

## Science and Technology Policy and Innovation Driven Growth: The Role of STEPAN



Science and Technology  
in Implementation

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**Sharing information and experiences has presented the major task for STEPAN**

**Chinese Taipei's economy has developed through factors driven by investment in innovation.**

### STEPAN Background and Objectives

For most countries recent, S&T policies have come to be seen as but one component in strategies for developing national innovation systems. This has led to the need for coordinating and integrating science and technology policies with a whole range of national objectives, policies and programs. How this has been achieved and the lessons various countries have learned as they work toward this goal carries important lessons for policy makers. Newly developing economies and those that have already undergone rapid and extensive industrial transformation can all benefit from the collective experiences of national S&T policy making and practice. Sharing information and experiences in this context has presented the major task for the UNESCO Science and Technology Policy Asia Network (STEPAN).

### Innovation Driven Growth in the Republic of Korea

The Korea presentations demonstrated how the country has remarkably altered its GDP per head of population, ratio of Government to Private Sector investment into Research and Development, and Growth over the last forty years. Exports had changed in nature from Primary Production, through Light Industrial Production, to Heavy and Chemical towards High Technology. The Science and Technology community had grown, its composition had altered significantly in favour of private sector employment, its productivity in terms of academic papers and patents had increased.

The university system would undergo restructuring to match industry needs and the structure of Korean economy had favoured large enterprise. It was believed that networks and smaller enterprises might release latent innovation.

Many of these issues were demonstrated in examples from the automotive industry. Historically the data show that Korea operated within a long-term vision determined with very significant Government involvement. A similar tale was told about Korea's Electronic Industry.

Although it had been noted that Korea needed to develop its people in science and technology this can be seen as a marginal improvement need when the level of investment and improvement over forty years is noted.

### Innovation Driven Growth in Chinese Taipei

Chinese Taipei's economy has developed through factors driven by investment in innovation, often in targeted sectors. Heavy investment has been made in nano-technology and related industry. It currently operates within a complex web of research bodies, policy bodies and political executives. The nation operates with a four-year Science and Technology development plan that emanates from its 5-8 year planning for emergent industries and key technologies.

Here too, there is much Government Investment, though less transfer to private sector investment than in Korea.

At a firm level it was argued that innovation is so important in such economies it probably deserves

*(Continued on page 3)*

## STEPAN Board Meeting Held in Seoul



Board Meeting was held at Seoul, Republic of Korea on October 13, 2004, in conjunction with the Innovation Workshop.

Upon the *Human Resource Development for S&T Knowledge Management* as its foremost priority. Development and use of innovation change management personnel within the innovation process, activities included tertiary education/training support for the generation of innovation change management personnel, change management, and the development of appropriate and effective university-private sector relations towards the promotion of national innovation.

The Meeting also set *S&T Policy Formation, Re-Oriented, and Implementation* as its second priority. Dealing with the formulation and strategic implementation of national innovation vision with a cross-country perspective, activities within the field also included the development and use of S&T policy analysis and advice capabilities by governments, and transforming the innovation process towards participation in a knowledge-based economy.

The Meeting discussed issues that were identified but prioritized. These included: strategy and process for R&D management, finance and technology transfer issues, and S&T management information issues.

## Iran Joins STEPAN

The Islamic Republic of Iran joined the STEPAN as the 20 th Member State, April 1 2005.

UNESCO received an official request from the Government of Iran to join the STEPAN network on February 8. Having been approved for meeting the constitutional requirements for membership, Iran was approved after a consultation with the STEPAN member states.

The Iran STEPAN National Focal Point will be the Iranian Research Organization for Science and Technology (IROST). Mr. Mohammad Hassan Entezari, Advisor to the Head of the Organization and Manager of the Bureau for Information Technology, is the National Focal Point Representative.

Iran is also hosting the International Forum on Science and Technology Policy for Sustainable Development from 3-6 September. Held in Tehran, topics of the forum will include science policy for sustainable development, harnessing technology for national and subregional priorities, and the role of parliaments in S&T governance.

Members of the forum will discuss ways to enhance awareness regarding the significance of supporting science, technology, and innovation, promote and empower structures to address S&T policies to local parliaments, set up forums for Central and Western Asian countries, and exchange information on new dimensions of science and technology governance and legislation.



Iran Joins STEPAN

## The Role of STEPAN (continued)

a strategic appointment. Evidence was provided on how people policies had changed through labour intensive to technology intensive to brain intensive (as had Korea), and that part of this policy had involved offshore recruitment and inducements.

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Both sets of experiences illustrated the significance of a strong central government with the ability to influence and pick industries in which to invest. This planned model may have special purchase in such nations but it has had much less success in some of the more mixed economies and those with far less economic power in the region. A point of analysis may be the means by which Korea transferred risk to the private sector.

The lack of involvement of SME entrepreneurs in Korea was less so in the case of Chinese Taipei. Thus a second issue worthy of exploration is the development of an enterprise culture. Certainly the experiences of Chinese Taipei suggest that SMEs have played a critical part in innovation driven growth particularly in the service sector.

A third issue that attracted general debate concerns the self-reliance and learning of both economies in their Science and Technology Policy Development. These modes were historically and, ironically, technologically bound but the countries in STEPAN today may be able to develop network approaches to Science and Technology policies.

### Implications for future STEPAN interactions and activities

Two quite distinct themes of network enquiry have emerged: one theme has emphasised the role of networks in the production, transmission and application of knowledge. A second theme has emphasised the ways that global 'networks' are transcending national boundaries particularly those between industrialised and developing economies.

Three challenges stand out. The first is to actively involve the least developed economies in partnership with the more developed economies while engaging in the policy process. In previous activities Australia, the Philippines and Lao PDR have worked together in developing new S&T policy for Lao PDR. How to engage the Network more broadly in such activities, however, remains a further challenge. Sensitization workshops such as the Seoul event offer an opportunity for further debate across the north/south divide.

## Current STEPAN National Focal Points

### AUSTRALIA

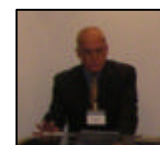
NFP: Australian Expert Group in Industry Studies (AEGIS), University of Western Sydney, City Research Centre. Level 8—263 Clarence St., Sydney, NSW, 1230

NFPR: Associate Professor Tim Turpin (Acting Director) [t.turpin@uws.edu.au]. Tel. 61 2 8255 6230; Fax. 61 2 8255 6222.

### BANGLADESH

NFP: Ministry of Science, Information, and Communication Technology, Bldg. 6, Room #916; Bangladesh Secretariat, Dhaka.  
NFPR: Mr. Hasanur Rahman [most@bangla.net] Tel. 88 2 7164676; Fax. 88 2 7169606

The role of networks and its transcendence beyond national boundaries



Dr. John Gray

This issue has been compiled by

UNESCO Jakarta  
 Jl. Galuh II No.5  
 Kebayoran Baru  
 Jakarta Selatan, Indonesia

Phone: 62-21-7399-818  
 Fax: 62-21-7279-6489  
 E-mail: Jakarta@unesco.org



### What is STEPAN?

STEPAN is an official Asia-wide network of people and institutions involved in research and training support for national science and technology policy and management. The organization's program is devoted to the development of support programs to assist the development of S&T management information systems, to foster the linking of research with social and economic application, and to promote associated human resource development. STEPAN operates under the auspices of UNESCO, which continues to provide substantial support for the network.

For further information on STEPAN, click:

[www.stepan.org](http://www.stepan.org)

## Current STEPAN National Focal Points



### BRUNEI DARUSSALAM

NFP: The Ministry of Development,  
 Bandar Seri Begawan 1190,  
 Brunei Darussalam.

NFPR: Mr. Malai Hashim Othman (Head, Research and Development)  
 [malai@mod.com.bn]. Tel. 673-2-383525; Fax. 673-2-382137

### THE PEOPLE'S REPUBLIC OF CHINA

NFP: Ministry of Science and Technology, 15B, Fu Xing Road, Beijing  
 100862.

NFPR: Mr. Luo Delong [luodl@mail.most.gov.cn]. Tel. 86 10 58881320;  
 Fax. 86 10 58881324

### INDIA

NFP: Department of Science & Technology, Government of India, New  
 Mehrauli Road, New Delhi 110 016.

NFPR: Mrs. Sadhana Relia [srelia@alpha.nic.in]. Tel. 91 11 26602189;  
 Fax. 91 11 26862418/6863847

### JAPAN

NFP: National Institute of Science and Technology Policy (NISTEP),  
 MEXT Building 5<sup>th</sup> Floor, 5-1, Marunouchi 2 chome Chiyoda-ku, Tokyo  
 JAPAN 100-0005

NFPR: Dr. Fumihiko Kakizaki (Senior Research Fellow, Science and  
 Technology Foresight Center) [kakizaki@nistep.go.jp]. Tel. 81-3-3581-  
 0605

### REPUBLIC OF KOREA

NFP: Science & Technology Policy Institute (STEP), Specialty  
 Construction Center, Shindaebang-dong 395-70, Dongjak-Gu, Seoul,  
 #156-010 Korea. Tel. 82 2 3284-1801; Fax. 82 2 849-1195.

NFPR: Dr. Youngrak Choi [yrchoi@stepi.re.kr]. Tel. 82-2-3284-1801;  
 Fax. 82-2-849-1195.

### INDONESIA

NFP: Indonesian Institutes of Sciences (LIPI), Jl. Gatot Subroto10,  
 Jakarta 12710.

NFPR: Prof. Dr. Lukman Hakim (Vice Chairman Indonesian Institute of  
 Sciences) [lukman.hakim@lipi.go.id]. Tel. 62 21 5225641; Fax. 62 21  
 5255709.

### ISLAMIC REPUBLIC OF IRAN

NFP: Iranian Research Organization for Science and Technology  
 (IROST), 17, Shahid Mousavi (Southern Forsat) St., Enghelab Ave.,  
 Ferdosi Sq., PO BOX 15815-3538, Tehran, Iran. Tel: 98 21 88828051-  
 7; Fax: 98 21 8883 189993. [general@irost.com].

NFPR: Mr. Mohammad Hassan Entezari (Advisor to the President,  
 Manager of the IT Division).

### LAO PEOPLE'S DEMOCRATIC REPUBLIC

NFP: Prime Minister's Office, Science, Technology and Environment  
 Agency (STEA), PO Box 2279, Vientiane.

NFPR: Ms. Sisavanh Boupha (Deputy Director General, Science and  
 Technology Department) [sisaranhbpha@yahoo.com]. Tel. 856-21-  
 218737; Fax. 856-21-312992

### MALAYSIA

NFP: Ministry of Science, Technology and Environment, 14th floor,  
 Wisma Sime Darby, Jalan Raja Laut 50662,  
 Kuala Lumpur

NFPR: Mr. Hashim Hassan [hashim@moste.gov.my]. Tel. 60-3-  
 2939339; Fax. 60-3-2942312 / 29366006

### MALDIVES

NFP: The Ministry of Communication, Science and Technology, 4th Floor, H.  
 Aage, Boduthakurufaanu Magu, Male, Republic of Maldives.

NFPR: Mr. Midhath Hilmy (Minister) [Midhath@mcst.gov.mv]. Tel. 960  
 3328668; Fax. 3331694

### MONGOLIA

NFP: The Ministry of Science, Technology, Education and Culture of  
 Mongolia,

NFPR: Mr. Bulгаа Ganbat [ganbat\_b@hotmail.com], Tel. 976-11-267779  
 Fax. 976-11318131

### NEPAL

NFP: Royal National Academy of Science and Technology (RONAST),  
 Khumaltar, Lalitpur, Nepal [ronast@mos.com.np]

NFPR: Mr. Pratap Singh (Divisional Chief). Tel. 977 1 5547721/20; Fax.  
 977 1 5547713

### NEW ZEALAND

NFP: Ministry of Research Science and Technology, PO BOX 5336,  
 Wellington.

NFPR: Dr. Marten Hutt [Marten.Hutt]@most.govt.nz]. Tel. 64 4 471 6929;  
 Fax. 64 4 471 1284

### PAKISTAN

NFP: Ministry of Science and Technology International Liason Wing,  
 Islamabad.

NFPR: Amiad Hussain (Deputy Scientific Adviser). Tel. 92 51 9202225; Fax.  
 92 51 9220863/9205376

### PHILIPPINES

NFP: Department of Science and Technology (DOST), Gen. Santos Ave.,  
 Bicutan, Taguig, PO BOX 3596, Manila.

NFPR: Mr. Fortunato T. De La Pena (Undersecretary for S&T Services)  
 [ftdp@dost.gov.ph]. Tel. 63 2 837 0086; Fax. 63 2 837 2937

### SRI LANKA

NFP: National Science Foundation, Vidya Mawatha, Colombo 7.

NFPR: Mr. Mahen Watson (Director) [mahenw@nsf.ac.lk]. Tel. 94 1 694170;  
 Fax. 94 1 694754.

Ms. R.M.W. Amaradasa (Director) [wasatha@nsf.ac.lk]. Tel. 94 1 694770;  
 Fax. 94 1 694754  
 Dr. N. Jayasuriya (Director)  
 National Science Foundation

### THAILAND

NFP: Ministry of Science and Technology, Rama VI Road, Rajdivee,  
 Bangkok 10400.

NFPR: Ms. Saowanee Musidang (Director, Office of Policy and Strategy,  
 Office of the Permanent Secretary) [saowanee@most.go.th]. Tel. 662-354-  
 3738; Fax. 662-354-3718

### VIETNAM

NFP: Ministry of Science and Technology, National Institute for Science,  
 Technology Policy and Strategy Studies (NISTPASS), 38 Ngo Quyen Ha  
 Noi, Vietnam.

NFPR: Dr. Dr. Dang Duy Thinh (Deputy Director). Tel: 84-4- 8261 056;  
 fax: 84- 4- 8252 873.