

PREFACE
S&T Diplomacy and Sustainable Development in the Developing Countries

The objective of this book is to present a different perspective of S&T Diplomacy from the angle of developing countries and their sustainable development. It is a collection of a number of papers presented in the workshop plus some other papers which add to the breadth and depths of the vision with which that book provides the readers.

As its main contribution, this book is expected to enable readers to reach an integrated understanding of the two seemingly decoupled layers of the institutions and organizations; the policy of Science, Technology and Innovation for sustainable development and Science and Technology diplomacy. These two sets of policies have often been taken to be divided phenomena which are originated from two separated policy communities; the foreign policy community and the development policy community. The book aims to contribute to the literature by offering a unique and comprehensive conception which encompasses both domestic and foreign sets of policies simultaneously.

This double edged vision constitutes different dimensions therefore the reader can grasp it from different aspects. It is the shared theme in the papers which are devoted to the study of the diverse experiences of the developing countries at the national level. On the other hand, it is also underlined in the papers of which the level of analysis is regional and international. And finally, it is the centre of attention in the two papers which confer this concept from the theoretical aspect.

Therefore, the book is divided in four main chapters;

The First Chapter; National Experiences:

This chapter recounts some diverse experiences of several countries on S&T diplomacy and science and technology policy for sustainable development at the national level. They are all developing countries like Nigeria, Myanmar, Nepal Zimbabwe and Iran which are having valuable lessons worthy of lesson drawing by other developing countries.

It starts with Myanmar's paper on upgrading technological universities under ministry of science and technology. The writer is Ms. Khin San Thu who is Assistant Director, Ministry of Science and Technology, Myanmar. Through this paper, the reader gets familiar with the objective, the main tasks and the structure of Ministry of Science and Technology and more specifically about the Planning and Management of Technical Education in Myanmar.

The next paper is written by Mr. Clifford Mupeyiwa, the Principal Science and Technology Officer of Zimbabwean government, who seeks to present Zimbabwean institutional framework of S&T policy and Diplomacy. It also addresses historical recounts of some of general milestones of S&T diplomacy at the international level.

The third paper is on the Nepalian experience of science and technology diplomacy. It started with a historical recount of UN and Nepal interactions dated back as early as 1950 and reviews its current partnership with several international and regional specialized organization on the issues related with science and technology diplomacy. The paper then proceeds to address the formation of an updated structure for the governance of S&T diplomacy within the country such as Nepal Academy of Science and Technology (NAST), Institute of Foreign Affairs (IFA) and concludes with the missions of these organizations. It is written by Chiranjivi Regmi, Nepal Academy of Science and Technology.

The fourth paper belongs to Iranian authors, Mr. Birang, Amirinia and Ahmadi from V.P. for Science and technology. They attempt to show the recent efforts of the Iranian society in strengthening the national innovation system and the structure supporting the S&T diplomacy. The authors enumerate some initiatives including different memorandums of Understanding among universities. Another program is the deployments of scientific attachés as well as technological attachés among the Islamic Republic of Iran's (I.R. Iran) plans to expand scientific and technological ties with foreign countries. To facilitate international collaboration with internal organizations in science and technology, Iran's Ministry of Foreign Affairs set an agenda. Within the framework of this agenda, Iran's science and technology diplomacy and roadmap are taking shape and accordingly the Office of Science and Technology Cooperation is being established in the Ministry of Foreign Affairs to support to the country's international scientific and technological cooperation.

“Science & Technology Diplomacy: Progress of the Engineering Education in Cambodia” is the title of the fifth paper of this chapter by Cambodian author, Chansopheak SEANG from the Institute of technology of Cambodia (ITC). This paper highlights initiatives in Cambodia centered on science & technology policies to serve its development agenda; wherein science diplomacy is an integral aspect. As the paper proceeds we learn that Cambodia's national development priorities for S&T and find out that the country focuses on technology development and application to strengthen to small and medium enterprises. This includes upgrading of standards and product quality, links between industry and research and development sectors, promotion of technologies for their benefits and supply of skilled labor.

The sixth paper is authored by Siva Kumar Solay Rajah From Malaysian Ministry of Science, Technology and Innovation under the title of “Leveraging on Science, Technology and Innovation STI policy by Enhancing Collaborative Diplomacy”. It addresses the need to have a well designed S&T diplomacy in order to have a successful STI policy. The author maintains in detail that Malaysia has designed such a policy to highlight the advantages of sharing STI that would bring mutual benefits and not conflict. This country has also strived to identify a common ground that will be acceptable when people from different countries exchange ideas, information and findings with regard to STI. Kumar concludes the aim of this integrated S&T policy-diplomacy is to encourage the notion that diplomacy should assist in resolving problems and not doing otherwise and encourage young leaders of various nations to invoke diplomacy in forging friendship and fostering continued relationship.

The last paper under the title of S&T Diplomacy: Status and opportunities for the Republic of Mauritius by Madhou, Suddhoo and Gokulsing from Mauritius Research Council and Ministry of Foreign Affairs, Regional Integration and International Trade . It highlights possibilities for a Small Island Developing State like Mauritius to intensify strategic relationships and to influence S&T policies in other countries. It illustrates, at first, the institutional settings of the ministries carrying out the missions of S&T diplomacy, namely, the Ministry of Foreign Affairs, Regional Integration and International Trade (MoFARIT) and the Ministry of Tertiary Education, Science, Research and Technology (MoTESRT) and explain their responsibilities in details and then discusses the possibilities for Mauritius to use S&T to emerge as leverage and enhance relationships with other countries with similar interest, such as the possibility for Mauritius to emerge as a role model among Small Island Developing States through the Vision of the Ocean Economy and The Maurice Ile Durable (MID) Project and The potential for Mauritius to intensify its S&T strategic partnerships with Africa.

The Second Chapter :Regional Cooperation and South-South Relations:

The issue of regional initiatives and leadership is the topic of the second chapter.

This chapter commences with the paper by Indian authors like Ruckmani Arunachalam, Rita Gupta, and Dhaha Relian, from International Multilateral & Regional Cooperation Division, Department of Science & Technology. It is entitled “Better diplomacy and better science for better development” and is written to present the Indian initiatives to enhance S&T diplomacy among South countries. It enumerates and describes some of these programs such as ‘New Africa Initiatives in S&T’, Training of developing country scientists in India, Hosting developing country scientists for specialized training at the scientific centres and Implementation of Research Training Fellowships for Developing Country Scientists (RTF-DCS). It also goes on to explain some of Indian financial and scientific contributions to sustain international organizations and to maintain the level and quality of their collaborations. The topic of the contribution of S&T diplomacy for enhancing the technical and vocational education and training (TVET) in Nigeria is discussed by Aworanti, Olatunde Awotokun (PhD). He is the Registrar/Chief Executive, National Business and Technical Examinations Board of Nigeria. The paper is entitled “Enhancing Technical and Vocational Education through Science and Technology Diplomacy” and explains how apt negotiations have been made by Nigerian government with the western world in the area of providing support for technical and vocational education and training (TVET) as well as in industrial development. In pursuit of multilateral relations, many international organisations still embark on supporting and partnering with Nigerian government in knowledge and skills development areas. This paper is therefore designed to evaluate the roles of science and technology diplomacy in enhancing technical and vocational education and training in Nigeria.

The next paper is under titled “The Nigeria’s Technical Aid Corps Scheme, A Model for Science and Technology Diplomacy in Developing Countries “was written by Dr. Bolarinwa Olugbemi from Raw Materials Research and Development Council from Nigerian government. It is a paper to introduce a model for science and technology diplomacy in developing Countries based on the deployment of scientific knowledge, products and experts. As part of her foreign policy the Nigerian government established the Technical Aid Corps (TAC) Scheme in 1987, as an alternative to direct financial aid for African, Caribbean and Pacific (ACP) countries. It was designed not only to provide manpower assistance in all fields of human endeavour but also to represent a practical demonstration of South-South co-operation.

The Third Chapter: International Organizations and Networking :

The third chapter focuses its attention on the specific field of study, oceanography, nanotechnology and laser technology to highlight the benefits of international knowledge networking and S&T diplomacy at the global level:

The first paper of the third chapter is authored by Venugopalan Ittekkot from Bremen University, Germany. It is about international science and diplomacy in the area of ocean and seas. It discusses the challenges and opportunities the oceans and seas offer to humanities welfare and nature sustainability. It , then, addresses some knowledge gaps existing in some of developing countries to deal with this issues and proceeds to propose actions at national, regional and international levels. In some cases, regional investments, networking and sharing of facilities and

infrastructure could be beneficial. NAM S& T Centre could bring together member countries within an Oceanographic Network, where countries can support each other in the conservation and use of oceans and seas under their national jurisdiction. This could be in the field of education and research, national and regional policy making or in the design and implementation of regional oceanographic programs:

The next paper discusses the status of nanoscience and nanotechnology in many developed and developing countries as well as within the groupings of several countries, for example, BRICS, ASEAN and SAARC, and cooperation mechanisms adopted by them for the promotion of nanotechnology to meet their individual requirements. It is written by Ms. Radhika Tandon from NAM S&T Center. This paper discussed the significance of the issue of nano-technology transfer in the discourse of science diplomacy. Providing the fact that the North is deeply interested in exploiting the markets available in the developing countries for their nano-products, it is interested to engage South into different levels of negotiations and On the other hand, there is some level of mistrust in the developing countries about having been able to acquire 'real' technology from the developed countries even by paying high price, Therefore, South is more interested in the South-South cooperation. All these cross-interests and desirability of promoting partnerships to fulfil their own agenda vis-à-vis other nations requires negotiation and engagement of the nations in science and technology diplomacy.

The third paper of the third chapter was penned by Dr.Ihsan Fathallah Rostam from Iraq. It is on a specialized center for scientific research and treatment with laser. It starts with highlighting on the importance of regional cooperation , particularly in the fast growing areas like laser and nanotechnology, undertaking the following tasks: Dissemination of scientific knowledge , Information documentation and exchange of experience among workers in the field of laser from all disciplines (medical, engineering and physical, Scientific relations with corresponding centers regionally, within the organization and globally and everything would take care of and develop competence, curriculum development for the preparing intermediate stages enriching them with appropriate amounts of information regarding laser through adding and the new and developing present.

The 4th Chapter: Theoretical Frameworks:

The 4th Chapter is about conceptualization and theoretical modeling of the integration of S&T policy and Diplomacy. This task is completed by presenting two different cases studies; Turkey and Iran.

The first chapter is written by Turkish authors Dr. SiirKilkis and NesibeYazıcı from The Scientific and Technological Research Council of Turkey (TÜBİTAK). They presented Turkish Vision for Science, Technology, and Innovation and begins by providing an overview of the increasingly more mature and vibrant R&D, innovation, and entrepreneurship system of Turkey as the basis of advancing opportunities to increase international cooperation. Such an overview is based on a unique application of the "functional dynamics" approach in the literature to characterize the Turkish innovation ecosystem and its extension to cover international cooperations.

The second paper of this chapter is Miremedi's paper. It aims to build a theoretical model to explain the interactive nature of dynamism of domestic public policy and diplomacy in the domain of science and technology. Bridging two different frameworks of Advocacy Coalition Framework and Double Edge Diplomacy, the paper attempts to show how domestic

controversial policy advocacy of S&T determine the alternation of a country's position at the international arena and how the factor of policy brokering stabilizes this position by solidifying the relation between domestic and international policy communities. The presented model is applied on the case study of nuclear energy in Iran.

The book is recommended for students, engineers, policy researchers, S&T planners and technical staff involved in S&T Diplomacy and sustainable development.

Editor

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