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This paper examines Soviet development projects in African countries and Cuba during the Cold War. We analyze types of projects led by Soviet specialists and engage into the question of how Soviets, both leadership and engineers, viewed their roles and impacts as well as challenges on African territory and Cuba. In so doing, this paper analyzes differences and similarities in Soviet penetration to lands with newly established governments in Africa and Cuba.

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Introduction

The period following WWII changed the alignment of forces on the global scene. As the historian Odd Arne Westard says, “Washington and Moscow needed to change the world in order to prove the universal applicability of their ideologies, and the elites of newly independent states proved fertile ground for their competition”.⁹ Both superpowers and smaller European countries pretended to present in the Third World countries, often influencing their domestic politics. The Soviet Union is infamously known for its intervention in local political and military conflicts in Africa and Latin America as well as for intensive arms trade that bolstered ‘mutual weaponization’ and elongating these conflicts.¹⁰ However, the channels of influence which it used implied also practices embedded in economic, socio-cultural and technological aid, varying from construction of hydropower stations to Soviet educational programs for African and Latin students. In the Soviet Union, Africa was considered as a promise for enlarging the space of Soviet presence and influence and resonated with Bolsheviks’ initial idea of world revolution and also with after WWII strategy for building and strengthening of the presence of socialism in the world. Possibility to enlarge this camp with newly established independent states in Africa provoked an interest of the Soviet government to Africa.¹¹ Cuba was a peculiar partner which was eager to spread socialism far away from the Soviet Union. The cooperation between two countries implied trade, technological projects, and cultural exchanges, also been embedded into political context.

At the same time, the role of the politics in the technological cooperation between the Soviet Union and Third World countries should not be exaggerated. While stressing the role of politics in providing technological aid we do not consider technology as a mere tool of politics and fully agree with an integrated approach declared by Gabrielle Hecht by coining the concept of ‘technopolitics’ “that captures the hybrid form of power embedded in technological artifacts, systems and practices”.¹² African countries and Cuba were much about many basic scarcities, and technological assistance was of large importance. The assistance was negotiated on the state level, and had a significant meaning for politicians. For the Soviet leadership it was peculiarly important as it illustrated the potential of Soviet economy as well as a friendly character of Soviet politics. Starting from Khrushchev’s rule onward the latter was significant to prove that the peaceful co-existence,

⁹ Westard O.A. *The Global Cold War: Third World Interventions and the Making of our Times*. Cambridge, 2007, p. 4.

¹⁰ Mavhunga C.C. A Plundering Tiger with its Deadly Cubs? The USSR and China as Weapons in the Engineering of a “Zimbabwean Nation”, 1945 – 2009. In: *Entangled Geographies. Empire and Technopolitics in the Global Cold War*, ed. by G. Hecht. London, Cambridge, 2011, pp. 239 – 241.

¹¹ Katz M.N., ed. *The USSR and Marxist Revolutions in the Third World*. Cambridge, 1990. On Africa see Nation C. and M. Kauppi, *The Soviet Impact in Africa*. Lexington, 1984; Radu M. *The Dynamics of Soviet Policy in Sub-Saharan Africa*. New York, 1991.

¹² Hecht G. Introduction. In: *Entangled Geographies. Empire and Technopolitics in the Global Cold War*, ed. by G. Hecht. London, Cambridge, 2011, p. 2.

proclaimed as the leading principle of Soviet foreign politics, was functional. At the same time, as Alessandro Iandolo posits in his article on “Soviet model of development” in West Africa, for example, the policy of the USSR there was not determined by the will to export Marxism-Leninism as such. Instead, the Soviet aims were driven by “a form of “economic ideology” and the idea that “producing a faster and better modernity would allow for the final victory of Soviet socialism over Western capitalism”.¹³ This idea was particularly clear in the mid-1950s – 1960s, but expired after the end of Nikita Khrushchev`s era and was moved to a secondary position. Still, afterwards technological projects were part and parcel of Soviet-African and Soviet-Cuban relations.

In this paper we will examine several examples of technological cooperation with both, paying attention to the interplay between technology and ideology. This analysis does not pretend to be a comparative research, but rather an overview of cooperation which will define further directions of research.

Soviet-African Cooperation in Industry and Technology

Soviet contribution into African development was expansively discussed in Soviet scientific and popular literature. In secondary literature, Soviet accounts of relations between the USSR and African countries usually shared praises of the Soviet government which stressed successful Soviet policy in Africa and mutual benefits of cooperation and peaceful co-existence. They often reproduced certain standard clauses, presenting a successful and efficient policy of the Soviet Union in the development of technical cooperation and a better life in Africa. They emphasized the Soviet government's sincere desire to help Africans, but did not explicitly mention the fact that these countries were expected to sympathize Soviet ideology and also to refuse to cooperate with the West. Africans, both those who studied in the Soviet Union as well as African professionals who worked in their home countries alongside their Soviet counterparts were exposed by Soviet propaganda as an evidence of friendship between African and Soviet people. These representations were featured prominently in magazines focused on international news, such as “Vokrug sveta” (*Around the World*) as well as in popular books published by different groups of Soviet specialists (especially biologists and geologists) after their return from expeditions and work in Africa.¹⁴ At the same time, the activities of American specialists, who began to arrive to decolonized countries,

¹³ Iandolo A. The Rise and Fall of the “Soviet Model of Development” in West Africa, 1957-64. *Cold War History*, vol. 12, no. 4, 2012, pp. 703-704.

¹⁴ Boldurev A. and Y. Tusovsky. *Sadd al-Aali zvezda Afriki. Vokrug sveta* 1964, no. 5, s. 2-5; Baranov P.A. *V Tropicheskoi Afrike*. Moskva, 1956; Gerasimov I.P. *Moi zarubezhnye puteshestviya*. Moskva, 1959; Monakov A.V. *Puteshestvie po Belomu Nilu*. Moskva, 1969; Petrovskiy A.D. and U.I.P. Seliverstov. *Po dorogam i tropam gvineiskoi savanny*. Moskva, 1986, among others.

were represented as commercial policy that aimed only on increasing its political and economic influence, not on the fate of the Africans. For example, in his article of 1964 G. Gal`perin stated that “Soviet aid to newly independent countries is sincere”. Discussing Soviet and American aid to Ethiopia, he said that American volunteers there were unfair: giving an example he discussed that they looked at Ethiopian poor children fastidiously, but still were smiling to them.¹⁵

Western authors of the Cold War period openly criticized Soviet policy and interests towards African countries. In this literature, the USSR was often represented as a coercive state that aimed to purchase political friendship through the provision of technical assistance to African countries that lacked material resources and modern technical knowledge. Western authors directed a range of criticisms at their ideological enemies. Some argued that the Soviet Union allocated large sums for the development of only those countries that had agreed to join the socialist camp (and some developing countries were reluctant or refused to accept Soviet aid, afraid to get into complete dependence on the Soviet Union).¹⁶ Others stressed that the Soviet Union aimed not to improve peoples` lives in Africa, but mostly was willing to increase the military power.¹⁷

While establishing diplomatic ties with newly independent African states, the Soviet leadership usually insisted on building scientific, technical and economic ties. When an African country became independence, a delegation from the USSR, including politicians, officials, and scientists usually came to attend the celebration of independence. During such visits, the Soviet ambassadors had an opportunity to talk about Soviet achievements in agriculture, science and technology to show the advantages of the socialist economic system. The Soviet Union provided aid to Africa in several forms: by sending specialists, who trained African engineers and workers, enrolling African students to Soviet universities, allocating money for the construction of various facilities varying from hospitals and stadiums to steel plants and oil wells.

In the 1960s Soviet educational institutions designed courses in several disciplines like law, engineering and medicine which became attractive among African students. In particular, the program in comparative law, which primarily examined legal systems in capitalist and socialist countries, was designed to recognize the global political situation and solve problems in African countries by improving legal systems.¹⁸ In 1961, the Peoples` Friendship University offered both foreign and Soviet students training in engineering, agriculture, physics and mathematics, history and philology, economics and law. It, thus, offered different disciplines which were seen as strong

¹⁵ Gal`perin G. Vorota znaniy. *Vokryg sveta* 1964, no. 8, s. 22.

¹⁶ Goldman M. How Effective is Soviet Foreign Aid? *Challenge*, vol. 11, no. 4, 1963, pp. 7-11.

¹⁷ Cooper O. and C. Fogarty. Soviet Economic and Military Aid to the Less Developed Countries, 1954-78. *Soviet and Eastern European Foreign Trade*, vol. 21, no. 1-3, 1985, pp. 54-73.

¹⁸ Almaev R. Mezhdunarodnye svyazi otechestvennoi sistemy obrazovaniia v 1950-1960-e gody. *Pedagogicheskii zhurnal Bashkortostana*, vol. 1, no. 2, 2006, pp. 121-129.

in the Soviet teaching. The university funded travels, medical service, and accommodation as well as paid a scholarship to foreign students. The most popular among African students were medicine, engineering, law and agriculture.¹⁹ In addition, the Soviet Academy of Sciences was to develop cooperation with African educational and research institutions in order to assist Africans in the development of science, research and training specialists as well as mutual expeditions and research in order to “involve African countries in the process of scientific-technical revolution”.²⁰ For instance, in 1962 - 1965 a group for geological exploration was trained in Ghana in Tamale. One fourth of people in the group had experience in geological works and they were trained to work with Soviet equipment. The rest of the group was dwellers of local villages who got theoretical and practical training. For this project, with help of translators, Soviet specialists in Ghana trained assistants for geological works, drill runners, drivers, among others.²¹

Geological exploration was one of the first areas of the Soviet-African cooperation. As early as in 1933 Soviet scientists created the first geological map of Africa and in the context of the development of Soviet-African relations in the second half of the XX century, the search for mineral deposits (including oil and gas) became one of the priorities of Soviet scientists. The main organization involved in exploratory work in the Third World was the research institute "Zarubezhgeologiya", established in 1964 as an institution on geology works abroad. This center sent Soviet specialists to African countries and established there laboratories and national geological centers. Active work was carried out in countries such as Mali, Ethiopia, Angola and Benin. For instance, in Benin, by 1970, the Soviets composed a geological map of the country and found vast deposits of gold. In Algeria by 1980, more than two hundred Soviet geologists worked.

A study of the resource potential of African countries laid the foundation for the construction of industrial facilities, where the Soviet Union expected to be directly involved in design and construction. For example, in 1975, after fourteen years of gold exploration in Mali, an agreement on construction of a gold mining enterprise in Kalan was signed. This factory which was finished in December 1984, became the largest object of the Soviet-Malian cooperation.²² The Soviet Union provided support in the construction of cement, saw mills, leather and footwear factories in Guinea, state agricultural farms for growing crops such as rice and maize in Ghana²³, a cement plant in Mali, oil refinery in Ethiopia and a smelter in Algeria.²⁴ However, one of the most important

¹⁹ Ponomarenko L.V. and E.G. Zueva, *RUDN i Afrika*, Moskva, 2009, p. 40.

²⁰ Nauchnye sviazi Sovetskogo Soiuzs s Afrikoi (spravka ot Instituta Afriki Goskomitetu Soveta Ministrov SSSR po nauke i tekhnike). Russian State Archives of Economy (RGAE). F. 9480. Op. 9. D. 19. L. 70.

²¹ Otchet po rabotam Sovetskikh geologov v Gane za 1964 g. v g. Tamal. RGAE. F. 365. Op. 2. D. 2861. L. 96.

²² *Pamiat Gennadii Nikiforovicha Novikova: vospominaniia, bibliografiia, neopublikovannoe*. Available at <http://www.istor97.narod.ru/prj/nvkv/sod.htm#sdr> (accessed 10.01.17.).

²³ Morrisette N. and R.M. Juang (eds). *Africa and the Americas Culture, Politics and History*. Santa Barbara, 2008.

²⁴ Potekhin I.I. *Afrika, 1956-1961*. Moskva, 1961.

destinations in Africa was the development of industry and infrastructure for various types of power plant.

One of the rapidly developing areas of cooperation between USSR and the countries of the African continent was the construction of power plants. Scientific and institutional contacts in this field were established in the 1960s, at the early period of Soviet-African cooperation. For example, in 1965 Nigerien National Service of solar energy supported by Soviet Union was established in Niger. The center was headed by Abdou Moumouni, who had trained in Soviet Union for two years. In 1972, this center developed into the Niger Solar Energy Center for the creation of scientific contacts and exchange of information between experts of two states. Not only Niger considered the possibility of using solar energy: the governments of Cameroon, Mali, Nigeria and Chad were interested in supporting Soviet specialists to organize regional scientific centers. Another potential source of energy was also diesel fuel, widely used, for example, in Guinea (the Soviet Union assisted in the construction of a diesel power plant in the mill in N'Zérékoré).

In the Soviet Union, design and construction of hydroelectric stations were under the control of such institutions as «Tekhnopromexport»²⁵ and «Hydroproject».²⁶ Tekhnopromexport kept under its control all construction of facilities, including their commissioning. "Hydroproject" on the other hand prepared design of these facilities. These institutions realized a lot of projects in Africa such as hydroelectric power station "Moulay Youssef", "Mansour Addahbi" and "Al Wahda" in Morocco, "Malka Wakana" in Ethiopia, as well as a hydroelectric power station "Capanda" in Angola, the construction of which started during the Soviet era but completed only in 2007. An active player in constructing hydropower stations in Africa was the Ministry of Energy and Electrification founded in 1962. In the 1950s – 1960s, like many other ministries, it survived several reorganizations: first, it was the Ministry for Constructing Hydropower Stations (1954-1957 and 1958-1962) and the Ministry of Hydropower Stations (1954-1958). The Ministry of Energy and Electrification acted until 1963 when it was transformed into the State Committee on Energy and Electrification for two years. In 1965 the Ministry was organized again and acted until the demise of the Soviet Union. From 1962 to 1985 it was headed by Petr Neporozhnyi, a leading specialist in the energy sector in the USSR. Being trained in the Leningrad Institute of Engineers of Water Transport in 1933 he worked both in research institutions and on the construction of hydropower stations. With a little exception all these institutions were not only responsible for the development of energy sector and

²⁵ *Stroitel'stvo gidroenergeticheskikh ob'ektov*. Available at <http://www.tpe.ru/pages/press/present/Hydro.pdf>. (accessed 10.01.2017).

²⁶ Novozhenin V.D. *Istoriia Gidroproekta 1930-2000*. Moscow, 2000.

electrification of the country and scientific-technical research, but also participated in constructions abroad.²⁷

Visits of African engineers and officials often preceded the construction of power plants. Soviet engineers demonstrated to them successful and large-scale projects built in the Soviet country. For example, in the 1970s, a dam for the Nurek hydropower plant was constructed on the Vakhsh River. Members of Tunisian delegation had a strong impression of the construction process.²⁸ As part of these tours USSR demonstrated not only skills and experience in the construction of big objects, but also offered the possibility of building of such facilities in African countries. Such trips also proofed the success of the Soviet political and economic system that made the Soviet Union advantageous and desirable partner for the countries of the Third World.

In most cases, USSR's support for the construction was carried out through the provision of targeted loans, the money which went to the stations' design, as well as production and transportation equipment. For example, a large sum or 25 million rubles was provided to Tunisia as 12 years credit facility with a rate for only 3% for providing technical assistance in the construction of a number of facilities.²⁹ Because of the loan practice, the construction of large objects was positioned by Soviet Union as one of the aspects of mutually beneficial international cooperation. At the same time, the Soviet side often considered the cooperation with developing countries as gratuitous help. This combination of two types of formal interpretation was possible because of practice of presenting some buildings to the African side. At the same time the plants continued to be paid by credits. However, the Soviet leadership also actively assisted in the construction of schools and hospitals - often many of them presented as gifts. For example, the technical school in Bah Dar (Ethiopia) built in 1963 was donated by the Soviet government to "the Ethiopian people".³⁰

In the period of 1967-1969 in the context of cooperation between the USSR and Tanzania, a number of agreements on the construction of a plant for drying fish in Kigoma, four refrigerators with a capacity of 50 tons each, conducting of geological prospecting, construction of six veterinary centers (also supply of medicines and chemicals) and one incubator were signed.³¹ In the 1960s-70s, the Soviet government planned to support the construction of a cement plant, educational facilities

²⁷ Postanovlenie Sovmina ot 14.03.1969 ob utverzhdenii polozheniia o Ministerstve energetiki i elektrifikatsii SSSR. Available at <http://russia.bestpravo.com/ussr/data03/tex15181.htm> (accessed 16.10.2016).

²⁸ Nauchnye sviazi Sovetskogo Soiuz s Afrikoi// RGAE. F. 9480. Op. 9. D. 21.

²⁹ Letnev A.B. (ed.) *Sovetskii Soiuz i Tunis: iz istorii otnoshenii, 1917-1991*. Moskva, 2012.

³⁰ Akt peredachi tekhnicheskoi shkoly. RGAE. F. 365. Op. 2. F. 965.

³¹ Spravki o finansovom polozhenii ehkonomicheskom i tekhnicheskome sotrudnichestve mezhd SSSR i Tanzaniei. RGAE. F. 365. Op. 2. D. 2989.

(the Center of Vocational Education, Institute of Agriculture) and the exploration and mining of gold.

About 50% of consumed electricity in Tanzania was produced in small diesel units, another 50% were provided by Neil hydropower station (1964), and Musom and Tukuyu in 1966.³² Tanzania therefore needed to expand the energy base of the country. In 1967, the African country asked the Soviet Union for help in expanding the power of Chuck-Chake.³³ As a result, the USSR and Tanzania agreed on the provision of loans: the cost of design and survey works were estimated at 32,000 rubles and that of equipment pegged at 207,000 rubles.³⁴

Usually, the Soviet government sent experts to explore the area before providing loans and made sure of advisability of the power plants construction. In December 1967, Tanzania asked to send a group of Soviet experts to study the economic feasibility of hydropower plants construction on Kivira River. The group of experts also had to go on Simuyyu River, but the trip was canceled because Tanzania had rather sent to that place representatives of the International Development Bank.³⁵ Construction on Kivira was considered as appropriate and Soviet engineers assisted in the construction to the local power company in the 1970s. The first stage of negotiations with Tanzania was completed in 1969, when the Commission of Foreign Economic Affairs agreed to provide assistance. Five years later, when the project had already been approved, the Tanzanian side expressed the will to increase the capacity of hydropower that meant an additional work and costs from the Soviet Union: in general, the cost of services and supply of equipment.³⁶

Such visits for determining the feasibility had not always positive response. In 1967 for instance, a group of Soviet experts traveled to Tanzanian Kigoma to explore the possibility of constructing the plant for drying fish. It was discovered that at that place there were only 200 boats and no fishing fleet which made the construction unreasonable.³⁷

Constructed objects often demanded upgrading, so the work of Soviet specialists did not end after the completion. Active cooperation in energy was also established between the Soviet Union and the United Arab Republic, in construction of the Aswan Dam for example. So, after the start of works on the dam in 1970, the Soviet specialists did not leave the facility. In the 1970s a number of Soviet specialists continued to work at Aswan Dam in order to maximize the economic efficiency

³²Obzor ehkonomicheskogo polozheniia Tanzanii. RGAE. F. 365. Op. 2. D. 2988.

³³Perepiska s predstavitel'yami Tanzanii i sovetskimi organizatsiiami ob okazanii tekhnicheskogo sodeistviia. RGAE. F. 365. Op. 2. D. 2990. LL. 76-84.

³⁴Ibid. LL. 76-84.

³⁵Ibid. LL. 86-88.

³⁶Pis'mo Sovetskoi storony po voprosu uvelicheniya moshchnosti GES na reke Kivira v Tanzanii, avgust 1974 goda. RGAE. F. 365. Op. 9. D. 1534. L. 104.

³⁷Ibid. L. 105.

of the entire complex. Soviet Union paid money for some improvements every year, including restoration work, supply of spare parts, overhaul of equipment (such as repair units and inspection of tunnels). Soviet specialists not only improved objects, but also trained African national cadres. There were special teachers who organized training for new staff and gave lessons for improving the skills of experienced workers. Soviet instructions and manuals had been translated into English and Arabic languages for that purpose.

A good example of the long work on the subject is the process of construction and modernization of a cement plant in Mali. Its grand opening took place in October 13, 1970.³⁸ It was planned that the cement produced at the plant would fully satisfy the needs of Mali and allowed to stop importing. The main competitor in the cement production was a French factory in Senegal. At first, after the commissioning of the factory, Director of Cabinet of the Ministry of Industrial Development Bakari Toure noted that the Malian cement was much better than the Senegalese.³⁹ At the same time, there was also an obvious problem. The factory needed limestone for the production of cement which was delivered from a quarry in Gangonteri. Construction of the road between the plant and the quarry had halted because of the rainy season.⁴⁰ In the spring of 1970, most of the Malian cities had an acute shortage of cement and because of that it was decided to resume import. Throughout the year, there were active negotiations between the USSR and Mali about expediting the construction process, but it required additional financial costs for the Soviet Union. The Soviet leadership refused to enhance the loans for the construction of roads and USSR could only ensure the timely delivery of equipment.⁴¹ Additional problem was the lack of discipline among the Malian workers who were unable to ship fuel tanks supplied to the plant. Because of that the factory introduced new rules and Malian staff started to work under the Soviet control.

Besides the power plants, the Soviet Union was actively involved in the construction of educational centers. In 1970, there was the necessity to modernize Malian education center. It turned out that the dormitory in the school, designed by Soviet specialists, were unsuitable for life.⁴² Bedrooms were fully glazed and were not ventilated, so stuffy and humid atmosphere of the room quickly became the good conditions for germs that caused epidemics. After the construction of educational institutions, African and Soviet sides regularly discussed student exchanges. In 1969,

³⁸Zapis` besedy s poslom Respubliki Mali, 23 marta 1970 g.// RGAE. F. 365. Op. 9. D. 371. L. 8.

³⁹ Zapis` besedy s direktorom kabineta ministerstva promyshlennogo razvitiya i obshchestvennyh rabot Bakari Ture. RGAE. F. 365. Op. 9. D. 593. L. 105.

⁴⁰ Ibid. L. 103.

⁴¹ Ibid. L. 108.

⁴²Zapisi besed s predstaviteliami Mali po voprosam okazaniia tekhnicheskogo sodeistviia. RGAE. F. 365. Op. 9. D. 593. L. 26.

both sides planned to send 67 Malians from Agricultural Institute to USSR for studying. However, only 32 students finally made the list to the USSR because of meningitis epidemic.⁴³

Other remarkable aspects that need mentioning in the context of Soviet-African technical cooperation is the field of education and medicine in countries such as Ghana, Uganda and Kenya. After Ghana's independence in 1957, there were a number of positive negotiations and agreements between the young nation and the Soviet Union which planted a lasting legacy in terms of higher education of Ghanaian students in the Soviet Country. Currently, Soviet trained doctors still comprise of about 11.3 percent of all permanently registered doctors in Ghana.⁴⁴ It has been noted that the scheme played a 'crucial role' in the Soviet era in 'averting a catastrophic shortage in the healthcare delivery system' of Ghana.⁴⁵ In Uganda, the Soviet Union sponsored and constructed the first mechanized agricultural college in East Africa in the 1960s, spinning textile miles at Lira which started in 1974 and revisited in the eighties. In Kenya, a medical hospital was also constructed by the Soviet Union at Kisumu.⁴⁶ These and similar other projects which were partially realized witnessed the training of African workers by Soviet specialists who eventually worked in these fields. No less important was that Soviet cooperation with African states also fostered military contacts, and different forms of military aid with these countries. As Mark Philip Bradley puts it, the Soviet-American rivalry "presented revolutionary movements and newly independent states with the benefits and the dangers of superpower patronage through weapons and arms, advisers and funds for civil and military development, and direct military intervention".⁴⁷ Thus, the Soviet Union aimed to prepare African military specialists by sponsoring specialized training. As a result, the first wave of African students in the USSR in the 1950s-1960s consisted of future soldiers.⁴⁸ The malignant role of military and arms trade played in African-Soviet relations distressed some Soviet scholars as well.⁴⁹ The attractiveness of military support for African leaders involved in conflicts about power was obvious: Soviet arms were relatively cheap and effective in the African context.⁵⁰ The Kalashnikov rifle, for example, became one of the most popular arms and contributed to escalating conflicts because of its inexpensive ubiquity. Starting from the late 1960s,

⁴³Ibid.

⁴⁴OXFAM. *Scholarships and the Healthcare Human Resources Crises; A case study of Soviet and Russian scholarships for medical students from Ghana*. December, 2014.

⁴⁵ Ibid

⁴⁶ Mazrui A. A. and C. Wondji. *General History of Africa. VIII Africa Since 1935*. California, 1999. See also Babbit J.F. *Soviet Arm Transfer to Sub-Saharan Africa. What are they worth in the United Nations?* Masters Thesis in Military Art and Science. Maryland, 1974.

⁴⁷ Bradley M.P. Decolonization, the Global South, and the Cold War, 1919-1962. In: *The Cambridge History of the Cold War*, vol. 1: Origins, ed. by M. Leffler and O.A. Westard, Cambridge, 2010, p. 465.

⁴⁸ Almaev R. Mezhdunarodnye sviazi otechestvennoi sistemy obrazovaniia v 1950-1960-t gody. *Pedagogicheskii zhurnal Bashkortostana*, vol. 1, no. 2, 2006, pp. 121-129.

⁴⁹ Mirsky G. The Role of the Army in the Sociopolitical Development of Asian and African Countries. *International Political Science Review*, vol. 3, no. 2, 1981, p. 337.

⁵⁰ Lawson C. Soviet Economic Aid to Africa. *African Affairs*, vol. 87, no. 349, 1988, p. 507.

the Soviets increased military support for national movements which professed Marxist ideals, in order to win sponsorship in their struggles against political rivals inside the country. To a large extent this change was a result of the crisis in the Republic of Congo in 1960-1965, which illustrated that the USA was willing to compete with the Soviets, “in the face of growing expenses and increased risk of open conflict with the West, the Soviet Union chose to back down.” The Soviet Union would later provide more effective military support to Africans.⁵¹

In sum, the Soviet assistance in developing countries had a complex nature: it included mineral exploration, construction of industrial enterprises and training technical personnel. The Cold War had a great influence on such a support and on the ways of its realization. Geopolitical confrontation of two blocks was one of the reasons why the United States and the Soviet Union tried to enlist the support of the Third World. The most important aspect of Soviet aid was scientific and technological cooperation which included the provision by the Soviet Union (as a more developed country in the industrial and agricultural sector) financial and technical assistance in the development of African infrastructure.

Soviet-Cuban cooperation

Cooperation between the USSR and Latin America countries began in the 1920s when the Soviet Union decided to make socialistic revolutions and expand its influence on the Third World. For this propose the USSR created a company ‘Energomareksport’ which organized a project for establishing technical relations with Latin American partners.⁵² However, Latin America did not become dependent on the USSR technologies. As the Cold War began, many Latin American countries joined the position of the West. In this context, the Cuban revolution became a symbol of socialistic influence on the Latin American countries and the USSR began to resume cooperation vigorously. However, the Soviet assistance was highly ambiguous: first, the USSR received great economic (almost 13, 9% of all total income) and political (relations with strategic allies in the camp) benefits. Moreover, the USSR declared its unconditional support to countries “which cannot do without protection in the struggle against world imperialism”.⁵³

⁵¹ Iandolo A. The Rise and Fall of the “Soviet Model of Development” in West Africa, 1957-64. *Cold War History*, vol. 12, no. 4, 2012, p. 704

⁵² Shvec E.A. *Energetika Latinskoi Ameriki i vozmozhnost' rossiisko-latinoamerikanskogo sotrudnichestva v ehnergeticheskoi sfere*: Aftorefer. d-raehk. nauk., 2006, s. 36.

⁵³ Tekhniko-ehkonomicheskoe obosnovanie razvitiia i razmeshcheniia promyshlennosti sbornogo zhelezobetona ministerstva obshchestvennogo i sel'skohoziastvennogo razvitiia (DESA) respubliki Kuby. Russian State Archive of Scientific-Technical Documentation (RGANTD). F. R-450. Op. 5-4. D. 114.

The Soviet leadership aimed to establish a full-fledged ally with Republic of Cuba and develop the production sphere which in the future could be useful for Soviet government in the fight against the West. After analyzing the economic and industrial need of the Caribbean country, the USSR and Cuba signed contracts which defined the cooperation between both countries. For example, in an agreement signed on 12 March 1962, the Soviet government pledged to carry out expert help and send Russian teachers to Cuba for studying the language of the local population and carried out exchange delegations in various industries. On 1 December 1960, a protocol on 'Scientific and technical cooperation with Cuba' was signed. It established the transfer of scientific and technical information. Moreover, the protocol of the USSR pledged to send out technical teams to Cuba to help in developing technical skills of employees in Cuban laboratories.⁵⁴ The Treaty of 1962 as already noted additionally coordinated transfer of technical data and information from institutions such as 'Hydroenergoprojekt', 'Hydroprojekt' and 'VODGEO'.

At the end of such missions, experts drew up a report which referred the 'the desire of Cuban people to successfully build socialism and create a new society and challenge economic and cultural backwardness of the country.' This was to 'be done only on the basis of the fraternal support of the USSR'.⁵⁵ Soviet government also faced a number of difficulties associated with the need for industrialization of the island: full constructions could not be done without enough coal and oil resources and the lack of hydropower reserves. Besides, there was also a problem with quantity of qualified personnel and geographical remoteness of the island from other socialist countries. Therefore, initially the Soviet Union began to help Cuba, concluding trade agreements on the supply of sugar. This was due to several factors: first, after the cessation of trade with the United States, Cuba faced with the need of replacing its main importer of sugar; secondly, the Republic needed to increase financial dividends from industrial construction on the island by changing export and import ratio. The Soviet side also controlled Cuban production by establishing a system that was fully in Russian and aimed at the Soviet consumption⁵⁶. The next step was organization of so-called "oil triangle" when Venezuela pledged to supply oil to Cuba in exchange for oil supplies from the Soviet Union in Eastern Europe. Such a scheme made Cuba the biggest oil exporter in Latin America. In "VNIPIneft" (Scientific Research and Design Institute of Oil Refining and Petrochemical Industry) was created a special department that monitors the quality of oil exported to the Republic of Cuba.⁵⁷ From such a cooperation, the USSR received around 200 million dollars

⁵⁴Protokol o nauchno-tekhničeskome sotrudničestve s Kuboi. RGAE. F. 9480. Op. 7. D.. 885.

⁵⁵Taylor F. Cuba's relations with the Soviet Union since October 1962 – a Retrospect. *Boletín de Estudios Latinoamericanos y del Caribe*, no. 46, 1989, p.100.

⁵⁶Plan komiteta Soveta ministrov SSSR po kul'turnomu sotrudničestvu s Kuboi// RGAE. F. 9480. Op. 7. D. 885. L. 27-29.

⁵⁷Obosnovanie nauchno-tekhničeskogo sotrudničestva s respublikoi Kuboi, VNIPIneft'. RGANTD. F. R-597. Op. 3. D. 1154.

(from saving on transportation costs), while Cuba in 1965 came out from economic crisis and became the main economic partner of the USSR.⁵⁸

In 1960, the Soviet Union began to provide assistance to Cuba in the field of light industry. The Central Research Institute of Cotton Industry (TSNIHBI) played a key role in these activities. TSNIHBI controlled regular exchanges of delegations, analyzing methods of management, economic accounting systems, branch offices and creations of factories. In addition, within the framework of scientific and technical cooperation with Cuba, TSNIHBI also worked continuously to involve workers in the Cuban Young Communist League which should improve the efficiency.⁵⁹ The direction of the Institute also provided annual reports on the progress made with the Cuban side where they stressed the difficulties in cooperation. They wrote that “there is a big gap between and a different level of technology in the Soviet Union and Cuba”.⁶⁰ TSNIHBI also oversaw the construction of the Universal Combine in Santiago de Cuba that aimed at improving quality and quantity of Cuban production.

For improving energy consumption in Cuba, the USSR provided assistance in several areas such as construction of thermal power plants, transmissions, explorations, as well as training Cuban students in Soviet universities. Not all projects were implemented, but only in 20 years energy situation in Cuba rapidly changed. Several thermal power plants (“Mariel”, “Rente”, “Havana”) as well as diesel power stations on the island of Youth were constructed.⁶¹ In 1967, the USSR and Cuba signed an agreement on construction of the “Jaragua” nuclear power station, but in 1975 the Soviet side reduced financial support to the project and reduced the number of reactors from 12 to 2. The construction of the station began only in 1983, and lasted until the collapse of the Soviet Union in 1991. After the fall of the regime, no one took responsibility to continue “Jaragua” construction in Cuba, so the Cuban government offered to buy the unfinished station to other countries - but the proposal was not followed, and the station is still unfinished.

However, the construction of nuclear power plants "Jaragua" was important for other industries in which the Soviet Union helped the Cuban side. For example, in 1970 a school was opened at the Embassy of the Soviet Union. Its aim was to teach children of employees of the Ministry of Foreign Affairs of the "socialist camp."⁶² By 1980, the international school had its branches in all major

⁵⁸Widen A. Coastal Resource management in Cuba. *Building Capacity for Coastal Management*, vol.27, no. 8, 1998, pp. 766-768.

⁵⁹Ministerstvo legkoi promyshlennosti SSSR, tsentral'nyi nauchno-issledovatel'skii institut khlochatobumazhnoi promyshlennosti. RGANTD. F. R-597. Op. 1-4. D. 123.

⁶⁰Otdel instituta o nauchno-tehnicheskome sotrudnichestve s zarubezhnymi stranami i o vypolnenii meropriyati po vnedreniiu rezul'tatov sotrudnichestva za 1983 god. RGANTD. F. R-185. Op. 2-6. D. 643.

⁶¹Koniuhovskii A. Rossiisko-kubinskoe sotrudnichestvo v energeticheskoi sfere. *Ekonomika i sotsium: sovremennye modeli razvitiia*, no. 3, 2012, s. 123.

⁶²Materialy po nauchno-tehnicheskomu sotrudnichestvu so stranami Ameriki (SSHA, Kuba, Latinskaia Amerika, Kanada i Avstraliia). RGAE. F. 5. Op. 11. D. 11.

cities of Cuba (Santiago de Cuba, Holguin, Managua, Cienfuegos), including the nuclear power plant "Juragua." The training had an emphasis on technology and the Soviet leadership expected these children to become leaders of key industries in "friendly" countries.⁶³ With the same purpose, a project to build a polytechnic training center accommodating around 400 people was set up in 1974.⁶⁴ Among other things, the Soviet Union organized a five-year plan for industrial development in the Republic of Cuba, the most productive of which was from 1976 to 1980s. The purpose of such projects was the further industrialization of Cuba and developing the material base for construction socialism. For the development of agriculture, education, health and social security were sent twice as much than in the previous five years. Directives of five-year plans provided for significant expansion of the scope of construction, measures to ensure its profitability and quality. According to archival materials, the Soviet Union expended a record amount of money (11.8 billion pesos), when only in 1980 was planned to invest 2.5 billion, almost 1.8 more than in 1975. The project was approved at the first congress of the Communist Party of the Republic of Cuba in 1975.

Since 1959, the cooperation with Cuba became for the USSR one of the central objectives of Soviet scientific and technical cooperation with newly formed countries. It was important for several reasons: Cuba was the first country in Latin America which joined the "socialist camp" and became a platform for the world revolution; secondly, from an economic point of view, cooperation with Cuba helped the Soviet Union to export its oil to the countries of the Caribbean and benefited from this great profit. Moreover, investing in the construction of technological projects on the island and building schools, where the future Soviet experts studied and focused on the management of objects, the Soviet side planned in the nearest future to make Cuba a country that exported to the USSR products on the purchase prices that would be beneficial to the Soviet economy.

Conclusions: the Meanings of Cooperation

Technological cooperation between the Soviet Union and African countries and Cuba was part of Soviet modernity exported to the Third World. Ideological factors were of important in Soviet-African and Soviet-Cuban relations and spreading socialism was seen as a final aim by the Soviet policy in the Third World. Assistance development, however, was not restricted by ideology, but implied a range of other factors. Thus, technological aid was often embedded into military assistance and interwoven into political conflicts within African states. Also, it was educational

⁶³Ibid. L. 16.

⁶⁴Proekty politekhnicheskogo sotrudnichestva respubliki Kuba, sovместno sTekhnoehksportom (imeni Huana M. Kastineirasa). RGANTD. F. R-621. Op. 11-4. D. 3388.

programs for African students who got a command of Russian as well as were trained as military, engineers, medical and other specialists. It also entailed significant environmental, social, and cultural consequences. At the same time, the Soviet media exaggerated the Soviet aid to Africa, embedding it into the politics of peaceful co-existence, which was a guide for USSR`s foreign politics after Josef Stalin`s death. Soviet projects in Africa were to be witness to the world that first, Soviet attitude towards other countries was peaceful and ministrant (the military factor was not exposed) and, second, they spoke about Soviet technological mightiness.

Hydropower stations were among the most important objects which were to help in establishing technological and economic connections with newly independent African countries. By the second half of the XX century, the Soviet Union had become a leading builder of hydropower technologies. A lot of Soviet specialists were sent to African states as assistants for solving problems, primarily, in supplies with electricity. Although large projects helped provide many benefits for Africans, they implied a number of more complicated outcomes. Some projects were not finished because of bureaucratic reasons, wars, conflicts or even lack of resources.

The cooperation with Cuba developed in a similar way, stretching to technological construction, education, and social projects, although not involving conflicts.

In both cases, the Soviet leadership paid large amounts of money and invested a lot of resources. The costs of spreading socialism, thus, were pretty high, although also important for developing hydropower, mining and other technologies.

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