# Science Diplomacy as a Tool for Development Cooperation in South Asia

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## Introduction

A country's march towards modernization and economic empowerment is largely dependent on the progress it makes in science & technology (S&T). In South Asian countries the trade and economic negotiations have been pursued more meticulously. Such cooperation when contacted upon the issues related to S&T has often resulted in conflicts and controversies over security issues. However in 21st century, countries willing to pursue their development goals can no longer stay in isolation. There is necessity to abandon the political differences and collaborate in S&T in order to best serve a nation's own interests. The role of science & technology is inevitable in building dialogues, improving relationships and building bridges for sustainable development among the nations, and provides a unique niche for science diplomacy.

## Cooperation between India and South Asia neighbors

India has been first among developing countries to provide aid to its neighbors in South Asia starting from 1950s with the aim of strengthening their infrastructure, communication as well as building relationships. From Plan aid to industry support, the financial aid took many forms. With the signing of Memorandum of Understanding (MoUs), between India and other nations the cooperation grew not only in the field of education and health but also in industry, energy and agricultural advancements. Skill development, vocational education and trainings have been pursued in multi-disciplinary fields. Scholarships were extended to students from neighboring countries under various schemes. Although India's aid to South Asia countries has been quite substantial compared to its needs and resources, such bilateral collaborations were regarded as Aid diplomacy[1]. The Gujral Doctrine of Non-Reciprocity with its neighbours adopted

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by India during 1990s, failed to arouse the interest of the partner country in development cooperation, rather labeled India as 'hegemonic power'[2], which was seen as a threat. Science communication at the country level remained below average, jeopardized with the fear of leaking defense secrets in view of increasing border disputes.

## Leveraging Strengths in Science & Technology

Nevertheless, South Asian countries are undergoing significant transformations. South Asia Association for Regional Cooperation (SAARC) came into being in 1985 as geopolitical union of eight nations viz.; Afghanistan, Bhutan, Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka in South Asia aiming at economic, cultural and social ties with its headquarters in Nepal. Department of Science & Technology in the Ministry of Science & Technology, Government of India has nodal responsibility toward multilateral diplomacy and has been taking new intiatives. India has made conscious efforts to strengthen its relationship with its neighbors. There are bilateral and multilateral programs under the umbrella of not only SAARC, but also ASEAN and BIMSTEC, which have taken shape through extensive diplomacy including science diplomacy. In addition to these, India has taken several multi-lateral initiatives within SAARC aimed at the triple objectives of education-peace-development of the region.

***South Asian University (SAU).*** India took a lead in setting up South Asian University (SAU) for the benefit of the region. The proposal was first discussed in the 13th SAARC Summit held in Dhaka in 2005. Prof...G. Rizvi an eminent historian from Bangladesh prepared the concept paper in consultation with SAARC nations. An agreement was signed in the SAARC Summit held in New Delhi in 2007. The mandate of SAU to be established in India envisaged that the choice of the programs of studies offered would enhance learning in the South Asian community to promote an understanding of one another's perspectives and strengthen regional consciousness for better relationship besides education and capacity building[3]. Three core elements of the SAU are;

i) Building a culture of understanding and regional consciousness;
ii) Nurturing a new class of liberal, bright and quality leadership;
iii) Building the capacity of region in science, technology, and other disciplines considered vital for improving the quality of life of the people.

The SAU began its operation in 2010 in New Delhi. The capital cost of setting the University is being completely borne by India. The mechanics of its operation include cost of running of University is shared on year-to-year basis by all SAARC member states and the contribution of individual member states is governed by a formula that has been jointly evolved. Interdisciplinary Research Centers and Institute of South Asian Studies are envisaged as core infrastructure. There are many challenges to face, yet it is indeed an opportunity for the neighboring countries to come forward to take part in this cooperative movement.

***South Asia Satellite (SAS).*** Launch of South Asia Satellite (SAS) from Sriharikota on May 05, 2017 was heralded as India's science diplomacy victory. In line with India's 'neighborhood first' policy all Heads of SAARC countries

(except Pakistan) took part in the video conference of the launch of GSAT-9 by Indian Space Research Organization (ISRO) into Geosynchronous Transfer Orbit (GTO) and applauded the initiative. The SAS (previously SAARC Satellite) was renamed South Asia Satellite after Pakistan withdrew. The satellite with its solar panels is put into Geosynchronous Orbit (GSO) and has potential for SAS data utilization for various broadcasting and interactive telecommunication applications viz. television, direct-to-home (DTH), very small aperture terminal (VSATs), tele-education, telemedicine etc. Applications will include disaster management, broadcast of meteorological data and networking of academic, scientific and research institutions to strengthen the regional cooperation[4,5].

The cost of SAS is completely borne by India and prior to launch MoUs were signed with each country. The satellite also has the capability to provide secure hot line among the participating nations as critical communication links in times of disasters viz. earthquakes, cyclones, floods, tsunamis etc. It is therefore imperative to do more work to build scientific collaborations for using satellite data in newer areas such as weather forecasting, education and disaster risk reduction to leverage strengths in science diplomacy.

***Disaster Risk Reduction (DRR).*** Soon after the disastrous Tsunami that occurred in December 2002 in the India Ocean, steps were taken to establish Indian National Centre for Ocean Information Sciences (INCOIS) at Hyderabad. The Indian Tsunami Warning System at INCOIS is equipped to issue warnings within 10 minutes of occurrence of an extreme event inside the oceans. A Real Time Seismic Monitoring Network (RTSMN) has been established. To facilitate access to neighboring countries a network of national systems comprising of National Tsunami Warning Centers (NTWC) in each Member country is proposed.

India enacted Disaster Management Law in 2005 and proposed National Disaster Management Authority (NDMA) in New Delhi. The NDMA incorporated South Asian Disaster Management activities. The Government of India took lead role in organizing the "South Asian Annual Disaster Management Exercise" (SAADMEs)-2015. Its main focus was to test coordination efforts, create synergy and synchronize efforts to institutionalize Regional Cooperation on Disaster Response among the member countries. Delegations and rescuers from each of the eight SAARC nations – India, Maldives, Nepal, Afghanistan, Bangladesh, Bhutan, Pakistan and Sri Lanka participated. In the Asian Ministerial Conference for Disaster Risk Reduction (DRR) held in New Delhi in 2016, and Asian Regional Plan for Implementation of Sendai Framework has been evolved. First World Tsunami Awareness Day for the region was observed on November 05, 2016. In 2016, the SAARC Disaster Management Centre (SDMC) Interim Unit has been inaugurated at Gujarat Institute of Disaster Management in Gandhinagar. The SDMC is expected to serve the SAARC member countries and has a vision to be a vibrant Centre of Excellence for the knowledge, research and capacity building for regional cooperation. The overall disaster management capacities in the region are being strengthened through these initiatives.

***International Solar Alliance (ISA).*** International Solar Alliance (ISA) is a multi-country partnership organization

with its Headquarters in India to boost solar energy development in response to climate change[6]. It is first inter-governmental organization which aims to mobilize $ one trillion funds to achieve one terra watts of solar energy capacity by 2030. Solar resource rich countries falling completely or partly between the Tropic of Cancer and the Tropic of Capricorn are anticipated to be its members. Though it is an Alliance of more than 120 countries, all South Asian countries fall within the identified boundaries. The ISA has laudable goals to undertake a number of activities for its members, such as;

- Collaborations for joint research, development and demonstration, sharing information and knowledge, capacity building, supporting technology hubs and creating networks.
- Acquisition, diffusion and indigenization and absorption of knowledge, technology and skills by local stakeholders in the member countries.
- Creation of expert groups for development of common standards, test, monitoring and verification protocols.

Members are expected to take coordinated actions through programmes and activities launched on a voluntary basis, aimed at harmonizing and aggregating demand for solar finance, solar technologies, innovation, research and development, and capacity building. It is no doubt a great opportunity toward combined effort through science diplomacy for achieving clean energy development to address climate change concerns.

## Conclusions

Science & Technology are deeply rooted in the ancient culture of South Asia. India has tried development cooperation with its neighboring countries under bilateral and multi-lateral engagements. A beginning has been made in science diplomacy among the South Asian countries by taking new initiatives in the recent years. These need to be strengthened further by leveraging the 'soft-power' of science and technology in the foreign policy of nations. The partner countries have to come forward to build new ties by focusing on scientific collaboration within the ambit of nations' sovereign policies.

## References


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