

**INTERNATIONAL WORKSHOP
ON
SCIENCE, TECHNOLOGY & INNOVATION POLICY MAKING FOR
DEVELOPING COUNTRIES
KISH ISLAND, IRAN
28 NOVEMBER – 01 DECEMBER 2014
BRIEF REPORT**

The key to economic development in a country lies in its ability to innovate and effectively exploit innovations. In the competitive world, only those countries can be successful in managing their economy, which possess technologically skilled manpower, indigenous capability in state-of-the-art technologies and a strong climate of innovation and entrepreneurship. The capability for innovation and its diffusion can be promoted through a dynamic process involving governments, academia, R&D institutions and industry with the help of a combination of schemes and programmes for research and development in priority areas of technologies for the transfer and adaptation of technologies and for the development of new technology-based industry backed up by adequate support facilities and suitable institutional mechanisms.

For a variety of reasons, in most cases the S&T infrastructure and capabilities created in the developing countries have failed to fulfil their potential and the real technological requirements of the productive sector have not been adequately appreciated in these countries in the formulation and implementation of Science, Technology and Innovation (STI) policies. The reasons may stem from financing, economic factors, management problems and policy orientations. Therefore it is important to have a strategically designed STI policy at the national level, commensurate with the challenges of the globalising society. In many developing countries, however, STI policies are rather focused on research in basic sciences, and do not address the needs of the local industry and economic conditions. Moreover, developing countries often do not even have proper human resource to design their own national STI policies and lack experience in policy formulation and implementation.

Keeping the above in view, the NAM S&T Centre and the Technology Studies Institute (TSI) of the Presidency of Islamic Republic of Iran organised an International Workshop on ‘Science, Technology and Innovation (STI) Policy Making for Developing Countries’ during 28th November – 1st December 2014 at the International Convention Centre of Kish Island, Iran.

The Inaugural Session started with the Welcome Address by Dr. Seyed Habibollah Tabatabaeian, Head of Technology Studies Institute (TSI). Prof. Dr.

Arun P. Kulshreshtha, Director General, NAM S&T Centre presented the genesis of the event and also briefly described the activities of his inter-governmental organisation. This was followed by the address of the Chief Guest, Dr. Engr. Alimorteza Birang, Deputy for Vice-Presidency on S&T in Iran. The Session was concluded with the introduction of the participants and a photo session.

26 experts, professionals, researchers and administrators from 13 countries, including Botswana, India, Indonesia, Iraq, Mauritius, Myanmar, Palestine, South Africa, Sri Lanka, Tanzania, Zambia, Zimbabwe (which were sponsored by the NAM S&T Centre) and the host country Iran attended this international workshop. Besides them, three special Iranian guests, namely, Dr. Hamidreza Amirinia, Head of Knowledge-Based Economy Committee, Setade Ejraee Farmane Emam, Vice Presidency for Science & Technology; Dr. Alimorteza Birang, Head of International Affairs, Vice Presidency for Science & Technology; and Dr. Hossein Ahmadi, Head, International Affairs Division, Centre for Innovation and Technology Cooperation (CITC), Presidency of the I.R. of Iran were also present during most part of the event and chaired the technical and other sessions. From among the organisers, Dr. Seyed Habibollah Tabatabaeian, Associate Professor and Head of Technology Studies Institute (TSI), Presidency of I.R. of Iran was present along with his colleagues.

The overseas participants were from Botswana [Dr. Budzanani Tacheba, Director, Cluster Development and Innovation Programmes, Botswana Innovation Hub, Gaborone]; India [Dr. Kasturi Mandal, Scientist, CSIR - National Institute of Science, Technology and Development Studies (NISTADS), New Delhi and Ms. Parul Sehgal, Research Assistant, NAM S&T Centre]; Indonesia [Ms. Anteng Setia Ningsih, Head of Sub-division of Technology Transfer Mechanisms, Directorate of S&T for Large Industries, Ministry of Research and Technology, Jakarta]; Iraq [Mr. Naseer Dhahir Mohsin, Manager, Planning & Follow-up Department, Directorate of Space and Communications, Ministry of Science and Technology, Baghdad]; Mauritius [Mr. Seethiah Dhuvandranand, Lecturer, University of Mauritius, Reduit]; Myanmar [Dr. Sai Kyaw Naing Oo, Director, Ministry of Science and Technology, Nay Pyi Taw]; Palestine [Dr. Adnan Jawdat Judeh Yousef, Executive Director, Higher Council for Innovation and Excellence, Ramallah]; South Africa [Mr. Cheka Mailula, Deputy Director Africa Multilateral Cooperation, Department of Science and Technology, Pretoria]; Sri Lanka [Dr. N. Deepal Subasinghe, Senior Research Fellow, Institute of Fundamental Studies, Kandy]; Tanzania [Mr. Sigisbert Mathias Mmasi, Research Engineer, Tanzania Engineering and Manufacturing Design Organization (TEMDO), Arusha]; Zambia [Ms. Mupande Nambala, Programme Assistant – Policy, Regulation, Monitoring and Evaluation, National Science and Technology Council, Lusaka];

and Zimbabwe [Prof. Quinton C. Kanhukamwe, Vice Chancellor, Harare Institute of Technology; Ms. Ruvimbo Nazare, Science and Technology Officer, Ministry of Higher and Tertiary Education, Science and Technology Development, Harare; and Mr. Nqobizitha Dube, Lecturer / PhD Student, National University of Science and Technology, Institute of Development Studies, Ascot Bulawayo]. The NAM S&T Centre was represented during the Workshop by Prof. Dr. Arun P. Kulshreshtha, Director General and Mr. M. Bandyopadhyay, Senior Expert.

The overall programme of the Workshop was conducted in six sessions including five technical and one concluding and valedictory session, respectively co-chaired by Dr. Seyed Tabatabaeian (Iran) and Dr. Adnan Judeh (Palestine); Dr. Ali Mohammad Soltani (Iran) and Ms. Anteng Ningsih (Indonesia); Mr. Hossein Ahmadi (Iran) and Mr. Cheka Mailula (South Africa); Dr. Javad Mashayekh (Iran) and Mr. M. Bandyopadhyay (NAM S&T Centre); Dr. Hamid Reza Amirinia (Iran) and Dr. Kasturi Mandal (India); and Dr. Seyed Tabatabaeian (Iran) and Prof. Arun Kulshreshtha (NAM S&T Centre).

The scientific papers presented by the foreign participants during the five Technical Sessions were on ‘Science, Technology and Innovation Policies in Emerging Economies: The Case of India as an Attractive Destination for Knowledge-Based Industries’ by Ms. Parul Sehgal and Mr. M. Bandyopadhyay of the NAM S&T Centre; ‘National Science and Technology Policy for Future Myanmar’ by Dr. Sai Kyaw Naing Oo of Myanmar; ‘Intermediation Technology to support Indonesian National Innovation System’ by Ms. Anteng Ningsih of Indonesia; ‘An Analysis of the Factors that inhibit Creativity and Innovation Capacity of Entrepreneurs in Tanzania’ by Mr. Sigisbert Mmasi of Tanzania; ‘Human Development and the Reality of Science, Technology and Innovation in Iraq’ by Mr. Naseer Mohsin of Iraq; ‘Evolution of Science Policy in Zimbabwe: How the Nation can leapfrog Socio-Economic Development through Targeted Science, Technology and Innovation Policies’ by Ms. R. Nazare of Zimbabwe; ‘Prerequisites for Science, Technology and Innovation Policy Making in Sri Lanka’ by Dr. N. Deepal Subasinghe of Sri Lanka; ‘The Shades of Green in a Science, Technology & Innovation Policy; Assessing the Relevance of Ecological Limits in Innovation Policies of Developing Countries: A Case of Zimbabwe’ by Mr. N. Dube of Zimbabwe; ‘Institutional Reorganisation: A Case of the Council of Scientific and Industrial Research (CSIR), India’ by Dr. Kasturi Mandal of India; ‘Zambian National Policy on STI: Its Role in enhancing Competitiveness’ by Ms. M. Nambala of Zambia; ‘Linking Science with Business: The Role of University of Mauritius in the Ocean Economy’ by Mr. S. Dhuvandranand of Mauritius; ‘Towards A Pan-African Science, Technology and Innovation Agenda, Perspectives and Critical Reflections on the Past, Present and the Future’ by Mr.

Cheka Mailula of South Africa; ‘The Development of Special Economic Zones Models for Economic Growth: The Case of Science and Technology Parks and Research Parks in Africa’ by Dr. B. Tacheba of Botswana; ‘Innovation Status in Palestine’ by Dr. Adnan Judeh of Palestine; and ‘STI Policy Development and Implementation at the Harare Institute of Technology’ by Prof. Q.C. Kanhukamwe of Zimbabwe.

Five scientific papers presented by Iranian scientists were on ‘Science, Technology and Innovation (STI) Policy Making in Developing Countries: The Case of Islamic Republic of Iran’ by Mr. Javad Mashayekh of Technology Studies Institute (TSI), Tehran; ‘Designing the Infrastructure for Progress in the Light of Islamic-Iranian Approach’ by Mr. Reza Abdi of TSI, Tehran; ‘Nanotechnology Policy : An Experience from Islamic Republic of Iran’ by Dr. Ali Mohammad Soltani of TSI, Tehran; ‘Science and Technology Parks as an Infrastructure for Development; Case Study: Pardis Technology Park’ by Mr. Amin Reza Khaleghian, DG, Pardis Technology Park, Iran Silicon Valley; and ‘Iran’s Innovation System in a Historical Perspective: Examining Institutional Roots of the Current Technological Gap’ by Dr. Ebrahim Souzanchi Kashani, Assistant Professor, Graduate School of Management and Economics, Sharif University of Technology.

In the Concluding Session Prof. Dr. Arun P. Kulshreshtha, DG, NAM S&T Centre made a presentation on ‘The Role of the NAM S&T Centre for South - South Cooperation in Science & Technology’. This was followed by an extensive discussion and debate to generate a set of resolutions titled ‘Kish Island Resolutions - 2014 on Science, Technology and Innovation Policy Making in NAM and Other Developing Countries’, which was subsequently unanimously adopted.

During the Valedictory Session certificates of participation were handed over to the Workshop participants and concluding remarks were made by some of the participants, DG NAM S&T Centre and Dr. Hamid Reza Amirinia, Advisor to the Vice Presidency on Science & Technology in Iran. The organisers were profusely thanked for the successful and fruitful organisation of the Workshop and for excellent hospitality and arrangements made for the delegates. It was unanimously hoped that more similar events will be held in future with a focus on South-South cooperation.

In the forenoon of the last day of the event, the Workshop participants got opportunity to participate in the Official Opening of the 4th International and 8th National Conference on Management of Technology at Kish International Convention Centre and also listen to Keynote Addresses by Prof. Bart Nooteboom of Groningen University, the Netherlands; Prof. Jeff Butler of Manchester Institute of

Innovation Research; Dr. Markus Bayegan, Former Chief Technical Officer of ABB Group and MD, TriTech GmbH; and others.

The Workshop participants were also taken around the Kish Island, where they visited Harire Ancient Township; Abdollah Ibn Shaahin Tarathi's House and Museum of Anthropology of Kish Natives; Abandoned Burnt Greek Shipwreck; and ancient underground Aqueduct City.

KISH ISLAND RESOLUTIONS - 2014 ON SCIENCE, TECHNOLOGY AND INNOVATION POLICY MAKING IN NAM AND OTHER DEVELOPING COUNTRIES

WHILE EXPRESSING GRATITUDE to the Technology Studies Institute (TSI) of the Presidency of the Islamic Republic of Iran, host of the International Workshop on 'Science, Technology and Innovation Policy Making for Developing Countries', jointly held with the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) at Kish Island, the Islamic Republic of Iran from 28 November – 01 December 2014;

CELEBRATING the 25th Anniversary of the NAM S&T Centre as a catalyst for promoting science, technology and innovation as a part of cooperation among NAM and other developing countries;

RECOGNIZING that science, technology and innovation is a global asset with potential to contribute to economic, social progress and welfare;

NOTING that the prevailing gap between the North and South in the S&T fields is still growing, it is also recognized that science, technology and innovation are vital for the achievement of the internationally agreed development goals, advocating for active participation of the developing countries in the global economy.

ALSO RECOGNIZING that promotion, capacity building and transfer of technologies are important for developing countries to facilitate innovation led, knowledge-based and sustainable economic growth.

ENCOURAGING the NAM Member Countries to give high priority to development of science, technology and innovation embedded in their national policies in response to challenges that they face in implementing their national sustainable development strategies and programs.

EMPHASIZING the importance of ensuring non-discriminatory and inclusive access of all countries to science, technology, knowledge and information, and rejecting the imposition of laws and regulations, including unilateral sanctions which have negative impact on development of science and technology;

AND

HAVING DELIBERATED upon various aspects of STI policy formulation and implementation in the developing countries and the practical approaches of developing STI policy measures oriented towards future societal and technological challenges based on evidence drawn from comparable policy measures worldwide;

WE, THE WORKSHOP PARTICIPANTS from Botswana, India, Indonesia, Iran, Iraq, Mauritius, Myanmar, Palestine, South Africa, Sri Lanka, Tanzania, Zambia and Zimbabwe unanimously recommend to:

- Establish STI platforms such as open repositories to share and access knowledge, information, experiences and best practices involving technology developments that address the challenges of NAM and other developing countries;
- Facilitate academia-R&D institutes-industry interactions, involving mobility and cooperative research aimed primarily at increasing STI capacities and the cross border and trans-regional circulation of knowledge for sustainable development;
- Facilitate public- private partnerships within the NAM and other developing countries through the establishment and expansion of STI networks;
- Identify specific short, medium and long term actions that can lead to strong technological capabilities across various sectors and measures to promote sectors of specific potential for technological development;
- Find ways to improve policy formulation and implementation through improved national dialogue in the area of STI;
- Encourage to undertake Science, Technology Innovation Policy (STIP) reviews, with a view to assisting developing countries and countries with economies in transition in identifying the measures that are needed to integrate science, technology and innovation policies into their national development strategies;
- Identify best practices in developing countries in technological and economic progress which would encourage policymakers in other developing countries to promote technology and accelerate growth through innovation;
- Optimize trade and investment links with sources of technology for improving the status of NAM and other developing countries;
- Provide adequate support and funding for the establishment of technology transfer offices in academia/R&D institutions and setting up of technology business incubators/S&T Parks in their vicinity, which facilitates transfer of technology and promotion of technology-based small and medium enterprises;
- Nurture international collaboration on capacity building of S&T human resources and research infrastructure;
- Include science and technology diplomacy in STI policy formulation for achieving mutual bilateral, multilateral and regional development;
- Consider socio-cultural and environmental issues while formulating STI policy;

- Create databases on the relevant STI indicators for benchmarking national performance in innovation and its impact on economic growth.

The workshop has been highly successful and the participants strongly recommend that similar events be held in other developing countries in future as a means of strengthening and promoting Science, Technology and Innovation Policymaking for sustainable development.

To stimulate policymaking in Africa and other NAM member countries, the offer of the South African participant for hosting the next International STI Policymaking workshop for developing countries and Sub-Saharan Africa jointly with the NAM S&T Centre in the timeframe of 2015-16, subject to the necessary administrative clearances, was gratefully appreciated.

The participants also expressed happiness with the participation of a senior representative of the State of Palestine for the first time in a scientific event organised by the NAM S&T Centre and agreed to extend support in the establishment of the Palestinian Innovation Ecosystem as part of the country's STI Policy initiative.

THUS, RESOLVED IN KISH ISLAND, THE ISLAMIC REPUBLIC OF IRAN ON THIS DAY, NOVEMBER 30, 2014.