

Pakistan Space Program and International Cooperation



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Introduction

The significance of the space programme to Pakistan is multi-faceted. Pakistan was among the first 10 countries to start a space programme. Its space programme started upon the appointment of Dr. Abdus Salam (Noble Prize Winner) as the Chairman of the Space Upper Atmosphere Research Commission (SUPARCO) in 1961. Owing to the prevailing unfavourable economic and political environment, coupled with regional instability and other factors, this programme could not persist for long. Recent efforts to overcome these mistakes and hurdles through an improved domestic strategy and smarter international relations are promising. To promote its space activities, Pakistan successfully conducted international cooperation with different countries and organisations. Firstly Pakistan collaborated with the US but now Pakistan's policy shifted towards China. In 2011, Pakistan announced a thirty-year plan for SUPARCO: 'Vision 2040'. The government bolstered the Pakistani space programme by putting ink to a 30-year programme in 2011.

- SUPARCO and CGWIC signed contract for the development and launch of Pakistan Remote Sensing Satellite (PRSS-1) System on 20 April 2016.
- Pakistan launched two remote sensing satellites PRSS-1 and PakTES-1A on 9 July 2018 from China's Jiuquan Satellite Centre. Pakistan Technology Evaluation Satellite-1A (PakTES-1A) indigenously designed and developed by SUPARCO's engineers, had also been co-launched with PRSS-1 by the same launch vehicle, from China.



Pak–America cooperation for the Rehbar series

- On 7 June 1962, the first rocket, named Rehbar1, was fired into space. It made Pakistan the 3rd country in Asia after Israel and Japan and the 10th in the world to conduct that launch.
- Rehbar 1 was a two-stage rocket successfully launched in cooperation with NASA. Rehbar1 carried a payload of 80 pounds of sodium and soared up about 130 km into the atmosphere. This rocket program went on until the 1970s.
- A team of five young scientists from Pakistan went to NASA for advanced education. These scientists also took advanced training and experience in space science related areas from U.S universities.
- The data received from Rehbar series gave scientists information on the wind shear and structure in the layers of the upper atmosphere extending beyond the stratosphere. The data collected also helped in the study of cloud formation, cyclones and weather over Arabian Sea. Pakistan shared the obtained data with the Americans.



Pak- China cooperation for Paksat-1R, PRSS1 & PakTES-1A

- Pakistan's first communications satellite, Paksat-1R, launched on August 11, 2011. The main purpose of this satellite is to provide broadband internet, digital television, tele-education services not only for Pakistan but also across South and Central Asia, Eastern Europe, and East Africa.
- Paksat-1R was manufactured and launched with the help of China Great Wall Industry Cooperation (CGWIC). China and Pakistan agreed to manufacture PAKSAT-1R in March 2009. Pakistan set up Satellite Ground Station (SGS) with China's help.



Vision 2040

- Vision 2040 started with the launch of Paksat-1R on 11 August 2011.
- In July 2011, the National Command Authority approved the Space Program 2040.
 - Five GEO and six LEO satellites will be launched till 2040.
 - Pakistan announced, on 25 October 2018, that Pakistan is going to send an astronaut into space in 2022 with the help of China.
 - Pakistan wants to build its own launcher and expecting complete self-reliance before 2040.

Conclusion

- Pakistan, despite being a nuclear power, has not been able to build its own indigenously made launcher yet and has limited space capabilities. It has been competing hard to intact its position in space observatory and exploratory endeavors.
- Pakistan's space Program initiated in 1961 and began to move forward in space exploration in cooperation with US for Apollo mission but couldn't continue its pace. The economic challenges, political instability and sanctions affected SUPARCO's progress in the space research field. SUPARCO has to consider these challenges as a serious threat to its future space prospects, particularly for Vision 2040.
- SUPARCO's Vision 2040 is a ray of hope for Pakistan to establish itself as a space faring nation. Remarkable progress has been made with the help of China until now. The main objective of Vision 2040 to become able to build and launch indigenously made satellite. The financial help and consistency of policies by government would be the guarantee of success. Pakistan's political scandals and budget shortfall should not affect SUPARCO, as it done it past.
- It is vital for Pakistan's policy makers to understand and acknowledge the importance of a robust space program. It will not only enable national and commercial space exploration but help provide Pakistan with significant military and economic gains in space field. The current commitment towards Pakistan's space program shows that it will not repeat history. The future plans and promise by state seems impressive.