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Soviet Science Policy During The Second World War And Its Implementation In Uzbekistan

Madina Temirova

Doctoral Researcher, National University of Uzbekistan named after Mirzo Ulugbek, Uzbekistan

Abstract: The article examines the policy of the USSR in the field of science and scientific research during the Second World War and the particular features of its implementation in Uzbekistan. It analyses the main directions of state policy aimed at mobilizing scientific potential in order to address military and economic tasks. Particular attention is paid to the evacuation to Uzbekistan of research institutions, higher educational establishments and scientific personnel from the western regions of the USSR. The interaction of the evacuated specialists with local scholars and its influence on the development of the republic's scientific infrastructure is considered. Research in the fields of agriculture, geology, medicine, chemistry and industry, directed towards meeting the needs of the front and of the economy, is analysed. Separate attention is devoted to the establishment in 1943 of the Academy of Sciences of the Uzbek SSR as an important stage in the institutional development of science in the republic. It is concluded that the war years contributed to the concentration of scientific potential and to the expansion of Uzbekistan's scientific and human-resource capacities, although scientific activity was carried out under conditions of centralized state and ideological control.

Keywords: Second World War, USSR, science policy, science, Uzbekistan, evacuation, scientists, research institutions, Academy of Sciences of the Uzbek SSR, agriculture, geology, medicine, industry.

Introduction

The years of the Second World War (1939–1945) became an important stage in the history of the development of science in the Soviet Union. After Germany attacked the USSR in 1941, the scientific community was set tasks directly connected with strengthening the country's defence capability, developing the military industry, searching for strategic raw materials, improving medical care and supplying the most important branches of the economy [1].

Under these conditions, scientific activity acquired a predominantly mobilizational character. The state sought to concentrate the available scientific resources on solving practical problems related to military and economic needs. At the same time, fundamental research continued, the results of which subsequently proved significant for the development of particular scientific fields.

A special place in this process was occupied by the evacuation of scientific institutions and specialists from the frontline areas to the eastern regions of the country. Uzbekistan became one of the most important centres for hosting evacuated scientific and educational institutions. With the outbreak of the war, the work of Soviet scientific institutions was restructured in light of the new military and economic conditions. Research was concentrated primarily in such fields as metallurgy, mechanical engineering, chemistry, power engineering, geology, medicine and agriculture [2].

The Academy of Sciences of the USSR played an important role in coordinating scientific research. Commissions and research groups were established under its auspices, their work directed towards solving practical problems of defence and industry. Scientists were engaged in the search for strategic types of raw materials, the development of new materials and technologies, the improvement of military equipment and the solution of medical problems.

One of the most significant directions of state policy was the evacuation of research institutions and higher educational establishments from the western regions of the USSR. The Central Asian republics, including Uzbekistan, received a considerable number of evacuated organizations and specialists. During the war years Tashkent was transformed into one of the major centres hosting scientific and educational institutions. By November 1941, according to the available data, 22 research institutes, 16 higher educational institutions and 2 libraries had been evacuated to Uzbekistan. In addition, various educational and scientific institutions were transferred from Moscow, Leningrad, Kyiv, Kharkiv, Voronezh, Odesa and other cities [3].

The evacuation exerted a substantial influence on the scientific life of the republic. The specialists who arrived interacted with local scholars and teaching staff, which facilitated the exchange of scientific experience and the expansion of research activity. In a number of cases the evacuated institutions merged with local organizations or carried out joint activity on their premises. The work of technical and design organizations was of particular importance. Their specialists took part in developing projects for enterprises evacuated to Uzbekistan. In particular, the organization Stankoproekt, relocated from Rostov, carried out technical design work from 1942 onwards for a number of machine-building and metallurgical enterprises.

A most important event was the establishment in 1943 of the Academy of Sciences of the Uzbek SSR. The formation of the Academy contributed to the institutional consolidation of the republic's research institutions and to the coordination of scientific personnel. Within the framework of the Academy, research developed in the natural and exact sciences, agriculture, geology, chemistry, medicine and other fields. Scientific institutions had simultaneously to address the tasks of developing the republic's economy and meeting the needs of the front [4].

Considerable attention was devoted to agricultural science. In wartime conditions, cotton growing played a particularly strategic role. Research was therefore aimed at increasing cotton yields, improving the composition of varieties, developing seed production, making rational use of water resources and enhancing soil fertility. In parallel, research was conducted with

a view to increasing the production of grain, vegetable and other agricultural crops. This was connected with the need to ensure food security under wartime conditions. Geological research acquired great importance. The growing demand for strategic raw materials led to an expansion in the study of Uzbekistan's natural resources. Deposits of non-ferrous and precious metals, oil and other minerals were investigated [5].

Geological research had not only immediate military and economic significance but also contributed to the formation of a scientific basis for the subsequent industrial development of the republic's natural resources. Medicine became one of the priority directions. Evacuated medical specialists, together with local doctors and researchers, were engaged in treating the wounded, improving surgical methods, preventing infectious diseases and organizing the work of hospitals [6].

Across the USSR as a whole, significant results were achieved during the war years in the fields of military surgery, infectious disease medicine and antibiotic therapy. One well-known example was the production of Soviet penicillin and the development of the technology for its manufacture under the direction of the microbiologist Zinaida Yermolyeva. Academician Nikolai Burdenko played an important role in the development of military medicine. The improvement of surgical treatment methods and of medical care for the wounded helped to reduce mortality and to save the lives of servicemen. Research in fundamental physics also continued. The nuclear physics research carried out during the war years subsequently became one of the scientific preconditions for the Soviet atomic project. Igor Kurchatov played a significant role in organizing the corresponding research. It should be borne in mind, however, that the creation of Soviet nuclear weapons as a fully fledged state programme belongs mainly to the post-war period. It is therefore appropriate to regard the research of the war period as one of the stages in the formation of the scientific basis for the subsequent atomic project. Scientific development in the USSR was carried out under conditions of centralized state administration and ideological control. During the war years this system was reinforced. Scientific institutions had to orient their research first and foremost towards solving the state's military and economic tasks [7].

Such a system had a dual character. On the one hand, the state mobilization of material, human and organizational resources made it possible to concentrate scientific potential rapidly on the most pressing directions. On the other hand, excessive centralization and the ideologization of scientific activity limited the independence of researchers and the scope for the free development of particular fundamental and socio-humanitarian fields [8].

Thus, the science policy of the USSR during the Second World War was oriented towards mobilizing scientific potential to solve military and economic tasks. Scientific research acquired a predominantly applied orientation, and research in industry, agriculture, geology, chemistry, medicine and power engineering was in greatest demand.

In Uzbekistan this policy manifested itself above all in the evacuation of scientific and educational institutions, the attraction of highly qualified specialists and the development of cooperation between evacuated and local scholars.

Of particular importance was the establishment in 1943 of the Academy of Sciences of the Uzbek SSR, which became an important stage in the institutional development of science in the republic. The concentration of scientific personnel and institutions contributed to the expansion of the scientific infrastructure, the development of individual research directions and the training of scientific cadres.

At the same time, scientific activity was carried out under conditions of centralized state administration and ideological control. The war years should therefore be regarded simultaneously as a period of the mobilization of science for the solution of military and economic tasks and as an important stage in the formation of Uzbekistan's scientific infrastructure and human-resource potential.

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