History of the development of the Pamir region of Tajikistan (Gorno-Badakhshan)[1]

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Abstract

Until the arrival of Russian military forces in the Pamirs at the end of the 19th century, the inhabitants suffered depredations by local potentates and representatives of the rulers of neighbouring countries and benefited from no influences for social or economic development. Their status improved with the establishment of a permanent Russian base in Khorog in 1895, but it was not until the full incorporation of the region into the Soviet Union that the development process began. The achievements were remarkable - the region was intended by the Russians to be perceived as a model of socialist achievements for the attention of neighbouring Moslem populations - but, after the break-up of the Soviet Union, proved ultimately to be non-sustainable. Thanks to the intervention of the Aga Khan Foundation from the time of the Tajik civil war in 1992-3, innovative programmes were introduced to address the most urgent problems and, subsequently, to lay the groundwork for more sustainable policies in the future. Major challenges remain.

Key words: Tajikistan, Pamirs, post-Soviet, sustainable development, AKF, MSDSP

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[1] Article written for inclusion in *Mapping transition in the Pamirs: With Case Studies on the Changing Human-Environmental Landscapes* (Editors: Hermann Kreutzmann and Teiji Watanabe) published by Springer in January 2016 in the series 'Advances in Asian Human-Environmental Research' - see http://link.springer.com/book/10.1007/978-3-319-23198-3.

1. Introduction

The Tajik Pamirs are situated in the eastern part of Tajikistan (Gorno-Badakhshan Autonomous Oblast - GBAO) and cover nearly half of the total surface area of Tajikistan (approx. 64,000 square km, equal to 1.5 times the area of Switzerland). The western and southern frontiers of the Tajik Pamirs are determined by the Panj/Amu Darya and Pamir rivers and are contiguous to Afghanistan. The eastern border is contiguous to the Kashgar prefecture of China.

Map courtesy of the Aga Khan Development Network

The current population is estimated at 216,000 (approx. 3% of the total population of Tajikistan). The total area of arable land (available for cultivation) is only 240 square km (0.4% of the Tajikistan total). Human settlements are located at altitudes varying from 1,200m to 3,500m. GBAO is one of the poorest regions in Tajikistan and therefore one of the poorest in all Central Asia as well as worldwide. The average per capita income in Tajikistan in 2011 was around $2,000 per year (substantially lower in GBAO).[2]

The Eastern Pamirs (Murghab district, population approx. 16,000) are mainly inhabited by people of Kyrgyz extraction, although there is a significant minority in Murghab town originating from the Western Pamirs.

The Western Pamirs (Darvaz, Vanj, Rushan, Shughnan - including the regional capital Khorog - Roshtkala and Ishkashim districts, population approx. 200,000) are inhabited by people of Irano-European extraction. The physical characteristics of the population of the Western Pamirs suggest that they may be remnants of the original Saka/Scythian inhabitants of Central Asia who were driven westward by successive Mongol invasions from the 13th century CE onwards and ultimately found refuge in the inaccessible high mountain area of the Pamirs.

[2] World Bank (http://en.wikipedia.org/wiki/List_of_countries_by_GDP_%28PPP%29_per_capita).

The Western Pamirs are characterised by narrow and long valleys, leading west into the Panj/Amu Darya. The eastern Pamirs are a high plateau (approx. 3,000m-3,500m) that contains several mountains over 6,000m.

2. Early development history

The Wakhan and possibly the Ghunt valleys were familiar to Silk Road travellers on their way to the 'Stone Tower' mentioned by Ptolemy.[3] Early Chinese Buddhist pilgrims and 17th century Jesuit missionaries also passed through the Pamirs; there are legendary accounts of visits by Ismaili saints and missionaries such as Shoh Khomoush, Shoh Burhon, Shoh Malang and Shoh Koshon, whose memory is still revered at shrines and other holy sites in the Pamirs;[4] the Ismaili poet and philosopher, Nasr Khusrow, is credited with the conversion of the Pamiri people to the Ismaili faith in the 11th century; and Marco Polo claimed to have been in Badakhshan and Wakhan.[5] But it was not until the arrival of Russian military forces in the late 19th century that the inhabitants of the Pamir region of Tajikistan were subject to any developmental influences. The territory was unmapped, its political status was unclear and the population was victim to slavery and other forms of exploitation.[6] In the areas in the north-west, from the early 19th century, the Sunni Mangit rulers of Bukhara also imposed forced conversion from the traditional Ismaili faith predominant in the Western Pamirs.[7]

Prior to the Russian occupation of the Pamirs, certain fairly well defined regions of the Pamirs (Shughnan, Darvaz, Wakhan) were ruled by local potentates, whose allegiance to outside forces fluctuated and could be multiple. Recognised as part of 'Turkestan', 'Turan', 'Transoxiana' or 'Soghdiana', the Pamirs were claimed at various times in recent history and with varying degrees of confidence and military coercion by the Emirs of Bukhara and Afghanistan and by China. In 1895, with the establishment of a permanent Russian garrison in Khorog, the Pamir region came *de facto* under Russian control. In 1924 it became briefly part of the Turkestan Autonomous Soviet Socialist Republic, and then, as the Gorno-Badakhshan Autonomous Oblast, became part of the Tajik Autonomous Soviet Socialist Republic within the Uzbek SSR. Present-day Tajikistan became a separate Soviet Socialist Republic on 5 December 1929.

3. 19th century Russian exploration

The Russian conquest of Tashkent in 1865, followed by the fall in rapid succession of Bukhara, Samarkand, Khujand and finally Kokand, led the St. Petersburg authorities to promote scientific studies of these newly acquired regions of Central Asia. As early as 1871, the scientist Alexei Pavlovich Fedchenko (commemorated by the glacier in the Pamirs that bears his name) and his wife Olga Alexandrovna travelled as far as the Alai valley on the

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[3] In his *Geographia* (circa 150 CE) Ptolemy described a trade route across Central Asia drawn from the writings of his contemporary Marinus of Tyre. Marinus' work has been lost, but was based on an account by the Macedonian Maës Titianus of his agents' travels to China. The 'Stone Tower' ('Tashkurgan' in Turkic languages) may well have been the city of this name in the Xinjiang province of China. See Middleton R and Thomas H (2012) Tajikistan and the High Pamirs. Odyssey, Hong Kong, pp. 267-294.

[4] See Middleton R and Thomas H (2012), pp. 634-640.

[5] See, for example: Wood F (1995) Did Marco Polo go to China?. Westview Press, Boulder.

[6] There are excavated caves near several villages in the Western Pamirs that were used for refuge from slave-traders and other marauders; it is said that the Sarikol population of Xinjiang province has its origin in a wave of refugees from such exploitation - many others fled to Chitral and Afghanistan.

[7] Ismailism is a branch of Shia Islam. The Ismailis are followers of the Aga Khan, who is their spiritual leader. In other parts of Tajikistan the Sunni faith is dominant.

fringe of the Pamirs and laid the foundation for the scientific exploration of the region.[8] On return to St. Petersburg, their reports stimulated great interest in the Pamirs and were followed by further expeditions, most by military detachments but almost always accompanied by experts in various scientific disciplines.[9]

Russian and subsequent Soviet research was nothing if not thorough. A comprehensive chronological listing of all Russian scientific expeditions in Central Asia from 1715 to 1886 was published in four volumes by the Lenin University of Tashkent from 1955 to 1971 under the editorship of Olga Vasilievna Maslova (Обзор русских путешествий и экспедиций в Среднюю Азию); it runs to some 500 pages. A listing of published materials from the two most important multi-disciplinary expeditions of the 20th century (the Soviet-German Pamir Expedition 1928 and the Tajik-Pamir Expedition 1932-1933) was issued by the USSR Academy of Sciences in 1936 under the editorship of A. O. Dalavassera (Памир, Таджикстан, Средняя Азия. Обзор трудов и материалов экспедиции 1932-1935 и 1928-1932); it comprises 250 pages.

4. Permanent Russian presence and early development activities

In 1892, an expedition led by a young captain, Mikhail Efremovich Ionov, head of the new military administration in Osh (in today's Kyrgyzstan), established a Russian base (complete with scientific staff) in what is today Murghab; and, in 1895, set up a permanent military headquarters in Khorog, now the capital of Gorno-Badakhshan, expelling the Afghan forces and, the Russians having already made the Emir of Bukhara and the Khan of Kokand their vassals in 1868 and 1876 respectively, established sovereignty over the whole Pamir region.[10]

Russian scientific staff at the military base in Murghab (Filchner, 1905)

It was from this new headquarters that the first 'development' initiatives on behalf of the inhabitants of the Pamirs began. In addition to protecting them from the depredations of the Afghans and Bukharans, the newly arrived Russians began road building, encouraged the use of horses[11] and gradually spread a minimum of basic health care through the Russian *feldsher* system.[12]

[8] Fedchenko and his wife had planned to return to explore the Pamirs, but he died in a climbing accident in Chamonix in 1873.

[9] For a full account of Russian and British exploration of the Pamirs during the 'Great Game' period, see Middleton R and Thomas H (2012), pp. 295-513.

[10] See Middleton R and Thomas H (2012), pp. 386-436.

[11] Olufsen O (1904) Through The Unknown Pamirs - The Second Danish Pamir Expedition, 1898-99, Heinemann, London, p. 117: " When I passed from Langarkish to Khorok the first time in 1896, there were no

A public school was opened in Khorog in 1914, but the commitment of the local Ismaili community to education for both boys and girls is recorded already in late 19th century reports by explorers. In 1879, Mukhtar Shah, an Indian native explorer ('pundit') sent to the Pamirs by the British administration in India to prepare maps of the region, observed girls' schools in Afghan Badakhshan;[13] and, in the last years of the 19th century, a Danish explorer noted the existence of schools in the Pamirs for both boys and girls with professional teachers who could read and write: "If a man does not send his children to school or to the wandering Mullah, the elders of the town remonstrate with him in the matter…" [14]

A road between Osh in Kyrgyzstan and Murghab was opened in 1897 and the connection to Khorog was completed a few years later. The Russians introduced the first potatoes, cabbages, new seed varieties for cereals and some improvements in livestock. However, with poor soil, the high altitude, harsh winters, and the primitive tools available to the local inhabitants, no fundamental changes could be made to the essence of subsistence farming and nomadic herding. A Russian fact-finding mission in 1904-6 "was shocked by the extreme poverty of the local population…." [15]

Young man with goitre, Vanj valley (Gorbunov, 1928)

Revolution in Russia, followed by the locally inspired ***Basmachi*** revolt against the new Bolshevik hegemony in Central Asia, diminished Russian presence and influence in the Pamirs. A combination of political reconciliation, cultural concessions and demonstrations of overwhelming military power led progressively to the pacification of Central Asia by 1926. In

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horses to be seen. But of late years the province has made much progress under Russian protection, and now the little horses of Kirghiz and Badakhshan have been imported. These horses are small, persevering, sagacious, and well adapted to mountain use, and they are highly prized by the people."

[12] Feldsher is the Russian name (Фельдшер) for a health care professional who provides various medical services, mainly in rural areas. Feldshers provide primary, obstetrical and surgical care services in many rural medical centres and ambulatories across Russia. (Wikipedia 2014)

[13] Tanner Colonel H C B (1883), *Reports of Trans-Himalayan Explorations in Badakhshan*, India Office Room 0011, C.2c. Survey General's Office, Library General Number 7372, para 49, p. 23.

[14] Olufsen O (1904), pp. 136-7.

[15] Bergne P (2007) The Birth of Tajikistan - National Identity and the Origins of the Republic. Tauris, London, p. 34.

the Pamirs, however, the inhabitants continued to see only advantages from Russian occupation and never joined the *Basmachi* movement.

5. Population growth

Until the mid-20th century, human settlement in the Pamirs was insignificant: indeed, the high plateau of the Eastern Pamirs was - until relatively late in the Soviet period - inhabited almost exclusively by nomadic herders. As is the case with any other area inhabited by nomadic peoples, the Pamirs were far from virgin unexplored territory at the time European explorers began to make maps and surveys. Long before the time of miners of spinel, lapis and silver, silk road traders, Chinese Buddhist pilgrims, Jesuit missionaries, spies and military adventurers, the Pamirs had been criss-crossed by local nomadic herders since time immemorial. The earliest estimates of population in the Tajik Pamirs, however, were not made until the British and Russian Empires began to take an interest in the region as part of their 19th century imperial rivalry.

In 1880, the pundit Mukhtar Shah estimated the total population of the Western Pamirs at some 43,000 on the Afghan left bank of the Panj, and some 22,000 on the right bank, including Darvaz, (present-day GBAO).[16] Ney Elias, the British spy/surveyor who was the first European to explore the Pamirs extensively in 1885, estimated the population on the right bank of the river at about 4,000 in Shughnan and 3,000 in Rushan, and the Kyrgyz population of the Eastern Pamirs at about 5,000.[17] In 1894, the first census undertaken by the Russians reported that 1,055 people lived in Murghab district; and, in 1908, Andrei Evgenevich Snesarev (1865-1937), Russian Academician and head of the Russian military administration in Khorog, estimated the total population of the Western Pamirs (i.e. territory under Russian jurisdiction on the right bank of the Panj) at 17,000 and the Eastern Pamirs only 2,000.[18] We may reasonably conclude that until the Soviet period, the population of the Tajik Pamirs did not exceed 25,000.

It became declared Soviet policy to encourage human settlement in strategic border areas and population began to grow steadily. Nomadic herders in the eastern Pamirs, for example, were forced to live in an urbanised environment, leaving their houses only in the spring and summer for their yurts and pastures. Best estimates of population[19] show a growth from some 29,000 in 1926[20] to 45,000 in 1950, 128,000 in 1979 and approx. 200,000 at the end of the Soviet period. During the Tajik civil war (1992-1997) the population reached a peak of some 250,000 as a result of an influx of displaced persons from other parts of Tajikistan.

6. Soviet period

6.1 Socialist revolution in a Muslim country

The Soviets considered the Gorno-Badakhshan Autonomous Oblast (GBAO) as an example of socialist revolution in a Muslim country and invested heavily in its modernization "to show

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[16] Tanner Colonel H C B (1883), pp. 5-6.

[17] *Report of a Mission to Chinese Turkestan and Badakhshan in 1885-86; By Ney Elias, Political Agent on special duty*, Calcutta 1886, IOLR F111/378; Ney Elias, Journal "Pamir Journey 1885-6", *RGS* Archive, ref. NE 33.

[18] Snessareff A (1908), "Religion und Gebräuche der Bergvölker des westlichen Pamir", Keleti Szemle. Revue Orientale, Budapest, Volume IX.

[19] Kreutzmann H (1996), Ethnizität im Entwicklungsprozess. Reimer, Berlin, p. 169.

[20] By this time the anti-Bolshevik revolt in Central Asia, know as the *Basmachi* movement, had been finally put down and stability had returned.

the neighbouring poor peoples to the south …. the superiority of the Soviet system…." [21] A hospital was built in Khorog in 1924; the airport in Khorog was completed in 1932 and the road between Osh and Khorog was fully asphalted and open to motor traffic by 1935.[22] Following from these early Soviet initiatives, schools, hospitals, public meeting halls, power stations and electricity grids, phone lines, roads, and airports were subsequently built in all major areas of the province.

Early road transport (*USSR in Construction No. 12, 1936*)

Arrival of one of the first flights to Khorog (*USSR in Construction No. 12, 1936*)

State-sponsored education began from the realisation that a large majority of party cadres in Tajikistan were illiterate. Schools for the eradication of illiteracy (*Likbez*) were organised from 1927 onwards.[23] Compulsory universal primary education was introduced as early as

[21] Bliss F (2006) Social and Economic Change in the Pamirs (Gorno-Badakhshan, Tajikistan). Routledge, London, p. 247.

[22] This strategic road - the 'Pamir Highway' as it later became known to tourists - regained significance as a military supply route during the Russian invasion and occupation of Afghanistan 1979-1989 (v. Kreutzmann H. (January 2013), "The significance of geopolitical issues for internal development and intervention in mountainous areas of Crossroads Asia", *Crossroads Asia, Working Paper Series 07*, Bonn).

[23] Bergne P (2007), p. 63.

February 1931.[24] In GBAO, school No. 12 in the village of Porshinev, just outside Khorog, celebrated its 70th anniversary in 1996.

The first nursery schools were set up at the end of the 1940s;[25] from the 1950s, education was being provided free from kindergarten to postgraduate studies and the literacy rate increased exponentially. In 1926 an official report by the Soviet *Sredazburo* (Central Asia Bureau) estimated village literacy in Tajikistan at 1.1% for males and 0.2% for females;[26] by 1984, the official estimate for the whole of GBAO was more than 99%. GBAO held pride of place in the whole Soviet Union in numbers of higher education degrees and produced a disproportionate number of highly educated professionals who made valuable contributions to Tajik society. Where educational facilities were not available at village level, schooling was taken over by the state farms.

After the break-up of the Soviet Union, a 1993 programme feasibility study by the Aga Khan Foundation (AKF), a private development agency,[27] described the health system in GBAO as follows:

- the health status of the population in GBAO is better than that of most middle-income countries in the world;
- the health system is accessible to everyone, with facilities located in even the most remote settlements and there are no economic barriers to access;
- it is equitable in its treatment of groups of people who, in many other systems, are often disadvantaged, such as women, the poor, those living outside major towns, etc.;
- there are large-numbers of well-trained professional staff, both doctors and nurses;
- there are 15 hospital beds per thousand population, a higher ration than in almost any country in the world;
- there is a higher ratio of doctors and nurses to population than for almost all middle-income countries.[28]

In GBAO in 1993, there were 28 hospitals, 7 polyclinics, 32 village clinics and 149 medical stations.[29]

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[24] Bergne P (2007), p. 83.
[25] Bliss F (2006), p. 257.
[26] Bergne P (2007), p. 75.
[27] As noted above, His Highness the Aga Khan is the spiritual head of the Shia Imami Ismailis, a branch of the Shia faith; there is a substantial Ismaili population in the Pamirs, extending to the Sarikol region of Tashkurgan province in China, the Northern Areas of Pakistan and Badakhshan province of Afghanistan.
[28] Middleton R *et al.* (1993) Mission Report on the Medium Term Development of Gorno-Badakhshan, 17 November 1993. Unpublished, Aga Khan Foundation Geneva, p. 72. Quoted in Bliss F (2006), p. 255.

The AKF study noted that some three-quarters of the school-age population of GBAO had eleven years of schooling and almost all the remainder at least nine years. In addition, some 12% of school-leavers went on to university every year, 78% of teachers had taken five-year university diplomas and a significant proportion of the remainder had attended colleges of education.[30]

6.2 Food production

Soviet planning came late to Central Asia, especially in isolated regions such as the Pamirs. The collectivisation of farming and herds that resulted did not improve yields and the system of state farms ('sovkhoz', from *советское хозяйство*, 'Soviet farm') imposed in the Pamirs from the early 1970s provided no incentive for the population to increase production. From 1940 to 1974, the number of agricultural production units had decreased from 3093 (mainly collective farms) to 245 (state farms).[31] By 1993, the latter had been consolidated into only 57 sovkhoz.[32]

The arable land of Gorno-Badakhshan, the poorest and most isolated part of the poorest Republic in the Soviet Union, is not sufficient to meet the food needs of its population: valleys are narrow and most of the land area is above 2,500m; in 1992, of a total of about 16,000 hectares of arable land, only 12,000 hectares were actually under food crops. During the Soviet period, under the centrally planned economy, a heavily subsidised system of food deliveries was organised - especially during the winter months, when the road from the Tajik capital Dushanbe was closed for 4-5 months by snow, and deliveries had to be made along 'The Pamir Highway'. from Osh in Kyrgyzstan.

'Pamir Highway' near Alichur

At the end of the Soviet era, Gorno-Badakhshan was dependent for 85% of its food and all of its fuel on subsidised supplies from other regions.

This dependence was deliberate. Since the progressive occupation of the area by the Russians from the late nineteenth century onwards, the Pamirs were of great strategic importance: first,

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[29] Middleton R *et al.* (1993), p. 80.
[30] Middleton R *et al.* (1993), p. 51; the report notes that "there are said to be public libraries in all major centres." See also Bliss F (2006), p. 257.
[31] Kreutzmann H (1996), p. 173.
[32] Middleton R *et al.* (1993), p. 5.

in the 'Great Game' pitting British spies and surveyors against Russian military expeditions, then in the contested area of Turkestan immediately after the Bolshevik revolution and finally for military access to Afghanistan after the invasion of that country by the Soviet army in 1979. Soviet foreign policy required a sedentary population as proof of sovereignty - economic migration could not be tolerated.

These measures ensured the well-being of the people (and prevented the depopulation of a strategic border area), but there was little development. Moreover,

> On the negative side, Soviet times also witnessed periods of forced collectivization of agriculture, during which lands were nationalized and certain types of crop production (e.g., tobacco and cotton) were forced upon people. Forced migration of the mountainous Ismailis to the southern lowlands of Tajikistan with radically different climatic conditions resulted in the death of many. Under various pretexts, Stalinist purges eliminated a great number of the Ismaili political, intellectual, and cultural elite. Local youth were encouraged to move to other parts of the Soviet Union to fill the human resource deficit in the labor market. The Cultural Revolution, carried out in the name of creating a 'new Soviet human being' who was to be above religious, ethnic and cultural 'prejudices', also impacted the Ismailis. Being a 'Soviet human being', however, was not very different from being or becoming 'Russian', and while education was free and comprehensive, its quality and relevance to the community's development and culture remained questionable.[33]

A few production units were set up in Khorog - a textile factory, a printing works, workshops for processing semi-precious stones, bread, milk and meat factories - but apart from infrastructure, investment in GBAO remained very low. People's needs were met by free or subsidised deliveries to the urban centres and state farms and there was little trading. Interviews carried out by the Aga Khan Foundation team in 1993 revealed that a telephone call to the district centre would result in the delivery of most basic necessities: "If ever we got too much flour, we fed it to the animals," was one comment. Over 70% of the GBAO budget was covered by funding from the capital Dushanbe.[34]

7. The post-Soviet period and the Aga Khan Foundation

7.1 A new paradigm

With the break-up of the Soviet Union in 1991, the system of subsidies ended and local leaders warned of impending food shortages. One of the first institutions to respond to the threatened emergency was the Aga Khan Foundation. Since the early 1980s, the Foundation had implemented a highly successful rural development programme in the Northern Areas of Pakistan and this was initially taken as a model for Gorno-Badakhshan. International experts in food security and rural development visited the area in 1992-1993. Their conclusions were clear:

a) no long-term development programmes could be envisaged until the short-term food needs of the population had been met;
b) the attention paid to remote and impoverished regions such as the Pamirs under the Soviet system presented a development paradigm unlike any so far encountered by the Foundation (and probably in the annals of international development policy).

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[33] Niyozov S (2002), 'Evolution of the Shi'a Ismaili Tradition in Central Asia', *The Ismaili* UK, Retrieved 2014 from http://www.iis.ac.uk/view_article.asp?ContentID=105413.
[34] Middleton R *et al.* (1993), p. 93.

The paradigm comprised: a high level of education – including graduate level technical specialisation; a highly mechanised Soviet-style agricultural infrastructure but no financial resources for its maintenance and no fuel for its operation; a range of health and education services the cost of which was far beyond the resources of the region; and a population size bearing no relation to the carrying capacity of the land. The collectivised centrally-planned Soviet model was unsustainable.

These conclusions had both positive and negative implications. On the one hand, contrary to experience in the Northern Areas of Pakistan, major professional and intellectual resources could be harnessed locally (specialists in civil engineering, hydraulics, electricity generation, agronomy etc.); and the transition to local programme management was immensely facilitated.

On the other hand, development priorities would be frustrated in the short-term by the distractions of fund-raising and logistics for an emergency food aid programme. The distractions were increased by the outbreak of civil war in Tajikistan at the end of 1992.

Other international agencies left the initiative to the Aga Khan Foundation, which rapidly had people on the ground and a coherent strategic concept. The first step was to ensure substantial international funding for food aid, while preparing the strategy for longer-term agricultural reform. Fortunately, donors with strategic vision were found: the government of the USA, well aware of the geo-political implications of a massive flight of destitute refugees across international frontiers; the Swiss government, always prompt to respond to humanitarian crises; the German government, developing a new-found interest in the former Soviet territories; and a Dutch NGO that happened to have a Farsi-speaking expert already in the region.

A local NGO, the Mountain Societies Development Support Programme (MSDSP),[35] was set up in Moscow, Osh and Khorog with indigenous personnel in order to undertake procurement, logistics and monitoring for the humanitarian programme and begin planning for longer-term development.

MSDSP staff in 1995

[35] MSDSP actually went through two transformations: beginning as the Pamir Relief Programme in late 1992, it became the Pamir Relief and Development Programme in November 1993 when a development component was added. The transition to MSDSP came when the programme expanded into the Rasht valley (Gharm) and Khatlon.

Despite the context of civil war, the Aga Khan Foundation was able to negotiate agreements with the Tajik (and Kyrgyz) governments to begin operations in the Pamirs. Between 1993 and 1999, the height of the emergency programme, a total of some 150,000 tonnes of humanitarian supplies (much locally procured in Central Asia) was carried in 5-ton Russian Zil trucks between Osh and destinations throughout GBAO, corresponding to more than four thousand shipments annually on a round trip averaging 2000km.

Zil trucks on the way from Osh to GBAO (in April)

7.2 Sustainable solutions

The break-up of the Soviet Union brought a major reduction in resources for social welfare (financed largely through budgetary support from Moscow) and the educational and health services were in crisis. In partnership with the local government, AKF initiated activities designed to prevent a total collapse of the system and test the potential for longer term development through reform of the system. In parallel with the humanitarian programme, AKF designed an agricultural reform programme to promote agricultural production and productivity and reduce dependence on subsidised and free food.

7.2.1 Health

Tajikistan's health system was based on Soviet models. Decisions about the health of the population were made by the central government with little or no consultation with regional counterparts, there was a surplus of health facilities and personnel, the focus of medical care was curative, and resources were spent in a wasteful manner with over-prescribing of medicines, overstay in hospitals and use of hospital facilities for rest purposes, etc.

7.2.1.1 Emergency needs and longer-term objectives

In response to this emergency, AKF began health activities in GBAO in 1994 and worked with a number of other NGOs such as Médecins sans Frontières, the International Federation of Red Cross/Red Crescent Societies and Pharmaciens sans Frontières, providing large quantities of vaccines and medicines in order to respond to the immediate threat of infectious diseases, with particular emphasis on remote communities and vulnerable groups. While meeting these emergency needs, AKF began developing a long-term strategy for health reform in the region which would influence national level policies.

The specific longer-term objectives of the programme were to :

- make pharmaceuticals available throughout GBAO under a cost-recovery system,
- rationalise hospital services beginning with the central hospital in Khorog and three district hospitals, and
- promote rational collection of valid and consistent data on health and nutrition by establishing a health management information system that will enable health staff to target services and analyse needs.

7.2.1.2 Pharmaceuticals

Working in all eight districts in GBAO, the Foundation trained medical practitioners in more rational prescribing practices as well as creating a limited list of essential drugs according to WHO guidelines. These essential drugs were provided to 190 primary health care (PHC) facilities (i.e. medical points, ambulatories, and pharmacies). Monitoring results revealed that between 77% and 88% of PHC facilities in GBAO dispense the pharmaceuticals provided by the project, thus indicating its affordability to the population. In addition, local production of intravenous fluids was promoted and supported.

Two training manuals on the rational use of drugs were developed for use by PHC staff and monitoring revealed that the training resulted in the reduction in the number of drugs prescribed per physician (from 4.6 per patient encounter to 1.2), the amount of injectable antibiotics (from 41.7% to 14%) and increased access to essential drugs throughout the region.

The project established an information centre in which updated and relevant pharmaceutical literature and information on new treatment protocols are provided to medical staff of all health facilities in the region. The head of the centre revealed that medical staff regularly visit this centre and gather information with them to take to their respective health facilities (e.g. materials are distributed to patients with pharmaceuticals).

7.2.1.3 Essential hospital services

AKF focused investment in hospital services, training and rehabilitation on a small number of key facilities, beginning with three district hospitals in Vanj, Ishkashim and Murghab, concentrating services in fewer buildings, thus reducing maintenance and fuel costs and encouraging more intensive use of buildings still in use. To date, there has been a bed reduction of 50% in Murghab and 20% in Vanj and Ishkashim.

All hospitals are now properly equipped with water supply in the wards, sanitary toilets, sewage disposal system, and simple heating systems, thus contributing to improved hygiene of the patients. Diagnostic and treatment equipment was provided to the three district hospitals. Ambulances provided to the hospitals have enabled seriously ill patients to be transported from the three districts to the central hospital in Khorog town and from the outlying areas to the district hospitals.

Since becoming fully operational in June 2000, the project has achieved the following successes:

- renovation of hospitals to a reasonable standard
- the provision of basic equipment and vehicles to the three district hospitals
- a programme of medical training
- regular English and computer courses for hospital staff

- support to the Ministry of Health on nurse training
- improving nurse practice
- building up a cadre of local staff with good management skills.

7.2.1.4 Health Management Information System (HMIS)

The regular collection of health data in GBAO has been in existence since the Soviet period and was the responsibility of the central hospital in Khorog. While this information was collected, the results were used only by the top-level health authorities and did not trickle down to the primary health care (PHC) staff at the district level. AKF succeeded in modifying the existing HMIS system to allow managers at all levels to have the data and analysis required to formulate information-based management decisions, while training them to manage the collection, flow and analysis of data more efficiently.

A Food Security and Nutrition Surveillance System was introduced and regular Health and Nutrition surveys were conducted to gather information on the trends in maternal and child health status in the oblast. The survey gathered data on drug use, sexually transmitted diseases, malaria and body mass index of women for the first time.

7.2.2 Education

During the Soviet period, education in Tajikistan accounted for 40% of GDP and achieved a high adult literacy of 99% (1990), an adult upper secondary education completion rate of 71% (1989), equal educational opportunities for girls and boys, and special provisions for minorities and disadvantaged students. The country had an extensive network of education institutions at all levels with highly trained teaching and non-teaching staff. The education system in Tajikistan was considered to be one of the best in the Soviet Union. State expenditure started to decline in 1992, from 11.1% of the GDP in 1992 to 2.1% of the GDP in 1999. There was a dramatic increase in overall dropout rates (6% in 1989 to 20% in 1997) and in non-enrolment of children (an estimated 25% of girls and 20% of boys aged 7-18 were not receiving formal education in 1996). In GBAO, however, dropout rates were considerably lower than in many other regions.[36]

School buildings were in desperate need of rehabilitation. Essential school supplies such as textbooks, notebooks, paper and chalk were lacking. Teachers' salaries declined sharply, and were often paid in arrears. Highly-qualified teachers were being forced to abandon teaching and turn to other income generating activities or emigrate, leaving behind uncertified teachers with limited teaching experience.

AKF's support to the education sector in GBAO started in 1996 and included the immediate supply of textbooks and essential supplies to schools for rent or sale by the schools to parents, thus creating a revolving fund and encouraging community involvement in schools. Using English as an entry point, AKF also worked with teachers to move away from traditional teacher-centred methods to a more student-centred interactive approach and focus on training at all levels of the education system, the revival or creation of local structures, the strengthening of the Institute of Professional Development (the key in-service training institution), and promoting community involvement in schools and local ownership of initiatives.

[36] Middleton R *et al.* (1993), pp. 51-63.

The overall goal of the education programme was to help the government reform the education system of GBAO to make it more relevant, cost-effective and efficient and raise the educational standards of the population in GBAO. The work in GBAO is also benefiting the education sector in Tajikistan more generally.

An innovative Mobile Training and Resource Centre introduced training on-site in one district and is serving all the language teachers in that district. The community now accepts the principle of community support for the education of their children and the revived Parent Committees are invaluable in raising funds for schools, conducting minor but crucial repairs to leaking roofs and crumbling walls and floors and taking responsibility for supporting poor or disadvantaged families at times of dire need.

At the management level, head teachers have been introduced to the concepts of school management and leadership and District Support Groups exist in each district, bringing the concept of decentralised decision-making and management of change a step closer. At the regional level, senior educators now work on reform of the system through research on reform barriers, the setting up of 'gymnasium' schools where freer experimentation and a review of their management methods and practices are possible. At the national level, the work done in GBAO is increasingly being recognised and AKF is being requested to maintain a more forceful presence and make its expertise and experience more widely available.

The challenges arising out of the extremely difficult context described above persist: a comprehensive, well-conceived educational reform plan remains elusive: central control over crucial educational areas such as curriculum and assessment is still almost total; and the concept of decentralised decision-making is only slowly being accepted.

7.2.3 Agricultural reform

In September 1993, MSDSP initiated negotiations with the local government of GBAO - which, as an autonomous entity, had considerable freedom (although no resources) - for the privatisation of land not being used (or under-used) by state farms. As a result of these negotiations, MSDSP obtained a landmark decision from the local government in Gorno-Badakhshan that some state farm land could be distributed to villagers who wished to become private farmers. A number of other measures, such as food-for-work and cash-for-work, were also introduced with a view to increasing rural incomes and access to food through increased purchasing power.

MSDSP agronomists inspecting a new variety of wheat

MSDSP conducted village-level dialogues throughout Gorno-Badakhshan to encourage private farming. Private farmers were assisted with improved seeds, adapted to high mountain environments, and fertiliser and received technical assistance from trained MSDSP staff – a channel building and repair programme was initiated to extend the area of arable land available to private farmers. (N.B. Physical inputs were provided on credit, repayable in cash or from food produced in order to avoid a return to the false incentives of the Soviet system.)

The spontaneous demand from villagers was so great that the local government decided to privatise all land in the Bartang valley. Significant increases in agricultural production in this valley subsequently persuaded the local government to privatise all land in GBAO and, at the height of the programme, some 25,000 private farmers were working with MSDSP. Arable land was apportioned according to family size on a village-by-village basis, without permitting sale or transfer of land title.

A highly developed network of irrigation channels, bringing snow melt to lower areas

Yields of potatoes and wheat per hectare more than doubled. Within ten years, production of staple crops increased from 15% of local needs (at the end of the Soviet Union) to over 50%[37] by 2002 as a result of improved yields and increases in land area under food crop cultivation.

A young family member brings the harvest home

Wheat, barley, rye and potatoes continue to be grown as the main food crops. Seed returned in repayment of loans was made available to participating farmers for spring and autumn

[37] Based on minimum calorific requirements.

planting, together with fruit tree saplings. As much seed as possible was procured locally, in order to encourage farmers to market their surplus, and to inject cash into a cash-starved economy.

7.2.4 Food diversification

A horticultural programme tested and introduced new varieties of vegetables in order to provide a balanced diet and a sustainable supply of vitamins and minerals: nine new varieties of beans and six varieties of peas were tested - suitable varieties, which are well adapted to the particular climatic conditions of the region, were identified and planted. In addition to increasing fruit and vegetable production through the provision of fertiliser, seeds, saplings, and plastic tunnels for small greenhouses, the horticultural programme also provided training and equipment for processing and preserving horticultural produce, including apricot drying. Two greenhouses from the Soviet era were rehabilitated: they are heated and irrigated all year round from nearby natural hot springs and can supply a small, but profitable market for out-of-season vegetables to the regional capital, Khorog, and other areas.

A livestock programme was implemented to address poor animal health, insufficient fodder availability and lack of organised marketing systems. A breeding programme improved livestock quality and yields of meat and dairy produce.

A yak is prepared for milking in Murghab district

In addition, small animal husbandry activities, largely managed by women, were initiated, including poultry, wool-processing and bee-keeping.

7.2.5 Village-level autonomy

With the successful implementation of the humanitarian programme and the privatisation of most agricultural land, AKF could begin to deal with broader long-term economic and social development at village level. The underlying philosophy was that rural economic development is best catalysed and sustained through village-level institutions that are autonomous and transparent, and contribute to democratic norms of behaviour and to the growth of civil society. Civil-society organisations such as MSDSP were an entirely new concept in the region in 1993.

Village-level 'dialogues' at the start of the programme -
Both men and women and all age groups were involved

Each Village Organisation (VO) drew up a village plan, determined village needs and priorities, managed infrastructure projects (such as mini hydroelectric plants, road and bridge construction, school repair). The VOs also created Village Funds, from which micro-credit was made available for small local enterprises and small trading. In the creation of the VOs, special attention was paid to women's needs - for example, internal rules of the VO require that if the leader of a VO is a man, the deputy leader must be a woman.

A beneficiary of the microcredit programme

"Small" traders at the roadside

Village priorities generally included small hydro-power stations, piped water supply, rehabilitation of school and medical buildings and repair of infrastructure, such as irrigation channels, roads and bridges. The Swiss Agency for Development and Cooperation SDC introduced an innovative category of emergency assistance entitled 'non-food humanitarian assistance' which made it possible to meet many of these priorities. In all cases, MSDSP required village inputs in the form of labour, backed where possible with food- or cash-for-work.

7.2.6 Gender and social equality

As noted above, the AKF programme paid special attention to women's needs. However, the traditions of the Ismaili community, reinforced by Soviet policies, led to a basically favourable status for women in GBAO when the AKF programme began. At 52% in 1985, the percentage of women in the workforce was higher than in the rest of Tajikistan and equal to that for the whole of the Soviet Union.[38]

Moreover, long-standing traditions of community sharing - perhaps typical for a society in which everyone is equally poor - led to a high degree of social equality.[39] The cooperative and self-governing community organisation known as *Mahallah* pre-dates the Soviet period and was greatly strengthened during times of hardship, such as the Tajik Civil War and the danger of famine that followed. One of the major donors to the AKF humanitarian programme insisted on the establishment of categories of beneficiaries according to relative need. It proved impossible to achieve full implementation of these lists, especially in remote communities, because local civic and religious leaders considered it the responsibility of the community, and not of the donor, to determine real needs from family to family; a 'mechanical' system of lists was felt to be a shame on the collective leadership.

Under the land privatisation programme described above, there was no opposition to the distribution of all village land according to family size.

7.2.7 Energy

Electricity generation in GBAO began in the 1940s; immediately before the break-up of the Soviet Union, over 70% of the energy was actually provided by diesel generators run on imported diesel fuel. This was a deliberate policy preference over the alternative of developing the hydro-power potential of the Pamirs, estimated at up to 4,000 Megawatt,[40] that would not only have reduced dependency on the centralised resources of USSR, but would also have been a potential source of locally-created revenue through export to other regions.

Many of the rural inhabitants resort to wood fuel for their heating and cooking needs during the winter, resulting in the destruction of 70 percent of the region’s forests by 2000 and a sharp increase in respiratory disorders due to smoke inhalation. In the eastern Pamirs, almost all of which is above the tree line, Teresken (*Ceratoides papposa*) is the major source of domestic fuel. The uprooting of Teresken plants, that take decades to grow to maturity, has led to desertification and wildlife reduction.

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[38] Middleton R *et al.* (1993), p. 103; and Bliss F (2006), p. 260.
[39] Bliss F (2006), pp. 264-5.
[40] Breu T and Hurni H (2003), *The Tajik Pamirs. Challenges for sustainable development in an isolated mountain region*. Bern: Centre for Development and Environment, p. 35 - see http://www.cde.unibe.ch/CDE/pdf/The_Tajik_Pamirs.pdf - accessed 2014-09-06..

Teresken being brought back to Rangkul village

Very late in the Soviet period, planning began for the construction of a major hydropower plant on the Ghunt river near Khorog, known as *Pamir-1*, with a capacity of 28mW, but it was not completed by the time of the break-up.

By 2000, the transmission and distribution system of GBAO was in very poor condition, having been largely destroyed in the civil war. Only 15 percent of the 435km of 35kV lines was still in service. Although the power system continued to provide electricity, outages were scheduled on a rotational basis, particularly during winter, and the power cuts had become more frequent and prolonged. There was no power in most districts of GBAO in winter.[41]

The Aga Khan Fund for Economic Development (AKFED), in partnership with the International Finance Corporation, formed the *PamirEnergy* company in 2002 to repair the electrical infrastructure of GBAO and make *Pamir-1* fully operational.

Forty mini hydropower plants have been built in the Tajik Pamirs - most by the Aga Khan Foundation - since the mid-1990s, mainly in remote areas that were unlikely to benefit from *Pamir-1*, with a capacity ranging from 20kW to 300kW. However, even with *Pamir-1* fully operational, only a minuscule amount of the region's energy needs will be supplied. The considerable solar and wind power generation potential of the Pamirs has been largely untapped. Shortage of energy has hindered the development of the region.

In the Western Pamirs, hydro-electricity and solar power must be considered the best approaches to sustainable energy solutions. In the Eastern Pamirs, communities are affected by energy poverty throughout the year which becomes critical and life-threatening in the winter months. A combination of hydro and solar power in the warmer months and wind and solar in the winter months is probably the best approach in this high plateau area.[42] In both cases, there are not adequate indigenous financial resources for implementation of these approaches.

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[41] *Pamir Private Power Project* - World Bank, April 6, 2013: http://web.worldbank.org/external/projects/main?pagePK=104231&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P075256; Also http://www.ehs.unu.edu/article/read/energy-crisis-in-the-pamir-mountains - both accessed 2014-09-06.

[42] Nelson T (2011), *Wind Power as a solution for energy poverty in the Eastern Pamirs, etc4CA*, - see http://etc4ca.com/projects/enwind-power-project/ - accessed 2014-09-06.

8. Challenges and future prospects

The success of the programme can be mainly attributed to intelligent public policy by the local government, resourcefulness and adaptability on the part of the population and a wide variety of accompanying measures by a committed international agency (the Aga Khan Foundation) supported in turn by enlightened government funding from the developed world.

However, as noted above, the total area of arable land in the Tajik Pamirs (available for cultivation) is only 240 km². With a population of more than 200,000, even with the increased yields already achieved, Gorno-Badakhshan will never be able to meet all the food needs of its inhabitants. Today, the balance of needs is met by a development that was only partially foreseeable: remittances from workers from the Pamirs who have emigrated to other parts of the former Soviet Union – mainly Moscow – and who send portions of their earnings back to their families in the Pamirs.

This, in turn, is unsustainable and has serious demographic and cultural consequences. Many villages are depopulated of young men, who return only sporadically and often never. Local traditions are being lost and cultural identity dissipated. According to official estimates, 1 million Tajiks, one-eighth of the country's population and roughly half of its working-age men, work in Russia; the recent fall in the exchange rate of the Russian rouble against world currencies, including the Tajik *Somoni*, has resulted in a substantial reduction in the value of remittances to Tajikistan.[43]

New initiatives are slow in coming. The three greatest resources of the Pamirs are a network of fast-running rivers, the high level of education of the population and spectacular natural beauty. To harness the hydropower potential of the Pamirs will require investments beyond the capacity of the Tajik government, but the potential to supply neighbouring countries such as China and Pakistan could provide a basis for international financing.[44] The high level of education of the people, very low internal salary levels and the fact that increasing numbers of young people are learning English, may provide an opportunity for outsourcing services from developed countries.

Tourism - especially eco-tourism - is growing slowly. Regrettably, local entrepreneurs have shown too much interest in quick profits and have shown little interest in raising the level of service quality, a prerequisite for partnerships with international tour operators. For the time being the Pamirs cannot compete on price or quality with other high mountain areas such as Tibet, Bhutan, Ladakh and even the Northern Areas of Pakistan. Today, the vast majority of tourists are 'backpackers' with low revenue-generating capacity - so-called 'soft adventure tourism'. Here again, foreign investment and international partnerships could improve the situation.

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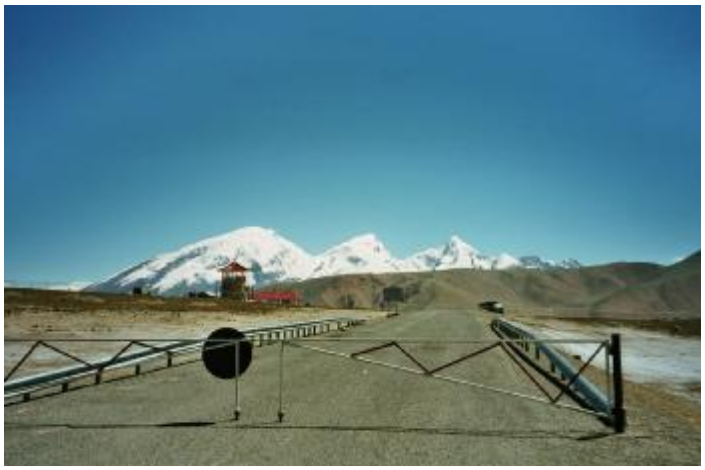
[43] "Tajikistan looks to China as Russian remittances dry up" - *Financial Times*, 20 October 2014.

[44] According to government figures, Tajikistan's potential hydro-power capacity is 527 billion kWh per year (eighth in the world after China, Russia, the USA, Brazil, Zaire, India and Canada), corresponding to 4% of worldwide hydro-power potential and three times higher than the current electricity consumption in the whole of Central Asia. Annual electricity generation is, however, only 16.5 billion kWh (3% of this potential) and the country-wide electricity shortage in winter is 2.5 billion kWh. (Ministry of Foreign Affairs website http://mfa.tj/en/energy-sector/the-energy-sector-of-rt.html,accessed 20150116)

Afghan Wakhan (Andy Miller)

A simple visa procedure currently provides tourists easy access to neighbouring Afghanistan, where the Wakhan is becoming increasingly popular as a destination. The 2012 opening of the border to China at the Qulma pass is a positive factor, as would be a reduction of tension in Afghanistan and an easing of border restrictions from the Afghan Wakhan into Pakistan. An extension of cross-border tourism to China and Pakistan would provide a very valuable boost to tour operators in the Pamirs.



Chinese border post at the Qulma pass

Wildlife, also important for eco-tourism, is threatened in the Pamirs: not only the well-known large mammals, such as the Marco Polo sheep (*Ovis Poli*) and the snow leopard, but also and certainly more surreptitiously the extraordinary butterflies of the Pamirs. Recent missions to the Pamirs reported evidence that the population of *Parnassius Autocrator*, found only in the Pamirs (and there only in three locations) and in north-eastern Afghanistan has been almost totally destroyed by commercial poaching.

The project of a Pamir National Park in the eastern Pamirs exists primarily on paper. Virtually no resources are available for wildlife protection and the interventions of the park personnel serve mainly as an obstacle to the promotion of eco-tourism.

Snow leopard (Wikipedia)

Ovis Poli (drawing by N.A. Severtsov)

The territories of the former Soviet Union are described as 'economies in transition'. Some have made the transition successfully - Tajikistan has not. The challenges of privatisation have been met to large extent by an increase in corruption and acquisition of wealth by a few privileged families. The situation remains unstable. For the time being, the threat of Islamic extremism is minor but could increase with a major deterioration of the economy, especially in remote regions such as the Pamirs.[45] Many migrant workers are now returning to Tajikistan with few if any employment prospects.[46]

[45] In August 2012, the Tajik government sent military forces into Gorno-Badakhshan, ostensibly to apprehend four alleged criminals. This massive and disproportionate military response succeeded only in reducing the already fragile loyalty of the local population to the central government. See http://www.pamirs.org/RECENT-MILITARY-ACTION-IN-KHOROG-NEWS-UPDATE.pdf. Further public protests were sparked in Khorog in May 2014 following the killing in the centre of town of four young men by the security forces - see http://www.pamirs.org/may-2014-incidents.pdf.

[46] See, for example, " One-Way Ticket to Dushanbe: Russia Sees Exodus of Migrant Workers", *The Moscow Times*, 5 February 2015 (http://www.themoscowtimes.com/news/article/one-way-ticket-to-dushanbe-russia-sees-exodus-of-migrant-workers-video/515512.html).

The difficulty of achieving post-Soviet transition should not be underestimated and is illustrated by the German experience: despite a high level of industrialisation during the Soviet period and massive financial inputs from Western Germany, the economy of the eastern part of the country (formerly German Democratic Republic) is still struggling. In the case of the Tajik Pamirs, central planning and a deliberate Soviet policy of forcing human settlement in inhospitable areas, combined with limited natural resources, has led to imbalances and distortions that can only be corrected in the short- to medium-term by a reduction in the pressure of population on the land, in other words by emigration.