Chapter 1
Setting the Stage: Key Features of the Present-Day Central Asian Region: An Introduction to the Wider Historical, Social, Political, Economic, Cultural, and Ecologic Contexts of the Region in a Nutshell

Daniel Maselli and Inam-ur-Rahim

Abstract The Central Asian region is a vast area encompassing six countries, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, and part of western China. This definition follows UNESCO's classification. The chapter focuses on describing Central Asia's biophysical context. It outlines the key features, challenges, responses, and opportunities. It is meant as an introduction to the wider historical, social, political, economic, cultural, and ecologic contexts of the region and sets the stage for what follows in the remaining chapters.

Keywords Economy • Energy • Agriculture • Communication • Political system • Landscapes • Migration

Key Points

- Central Asia is presently home to over 64 million people with considerable differences regarding urban-rural distribution (Table 1.4). The average population growth varies from 0.9 % for Kyrgyzstan to 1.8 % for Tajikistan. Especially within the poorer countries, out-migration rates of people moving to other countries are remarkably high, with currently Kyrgyzstan topping the list followed by Tajikistan. In both countries, the generated remittances play a key role within the overall national economy and are an important factor of investment and innovation/changes in people's livelihoods.
- The five nation states that evolved from the Soviet republics and the contiguous territories of western China and Afghanistan that collectively, according to UNESCO, make up the Central Asian region (CAR) are in many respects very different from each other both with regard to their biophysical and their socio-economic features.

D. Maselli (✉) • Inam-ur-Rahim
Mountain Societies Research Centre (MSRC),
University of Central Asia, Bishkek, Kyrgyzstan
e-mail: daniel.maselli@ucentralasia.org; inam.rahim@ucentralasia.org

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1 Overview

The territory of present-day Central Asia encompasses a vast area of more than 4 million km^2 comprising the surface of the five former Soviet republics (now independent states) – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan – that make up the bulk of the Central Asian region (CAR). However, the term "Central Asia" also includes adjacent territories such as the southern outskirts of the Russian Federation, western Mongolia, Afghanistan, and western China with the Xinjiang Province as well as parts of the Tibetan Plateau. The borders (Fig. 1.1) between countries in the CAR are of rather recent making and do not run along historical boundaries of former kingdoms or *khanats* that dominated large portions of the area over centuries.

The territory of Central Asia is landlocked and situated at the crossroad of most of the historical civilizations including China to the east, India and Persia to the south, Russia with Siberia to the north, and Turkey with the remainder of Middle East to the west. The famous silk route passed through the Central Asian territory and connected people from diverse cultures to interact in its few urban centers often

Fig. 1.1 Map of the political entities that comprise the five former Soviet republics and their borders with neighboring countries

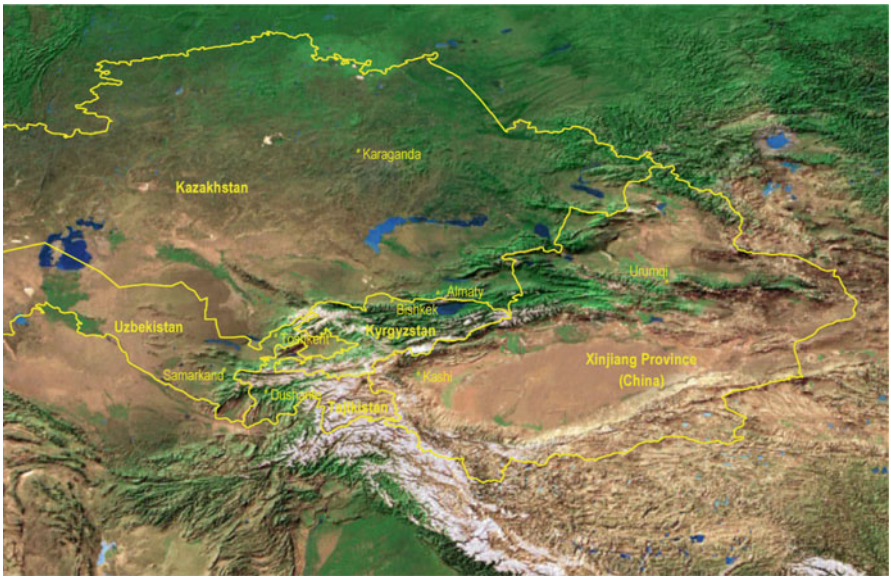

Fig. 1.2 Satellite imagery of the Central Asian region and borders of the former Soviet republics

placed in desert oasis. This led to the creation of centers of learning like Samarkand and Bukhara that have contributed enormously to our current knowledge.

Besides the few urban centers, large portions of the Central Asian territory consist of grassland steppes with a lot of commonalities due to interactive nomadic cultures. Moreover, the vast steppes used by nomads through their mobile lifestyle made rigid boundaries rather an unnecessary and even critical obstacle (Jacobs and Schloeder, Chap. 6). Mobility allowed for regular interaction among people of different ethnic background. However, after the forced sedentarization and mass collectivization induced by the Marxism-Leninism doctrine, these borders are nowadays continuing to limit movements. They hamper adaptation to both climate change and global change. In a general perspective, the traditional nomadic practices developed over centuries and even millennia in Central Asia are more than ever at risk despite the "political freedom" gained by the dissolution of the former Soviet Union in the early 1990s. After independence, the new nation states adapted different strategies to move forward. In a synoptic perspective, Central Asia embraces thus an impressive wide spectrum of nation states and ethnic territories that are very different from one another both with regard to their biophysical and their socioeconomic features. Despite this diversity, long-distance horizontal and vertical movements – i.e., transhumance – were and for the time being remain a common feature characterizing land use in Central Asia and shaping people's life as well as their environment. Similarly, as for the vast plains, the huge mountain systems are a key characteristic of Central Asia. They have conserved more traditional features as compared to many flat and rather uniform lowland areas (Fig. 1.2).

2 Biophysical Characteristics

The relief of Central Asia is characterized by an impressive diversity of large-scale landscapes (Figs. 1.3 and 1.4). The northern part of the territory is dominated by vast grassland steppes while relatively low-altitude flat deserts and semideserts prevail in the central and western areas. Among the most prominent deserts are the "Kara-Kum" or "black sand" in Turkmenistan, the "Kyzylkum" or "red sand" in western Uzbekistan, and the "Taklamakan" desert ("land of poplars" or "gardens of the desert") in western China.

In the south and east, large mountains raise up to altitudes of 7,495 m a.s.l. (Peak Communism or Lenin). The major mountain ranges are the high Pamirs in southwestern Tajikistan adjacent to the Hindu Kush range in Afghanistan and Pakistan, the Tien Shan in Kyrgyzstan with its prolongation into western China's Xinjiang Province, and the Pamir-Alai in southeast Kazakhstan connecting to Mongolia.

These mountain ranges have a direct influence on the climate, land cover, and land use in Central Asia. They host a high number of glaciers and act as water towers to the entire region. These high mountains toward the south also retain the northern Siberian cool winds which remain in the territory keeping winter temperatures well below freezing point while at the same time preventing moist clouds of the monsoon rain system approaching mainly from the Indian Ocean in the south to reach Central Asia. The mountains thus act as barriers keeping the territory relatively arid. The dominant climate in Central Asia is thus continental, characterized by

Fig. 1.3 Yurts are a feature of traditional way of living (photo D. Maselli, Kyrgyzstan 2008)

Fig. 1.4 Vast steppes and snow-capped mountains dominate large areas

cold winters and hot summers with arid and semiarid regimes in the vast lowland plains and semiarid to semihumid regimes at higher altitudes.

2.1 Kazakhstan

This country covers more than two-thirds of the entire surface of the five Central Asian republics. It is thus by far the largest country in the region (Table 1.1) and the 9th largest country worldwide. Nevertheless, only little more than 8 % of its territory is categorized as arable land. With altitudes ranging from −132 (*Vpadina Kaundy*) to 6,995 m a.s.l. (*Khan Tangiri Shyngy* or former *Pik Khan-Tengri*), the Kazakh landscapes encompass a huge variety of ecosystems that translate into a variety of traditional and well-adapted land use systems including in particular mobile/nomadic pastoralism. The territory is dominated by vast flat steppes that stretch from the Volga in the west to the Altai mountains in the east and from the plains of western Siberia in the north to the deserts and oases in the south.

2.2 Kyrgyzstan

Historically, *Kyrgyzstan* was formally annexed to Russia under the Czar's authority from 1876 (Rahimon, Chap. 3) and later became a Soviet Republic in 1936. More than 93 % of its territory or close to 200,000 km^2 is mountainous with the lowest

Table 1.1 Key geographic features of five former Soviet republics in Central Asia

Attribute	KZ	KG	TJ	TM	UZ
Surface in km^2	2,724,900 (19×)	199,951 (1.4)	143,100 (1×)	488,100 (3.4×)	447,400 (3.1×)
Land	2,699,700 (6.3×)	191,801 (2.2×)	141,510 (1×)	469,930 (3.3×)	425,400 (3×)
Water	25,200	8,150	2,590	18,170	22,000
Border line in km	12,185	3,051	3,651	3,736	6,221
Lowest point in m a.s.l.	−132	132	300	−81	−12
Highest point in m a.s.l.	6,995	7,439	7,495	3,139	4,301

Source: CIA World Factbook, accessed March 2012
Total figures: surface, 4,003,451 km^2 (about 40 % of the total European surface); land, 3,928,341 km^2; irrigated land, 113,206 km^2; arable land, 311,228 km^2

point at 132 m a.s.l. (*Kara-Daryya*) and the highest peak *Jengish Chokusu* (or former *Pik Pobedy*) at 7,439 m a.s.l. (Table 1.1). The country thus hosts a large number of glaciers and high-altitude lakes of which the *Son Kul* is the most famous one where traditionally different tribes used to graze their animals on the rich summer pastures (*jailoos*). The climate varies from dry continental to polar in the *Tien Shan* mountains to a subtropical climate in the *Ferghana* valley and a temperate one in the northern foothill zone along the *Chuy* valley. While large parts of the country's hill and mountain slopes are poorly covered by forest, Kyrgyzstan is home to the world's largest natural-grown walnut forest (*Arslanbob* near *Jalalabad* in the south). The *Issyk-Kul* ("hot lake") is the second largest saline lake of the world after the Caspian Sea and is a declared biosphere reserve (Fig. 1.5).

2.3 Tajikistan

Like Kyrgyzstan, *Tajikistan* is dominated by mountain ranges such as in particular the high Pamirs which are often referred to as "roof of the world." Tajikistan hosts the highest peak in Central Asia, while its waters leave the country via the Syr Darya river toward Uzbekistan at the lowest point of about 300 m a.s.l. in the southeast. With the Alai mountain range along the northern border, the ethnic Kyrgyz nomads populating the eastern Pamirs, and the outreach to the edges of the Ferghana valley, Tajikistan shares many commonalities with Kyrgyzstan. Its role as regional water tower is underpinned by the fact that the glaciers and lakes represent the world's second largest mountain hydropower potential. The Tajik National Park is the largest protected area in Central Asia. It consists of an impressive mountain system surrounded by the Hindu Kush to the south, the Karakorum and Himalayas to the southeast, the Kunlun Shan to the east, the Pamir-Alai to the north, and the Parapamir to the west. The park includes a diversity

Fig. 1.5 Revenue from tourism at Issyk-Kul provides economic diversity (photo D. Maselli, Tajikistan 2008)

of natural landscapes with rare and endangered flora and fauna of regional and global importance such as in particular the snow leopard (*Uncia uncia*) and the red wolf (*Cuon alpinus*) listed in the red book of IUCN (Jackson, Chap. 15). Some of the most spectacular features are the two high-altitude lakes of *Karakul* and *Sarez*, the two highest peaks *Somoni* (7,495 m a.s.l.) and *Lenin* (7,134 m a.s.l.), the two monumental glaciers *Fedchenko* and *Medveji,* and numerous hot and mineral springs (Figs. 1.6 and 1.7).

2.4 Turkmenistan

The territory of *Turkmenistan* is characterized by a subtropical desert climate manifesting as sandy landscape (*Kara-Kum* desert) that forms dunes and rises to mountains in the south at the border with Iran. The highest elevation point in Turkmenistan is at 3,139 m a.s.l. (*Gora Ayrybaba*), while the lowest point is at −81 m below sea level (Vpadina Akchanaya). The Great Balkhan Range in the west (Balkhan Province) and the Köýtendag Range along the southeast border with Uzbekistan (Lebap Province) are the only other significant elevations in the country. The Great Balkhan Range rises up to 1,880 m a.s.l. (Mount Arlan), while the highest summit in Turkmenistan is the Ayrybaba (3,137 m a.s.l.) belonging to

Fig. 1.6 Alpine summer pastures provide seasonal grazing for the flocks and herds of pastoral nomads (photo D. Maselli, Kyrgyzstan 2011)

Fig. 1.7 Tajikistan's Zerafshan valley is utilized by a sedentary population whose livelihood is derived from small plots of irrigated land on the terraced hill slopes and in the fertile valley bottoms (photo D. Maselli, Tajikistan 2009)

the Kugitangtau Range. The major rivers include the Amu Darya, the Murghab, and the Tejen. The climate is mostly arid and subtropical with little rainfall. Winters are mild and dry, while most precipitation falls from January to May with the heaviest precipitation in the Kopet Dag mountain range. Based on the prevailing natural conditions, the country mainly depends on intensive agriculture located in irrigated oases as well as on exploiting substantial oil and gas resources. Its major agricultural products though are cotton as a cash crop for export and wheat for domestic consumption. With more than 300,000 km^2 of permanent meadows and pastures, Turkmenistan is the third largest producer of fresh milk and meat in the region (Table 1.3).

2.5 *Uzbekistan*

Today, *Uzbekistan* controls most of the *Ferghana* valley which is the largest fertile area of Central Asia and home to about half of the entire region's population. Uzbekistan's highest point reaches 4,301 m a.s.l. (*Adelunga Toghi*), while the lowest point is slightly below sea level (*Sariqamish Kuli*, −12 m a.s.l.). Intensive agriculture aimed at producing the "white gold" (cotton) and grain caused considerable environmental damage due to the overutilization of agrochemicals and of scarce water resources leading to soil degradation in particular salinization. Eventually this led to the drying out of the Aral Sea and to environmental pollution through wind erosion transporting toxic materials over large distances. The landscape is mostly dominated by sandy deserts and dunes interrupted by flat and intensely irrigated river valleys along the two major rivers of Central Asia, the *Amu Darya* in the south and the *Syr Darya* in the north. The overall climate is dry and hot in summer with rather mild winters (Fig. 1.8).

2.6 *Xinjiang*

This large region in western China is split by the *Tien Shan* mountain range into two large basins: the *Dzungarian* basin in the north and the *Tarim* basin in the south. Much of the *Tarim* basin is dominated by the Taklamakan desert. The lowest point in *Xinjiang* is the *Turpan* depression, −155 m a.s.l. Its highest point is the famous K2 mountain, which reaches 8,611 m a.s.l. and is located on the border with Pakistan. Other important mountain ranges include the *Pamirs* in the southeast, the *Karakorum* in the south, and the *Altai* in the north. The *Tien Shan* mountain range marks the *Xinjiang*-Kyrgyzstan border at the *Torugart* pass (3,752 m a.s.l.). The Karakorum Highway links Islamabad (Pakistan) with *Kashgar* (China) over the *Khunjerab* pass.

Fig. 1.8 Modern mechanized agriculture is expanding in the Ferghana (photo D. Maselli, Uzbekistan 2007)

2.7 Afghanistan

This country is also regularly considered as being part of Central Asia. The country's highest point is the *Noshaq* at 7,492 m a.s.l. By and large, Afghanistan is characterized by a continental climate with very harsh winters in the central highlands, the glaciated northeast (i.e., around Nuristan), and the *Wakhan* corridor, where the average temperature in January falls below −15 °C, and hot summers in the low-lying areas of the *Sistan* basin of the southwest, the *Jalalabad* basin in the east, and the Turkestan plains along the *Amu Darya* river in the north, where temperatures average over 35 °C in July. Despite having numerous rivers and reservoirs, large parts of the country are dry. The endorheic *Sistan* basin is one of the driest regions in the world. Aside from the usual rain falls, Afghanistan receives snow during winter in the *Hindu Kush* and *Pamir* mountains, and the melting snow in the spring season enters the rivers, lakes, and streams. However, two-thirds of the country's water flows into neighboring countries of Iran, Pakistan, and Turkmenistan.

3 Land Use

Despite the fact that all CAR countries are still heavily involved in and dependent on agricultural production, the overall output (and partially also the productivity) has declined tremendously after independence and remains generally at a very poor level despite governmental efforts supported by bi- and multilateral partners. The stagnation

Table 1.2 Key land use figures in the five former Soviet republics

Attribute	KZ	KG	TJ	TM	UZ
Arable land in % (in km²)	8.28 (223,535)	6.55 (12,563)	6.52 (9,226)	4.51 (21,194)	10.51 (44,710)
Irrigated land in km² (2008)	35,560	10,196	7,220	18,000	42,230
Permanent crops in km² (2009)	–	750	1,330	611	3,500
Permanent meadows and pastures in km² (2009)	1,850,000	92,660	38,750	307,000	220,000
Forest in km² (2009)	33,146	9,370	4,100	41,270	32,794
Fresh cow milk in tons (2010)	5,347,540	1,317,300	602,000	2,150,000	6,120,000
Indigenous cattle meat in tons (2010)	546,817	100,217	–	147,900	665,300

Source: FAOSTAT, data for 2010, and CIA World Factbook; accessed June 2012

is due to a number of factors such as in particular the lack of investment opportunities needed, e.g., to replace aged agricultural machinery and improve technology, overutilized and degraded soils and vegetation cover, as well as inappropriate water management. Generally, the current agricultural sector is suffering from a deep economic, social, and ecological crisis that requires new orientation. However, the lack of appropriate policy and land reforms including their ineffective implementation hamper the required structural adjustment of land use in the entire region. Western China (Xinjiang and Tibet) has benefited by higher levels of investment, inward migration, and more effective land reforms (Hua, Chap. 14; Hannam, Chap. 17). Afghanistan is caught up in seemingly interminable war (Emadi, Chap. 5; Jacobs and Schloeder, Chap. 6).

Permanent meadows cover the prevailing portion of the land, and hence pasturing is the dominant land use and animal husbandry the dominant occupation. The overall forest cover in Central Asia is extremely poor: 131,660 km² or just about 3 % of the entire land surface (Table 1.2). It would require considerable efforts to increase forest cover in a substantial manner within all Central Asian countries. The forced reversion to self-sustenance and specific incidences, such as in particular the civil war in Tajikistan in the 1990s, have put forest cover under heavy stress and have further exacerbated its deterioration (Table 1.3).

With regard to agricultural production, Central Asia is generating an impressive amount of goods with a total value of nearly 22 billion international dollars in 2010. Despite its vast territory, Kazakhstan is only the number 2 in the region since Uzbekistan with the fertile and irrigated Ferghana valley produces about 1.6 times as much as its large neighbor. Live animals and livestock products bear huge potentials for proper processing and export. However, this potential has not so far been properly exploited.

4 Environmental Issues and Natural Hazards

Most CAR countries also suffer from a variety of environmental threats and mostly human-induced degradation processes (Fig. 1.9). Kazakhstan, e.g., has a number of radioactive or toxic chemical sites stemming from the former Soviet Union defense

Table 1.3 Net agriculture production value (in $1,000) for the five former Soviet republics

Attribute	KZ	KG	TJ	TM	UZ
Total	6,486,959	1,520,594	1,213,099	2,470,080	10,270,284
Camel milk	–	–	–	–	170
Cow milk	1,471,536	349,039	104,064	231,627	1,211,421
Goat milk	3,759	2,215	19,732	–	10,235
Sheep milk	10,514	14,019	–	–	–
Camel meat	1,142	–	–	–	1,257
Cattle meat	1,098,547	270,724	77,372	399,520	1,794,035
Goat meat	48,908	13,255	–	23,505	–
Horse meat	113,849	33,852	–	–	3,424
Sheep meat	334,752	111,935	106,843	353,027	272,137
Wool	71,933	20,853	11,041	72,698	50,717
Livestock	3,756,942	867,670	342,608	1,158,664	3,659,022
Food	–	–	–	–	8,491,591
Crop	–	–	–	–	7,064,968

Source: FAOSTAT, data for 2010

Fig. 1.9 Cutting of trees and other woody plants for fuel is a daily chore, often done by children and women (photos by D. Maselli, Tajikistan 2008)

industries and test ranges. They represent a considerable health risk both for humans and animals. The diversion of water for irrigation from the two main rivers – the Amu Darya and the Syr Darya – that used to flow into the Aral Sea has dried up its shore and made its surface shrink in an alarming manner. As a consequence, a harmful layer of chemical pesticides and natural salts covers the soil that is picked up by the wind and blown away as noxious dust storms. Nowadays, the concerned area is one of the heaviest polluted ones in Central Asia.

Mining along with inappropriate precautionary environmental measures is threatening considerable areas in Central Asia such as the high-altitude gold mines in Kyrgyzstan that threaten glaciers and their melting waters as well as traditional summer pastures (*jailoos*). Furthermore, uranium and mercury tailing sites are of concern to large parts of lowland population including in particular the Ferghana valley.

In most cases, both technical know-how and funding are required to take appropriate measures that will help avoid further spoiling vast areas needed as living ground for future generations.

Fig. 1.10 Accelerated soil erosion is a common result of deforestation, a process that was accelerated as a consequence of the civil war in Tajikistan (photo D. Maselli, Tajikistan 2006)

The sudden and severe interruption of energy supply to the region has also triggered serious environmental damages in particular related to the collection of firewood for heating and cooking in many rural places (Vanselow, Chap. 4). Cold winter temperatures coupled with traditional cooking habits using simple but ineffective stoves and oven have contributed to the degradation of many remaining (riparian) forests and shrub vegetation. Given the general scarcity of wooden fire resources, dried dung cakes remain a widely used substitute. However, the burning of dung interrupts the natural cycle of nutrients, thus negatively impacting on soil fertility which in turn leads to reduced agricultural productivity and smaller harvests causing a vicious circle.

Many parts of Central Asia are exposed to a variety of potential natural hazards and related disasters. The biggest threat emanates from the rather frequent and partially strong seismic activities that generate regular earthquakes of different magnitudes. Landslides, floods, droughts, avalanches, or mud flows are causing damages to the infrastructure and require considerable reconstruction and maintenance work particularly in remote mountain areas. More recently with the rapid acceleration of glacier melting, the risk for incidences caused by glacial lake outburst flows (GLOFs) has increased and requires due attention and adequate preventive, mitigation, and awareness, rising efforts at all levels including in particular local authorities and communities. Along with the expected and partially already felt climate change, the potential for more frequent and severe pest calamities, heat waves, fires, or long periods of deep cold increases, too, calls for adequate response mechanisms to increase people's resilience (Fig. 1.10).

5 Demography

Central Asia is presently home to over 64 million people with considerable differences regarding urban-rural distribution (Table 1.4). The average population growth varies from 0.9 % for Kyrgyzstan to 1.8 % for Tajikistan. Especially within the poorer countries, out-migration rates of people moving to other countries are remarkably high, with currently Kyrgyzstan topping the list followed by Tajikistan. In both countries, the generated remittances play a key role within the overall national economy and are an important factor of investment and innovation/changes in people's livelihoods.

The global phenomenon of moving toward urban centers applies to Central Asia as well. This development is strongly correlated with the level and increase of the (peri-)urban population. As a consequence, the future generations expected to manage rural livelihoods and their respective natural resources appear to be at risk. The key question related to the exodus from rural areas to central political, economic, and cultural locations is whether there will be sufficient young people left ready to become herders of large flocks of small ruminants especially in the high-altitudinal belts of mountain ranges such as the Tien Shan in Kyrgyzstan or the Pamirs in Tajikistan but also the wide steppes of Kazakhstan. Who will be ready to live a seminomadic lifestyle and refuse modern standard commodities? Herein, the provision of basic services such as health, education, and communication plays certainly a key role as incentive or disincentive for long-term/permanent migration or settlement of the younger generation.

With regard to the composition of the population, Central Asia represents an impressive mix of ethnicities and related cultures partially as a result of the settlement policy of the Soviet Union and partly as the result of long-term historical movements. Herein, the Uralic-Altaic and Indo-European represent the two main ethnic groups under which most of the others can be categorized. While this multiethnicity

Table 1.4 Key demographic features of the five former Soviet republics

Attribute	KZ	KG	TJ	TM	UZ
Population (2012 est.)	17,522,010	5,496,737	7,768,385	5,054,828	28,394,180
Urban population in % (2010)	59	35	26	50	36
Population growth rate in % (2012 est.)	1.235	0.88	1.823	1.143	0.94
Migrants/1,000 population (2012 est.)	0.43	−8.1	−1.21	−1.9	−2.65
Literacy rate in %	99.5 (1999 est.)	98.7 (1999 cens.)	99.5 (2000 cens.)	98.8 (1999 est.)	99.3 (2003 est.)

Source: CIA World Factbook, accessed June 2012
Total population for featured CAS countries: 67,416,137 (about 9 % of the total European population)

Fig. 1.11 People of Central Asia (photos D. Maselli, Tajikistan and Kyrgyzstan, 2006–2009)

could potentially be an asset for the entire region, there is an imminent danger of ethnical conflicts particularly due to phenomena such as exclusion and/or political under-/misrepresentation.

Like in other rapidly growing regions, the age composition in Central Asia is characterized by an impressive youth bulge (Figs. 1.11 and 1.12).

The relative population density among the five former Soviet republics is highest in Uzbekistan followed by Tajikistan with the lowest in Kazakhstan. On one hand, Kazakhstan has the highest proportion of population residing in urban areas as compared to the other states, while on the other hand having the lowest density of population per unit of pastoral and agricultural land. This shows that in Kazakhstan, more and more population is moving to the urban centers due to increasing job opportunities, while, e.g., the people in Tajikistan still depend on subsistence farming. This disparity is confirmed by the proportion of population living below poverty line which is highest in Tajikistan and lowest in Kazakhstan. Due to the better economic conditions, Kazakhstan acts as pull area for the working labor of the other Central Asian nations, in particular Kyrgyzstan and Tajikistan (see Table 1.4). The high literacy rate is comparable among the former Soviet republics, thanks to the Soviet system that offered education to all while, e.g., the literacy rates in neighboring Afghanistan and Pakistan are less than 60 % (Fig. 1.13).

Fig. 1.12 Women in Tajikistan producing traditional handicrafts (photo D. Maselli, Tajikistan 2004)

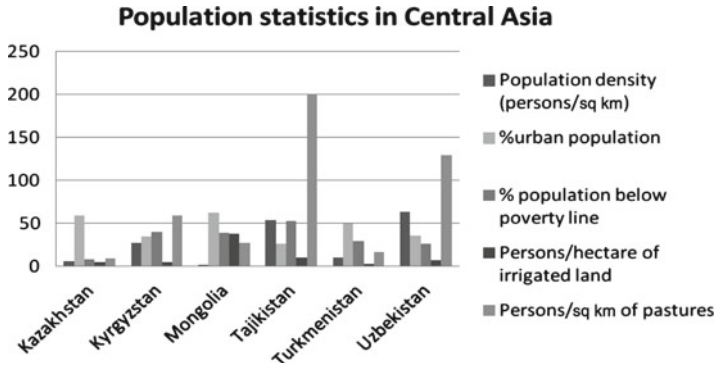

Fig. 1.13 Population statistics for Central Asia

6 Social Features

Since independence in 1990, a sharp increase in the inequality of income distribution has hurt the lower ranks of society in most of the Central Asian states. Many of the former facilities and services provided to the entire population through the Soviet system have collapsed. This increased the vulnerability of many households, in particular single-headed women households (Kurbanova, CIA World Factbook, FAOSTAT) (Chap. 7) (Table 1.5).

Table 1.5 Key social features of the five former Soviet republics

Attribute	KZ	KG	TJ	TM	UZ
Maternal mortality rate in deaths/ 100,000 live births (2008)	45	81	64	77	30
Infant mortality rate in deaths/1,000 live births (2012 est.)	23.06	30.78	37.33	40.89	21.2
Health expenditures in % of GDP (2009)	4.3	4.1	5.3	2.3	5.2
Life expectancy at birth in years (2012 est.)	69.63	69.45	66.38	68.84	72.77
Fertility rate in children born/woman (2012 est.)	2.41	2.73	2.85	2.14	1.86
Children under the age of 5 years underweight in %	4.9 (2006)	2.7 (2006)	14.9 (2005)	–	4.4 (2006)
Access to improved sanitation facilities in % (2008)	97	93	94	98	100
Urban areas	97	94	95	99	100
Rural areas	98	32	94	99	100
Access to improved drinking water source in %	95 (2008)	76	70 (2008)	83 (2000)	87 (2008)
Urban areas	99	97	94	97	98
Rural areas	90	49	61	72	81

Source: CIA World Factbook, accessed June 2012

7 Economy

The dramatic shift from planned to market economy triggered by the disruption of the Soviet Union caused a sharp drop in the production of the Central Asian economies immediately after becoming independent in the early 1990s. This economic collapse was accompanied by an abrupt fall in living conditions for the majority of the population and by an out-migration of ethnic Russian specialists returning to their native country along with their families. As a result – and despite many efforts trying to address the economic breakdown – poverty is still widespread, especially in rural areas but meanwhile also in peri-urban settlements. Many governmental services have ceased to exist or have been considerably reduced in scope at all levels and in many domains such as in particular health and education. This state failure is continuing to strain the relation between authorities and the population.

With the disappearance of the socialist redistributive economy, the new Central Asian states are forced to find their own position in the global market. Due to their geographical double landlocked position between China and Russia as two economic and political giants, this task is difficult, especially for the poorer and weaker countries such as in particular Tajikistan and Kyrgyzstan. Most of the Central Asian economies remain predominantly agricultural relying mainly on primary exports that expose them to fluctuating world prices and financial turmoil.

Despite its huge territory and natural livestock grazing potential, Kazakhstan with its growing industrial development has become a major pull area for agricultural products such as in particular livestock-related products like milk and meat.

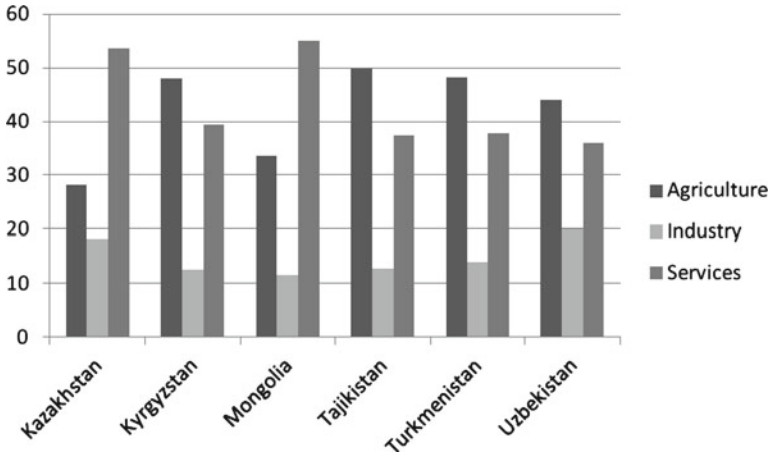

Fig. 1.14 Percent distribution of labor force according to occupation sectors

This provides certain market opportunities for the smaller Central Asian countries to access regional markets. However, competition from China is rapidly increasing as many products such as apples are being imported into Kyrgyzstan. This compromises the market opportunities for certain agricultural and livestock products of the Central Asian states. Nevertheless, the meat market remains a good avenue for income, provided meat quality can be improved and serious issues of animal health are addressed properly and effectively such as in particular brucellosis in Kyrgyzstan or anthrax in Tajikistan (Fig. 1.14).

8 Current Status and Future Prospects of the Five Former Soviet Republics

8.1 Kazakhstan

Kazakhstan is the "economic giant" among the newly created Central Asian countries. Its overall GDP is nearly one-third higher than the total GDP of the four other countries (Table 1.6). Its per capita GDP is considerably higher than in Kyrgyzstan, Tajikistan, and Uzbekistan. The primary/agricultural sector is of much less importance in comparison to the other four countries. Compared to Uzbekistan, the labor force is only about half with a relatively high concentration in the tertiary sector as compared to the other four countries. With regard to unemployment and to inflation rate, Kazakhstan is performing rather well. This translates into a rather moderate portion of its population living below poverty line, i.e., less than 10 %. With regard to the occupation of the labor force, Kazakhstan is currently the only one with less than 30 % in the primary sector (agriculture) and more than 50 % in the tertiary sector (services) as compared to the other four CAS states.

Table 1.6 Key economic features of the five former Soviet republics

Attribute	KZ	KG	TJ	TM	UZ
GDP in billion $	214.5	13.16	16.01	41.51	94.04
Purchasing power parity official exchange rate (est. 2011)	180.1	5.4	6.8	24.1	43.7
GDP real growth rate in % (2011 est.)	6.5	7	6	9.9	7.1
GDP per capita in $ (2011 est.)	13,000	2,400	2,000	7,500	3,300
GDP sectors in % (2011 est.)					
Agriculture	4.6	20.2	18.1	7.8	21.9
Industry	34.2	27.8	22.4	24.1	37.8
Services	55.7	51.9	59.4	68.1	40.2
External debt in billion $ (2011 est.)	95.95	3.74	2.20	0.53	4.44
Health expenditures in % of GDP (2009)	4.3	4.1	5.3	2.3	5.2
Labor force in million	8.7 (2011 est.)	2.3 (2007)	2.1 (2009)	2.3 (2008 est.)	16.3 (2011 est.)
Unemployment rate in %	5.2 (2011 est.)	18 (2004 est.)	2.2 (2009 est.)	60 (2004 est.)	1 (2011 est.)
Distribution of family income/ Gini Index	26.7 (2009)	33.4 (2007)	32.6 (2006)	40.8 (1998)	36.8 (2003)
Budget in billion $ (2011 est.)					
Revenues	38.65	1.32	1.74	4.18	14.97
Expenditures	42.74	1.64	1.78	4.07	15.07
Taxes and other revenues in % of GDP (2011 est.)	21.5	24.4	25.6	17.3	34.3
Budget surplus (+) or deficit (–) in % of GDP (2011 est.)	–2.3	–6.1	–0.6	+0.4	–0.2
Public debt in % of GDP	16 (2011 est.)	28 (2010 est.)	–	–	7.7 (2011 est.)
Inflation rate (consumer prices) in % (2011 est.)	8.3	18.6	14.3	15.0	16.0

Source: CIA World Factbook, accessed June 2012
Total figures for featured countries: labor force 31.8 million; annual oil production 1,914,166 bbl/day; annual gas production 137.2 billion cu m in 2009/2010

Kazakhstan is also both the largest consumer and producer of energy in Central Asia. With a consumption of nearly 78 billion kWh of electricity in 2009, it consumed more electric power than the remaining other four countries (Table 1.7). The regional supremacy of Kazakhstan related to energy production manifests via its impressive and rapidly evolving oil production that boosts its economy and secures the country's international reputation as a new key oil provider on the global market. Kazakhstan's other major export products are ferrous metals, chemicals, machinery, grain, wool, meat, and coal. It has large deposits of petroleum, natural gas, coal, iron ore, manganese, chrome ore, nickel, cobalt, copper, molybdenum, lead, zinc, bauxite, gold, and uranium (Tables 1.8).

Table 1.7 Key energy features of the five former Soviet republics

Attribute	KZ	KG	MN	TJ	TM	UZ
Electricity in billion kWh	(2009 est.)	(2008 est.)	(2010 est.)	(2009 est.)	(2009 est.)	(2009 est.)
Production	75.6	11.7	4.313	16.1	15.5	47.4
Consumption	77.9	7.5	3.375	16.7	13.0	40.1
Oil production in bbl/day (2010 est.)	1,610,000	946	–	220	216,000	87,000
Natural gas production in billion cu m	35.61 (2009 est.)	0.015 (2009 est.)	–	0.038 (2009 est.)	42.4 (2010 est.)	59.1 (2010 est.)
Natural gas proved reserves in trillion cu m (2011 est.)	2.407	0.006	–	0.006	7.504	1.841

Source: CIA World Factbook, accessed June 2012

8.2 Kyrgyzstan

Due to its topography, *Kyrgyzstan* is a predominantly agricultural country with nearly 50 % of the labor force engaged in agriculture and contributing to about 20 % of the GDP (Table 1.6). It has the region's second lowest per capita GDP (2,400 USD in 2011) right after Tajikistan (2,000 USD in 2011).

Kyrgyzstan has abundant hydropower, minerals such as in particular gold and rare earth metals, coal, oil, natural gas, and some other marketable deposits like naphthalene, mercury, bismuth, lead, and zinc.

8.3 Tajikistan

The civil war 1992–1997 that hit Tajikistan has severely damaged its already weak economic infrastructure causing a sharp decline in industrial and agricultural production. As a consequence, the country today features among the poorest of the former 15 Soviet republics that become independent in 1990. Its per capita GDP in 2011 reached approximately 2,000 USD, and widespread corruption along with weak governance, seasonal power shortages, as well as a high external debt are persisting obstacles toward improving the overall fragile socio-economic situation. Due to the lack of employment opportunities, about 1 million Tajik work as migrants outside the country (40–50 % of the total labor force), and the remittances generated account for about 25 % of total GDP. Tajikistan has the second biggest hydropower generation potentials in the world. In addition to this hydropower, Tajikistan has modest quantities of petroleum, uranium, mercury, brown coal, lead, zinc, antimony, tungsten, silver, and gold as additional natural resources available for exploitation and export.

Table 1.8 Key import and export features of the five former Soviet republics

Aspect	KZ	KG	TJ	TM	UZ
Exports in billion $ (2011 est.)	65.9	2.3	1.8	14.4	13.8
Main export partners 2010 in %	China 20.2 Germany 9.1 Russia 8.5 France 7.1 Turkey 4.5 Canada 4.5 Italy 4.1	Russia 35.7 Uzbekistan 21.9 Kazakhstan 17.3 China 5.4 UAE 4.6 Afghanistan 4.3	Turkey 28.4 Russia 14.4 Uzbekistan 10 Iran 6.2 China 5.6 Norway 4.5	China 28.6 Turkey 10.6 UAE 7.2 Afghanistan 6.5 Iran 6 Italy 5.4 Kazakhstan 4.5	China 21.8 Russia 18.1 Turkey 14.5 Kazakhstan 8.5 Bangladesh 8.5
Imports in billion $ (2011 est.)	32.1	3.7	3.9	9.0	8.7
3 main import partners 2010 with %	Russia 34.3 China 27.7 Germany 5.2	China 61 Russia 17.2 Kazakhstan 5.7	China 35.3 Russia 23.5 Kazakhstan 8.3	Russia 21.6 Turkey 20 China 9.2	Russia 25.4 South Korea 17.3 China 13.9
Major export products	Oil and oil products, ferrous metals, chemicals, machinery, grain, wool, meat, coal	Gold, cotton, wool, garments, meat, tobacco, mercury, uranium, hydropower, machinery, shoes	Aluminum, electricity, cotton, fruits, vegetable oil, textiles	Gas, crude oil, petrochemicals, textiles, cotton fiber	Hydrocarbons (natural gas), gold, cotton
Major import products	Machinery and equipment, metal products, foodstuffs	Oil and gas, machinery and equipment, chemicals, foodstuffs	Petroleum products, aluminum oxide, machinery and equipment, foodstuffs	Machinery and equipment, chemicals, foodstuffs	Machinery and equipment, foodstuffs, chemicals, ferrous and nonferrous metals

Source: CIA World Factbook, accessed June 2012

8.4 Turkmenistan

Based on the prevailing natural conditions, the country mainly lives on intensive agriculture located in irrigated oases as well as on exploiting substantial oil and gas resources and the third producer of fresh milk and meat in the region (Table 1.3).

8.5 Uzbekistan

Besides agriculture and in particular the cotton monoculture inherited from Soviet times, Uzbekistan is trying to diversify its export portfolio by developing in particular the infrastructure to exploit the available oil and natural gas reserves as well as other natural resources. Like most of its neighbors, Uzbekistan has deposits of coal, gold, uranium, silver, copper, lead, zinc, tungsten, and molybdenum that are in high demand on the global market and may help boost the economic development of the country (Tables 1.8).

Twenty years after independence, some of the economies have started recovering, showing signs of steady improvement and growth, mainly thanks to the availability of high-demand natural resources such as energy carriers in particular. Unfortunately the GDP growth rates have not yet helped to reduce poverty and social inequality – partially due to inefficient governmental service delivery structures as well as persisting political instability in many instances.

Unemployment rates are generally high, and the job markets are far too small to absorb the entire workforce – in particular youth. Considering that in many of the countries nearly half the population is under the age of 20 and thus about to join the workforce. This is a key issue that needs to be addressed in the context of regional sustainable development as it might again contribute to a drastic increase of unemployment and trigger more migration flows toward foreign destinations.

9 Politics

Since their independence in the early 1990s, the political changes within the Central Asian republics have had a critical impact on their respective political, social, and economic development as well as their integration into the worldwide market economy. Changes have been dramatic and will continue to shape the future of society in the region. At present, Table 1.9 gives an overview of the main systemic features of the political systems in the five Central Asian republics.

10 Communication, Infrastructure, and Mobility

Connectivity in all its facets is a key aspect of modernization in the present-day Central Asia. The vast often thinly populated flat territories and the huge mountain ranges represent natural obstacles and challenges for securing an adequate communication and transportation for many rural communities (Figs. 1.15, 1.16 and Table 1.10).

Table 1.9 Key political features of the five former Soviet republics and Mongolia

Attribute	KZ	KG	MN	TJ	TM	UZ
Capital	Astana	Bishkek	Ulaanbaatar	Dushanbe	Ashgabat	Tashkent
Government type	Republic with authoritarian presidential rule and little power outside the executive branch	Republic	Republic	Republic	Declared secular democracy and presidential republic; de facto authoritarian presidential rule	Republic with authoritarian presidential rule
Juridical system	Civil law system	Civil law system	Civil law system	Civil law system	Civil law system with Islamic influences	Civil law system
Executive power	President (elected by popular vote for 5-year term), Chairman of Supreme Soviet; Prime Minister (appointed by President) Head of government; Cabinet with Council of Ministers appointed by President	President (elected by popular vote for 6-year term); Cabinet of Ministers proposed by Prime Minister, appointed by President; Prime Minister nominated by strongest party (coalition)	Presidential candidates nominated by political parties represented in State Great Hural and elected by popular vote for a 4-year term	President (elected for 7-year term, renewable 1×), Head of State and Chairman of Supreme Assembly; Cabinet with Council of Ministers appointed by President, approved by Supreme Assembly; Prime Minister Head of Government, appointed by President	President (elected for 5-year term; Chief of State and Head of Government); Cabinet of Ministers appointed by President	President (elected for 7-year term); Cabinet of Ministers with Prime Minister

(continued)

Table 1.9 (continued)

Attribute	KZ	KG	MN	TJ	TM	UZ
Legislative power	Bicameral parliament (Senate and Mazhilis)	Unicameral Supreme Council (members elected by popular vote to serve 5-year terms)	Unicameral State Great Hural (76 seats; 48 members directly elected from 26 electoral districts; 28 members proportionally elected based on party's share of total votes; all 4-year term)	Bicameral Supreme Assembly with National Assembly (upper chamber) and Assembly of Representatives (lower chamber)	Unicameral National Assembly (second chamber "People's Council" abolished in 2008)	Bicameral Supreme Assembly with Senate and Legislative Chamber
Judicial power	Supreme Court and Constitutional Council	Supreme Court and Constitutional Court (judges appointed for 10-year terms by Supreme Council on recommendation of President)	Supreme Court, appeals' court for people and provincial courts; judges nominated by General Council of Courts, approved by President	Supreme Court (appointed by President)	Supreme Court (appointed by President)	Supreme Court (nominated by President, confirmed by Supreme Assembly)

Political parties	12 parties with various additional pressure groups	6 parties and several pressure groups	4 main parties	7 parties with splinter parties and unregistered parties	1 party without opposition (political parties allowed to register since Jan 2012)	5 parties without major opposition or pressure group
Administrative division	14 provinces	7 provinces	21 provinces	2 provinces and 1 autonomous province	5 provinces	12 provinces

Source: CIA World Factbook, accessed June 2012

Fig. 1.15 Mechanized conveyance is used to transport equipment and portable housing to and from the summer grazing – generally over unmade roads and crossing rivers over hazardous bridges (photo D. Maselli, Kyrgyzstan 2008)

Fig. 1.16 Mountainous terrain and remote locations contribute to the problems of trade, lack of public transport services, and poor communications in many Central Asian countries (photo D. Maselli, Tajikistan 2008)

Table 1.10 Key communication features in five former Soviet republics and Mongolia

Attribute	KZ	KG	MN	TJ	TM	UZ
Internet hosts	53,984 (2010)	97,976 (2010)	20,865 (2011)	1,504 (2010)	794 (2010)	47,718 (2010)
Internet users in million (2009) in % of population	5.3	2.2	10.4	0.7	0.08	4.7
Railways in km 2010	15,079	470	1,908	680	2,980	3,645
Roadways in km	93,612 (2008)	34,000 (2007)	49,249 (2010)	27,767 (2000)	58,592 (2002)	86,496 (2000)
Waterways in km	4,000 (2010)	600 (2010)	580 (2010)	200 (2010)	1,300 (2008)	1,100 (2009)

Source: CIA World Factbook, accessed June 2012

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