

Abdus Salam born in a devote Muslim family in the Punjab province, in the then British India. While still aiming at a career in the civil service, being an outstanding student Salam obtained a British scholarship that allowed him to attend Cambridge, where he got his Ph.D. in physics. By January 1951 he was invited to join the Institute for Advanced Studies at Princeton, but in the autumn of that year he decided to return to Pakistan, where he was appointed head of the Mathematics Department at Punjab University. A decision most likely tantamount to academic suicide for a rising star in the world of high-energy physics shows very well how the young man's – then 25 years old – the young man's devotion to the cause of promoting science in what was called the Third World, notably in his home country Pakistan – a cause which Salam consistently supported during the whole of his long life. But, unfortunately, Pakistan was already a shaky, dangerous place. Salam, a devoted Muslim himself, belonged to the Ahmadiyya Society, a 19th-century Islamic movement which was by and large considered as a form of heresy by Sunni authorities. Personally threatened during the violent riots that occurred in Punjab in 1952-1953, Salam decided to leave Pakistan once and for all, though maintaining the Pakistani citizenship throughout his life. On recommendation of physicist Hans Bethe, Salam joined Imperial College in London, where he became the first professor of theoretical physics. In 1979 he was awarded the Nobel Prize for his work on the unification of electroweak interactions, an area of research very much consistent with Salam's idea that the Qur'an asserts the basic symmetry of the nature of all forces, so that there's no contradiction between religion and science. As Salam's scientific career improved, his activities as 'scientific diplomat' – as Alexis De Greiff put it already some twenty years ago – flourished. Probably the most notable result of such activities is the foundation of the International Centre for Theoretical Physics in Trieste, a place intended to promote physics in developing countries by fostering exchange and collaboration with physicists in the Western world. This is why Salam's personal papers are kept in Trieste: among them, those relating to Salam's activity as chief scientific advisor to the President of Pakistan and as a leading member of the Pakistan Atomic Energy Commission (or PAEC).

Like many other countries, Pakistan's interest in atomic energy started in connection with the US Atoms for Peace programme and the new opportunities heralded by the first Geneva conference on the peaceful applications of atomic energy. An extensive programme with a strong impact on Pakistan's industrial development was broadly sketched. Its foundations were the creation of a research institute with a technological vocation, the search for radioactive minerals and the rapid introduction of electronuclear generation, along with the related effort to train technicians, both abroad and in the facilities to be built in Pakistan. The huge amount of money and technical assistance needed were expected to become available thanks to the special allure of peaceful atomic cooperation as a new area of Cold War competition against the wider background of the boom of development

aids at the crossroads between Cold War and decolonization. By the end of the 1950s, however, no breakthrough had been made. The turning point occurred when the military regime led by general Mohammad Ayub Khan hired Salam and appointed Ishrat Hussain Usmani – a senior civil servant who had got a Ph.D. in physics in the early 1930s – as chairman of the PAEC.

One should notice a peculiar feature of Ayub Khan's regime, namely the idea that modernization represented a key component of the power compromise on which the Pakistani ruling elite ultimately rested. In a country bereft of the basic characteristics of the modern nation-state – that is geographical contiguity, common language, and a shared identity rooted in a nationalist narration of the independence – Islam should have been the fabric of 'Pakistan-ness'. But, as Salam knew very well, there was no consensus about what 'Islam' really meant. So – and this was the political bet of the Ayub Khan's regime – the focus had to be switched on social and economic development, coherently with development theories so influent especially, but not only, in the United States. That's why the regime's propaganda labelled the 1960s as the 'Decade of development' and that's why the myth of Ayub's period still resists as a golden age of political stability, economic growth, and secularism. The period when flight attendants of Pakistan International Airlines displayed suits by Pierre Cardin and Pakistan as a whole was deemed as a virtuous example in development politics.

In a country with an average annual GDP growth rate of almost 17% in the period 1960-65, the case for atomic energy could be reasonably argued as a strategic choice to guarantee the economic future, as well as a vehicle of nation building. As the arch-rival India had built – in the words of nuclear scientist Homi Bhabha - a 'nuclear Versailles' near Bombay as a canvas on which to paint an image of India's future, Salam and Usmani presided over the construction of the Pakistan Institute of Nuclear Science and Technology as a 'nuclear Taj Mahal', which, with its Mughal quotations as rendered by an internationally renowned American architect, could be a secular mosque, the physical exemplification of Pakistan's future of modernity and prestige.

However, in Salam's vision, nuclear energy – and, more generally, theoretical physics – was not merely a symbol. The atomic programme, on the contrary, was deemed as instrumental to modernization and development upon two assumptions. First, scientific research was considered a key element for economic growth; second, taking stock of the country's appalling illiteracy rate and inadequate education system, the atomic programme could be instrumental in the establishment of a scientific tradition in Pakistan. The Ayub Khan's regime seemingly represented an important window of opportunity, as it shared the same high-modernist rationale – namely the appealing idea that science and technology allowed the state to administratively give order to both nature and society, improving the conditions of the latter in the process. This is the reason why Salam attempted to employ the prestige of atomic energy and the influence of the PAEC to support with Usmani a reform project

aimed at establishing a single Cabinet ministry responsible for both education and research, as well as the creation of a scientific civil service – following the British and Indian model.

To be used as a vehicle of modernization and change, the atomic energy programme had to overcome the crippling hurdles of the first few years. In this sense, Salam's role in the academic world offered enough connections, influence, and prestige to allow him playing a very important role, even though in the backstage. Let's consider a couple of examples. At the time of the Geneva conference, nuclear physics was virtually non-existent in Pakistan, with the exception of a laboratory at Government College in Lahore, so it is clear that the training of scientists and technicians was a top priority: without adequate cadres, no atomic energy programme whatsoever could reasonably be supported. This kind of training was available only abroad, and Salam's connections, such as his friendship with Michael Moravcsik played an important role in putting the effort through. Moravcsik shared with Salam some research interests and, since his stay at Lahore as visiting professor under the auspices of the International Atomic Energy Agency, also his faith in the centrality of science for the development of countries like Pakistan. And Moravcsik exposed himself in order to assure that a consistent quota of Pakistani students was admitted in the US graduate schools, simply putting trust in Salam's advice about the suitability of the applicants' background. Of course, nothing would have been attained if not thanks to development aid, which covered the cost of such training, but this kind of connection emerged as instrumental in the success of the effort: by 1970 some 500 scientist and engineers had been trained, so creating a nucleus of experts which could reproduce their expertise domestically. My second example deals with Salam's role in the Karachi Nuclear Power Plant Project (or Kanupp). In March 1962, Salam and Usmani formally asked the United Kingdom Atomic Energy Authority to act as consultants to the project. The British recognised the wisdom of the Pakistani approach and hastened to initiate the design study for a Magnox-type plant to be built some 15 kilometres from Karachi, while also extending the technical assistance already provided to the PAEC. In other subsequent meetings, Salam was alone in representing the Commission. Again, the discriminating factor for success was money, hence the availability of sufficient resources as development aid: if Kanupp was eventually built by the Canadians, the reason is that Canada could guarantee an inferior cost of the electricity produced by means of financing conditions that the British were not able to compete with. But Salam at the very least contributed to adding credibility to Kanupp, so convincing the British to perform the first feasibility study on which the Canadians would draw upon.

In conclusion, I would like to stress that Salam continued to play a role in the PAEC even after the fall of the Ayub Khan's regime and the end of the technocratic era with the advent of Zulfikar Bhutto. While the latter sacked Usmani in the process of reorientation of the atomic programme, Salam did

remain and had a chance to praise the new chairman for his success in negotiating with the French the construction of a reprocessing plant. I quote: Professor Salam wanted to place on record his appreciation and those of his colleagues of the untiring efforts the Chairman had made in implementing the PAEC programme, who worked almost round the clock during his visit to France and Brussels in achieving the objective. Though anodyne, the record of the PAEC meeting suggests that still in 1973 Salam was a conspicuous presence. His resignation arrived only in 1974, when the Pakistani government decreed the Ahmadiyya a non-Muslim sect.