striving to help develop the human resources, ensure technology transfer to its member countries and build their technical capacities.

The launching of the IDB science development network (SDN) is intended to give the IDB merit scientists and its graduates an opportunity to help in the development of technology-based economy in the IDB member countries.

It also can be considered as a call from the IDB to renew and reaffirm its commitment to science development and a strategic action to appreciate the role of scientific research and technology for the socio-economic development of the OIC countries.

**Dr. Ahmad Mohamed Ali**
Chairman
Islamic Development Bank Group

## Comments about SDN

“ScienceDev.net service is a valuable and informative service for developing countries in general and the Islamic countries in particular”
*Dr. Mohamed Taeb, Institute of Advanced Studies, United Nations University, Japan.*

“It gives me great pleasure to know that there are wonderful people out there that have taken this effort on and are working hard to promote science in our culture….As a 'Muslim Women' in science, I must admit there are not many opportunities to showcase the wonderful efforts of the many gifted and talented Muslim women in Science. But insha Allah this will be a great place for them.”

*Dr.Arwa Al-Aama, Chair of the Women's Computer Science Department, King Abdul Aziz University, Saudi Arabia*

"Thank you very much for the tremendous job you have done about the Network and the initiatives you take"
*Dr.Mamadou Goita, Member of the general committee of the IDB merit/M.Sc. scholarship Programme.*

"Excellent work and I personally congratulate you for it"
*Dr.Yasser Elshayeb, Assistant Coordinator, National TEMPUS "Trans-European Mobility Scheme for University Studies", Egypt.*

"Thank you for sending me the ScienceDev.net's Newsletter. I see this newsletter is important for us. Hopefully, this newsletter will always come to us every month. I appreciate the editor(s) for their hard working"
*Dr.Ahmad Sulaeman, Dept of Community Nutrition, Faculty of Human Ecology – Bogor Agricultural University, Indonesia.*

"I would like to congratulate you for your successful Newsletter"
*Prof. Dr. Mohammed A. Ibrahim, Egypt.*

"It could be helpful for our countries"
*Dr. Khaled Masmoudi, Head of the Plant Molecular Genetics Unit, Centre of Biotechnology of Sfax, Tunisia.*

"I great you for your work & thank you for it"
*Prof. Dr. Maha Mounir, Dental Biotechnology Labs for genetic & tissue Engineering, Faculty of dentistry, Alex. Univ., Egypt*

"I would congratulate you about this excellent magazine."
*Dr. Abbas Nasser, Genetic Engineering institute at Menoufiya University, Egypt*

## Introduction

The 57 predominantly Muslim countries have about 23 % of the world's total population but less than 1% of its scientists who generate less than 5 % of its science and make barely 0.1 % of the world's original research discoveries each year. The Islamic countries have a negligible percentage of patent registrations in US, Europe and Japan. Even more serious is the fact that the Research and Development manpower of Muslim countries is only 1.18% of the total science and technology manpower.

The above-mentioned facts make us no wonder…. why most Muslim countries fall under poor and developing countries. It indicates clearly that there is a dearth of science and technology manpower and particularly of quality Research and Development manpower in the Muslim world. Consequently, no real and substantial development has been possible in the past four decades. It also shows that the Muslim countries have a long way to go to catch up with even the average developing countries in the Third World.

In many Muslim countries, science is under-valued and thus under-funded. As a result, the returns from science to the community are often minimal. Thus, we should develop the necessary human resources to break this chronically closed cycle of minimal funding, minimal output and minimal impact.

The experience of the developed countries indicate that the provision of advanced education and training to large numbers of young people is the only way in which modern scientific knowledge can be introduced in a society and the state of the art technology implemented, essential both for raising productivity and enhancing developmental growth

Thus, specialized forms of science and technology education and training are at the core of the production of competent elites who can both act to negotiate effectively for the transfer of available and relevant technologies, and who can create a critical mass of scientific and technological capability which is endogenously based.

Adequately trained scientific and technical personnel are vital to industrial development. Countries lacking highly skilled personnel cannot have companies that compete internationally in highly technical operations.

As rapid growth in science and technology is essential and even critical for the very survival of Muslim countries, it is the science development network job to take care of Islamic community of scientists and make use of their skills and capabilities in establishing knowledge-based economy.

## Science development network

Since its launch in 2005, the IDB Science Development Network "SDN" (sciencedev.net) has established itself as the world's leading online Islamic network of science and technology professionals of the Ummah.

- By November 2007, SDN had about 20,000 members.
- SDN repeatedly came top in Google and Yahoo web searches using the words "science development network"

### Mission

"To set up the Islamic community of science and technology professionals for the promotion of technology-based socio-economic development in IDB member countries"

### Vision

"To assist Moslem scientists to play their role in the development of science and technology for the benefit of the Ummah, and to function as the Islamic Science Brain Trust "

### Objectives

To promote networking and cooperation between scientists in scientific research and development programmes.

- To share scientific information, including the results of research conducted by the scholars and students, particularly concerning their contributions and applications in industrial development in the IDB Member countries.
- To promote the opportunities for training and development of graduates of the Programmes through information sharing, organizing workshops and seminars.
- To exchange views and ideas towards the formulation of strategies for the development of science and technology for the Ummah.

### Partnerships

To achieve its mission, science development network (SDN) is working in collaboration with the following partners:

- Ghent University, Institute of plant biotechnology for developing countries (IPBO), Belgium.
- Handasa Arabia (HA) Internet-based organization.
- Princess Haya Biotechnology center (PHBC) of Jordan University of science and technology.

SDN will work with its partners, when appropriate, in organizing conferences, workshops, symposia, training programmes and seminars in science, technology, innovation, and higher education issues as well as promoting knowledge and technology transfer to and among IDB member countries.

## I. Present programmes and activities

(1) Producing and distributing a monthly electronic bulletin entitled (Science and Development) that

- Monitors science and technology development in IDB member countries;
- Provide Moslem scientists with up to date information about new scientific reports as well as multimedia sources for use in science education;
- Presents information about conferences and scientific meetings in IDB member countries.
- Provide information about fellowships, award and funding opportunities that Moslem scientists are eligible to apply for;
- Provide information about academic job opportunities in Islamic countries; and
- Create a specific section for Moslem women in science.

(2) Sending e-cards to all members in Islamic occasions such as Eid el-fater, Eid Al-adha, Ramadan and Hijrah

(3) Launching SDN campaigns in specific occasions

- 2006 bird flu awareness campaign
  the bird flu is rapidly spreading to birds and human across the Islamic world as in Turkey, Iran, Iraq, Egypt, Niger, Indonesia, Malaysia, and Nigeria.

  Thus, an information package including multimedia had been circulated to more than 5000 scientists across the Islamic world to help in raising awareness and taking precautions.

(4) Ongoing programmes

- Islamic Talent pool

  A database for Moslem scientists in the west is being developed to be used as a tool for the transfer of science and technology to IDB member countries. It is divided into the following categories:

- Islamic directory of science and technology institutions

  A database for science and technology institutions in IDB member countries is being developed to be used as a step for the establishment of Islamic union for science and technology centers

  It will be used for a number of purposes such as:

  - Choosing research institutions for IDB scholars.
  - Facilitating the scientific and technological collaboration among IDB-member states for the development of knowledge-based economy.

- Science and technology education observatory for sustainable development

  **Background**

  Education in all its forms plays an indispensable role in addressing the critical challenges of sustainable development.

  Higher education, in particular, has a catalyst role for sustainable development and the building of a Learning Society. It has a special responsibility to conduct the scholarship and scientific research necessary to generate the new knowledge needed and train the leaders and teachers of tomorrow, as well as communicate this knowledge to decision-makers and the public-at-large.

  It has a vital role to play in shaping the way in which future generations learn to cope with the complexities of sustainable development. Universities and higher education institutions educate highly qualified graduates and responsible citizens able to meet the needs of all sectors of human activity.

  **Objectives**

  Education is a critical sector whose performance directly affects and even determines the quality and magnitude of development in IDB member countries. It is the most important means we have at our disposal to develop human resources, impart appropriate skills, knowledge and attitudes.

  Education forms the basis for developing innovation, science and technology in order to harness our resources, industrialise, and participate in the global knowledge economy and for the Islamic world to take its rightful place in the global community.

  Thus, the main objective of the proposed IDB education observatory for sustainable development is to help education leaders, decisions-makers and professional in IDB member countries to establish sustainable education system.

**Proposed activities**

An educated citizenry is vital to implementing informed and sustainable development. In fact, a national sustainability plan can be enhanced or limited by the level of education attained by the nation's citizens. Nations with high illiteracy rates and unskilled workforces have fewer development options. For the most part, these nations are forced to buy energy and manufactured goods on the international market with hard currency. To acquire hard currency, these countries need international trade; usually this leads to exploitation of natural resources or conversion of lands from self-sufficient family-based farming to cash-crop agriculture. An educated workforce is key to moving beyond an extractive and agricultural economy.

To take care of education in IDB member countries and provide help for education experts and policy makers, the observatory will set up a website that will carry out the following activities:

(1) Monitoring science education development in IDB member countries
(2) Establishing a database for science education strategies in IDB member countries.
(3) Setting up science education information center that will contain reports and documents dealing with education development strategies
(4) Setting up a database for science education experts in IDB member countries
(5) Establishing of a network of top-class science education institutions in IDB member countries.
(6) Promote cooperation between science education centers of excellence in and out of Islamic world.
(7) Producing a monthly bulletin to be called (education for sustainable development)

- "Making the science work for the Ummah"

**Background**

Science and technology, in general, can be considered an important key towards solving the problems of socio-economic development and producing a high quality of life in which man has been transformed from a social burden to a productive contributor.

Islamic countries are entering a new phase of economic development with emphasis on the crucial role of the private sector and its potential impact on different branches of economy. Thus, they are urging their private sector to invest in technology in order to maintain their industrial or economic competitiveness relative to the industrialized countries.

## Idea

Rapid technological development has fundamentally altered economic development principles, and technology is rapidly changing the way value is created and transforming the nature of dynamic competitiveness.

Techonomics incorporates technology as a core driver of economic changes, and redefines the tools and strategies that can be adopted by firms, industries, or regions to improve competitive advantage and build success.

On the path to development many emerging nations focused on importing scientific and technical knowledge from other countries. Following that, they tried to copy and master it. Working and re-working existing knowledge rather than creating new knowledge through research is a predominant activity in innovation.

Many technologies and much knowledge are either proprietary in nature and form the subject matter of patents owned by foreign entities or published as research articles in scientific journals and is free to use.

Thus, the initiative “Making the science work for the Ummah“ (MSWU) will establish a mechanism for screening science and technology information and cooperate with the private sector to set up commercially viable projects in the area of technology as well as providing marketing support.

## Aims

The main aims of the initiative “Making the science work for the Ummah“ (MSWU) is increasing excess to scientific research results related to industrial development that are originating from research centers in Islamic states, patents and scientific journals.

This will enhance innovative research among Muslim scientific community and encourage private sector for investing in science and technology sector, which, in turn, will provide solutions for problem facing Islamic States, and help in improving the quality of life of the people.

## Objectives

MSWU will serve as the eyes and ears of the Islamic countries on the latest technological developments to lay the foundations for science and technology-based industry with the aim to:

- Assist with the acquisition and mastery of imported technology
- Provide the scientific underpinning of regulations for environment and safety
- Provide advice to government on policy issues requiring an understanding of science

- Solve social problems like disease and malnutrition
- Develop technologies appropriate to local conditions
- Solve scientific problems unique to Islamic countries

## Vision

"To Harness science & technology for Islamic countries economic development, to assist industrial key players such as academic, scientific and business communities, and to function as the Islamic Technomic Brain Trust"

## Mission

"To provide an institutional set up for Islamic countries to promote the "Techonomic" approach that captures the fusion of technology and economic development."

**Beneficiaries**

Despite all the hype about the potentials of Science and Technology for sustainable socio-economic development, currently organised, research and development (R&D) systems especially in poor Islamic countries do not respond well to its needs. Very often poor and marginalised people across the global south do not end up benefiting from science and technology (S&T).

Thus, MSWU will assist private and public sector clients in finding solutions to an array of economic issues, ranging from building stronger economic foundations to improving industrial competitiveness, focusing on technology infrastructure and human resource development.

This initiative will be useful for the following:

- IDB scholars
  It will help IDB scholars to work on innovative research relevant to the Ummah needs.
- Private sector
  It will provide investors with new opportunities for setting up new companies as well as upgrading their production processes
- Scientists and technologists
  It will provide Muslim researchers with the opportunity to transfer their ideas into products

**Programmes and activities**

- Setting up database containing the results of research projects carried out by the IDB scholars, which have industrial applications in the Islamic countries.
- Preparing a database for scientific researches that is relevant for socio-economic development in Islamic world.
- Preparing a monthly bulletin to be called " science means business"
  Offering help to other science-based IDB programmes such as "early harvest" and Malaria …etc.

- Organising annual conference for promoting new scientific ideas for investors and the private sector.

## II. Future programmes and activities

- Establishing online scientific library for research projects carried out by IDB scholars and members of SDN.
- Establishing e-journal for science and technology.
- Organising a symposium about the role of IDB scholars in developing knowledge-based bio-economy in Islamic countries.
- Launching science and technology investment initiative for employment creation and poverty reduction.

  The main aim of this initiative is to combine research with technological and social innovation to develop models that empower people living in poverty It will develop mechanism for screening scientific results obtained by members of SDN with the view to convert concepts and ideas into small projects that can be used as a tool for solving the employment and poverty problems.

  It will also assist small and medium enterprises in technology acquisition, adoption and up-gradation, foster and promote a close and productivity linkage between industry and research and development institutions including universities.

  This project will aim to do work on the ground to identify innovative ideas and explore new models and approaches that are adapted to local conditions with the aim to reduce poverty and create employment chances.

- Establishing Muslim Science Writers & Journalists Association

  **Need for it:**

  To create a unique platform for Muslim science journalists and writers all over the world and to exchange views networking among themselves.

  **Objectives:**

  To create a congenial environment and opportunities for Muslim science writers and journalists. Bridging the gap between government, scientist and people regarding latest development of Science and Technology.

  **Activities:**

  Organize workshops, seminars, conferences, training programmes in local, regional and international level, publish books, bulletins, magazines, web etc.