

## **DELHI DECLARATION**

National science academies have been established all over the world to promote excellence in science through different means and to deliberate on issues and challenges faced by their respective societies. They make recommendations for solution of societal problems and render advice to decision makers/political leadership on matters of national importance. In the South Asian region problems faced by the people are quite similar. These include: challenges in improving quality and spread of education, particularly in science; radically fresh solutions to make available adequate level of energy to all citizens; novel approaches that can lead to affordable high quality health care infrastructure; strategies to tackle challenges like those emerging out of climate change and fast urbanization in the developing world and stimulation of innovation and manufacturing capabilities to stimulate fast inclusive economic growth. Keeping these major issues in mind, Indian National Science Academy had organized a Summit of the South Asian Academies of Sciences during 6-9 September 2012. Presidents and top representatives of the following Academies participated in these deliberations:

Afghanistan Academy of Sciences;  
African Academy of Sciences, Nairobi;  
Bangladesh Academy of Sciences;  
Indian National Science Academy;  
The Academy of Sciences of Islamic Republic of Iran;  
Mauritius Academy of Science & Technology;  
Nepal Academy of Science & Technology;  
Pakistan Academy of Sciences;  
The National Academy of Sciences, Sri Lanka.

The African Academy of sciences, a pan African organization representing 32 African countries was specially invited to share the African experience.

Honourable Minister of Science and Technology, Shri Vayalar Ravi addressed the Summit participants on 7 September 2012 and strongly supported the deliberations of the Summit. He promised full support of the Government of India as the subject matter of discussions is of considerable societal value.

Well-known keynote speakers in all areas had shared their views which were followed by detailed discussions on different aspects. As a result of these deliberations, it has been resolved as follows:

### **Energy Options**

Energy security for all of the South Asian countries is of paramount importance. The per capita availability of electricity in this region is many times lower than that in the developed world.

For sustainable socio-economic development of any nation, investment in availability of adequate energy is essential. To quote Dr Homi Bhabha, “There is no power as costly as no-power”.

Several options exist in South Asian countries for increasing their energy output. These include thermal, nuclear, renewable resources, like hydro-electric, wind, hydrogen, etc. and each nation will prioritize its options, depending on the availability of resources. However, all the energy options have to be appreciated and a right proportion has to be found, depending on the end use. It was envisaged that cross-border cooperation will be in the interest of all the stake-holders.

It was also realized that in a number of South Asian countries, large energy needs will still be met through thermal sources based on coal. Hence, it is necessary to initiate new research towards mitigation of carbon emissions for environmental purposes. For energy needs of the transportation sector, R&D on hydrogen as future fuel must be encouraged.

R&D on all resources of energy should be pursued with vigour, and economic and sustainable social progress should be ensured without much environmental degradation.

### **Health care and Infectious Diseases**

Infections are still a major threat, both in the region and worldwide. Older ones continuing, rather re-emerging; and newer ones are getting added on. On the top of it the problem of neglected tropical diseases are unique to this region. More recently the added problem of multidrug

resistant - malaria, tuberculosis and now the new bacterial infections are surfacing. All these are common to all countries of the region.

There is tremendous deficiency of multidisciplinary expertise to tackle the infectious disease menace. There is a felt need to apply newer technologies to find context specific solutions to these challenges. There could be immense benefit by pooling resources. We may start with creation of databases and sharing of this data and sharing of materials.

Also, opportunities for training of young investigators need to be created. This could become a role model for control of infectious diseases and of regional cooperation and collaboration.

### **Science Education**

Science in education is primarily meant to create societies based on scientific thinking, rational approach towards problems, greater tolerance, and ability to resolve issues based on facts and justice, thus developing scientific minds and scientific temper in general

In order to develop scientific minds, there are good models available, such as ICSU and Science Education Panel of UNESCO, as well as French and US models. They can be taken into account while developing the most appropriate model(s) for science education in various countries. The education in science should include ethical dimensions.

It is also important to use modern ICT tools to cooperate in science education endeavors, to increase interest in younger generation in science and technology and to benefit from the science teaching resources available in the regions and elsewhere. It has been noted that number of students in basic sciences is decreasing. It is therefore important that science education is provided at the grass root levels through the provision of scholarships, internships and other opportunities for young generation to interact with fellows of academy and other established scientists.

## **Science and Society**

Science today means not only creation of knowledge, but also making it relevant to the society and applying it to solve societal problems. Efforts should be made to use the existing knowledge and innovate to be of maximal use to the society. The commonality of the region is that a large segment faces deprivation from benefits of science.

### *Women in Science*

Despite the fact that women constitute half the population, their role in science education and development is marginal. Steps are needed to strengthen the participation of more women scientists to enrich the pursuit of science, research and teaching.

### *Urbanization*

Urbanization caused by unequal facilities and opportunities in rural areas has resulted in numerous problems to human species as well as the environment. The urgent need is to control urbanization by empowering villages with good social infrastructure that access to food, nutrition, health, education and employment.

## **Climate Change**

Human intervention has caused considerable climate change posing a threat to all life forms. Urgent steps are needed to arrest further deterioration and restore climate conditions.

The South Asian Academies should collaborate in addressing these issues. They can play a pivotal role in identifying the specific problems of the region and come up with region specific solutions. This in turn will change the mindset of the people about science.

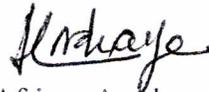
## **Inclusive innovation**

All Academies will deliberate on interfaces between research, knowledge and innovation. Inter-Academy efforts will be encouraged to find solutions to common cross- border problems.

It has been resolved that academies should play a key role in working closely on issues of concern to science and society and prepare recommendations for decision makers, scientists, educationists and other stake holders. It was also resolved that a Network of the South Asian Academies of Science should be created. These Summits should be held on yearly basis.



(President, Afghanistan Academy of Sciences)



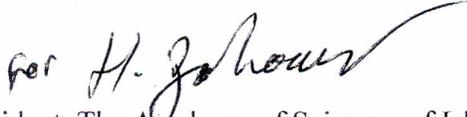
(President, African Academy of Sciences, Nairobi)



(President, Bangladesh Academy of Sciences)



(President, Indian National Science Academy)



(President, The Academy of Sciences of Islamic Republic of Iran)



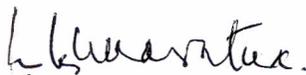
(President, Mauritius Academy of Science & Technology)



(President, Nepal Academy of Science & Technology)



(President, Pakistan Academy of Sciences)



(President, The National Academy of Sciences Sri Lanka)