

Myanmar has also engaged in international-level collaborations with member countries of ASEAN, India, China, Republic of Korea, Japan, Pakistan and some European Union countries in terms of: exchange of scientists and researchers; exchange of S&T news and documents; and conducting conferences, workshops and training programmes on S&T topics.

Besides bilateral engagements with some countries in the Asian region, Myanmar is also a member of several regional groups as well as international organizations such as International Electrotechnical Commission (IEC), International Organization for Standardization (ISO) and World Intellectual Property Organization (WIPO). It is in a number of sub-committees of the ASEAN Committee on Science and Technology (ASEAN COST).

D. Conclusion

As can be seen from the above, Myanmar does not have a well-structured National Innovation System as yet. However, the country has many of the required components, such as a basic S&T framework, human resources, natural resources, etc. What it lacks are the linkages, policies and integration of components. Hopefully, this workshop would give some direction towards this.

NEPAL²¹

A. Background

Nepal is a landlocked, mostly mountainous country situated between China in the North and India in the South, East and West. Its terrain that covers an area of 147,181 sq. km is 35 per cent mountainous and 42 per cent hilly, with only 23 per cent plains. The country, with Kathmandu as its capital, has a population of 28 million. This federal democratic republic has an annual growth rate of 2.2 per cent. Administratively, Nepal is divided into five development regions, which are further divided into 14 zones and 75 districts.

B. Status of science and technology

In Nepal, five governmental bodies formulate science and technology (S&T) policies, as required:

- Ministry of Science and Technology;
- Different sectoral ministries;
- National Planning Commission;
- Environment Protection Council;

²¹ Presented by Mr. Sanu Kaji Desai, Under Secretary, Ministry of Science and Technology, Nepal.

- High-Level Commission on IT; and
- National Agriculture Research and Development Fund.

Institutions that conduct S&T research and development (R&D) are listed below:

- Nepal Academy of Science and Technology (under the Ministry of Science and Technology);
- National Forensic Laboratory (under the Ministry of Science and Technology);
- Nepal Agriculture Research Council (under the Ministry of Agriculture);
- Water and Energy Commission (under the Ministry of Energy);
- Department of Forest Research and Survey (under the Ministry of Forestry);
- Department of Food Technology and Quality Control (under the Ministry of Agriculture);
- Department of Plant Resources (under the Ministry of Forestry);
- Department of Mines and Geology (under the Ministry of Industry);
- Department of Soil Conservation and Watershed Management (under the Ministry of Agriculture);
- Department of Hydrology and Meteorology (under the Ministry of Environment);
- Department of Survey (under the Ministry of Land Reforms);
- Central Food Research Laboratory (under the Ministry of Agriculture);
- National Health Research Council (under the Ministry of Health Services); and
- Research Centre for Applied Science and Technology (under Tribhuvan University).

S&T-related human resources have seen notable growth in the new millennium. As of 2009, there were nearly 44,900 people qualified in S&T-related areas (Engineering 20,693; Medical sciences 7,769; Agriculture 3,616; Forestry 925; and Natural science & others 11,886). One in every 624 Nepalis works in the S&T sector, and 2.37 per cent among these are Ph.D. holders. To educate the country's S&T workforce, there are five universities (two of them government-run), two health academies and the Council for Technical Education and Vocational Training.

The allocation for education in the national budget is 16.5 per cent, out of which S&T education gets 1.2 per cent. Expenditure on R&D is only 0.3 per cent of the gross domestic product (GDP). Sector-wise R&D expenditure is given below (Table 7).

Table 7: Sector-wise expenditure in R&D (as percentage of the sectoral budget)

Sector	Expenditure (%)
Forestry and plant resources	6.1
Agriculture and food	13.3
Industry and mines	26.8
Health	1.9
Water and energy	1.5
Land survey	5.8
Education	1.8

The Science and Technology Policy formulated in 2005 has three basic objectives:

- Enhance the national capacity through S&T;
- Assist in poverty reduction activities through the use of S&T; and
- Elevate the country to a competitive position through optimum S&T development.

The Policy has adopted a four-pronged strategy of: infrastructure development, human resources development, R&D and sectoral implementation.

Other policies that have a bearing on the S&T sector include:

- Information Technology Policy, 2010;
- Biotechnology Policy, 2006;
- National Nuclear Policy, 2007;
- National Wetland Policy, 2001;
- Nepal Academy of Science and Technology Act, 1991; and
- Electronic Transaction Act, 2006.

The country has good traditional technical know-how in sectors such as metallurgy, paper manufacture, plant-based medicines, architecture, textiles, food, handicrafts, agriculture and pottery.

The problems that Nepal faces in the S&T sector are:

- Low priority for and investment in R&D;
- S&T workforce is mostly engaged in non-research activities;
- Brain drain;
- Lack of coordination among S&T institutions;
- Lack of well-equipped laboratories, libraries and other infrastructure;
- Lack of high-quality S&T workforce; and
- Lack of scientists working on advanced technologies.