PROMITHEAS – 4

Azerbaijan Republic

Mapping national procedures, sources, available data and information

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SRI Geotechnological Problems of Oil, Gas and Chemistry

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This report has been read, commented and approved by all members of the PROMITHEAS-4 Scientific Committee.

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1. General information

1.1 Government structure In accordance with the Constitution, Azerbaijan state is in the form of presidential republic. State Leader: President. The president is selected by secret vote every five years. On 15 October 2008 Ilham Haydar Aliyev was selected as The President of the Republic of Azerbaijan, participated in the election and received 88.73% of votes.

The Legislative Authority of the Azerbaijan Republic is realized by the National Assembly of the Republic of Azerbaijan (Milli Mejlis).

Last election was in 2010. New Azerbaijan Party strengthened its grasp on the legislature and got a majority of 73 out of 125 seats. The other seats went to nominally independent, government-leaning candidates, and to "soft opposition" parties. The two major opposition parties (Musavat and the Parties of the People's Front of Azerbaijan) lost their previous 8 seats.

1.2. Mapping national procedures

1.2.1. Key categories according to IPCC

The main category according to IPCC is "Energy". Category "Energy" for Azerbaijan includes the following items:

- Oil and gas extraction, Oil refining, power generation

-Industry, Construction

-Transport

-Agriculture

-The commercial sector, forestry

The emission CO_2 forms a basic at a combusting of fuel, some technological processes in industry, and also at a land use change. The removals happen in woods, green plantings of residential points.

1.2.2. Methodology for retrieving key-category data

Pollution monitoring of atmosphere air is realized according "About hydrometer logical activity, " About execution of guarding of atmosphere air of Azerbaijan Republic in the framework of this laws" , "About taking rules of environment and natural recourses monitoring ", "Regulation (be affirming on 1st July in 2004th decision of Ministers Cabinet)". In this part country control is realized by Ministry of Ecology and Natural Resources of the Azerbaijan Republic

Monitoring work of the environment on the basis of programs is assigned by State Budget and is financed pay edge from the budget. Usage of the information on monitoring of the environment is free of charge and paid. Paid information are prepared, passed on the basis of treaties where has been closed among sides by order of the consumers and law of the Azerbaijan Republic.

In Azerbaijan, 67 stations transmit SYNOP data to the National Center. Data coming from 35 stations is transmitted to the regional exchange, while data from 7 stations used for global exchange. SYNOP data manually recorded on a special bulletin by meteorological brands. CLIMAT data is transferred to the National Center on 18 stations. Data from four stations is transmitted to the regional and global exchange. Operational information (SYNOP, CLIMAT, etc.) are processed manually. Data intended to summarize the climate is computer processing techniques developed in the State Hydrometeorological Committee.

1.2.3. Responsible authorities and contact persons

Ministry of Ecology and Natural Resources of the Azerbaijan Republic

Address:100 A,B.Aghayev str., Baku city, Azerbaijan

Website: www.eco.gov.az

Tel: (994 12) 496 94 10; Fax: (994 12) 492 68 25

Minister: Bagirov Huseyngulu Seyyid

1.2.4. Procedures to address climate-change issues

N/A.

1.3. Population

To April 13 2009, the number of population in the country was 8,922,000 people. This is 969,000 people more since 1st January 1999, according to State Statistics Committee of the country. More than half (54%) of the population lives in urban areas, 46% - in rural areas. Males constitute 49% of the population, women - 51%. The number of inhabitants of the Azerbaijani capital, together with the displaced temporarily residing is 2,246,000. In Ganja (formerly Kirovabad) about 313,000 people, Sumgait (310 thousand) and Mingachevir (old Russian transcription Mingachevir, 96 thousand) live.

1.3.1. Demographic characteristics

Main demographic characteristics of Azerbaijan include administrative and territorial units, population size and structure; general population replacement indices; fertility; mortality by causes of death; marriages and divorces; migration and etc.

State Statistic Committee of Azerbaijan has published an annual bulletin on the demographic and development indicators in the country

Age groups	1989			1999			2010		
	both	of which:			of which:			of which:	
		menn	wom		men	wome		men	wom
Total	3805.	1867.	1938.	4064.	1975.	2089.	4866.	2371.	2494.
of which:									
0-4	435.5	224.2	211.3	314.7	166.1	148.6	369.7	197.4	172.3
5-9	395.2	203.4	191.8	446.1	229.9	216.2	283.3	152.3	131.0
10-14	342.7	176.3	166.4	458.8	235.2	223.6	311.7	164.4	147.3
15-19	349.2	193.1	156.1	388.8	195.7	193.1	470.6	240.9	229.7
20-24	353.7	174.1	179.6	325.2	154.5	170.7	506.7	258.0	248.7
25-29	389.8	187.1	202.7	307.6	140.2	167.4	442.0	221.8	220.2
30-34	332.7	161.8	170.9	344.8	158.7	186.1	366.0	174.6	191.4
35-39	250.0	122.2	127.8	380.5	181.9	198.6	329.9	148.4	181.5
40-44	154.6	75.2	79.4	305.6	149.6	156.0	360.5	162.7	197.8
45-49	153.5	74.6	78.9	207.3	101.8	105.5	405.3	188.5	216.8
50-54	190.8	91.2	99.6	122.5	59.5	63.0	338.8	161.1	177.7
55-59	150.0	70.7	79.3	116.0	55.0	61.0	226.5	107.4	119.1
60-69	188.8	76.9	111.9	232.1	105.7	126.4	227.1	102.6	124.5
70 and	119.4	37.1	82.3	114.3	41.5	72.8	228.5	91.8	136.7

Source: Statistical yearbook of Azerbaijan Republic 2010

Table 1. Age and sex structure of population (thsd. person)

Economic and administrative regions	Territory, thsd. km^2	Population, thsd persons		Population density for 01.01.2010 (per km^2 per person)	Districts	Towns	City districts	Settle ments	Rural adm inistrative division	Rural settlements
		pleminary results of population census	in the beginning of 2010 (1)							
Aze rbaijan	86.6(2)	8922.3	8997.4	104	66	77	13	258	1704	4257
Baku city	2.13	2046.1	2064.9	969	-	1	11	59	-	-
Ganja-Gazakh	12.48	1172.2	1179.6	95	9	12	2	42	279	521
Shaki-Zagatala	8.96	565.9	569.9	64	6	6	-	8	162	336
Lankaran	6.0	823.9	832.2	137	6	8	-	13	156	642
Guba-Khachmaz	6.9	488.3	491.7	71	5	6	-	21	97	473
Aran economic	21.43	1797.3	1812.1	85	16	18	-	39	391	791
Yukhari Karabakh	7.25	607.5	613.3	85	7	10	-	40	189	539
Kalbajar-Dakhlik	6.40	227.3	230.0	36	4	4	-	7	150	442
Nakhchiv	6.06	281.2	283.6	195	4	4	-	8	106	274
	5.56	398.4	402.4	72	7	5	-	8	160	207

Source: Statistical yearbook of Azerbaijan Republic 2010

1) Calculated on the base of preliminary results of population census conducted on 2009.
2) Including areas of islands in the Caspian Sea
3) In this and following tables - t.d is a territory division. t.d. of Sumgait includes: Sumgait city, Haji Zeynalabdin Tagiyev and Jorat settlements; t.d. of Ganja - Ganja city, Hajikend and Goygol settlements; t.d. of Shirvan - Shirvan town, Hajigahramanly and Bayramly settlements; t.d. of Khankendi - Khankendi town and Karkijahan settlement; t.d. of Nakchivan - Nakchivan city, Aliabad settlement and 3 rural administrative devision.

Table 2. Territories, number, density of population and territorial units by economic and administrative regions of Azerbaijan Republic

1.3.2. Development indicators

Years	Urban and rural places (thsd.persons)	Total annual increase		of which:		By total population (in %)	
		thsd persons	%	urban places	rural places	urban places	rural places
1897	1806.7	...	...	305.1	1501.6	16.9	83.1
1917	2353.7	...	...	560.2	1793.5	23.8	76.2
1937	3082.6	84.8	2.8	1070.2	2012.4	34.7	65.3
1957	3484.3	110.7	3.2	1665.4	1818.9	47.8	52.2
1977	5828.3	95.7	1.6	3065.4	2762.9	52.6	47.4
1987	6822.7	105.3	1.5	3651.3	3171.4	53.5	46.5
1988	6928.0	93.2	1.3	3722.6	3205.4	53.7	46.3
1989	7021.2	110.7	1.6	3805.9	3215.3	54.2	45.8
1990	7131.9	86.6	1.2	3847.3	3284.6	53.9	46.1
1991	7218.5	105.6	1.5	3858.3	3360.2	53.5	46.5
1992	7324.1	115.9	1.6	3884.4	3439.7	53.0	47.0
1993	7440.0	109.6	1.5	3928.5	3511.5	52.8	47.2
1994	7549.6	93.9	1.2	3970.9	3578.7	52.6	47.4
1995	7643.5	82.7	1.1	4005.6	3637.9	52.4	47.6
1996	7726.2	73.6	1.0	4034.5	3691.7	52.2	47.8
1997	7799.8	76.9	1.0	4057.8	3742.0	52.0	48.0
1998	7876.7	76.7	1.0	4082.5	3794.2	51.8	48.2
1999	7953.4	79.4	0.8	4064.3	3889.1	51.1	48.9
2000	8032.8	81.5	1.0	4116.4	3916.4	51.2	48.8
2001	8114.3	77.0	0.9	4167.2	3947.1	51.4	48.6
2002	8191.3	77.8	0.9	4219.7	3971.6	51.5	48.5
2003	8269.1	79.9	1.0	4273.7	3995.4	51.7	48.3
2004	8349.0	98.3	1.2	4403.6	3945.4	52.7	47.3
2005	8447.3	105.7	1.3	4477.6	3969.7	53.0	47.0
2006	8553.0	112.9	1.3	4565.7	3987.3	53.4	46.6
2007	8665.9	113.9	1.3	4636.6	4029.3	53.5	46.5
2008	8779.8	117.1	1.3	4733.6	4046.2	53.9	46.1
2009	8896.9	100.5	1.1	4818.3	4078.6	54.2	45.8
2010	8997.4	-	-	4866.6	4130.8	54.1	45.9

Source: Statistical yearbook of Azerbaijan Republic 2010

1) - Data of 1979, 1989, 1999 was indicated on the base of population census, data for 1913, 1917, 1920 was indicated to the end of the year and data of rest years to the beginning of the year;

- Date of 2000-2009 again calculated on the base of preliminary results of population census conducted on the April of 2009.

Table 3. Population dynamics [1])(thsd. persons)

1.4. Geographic profile

1.4.1. Geomorphologic characteristics

Territory of the Republic of Azerbaijan: 86,600 km^2 (11.5% of area is covered by forests, 1.6% by water, 50% by agricultural lands, of which 27% pastures, 36.9% other lands).

The range of elevation within the Republic varies from 4,480 m. from the Major Caucasus Mountains

(Bazarduzu crest) to –26.0 m (Caspian Sea level).

The average altitude of the area is 384 m with 18% of the area below sea level, 39.5% is between 0 and 500 m, 15.5% is between 500 and 1,000 m., and 27% is greater than 1,000 m. Sharp changes of altitudes due to the orographic structure of the Major and Minor Caucasus Mountains and the location of the Kur-Araz lowlands form the unique climate in the Republic. Climate conditions and relief of the area plays special role in formation of the water resources of the republic.

Azerbaijan is situated in the geographical coordinates of 44^o and 52^0 eastern longitudes, 38^0 and 42^0 northern latitude.

Baku is situated in 40th parallel. Azerbaijan has common boundaries with: Iran in the south along the perimeter 765 km, with Turkey – 15 km, with Russia in the north – 390 km, with Armenia in the west 1007 km. The length of widest area of the Azerbaijan section of Caspian Sea is 456 km.

1.4.2. Ecosystems

The Caspian Sea is the largest enclosed water body in the world and it is located on the border of Asia and Europe. Its shoreline extends for 5360 km. Caspian Sea is divided between the independent countries of IRAN, KAZAKHSTAN, AZERBAIJAN, RUSSIA, TURKMENISTAN.

The coastal wetlands of the Caspian basin include many shallow, saline pools, which attract a variety of bird life and biodiversity. In the mid-1990s oil and Gas brought an influx of foreign investment in energy development in the region.

Petrochemical and refining complexes ion the Absheron peninsula in Azerbaijan are major sources of land –based pollution and discharges and spills from oil and gas drilling in the Sea and onshore have serious impacts on the environment.

The former Soviet Republics are trying to attract more investors in the oil and gas sectors. This leads to the beginning of extraction works to the ecology of the Caspian basin.

Oil and gas extraction, along with transportation and industrial production has been the source of soil, air and water pollution in the Caspian region. The contamination from phenols, oil products particularly oil extraction and pipeline construction has contributed to the pollution of about 30,000 hectares of land.

Due to the use of outdated technology, malfunctioning equipment and pollution from oil fields and refineries continues at a high rate in the former Soviet Republic.

There is no doubt that development of the oil and gas industry does have the significant impacts to the environment.

The untreated waste from the Volga River –into which half the population of Russia and most of its heavy industry drains its sewage-empties into the Caspian Sea.

The chemicals and pesticides are threats to the flora and fauna. Since 2000 due to the pollution thousands of seals died in the Caspian Sea. The pollution has weakened their immune systems.

It is estimated those one million cubic meters of untreated industrial wastewater is discharged into the Caspian annually.

In the Azeri coastal City of Sumgayit during the Soviet era the environment was subjugated to industrial goals. Hundreds of thousands of tons toxic wastes each year released into the atmosphere or dumped into a creek that fed into the Caspian Sea. Now the pollution overwhelmed the sea around Sumgayit and Baku, creating a virtual dead zone. The area witnessed a dramatic rise in stillbirths and miscarriages. The untreated sewage is still dumped into the Caspian Sea.

In August 2001, Tengizchevron, the Chevron Texaco-led consortium developing the giant Tengiz oil field in western Kazakhstan, was fined EUR 65,2 million for ecological damage.

Now in Azerbaijan and Kazakhstan new development projects are required to carry environmental insurance. In the past the Kazakh government fined polluters but now it is prepared to make sue that criminal charges are brought against the management of the enterprises, which break the country's environmental protection legislation.

The countries of the region have begun to take measures to prevent pollution.

The lack of regional cooperation among the Caspian Sea countries continued to undermine individual state efforts to protect the sea and surrounding region.

The challenge of protecting the Caspian's environment will become more difficult:

1) The problems of the legal status and regime of the Caspian Sea,

2) Mutual relations between the coastal states in the Caspian Sea region.

3) The strategic interests in the Caspian Sea.

4) All issues relating to the Caspian Sea.

5) The future cooperation among the Caspian coastal states.

1.4.3. Land use, land-use change and forestry

Forests play the main role in preventing soil erosion, protect waters and provide habitants for most of the terrestrial animal species.The forests are classified for five ecological regions in Azerbaijan: the Greater Caucasus Mountains, the Lesser Caucasus Mountains, the Kura-Araz valley and floodplain, the Talish-Lenkeran zone, and the Caspian Sea.

The Caucasus Mountains (Greater and Lesser) consist of mountain forests at altitude of 500 to 2500 m. These are dominated by Georgian oak mixed with, for instance, hornbeam, Caucasian lime, sweet chestnut, ash, and others, at lower altitudes. Broadleaved oak, beech and maple dominate in the higher zones. 90% of forest (800,000 ha of which 134,000 ha belong to Talish mountains, 360,000 ha to Greater and 250,000 ha to Lesser Caucasus) belong to mountain area. The up border of forest should be about 2500 m, but because of antropogenic influence in many places this figure is less than 2000 m. The forest coverage in Sheki Zagatala zone makes up 27%. That is why run-off coefficient here is highest.

General area of the land of forest fond of Azerbaijan is 1,214 million hectares. From this the forest covered area consisting of 1,021 million hectares is the 11.8% of the general territory. 95% of our forests spread in upland and foothills territories,the remainder 5% mostly in the valleys of river, run in plain territories. Our forests fulfill pure safety functions to the spread of territories. Therefore, it is incuded on the first group forests.

In the countries 20-25% of territory is covered by forest. It meets less comparing with the boggy and salt-ridden lands to water lack, degradation and erosion of the condition of the unstable climate. Therefore, the forests in our Republic is not enough to preserve the ecological balance,that is why our forests should be seriously guarded and protected and it's areas must be raised. The Ministry of Ecology and Natural Resources has done considerable expedient works in this province in the last years.

During 2010 the forest restoration 10550 ha against 10696 ha area and the forest sowing 3500 ha against 3521 ha area, in the 7175 aid arrangement for the natural restoration are held by the authorized bodies of the Ministry of Ecology and Natural Resources. 138352 kg of grain was purveyed.

Years	Value of forest farm works, thsd manat	including activities fulfilled by own force, thsd manat	Work of forest structure, thsd ha	Area of all activities carried out by tractor estimated on conventional standard hectare, thsd ha
2000	1181.4	-	-	1.1
2005	3710.8	3710.8	104.6	1.2
2006	4329.1	4329.1	107	9.3
2007	7275	7275	64.9	16.2
2008	7969	360	77	2..3
2009	9141.3	520	110	3.6
2010	9153.3	522	35	3.8

Source: Ministry of Ecology and Natural Resource of Azerbaijan

Table 4. Conducting of forest activities

1.5. Climatic profile

Natural conditions in Azerbaijan are diverse - from warm and humid subtropical Lankaran lowland and Talysh to snowy highlands of the Great Caucasus.

The Greater Caucasus protects the country from direct influences of cold air masses arriving from the north. This leads to the formation of subtropical climate in most of the foothills and plains of the country. Meanwhile, the plains and foothills are characterized by high rates of solar radiation

1.5.1. Precipitation On slopes of the foothills of the Greater Caucasus the annual rainfall is about 200 mm. Precipitation is rainfall, whereas the Lankaran lowland rainfall is 6-8 times greater. In the autumn, both mining, and the plain part of the country is characterized by very strong northerly winds.
The maximum annual precipitation falls in Lankaran (1,600 - 1,800 mm) and minimum in Absheron (200 - 350 mm).

Annual average number of precipitation- 514,6 mm

Months	Stations												
	Baku	Shaki	Lankaran	Mingachevir	Ganja	Yevlakh	Guba	Zagatala	Shamakhy	Kurdamir	Beylagan	Jafarkhan	Goytapa
I	20.6	30.6	38.0	17.5	7.4	18.3	26.6	30.6	20.6	20.8	32.7	23.3	28.7
II	57.4	45.3	32.5	18.9	13.7	28.7	83.0	27.3	62.0	43.5	18.5	22.5	12.7
III	6.4	68.0	29.1	20.9	11.0	22.7	16.2	72.0	51.9	24.1	20.7	6.2	13.8
IV	22.4	69.1	129.1	35.1	39.7	26.7	22.9	51.9	69.3	43.3	13.6	6.2	13.8
V	1.3	100.8	24.7	29.3	19.3	23.4	13.6	133.0	48.8	3.6	2.0	22.7	65.6
VI	2.5	46.5	14.3	53.1	22.4	9.5	30.7	92.1	21.5	4.3	10.9	19.1	8.4
VII	0.4	31.9	0.7	50.0	24.8	13.2	22.6	63.0	8.1	5.9	21.8	3.0	1.4
VIII	28.4	155.8	206.1	33.1	28.9	25.7	73.1	158.1	103.1	31.4	42.9	35.4	6.1
IX	39.3	161.0	166.6	125.6	59.1	114.6	124.5	274.0	151.6	56.3	81.0	72.8	125.2
X	19.4	32.6	95.0	3.3	1.4	1.4	25.5	28.0	37.9	5.9	-	7.5	52.1
XI	38.1	73.4	138.7	44.3	30.5	38.5	77.1	106.3	85.5	54.6	56.7	8.8	144.3
XII	9.0	53.4	152.8	21.0	10.2	20.8	26.0	14.0	14.1	17.3	26.6	15.8	68.5

Source: Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic

Table 5. Precipitation, mm

1.5.2. Temperature

The climate is transitional from temperate to subtropical. Average temperature in July differs from 5 °C in the highlands to 25-27 °C in the lowlands, in January, respectively, -10 °C and 3 °C. Precipitation is about 200 mm per year in the foothills of the Greater Caucasus to the 1200-1700 mm Lankaran lowlands.

Nine out of eleven existing climate zones are present in Azerbaijan. Absolute minimum temperature (-33 ° C) and absolute maximum temperature (46 °C) were observed in Julfa and Ordubad. Annual average temperature is 13,1 °C, Average temperature in January 1.5 ^{0}C, Average temperature in July-25 °C.

Months	Stations												
	Baku	Shaki	Lankaran	Mingachevir	Ganja	Yevlakh	Guba	Zagatala	Shamakhy	Kurdamir	Beylagan	Jafarkhan	Goytapa
I	3.9	1.9	3.8	3.7	2.7	1.9	0.1	1.9	0.7	2.2	1.9	2.0	3.6
II	5.3	5.2	7.8	7.3	6.3	6.9	2.5	6.2	2.8	7.0	6.8	7.0	7.9
III	7.7	8.0	9.3	10.0	8.9	9.7	5.1	8.6	6.1	9.6	9.1	8.9	9.7
IV	9.8	8.5	10.1	11.9	10.5	11.7	7.1	10.1	5.9	11.1	10.6	10.4	10.9
V	18.0	16.6	18.1	20.2	18.5	20.2	14.7	17.2	15.3	20.5	19.7	19.2	19.0
VI	24.1	22.2	23.2	25.6	23.5	25.5	21.3	22.7	21.3	26.1	23.8	24.0	24.7
VII	26.8	25.6	26.9	28.7	27.0	28.7	23.7	25.9	25.8	29.9	27.1	26.2	28.2
VIII	24.1	21.2	23.6	25.2	23.6	25.5	19.6	22.1	21.7	26.1	23.9	24.3	25.0
IX	21.0	18.1	20.6	21.7	19.6	21.2	16.5	18.9	17.2	22.2	21.0	20.9	21.3
X	18.3	15.0	17.6	17.9	16.7	17.4	13.6	16.4	13.5	18.7	16.9	17.2	17.8
XI	11.8	9.1	12.4	12.2	10.3	11.5	7.0	9.4	7.1	11.9	11.0	11.5	12.2
XII	7.5	5.2	7.6	6.6	6.0	6.0	2.9	5.4	2.6	6.2	5.8	5.6	7.3

Source: Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic

Table 6. Average monthly air temperature, in ^{o}C. Information of meteorological stations in 2009.

1.5.3. Other climatic characteristics On the formation of climate in Azerbaijan is particularly influenced by cold arctic air mass Scandinavian anticyclone, temperate of Siberian anticyclone, and Central Asian anticyclone. Diverse landscape of Azerbaijan affects the ways in which air masses are included in the country.

1.6. Economic profile

1.6.1. General

Occurred over the last year in Azerbaijan, major changes, the success of the country towards modernization is closely linked to economic developments. These achievements clearly recognized and international organizations.

Azerbaijan will continue to grow the world's highest rate. The growth of Azerbaijan in 2010 in comparative prices up 5% compared with the rate for the year 2009, GDP reached 36,17 billion EUR according to Goskomstat country sredu.Pri that GDP growth in non-oil sector in 2010 amounted to 7.9%. The volume of GDP per capita amounted to 4,046 thousand EUR. Industrial output in Azerbaijan last year grew by 2.6% compared with 2009 , amounting to 23.8 billion EUR investment in fixed capital – 21.2%, reaching 8.43 billion EUR (. Nominal incomes of Azerbaijan's population in 2010 grew by 13%, 3% compared with 2009. The per capita income for the year increased by 11.9% and amounted to 2,492 thousand EUR . Average wages, calculated per employee, grew last year by 9.1% and reached 282.6 EUR.

1.6.2. Primary sector

Ministry of Agriculture is responsible for the data in the field:

population and area; irrigated lands; distribution of employment by sectors of economy; gross domestic product by agricultur; volume of investment in fixed by sectors of economy; gross output of agricultur; number of agricultural enterprises and private owners; stock of main agricultural equipment; application of mineral fertilizers by kinds of agricultural crops; sown area of agricultural crops; grop production; yield of agricultural products; sown area of vegetable by types; fruits and berries: cultivated area, gross harvest and yield; gross harvesting area of orchards; grapes: cultivated area, harvest and yield; tea: cultivated area, harvest of green tea leaves and yield; livestock; structure of livestock by categories of holdings; main animal products; meat production, carcas (weight); milk production by type; productivity of live-stock and poultry in all categories of agricultural holdings; import of food products; production of main foodstuffs, per capita, in the year; the data on regions

Currently the agricultural sector of Azerbaijan is living through its' critical period related to radical changes of production processes and increasing degradation of production capacity. As a result of agrarian reforms most of the collective farms and soviet farms were disintegrated and new forms of agricultural holdings were organized. There were created more than 26 thousands of private farms, 5 thousands of collective farms, one thousand of rented farms, 800 smaller enterprises and etc.

Conducted reforms coupled with lands' privatization enabled the development of a private sector. The share of latter increased both in the structure of sawn areas and crops production. While in 1995 the share of private sawn areas was just 5% of the total, then by 1998 it increased and became 82%.

	2000	2005	2006	2007	2008	2009
Total land area	8660.0	8660.0	8660.0	8660.0	8660.0	8660.0
including:						
Agricultural lands - total	4740.4	4758.6	4756.0	4756.5	4756.7	4756.7
including:						
arable land	1825.6	1843.2	1841.3	1854.0	1860.2	1860.2
land under permanent crops	236.8	221.5	221.1	224.7	227.5	227.5
land under permanent meadows and pastures	2678.0	2693.9	2693.6	2677.8	2669.0	2669.0
Non-agricultural lands - total	3919.6	3901.4	3904.0	3903.1	3903.3	3903.3
including:						
industry, road and other non-agricultural lands	395.1	365.3	353.5	351.5	352.2	352.2
lands of special protected territories	192.4	288.6	288.8	291.5	343.9	343.9
wooded area	1037.4	1037.8	1037.8	1038.8	1038.8	1038.8
lands of water funds	150.2	142.5	146.7	146.7	146.7	146.7
other lands	2144.5	2067.2	2077.2	2075.0	2021.7	2021.7

Source: On the base of information of State Land and Cartography Committee

Table 7. General land fund distribution according to destination (the end of the year, thsd. ha)

Agricultural sector has a great potential for implementation of renewable energy sources. Introduction of contemporary climate relevant technologies and efficient use of those resources would surely lead to reduction of GHG emissions (see Table 8).

GHG gases	GWP factor	Gas volume (thds. of tons)	CO2- eq, (thds. of tons)
CO_2	1	30938	30938
CH_4	21	875	18375
Total			49313

Source: Initial National Communication of Azerbaijan Republic on Climate Change under UNFCCC.

Table 8. GHG emissions reduction potential in the agricultural sector.

1.6.3. Secondary sector

Mining, manufacturing, building occupies an important place for greenhouse gas emissions.

rey indicators in the sector formed by the Ministry of Industry and Energy, the State Oil Company of Azerbaijan Republic (SOCAR) and include - the indices of main socio- economic indicators; main macro-economic indicators by sector of industry; indexes of industrial production; price indexes of industrial producers; volume of industrial products (works, services); sectoral structure of industry ; structure of expenditures spent for the manufacture of products; number of employees in the economy of country; investments directed to industry sector; productivity of industry; innovation activity of industrial enterprises; manufacture of the most important types of industrial products in natural volue (by regions).

1.6.4. Tertiary sector

This sector includes the provision of data for the following:

Dynamics of foreign trade relation; Turnover, import and export by countries; Geographical structure of imports and export; Structure of imports on Standard International Trade Classification (SITC); Dynamics of main commodities imports фтв in commodities exports.

Statistic committee of Azerbaijan prepare the indicators about trade relations of Azerbaijan with CIS and far foreign countries. Goods considered as manufactured in the country are also goods of foreign origin which are imported and reprocessed with changing their quantity and quality indicators. Evaluation of the value of export is carried out by FOB prices or free-border prices of the country, i.e. the cost of the goods includes the value, and expenditures for dispatching of the goods to the land borders of departure port or loading to the ship board.

Estimation of the volume of import is carried at by SIF prices or by franko-border prices of the country, i.e. the cost of the goods includes its value, transportation to the borders of the country and insurance expense.

Ministry of turism is responsible for data in this area. Main indicators of turism are in Table 9.

	2004	2005	2006	2007	2008	2009
Total number of enterprises	58	81	96	117	123	124
Total number of employess (including substituties), person	475	646	779	1115	1174	1 393
of which:						
number of employees engaged in tourism activity, persons	426	564	612	745	749	1136
Gross income of enterprises-total, thsd.manat	4129.8	6020.9	8480.0	15966.6	17120.5	17 839.6
of which: from tourism services	1371.5	4035.3	4788.1	11646.1	12987.6	14 013.6
Expenditures for product (service) output - total, thsd. manat	4227.5	5661.4	7054.4	13843.0	15612.1	16 907.9
of which: tourist services	2844.2	3884.0	4094.3	9763.1	11909.5	13 220.7
Number of trip sheets to population-total, unit	8428	16444	20256	26008	27055	28 509
including:						
to Azerbaijan citizens for traveling within the country-total, unit	1099	2681	2634	2820	2517	3 259
to Azerbaijan citizens for traveling outside of the country-total, unit	6516	12211	17385	20777	20843	21776
to foreign citizens for traveling within Azerbaijan territory, unit	813	1552	237	2411	3695	3474
Value of trip sheets to population-total, thsd. Manat	1443.7	3253.3	7697.1	10356.9	11148.9	15071.7
including:						
to Azerbaijan citizens for traveling within the country-total, thsd. manat	90.4	809.3	2270.8	1945.8	1099.5	1291.8
to Azerbaijan citizens for travelling in outside of the country-total, thsd. Manat	1106.9	1997.6	5375.8	8152.6	8112.2	12039.8
to foreign citizens for traveling	246.4	446.4	50.5	258.6	1937.2	1740.2

within Azerbaijan territory, thsd. manat						
Number of received and dispatched tourists-total, person	29382	40008	45605	56290	59607	59700
including:						
received	11592	16858	14472	12356	19288	...
dispatched	17790	23150	31133	43934	40319	...

Source: Statistical yearbook of Azerbaijan Republic 2010

Table 9. Main indicators of tourist enterprises

1.6.5. Future prospects for the country's economy and development

According to revised forecasts of the IMF, on the basis of 2011 GDP growth was 2.8% (October forecast - 1.8%). For 2012 GDP growth forecast to 2.5 percent, and in 2016 – 2.8%, whereas in the previous report of the Fund predicted decline in 2015 GDP growth rate in Azerbaijan to 0.9%. The IMF forecasts that in 2011 inflation in Azerbaijan will be at the level of 10.3%, whereas previously fund predicted inflation for the current year at 5 percent. In 2012 the IMF forecasts inflation in the country at 7.5%, and in 2016 at 5%.

It is estimated the fund, in 2011 Azerbaijan will have a balance of payments surplus at 28.4% of GDP (the October forecast is 22.2%) in 2012 at- 24.2% and in 2016 at- 17,2%.

According to government forecasts the country, economic growth is expected in 2011 at 3.8%, and nominal value of GDP projected in the amount of 37.92 billion EUR. Up to 2014 mid-term economic growth is projected at 7%. Inflation rates are expected this year at 5%.

1.7. Transportation

Transport is a major consumer of fuel and energy production of greenhouse gases. Structural reconstruction based on the rational use of energy resources and the development of effective monitoring and regulating equipment.Thus, in particular, the national railways need new technology:

1. Railway electrification could reduce fuel consumption by 4 times, and reduce GHG emissions.
2. Traction electric trains are carried out by DC in Azerbaijan.

Switching to the alternating current will reduce CO_2 emissions by 256.000 tonnes.

3. The introduction of energy-saving measures will account for 10% of the economy of electric energy.

In the Table 10 the basic indicators of transport in Azerbaijan are reflected..

	2005	2006	2007	2008	2009	2010
Value added(at current prices),million EUR	614,69	1904,51	1409,65	1823,01	2113,91	2351,89
Gross operating surplus(at current prices),million EUR	333,945	1514,41	1085,09	1468,14	1680,87	1850,94

Net operating surplus (current prices), million EUR	252,29	1.340	796,49	1123,89	1340	1475,47
Average annual number of workers, persons	85,2	100,81	97,3	109,1	111,9	112,2
Average monthly nominal wages, EUR	116,51	285,15	207,89	277,88	316,52	372,64
Fixed assets (end of the year), million EUR	2798,17	3018,02	3522,81	3720,35	4406,09	5312,26
Investment in fixed capital, million EUR	473,39	566,67	656,14	1762,83	1483,48	2297,17

Table 10. Main macro indicators of transport

1.7.1. Road transport

The total length of highways: 59,141 km. Of these, 29 210 km is paved. Department "Yolnagliyyatservis" (azerb. Yolnəqliyyatservis) of the Ministry of Transport of Azerbaijan, operates and maintains 22,134 km of trunk roads in the country. Of these, 1,684 km international highway account, 2669 - strategically important, 13 thousand kilometers - of local importance, 1,5 km - on the territory of Azerbaijan, 3,3 thousand km - in the regions. The total number of bridges in the country is 1201. There is a new highway between Baku and Sumgait.

Highway in Azerbaijan should be parallel to the main railway line. One of them runs along the Caspian Sea from Russia to Iran via Azerbaijan. In its turn, from Baku to the Georgian border, also maintains highway. From the city of Yevlakh (in Baku - Tbilisi) to the south departs highway in Nagorno-Karabakh. They are all segments of the following European road routes.

The bus is the most developed form of public transport in cities across the country. Between Baku and major cities of the republic and regional centers, as well as the cities of Russia, Georgia, Iran and Turkey a regular bus service is established.

1.7.2. Shipping

Azerbaijan's largest shipping company is the Caspian Shipping Company - Caspar (azerb. Xəzər dəniz gəmiçiliyi), who is also the largest shipping company in the Caspian Basin. Caspar is engaged in transportation of all types of cargo, but a major stake in transport is oil and oil products. The company also performs the transport of passengers and an operator of a railway ferry Baku - Turkmenbashi, Baku - Aktau. Kaspar also owns a number of shipyards.

Caspar fleet comprises 86 vessels with total deadweight of 483,782 tons, of which 41 tanker, 35 bulk carriers, and 10 support vessels. Also, there are 3 type 3 ship Ro-Ro (rail / road), 7 ferries (passenger rail), passenger ships and boats.

Caspian Shipping Company performs and international transport in the basins of other seas and oceans, mostly Black, Mediterranean, Baltic Sea and the Atlantic Ocean.

1.7.3. Railways

Railways are one of the main modes of transport in Azerbaijan, they accounted for about 40% of turnover (2009) and up to 25% of passenger traffic. In 1980 the share of railways in total freight / passenger turnover amounted to 80% and 50% respectively, the volume of goods transported in 1987 reached 120 million tons. The fall in traffic was due to the collapse of the USSR. All these phenomena have sharply reduced the share of railways in the transport across the country. Crisis peak traffic occurred in the years 1991-93. In 1995 began the process of revitalizing and building-level traffic. Since 2000, growth in traffic began to increase at least 25% annually. In 2009, railroads were transported more then 35 million tonnes loads.

The railway network of general use in Azerbaijan and its all infrastructure is owned by JSC "Azerbaijan Railways - JSC BR, state-owned company operating railways for general use. In addition to UAB BR, right transport operators are also companies with Middle East Petrolium and Azersun, owning freight car fleet, licensed to transport oil by rail. In addition, its rail lines, park substation, and infrastructure, have many industrial enterprises, whose railway infrastructure has the status of industrial access roads.

The total length of railways is - 2125 km, including double track - 800 km, the developed length - 2995 km.

1.7.4. Air transport

Largest cities of Azerbaijan and Baku are connected with each other by air traffic. The largest airport is located in Baku, where are regular international flights. In addition to Baku, scheduled international flights are also committed from Ganja, Nakhchivan and Lankaran (since 2009). Government organization in the management and regulation of civil aviation of Azerbaijan is the State Administration for air transport.

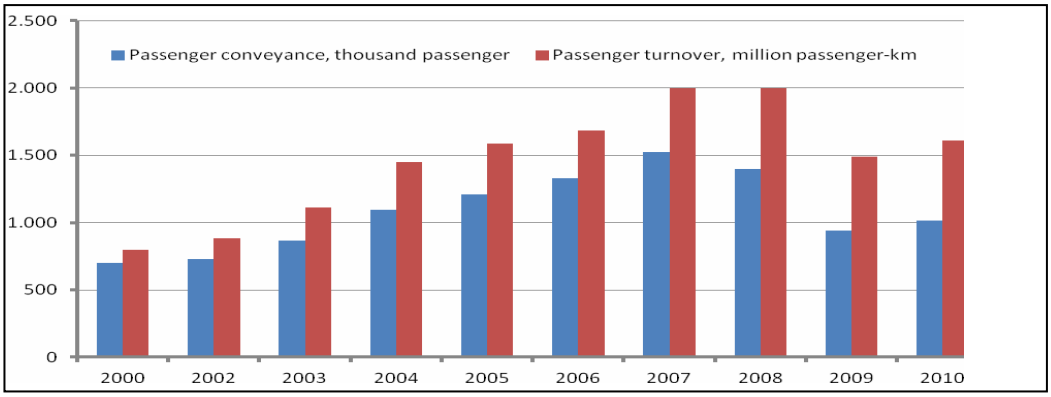

Figure 1. Air transport

1.8. Energy

Energy sector of Azerbaijan occupies an important place. Successful realization of the national oilstrategy, as well as national energypolicy carried out during last years for management of oil, gas, electricity and other energy resources makes Azerbaijan one of the providers of energy security in the region and world.

One of the main elements of the national and economic security of the country is provision of energy security. Energy security means to satisfy energy needs of the country economy and population. One of the main principles of the energy security is to substitute of unrestored energy resources with other sources.

There were great achievements with respect to satisfying energy needs of the country economy and population and these achievements are one of the important factors of strengthening of social, economic development of the country. 362.4 million tonnes crude oil and 141.9 milliard m^3 natural gas, as well as 376.2 milliard kwt/h electricity,16.6 million tonnes motor gasoline, 41.9 million ton diesel oil was produced during last years. Oil and gas extraction in the country was at record-breaking level in 2009, so 50.4 million ton oil and 16.3 milliard m3 gas was produced during the year. Oil extraction increased natural gas supply of the country as well as export of the natural gas continued.

The gross energy and fuel balance calculated on the basis of provisional fuel volumes, as well as in oil equivalents and Joule ratios. At the same time data reflects information on secondary oil products, scrap of ferrous and non-ferrus metal, secondary raw materials and waste, environmental pollution, valuable metal, exchanges activity, including for heating and electricity generation, natural gas, water, and communication services, financed by the government and used by consumers and also results of the survey on fuel and energy consumption in households.

1.8.1. Energy supply

Energy supply includes fuel and energy quantity used for production-technological, agriculture, construction, transport, communal-general and other needs, directly as fuel, i.e. quantity of used fuel and energy not converted into other types of energy.

1.8.2. Energy consumption

This item also covers energy consumption in industry, heating stoves, apparatus and other technological installations, material-working machinery, mechanisms and different transport means, lifting equipments, as well as heating of administration buildings, ventilation system, hot water supply, communal needs. This indicator includes energy consumption in electric power stations and boilers.

	2000	2005	2006	2007	2008	2009
Crude oil, mln. ton	8.3	7.5	7.6	7.5	7.4	6.1
Natural gas, billion m^3	5.5	9.5	10	8.6	10.1	8.6
Gasoline, mln. ton	0.3	0.6	0.7	0.8	0.9	1
Jet fuel, mln. ton	0.6	0.8	0.7	0.7	0.9	0.8
Fuel-oil, mln. ton	4.1	2.6	2.1	1.8	0.7	0.3
Kerosene for aviation and other, thsd. ton	292	532	429	488	533	373
Liquid gas, thsd. ton	80	158	158	143	126	106

Oil-bitum, thsd. ton	18	97	143	156	185	225
Electricity,billion kwt.hour	16.4	20	21.7	18.2	17.9	14.5
Heat energy, mln. Gcal	4	5.5	5.5	4.9	5.7	3.7

Source: Anual report of Ministry of Industry and Energy of Azerbaijan Republic and Statistical yearbook of Azerbaijan Republic 2010

Table 11.Consumption of main types of fuel and energy

1.9. Waste disposal

1.9.1. Solid waste disposal

To improve the situation in the area of solid waste management in the near future a project to build a plant for recycling of solid waste will begin. This project is being prepared by the Ministry of Economic Development, at a cost of 400-500 million manat. The main strategy is to sort all waste, including solid and reprocessing. Bury the waste is simply impossible; polygons are calculated at 250 tons, and the construction of expensive new landfills inappropriate.

Currently out to tender for the purchase of advisory work on research in connection with the recycling of household waste.

	2000	2005	2006	2007	2008	2009
Generation of hazardous	26.	12.	29.	10.	24.	16
Use of hazardous wastes	11.	4.	3.	4.	4.	10.3
Disposal of hazardous	-	0.0	26.	1.	8.	6.9

Source: Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic

Table 12. Generation, use and disposal of hazardous wastes (thsd. ton)

1.9.2. Wastewater treatment

The main environmental problem in Baku and Azerbaijan today is the treatment of wastewater. Recycling of wastewater is very low. Currently in Baku acts only Hovsani treatment plant, and then at 30% capacity. In the sea or ground is flocking 70% of untreated wastewater. Upgrade sewer system capital investment required billions of manat. Company Azersu within 2 years of planning to complete repairs own installations, then not a drop will drain into the sea.

2. The national GHG inventory

2.1. Development of a national system for the GHG inventory

On country monitoring network of pollution of Atmosphere air is taking away activity in big industry cities of country in Baku, Sumaqayit, Ganja Mingechevir, Shirvan, Nakhichevan, Lankaran and conceits of 26 obsidian points.

In these cities emission of pollutants in Atmosphere air is 3 times in a day about 0700, 1300, 1900 taking examples, being circular to profile of each city on following taken specific pollutants chemical analogues.

In atmosphere rainfalls composition (rain, snow) learning of portative pollutants composition which carry out with atmosphere air for trans boundary, their to influences to environment valuing and to control to quality indicator of rainfalls with on purpose realizing of republic constant snow-cover in mountain areas in four point chemical composition of snow, in 21 the points on chemical composition of Atmosphere rainfalls systematic monitoring are taken.In the composition of atmosphere rainfalls on following quality and pollutant fixed indicates are taken.

2.1.1. Government ministries/agencies responsible for collecting and inventorying data

The Ministry of Ecology and Natural Resources of the Republic of Azerbaijan. In 2001 at the Ministry of Ecology and Natural Resources of Azerbaijan Republic has created the Climate Change and Ozone Center. The center consists of four departments: the Inventory GHG Department, Ozone Department, Climate Change Department and the Department of Mitigation and Adaptation.

2.1.2. Supporting institutions

- Hydrometeorology scientific research institute (HSRI)

- Mineral Raw – material Scientific – Research Institute (Director – R.Kazimov Scientific; Secretary – S.HajiyevaAddress: 103, B.Safaroghlu Street, Baku city, AZ1009 Tel: 494 (124) 94-63-56; Fax: 494 (124) 94-35-80).

2.1.3. Measurement methodology and data sources

In Azerbaijan, statistical reporting is provided in compliance with the requirements of Convention. Azerbaijan uses a system of the former USSR State Committee for Hydrometeorology inventory of emissions to the atmosphere (Guidelines for the Control of atmospheric pollution: Gidrometeoizdat, 1979). Azerbaijan can provide some data from the 1999, 2000 and 2001.

2.1.4. Activity data

In Azerbaijan, carried out an instrumental sampling and processing in stationary laboratories. Controlled by the state of 14 components (including: dust, soot, phenol, benzo (a) pyrene, furfural, CO, NO, NO_2, Cl, H_2S, SO_2, HCl, H_2SO_4, SO_4). Samples are taken 3 times a day (07-00, 13-00 and 18-00). Among the parameters controlled temperature, humidity and air pressure, wind speed and direction.

2.1.5. Conformity with data exchange standards

All measurements and observations taking place in conformance with the standards of the State Technical Supervision of the Azerbaijan Republic, complies with EU standards and GOST.

2.2. Systematic observations

According to the law of Azerbaijan Republic on Hydrometeorological Activity, State Hydrometeorological Committee carries out meteorological, hydrological and oceanographic observation and data collection in Azerbaijan and in the basin of the Caspian Sea.
Hydrometeorological Committee has the status of National Hydrometeorological Services (NHMS) and has the right to represent Azerbaijan in international organizations.
Hydrometeorological Committee provides information and forecasts of institutions and enterprises.The structure of the National Hydrometeorological Service also includes the following services:

- State Committee on Ecology and control of natural resources;
- The National Aero-Spatial Agency (spatial data);
- Committee for Geology and Mineral Resources (Groundwater Quality Monitoring).

2.2.1. Measurements of meteorological parameters and instrumentation deployed

According to the national report of Azerbaijan coastal meteorological monitoring network includes 79 stations, which belong to the State Hydrometeorological Committee of Azerbaijan Republic. One station belongs to the national railway administration.Eight stations are designed for operational services.

58 stations are provided for the collection of climate data at the national level. Density of climate monitoring network of eight stations is 10 thousand km^2.

2.2.2. Oceanic observations

The Caspian Sea is one of the species indicators of climate change, I. e. poor climatic change impact on sea level fluctuations. From 1975 to 1996 the level of the Caspian Sea has increased by 2,4 meters. In Azerbaijan, 468 km of land disappeared under the water and damage to the national economy amounted to two billion dollars.

Besides the standard meteorological observations the following parameters are regularly measured there:

• Sea Surface Temperature
• excitement
• Sea Level
• Water salinity
• flows.

Station is located on a platform at sea. State Hydrometeorological Committee of Azerbaijan Republic also has a fleet consisting of 4 meteorological ships. When monitoring the flotilla carried out measurement of the following elements:

• Water temperature at each depth;
• salinity level of depth;
• flows;
• hydrochemical and hydro-biological content.

2.2.3. Terrestrial observations

State Committee for Geology and Mineral Resources and State Hydrometeorological Committee of Azerbaijan carries out hydrological monitoring on the territory of Azerbaijan. The main rivers of Azerbaijan - Kura and Araz - starting with eastern Turkey, passes through Georgia (Kura) and Armenia (Araz) and enter the territory of Azerbaijan. The remaining small rivers are divided into three groups - the Greater Caucasus and Lesser Caucasus and pools Lankaran-Astara Rover.

On the balance of Azerbaijan's 102 hydrological (75 of them are located on rivers, 9 - on the waters, 2 - on the lakes and 1 - per channel). Hydrological monitoring covers the following parameters:

- water level;
- water run-off;
- turbidity level;
- dispersed alluviums.

In winter, recorded data on the thickness, water content and density of snowpack. At 58 stations monitored the level of water contamination

2.2.4. Air-quality monitoring

Air quality monitoring is carried out in 5 cities of Azerbaijan, 3 times a day.Data is collected in the National Environmental Monitoring Centre of pollution. This data is used to produce operational forecasts of environmental quality and published in the daily environmental newsletter. Once a month, detailed information is prepared and stored in computer memory. National computer database contains information covering the period from 1993. Information from 1980 to 1992 in Russia in the database, the Main Geophysical Observatory named Voeikov.

3. Reporting

3.1. The GHG inventory, emissions per sector

	Air pollutant emissions	including:				
		particulates	gaseous and liquid matters	of which:		
				SO_2	CO_2	NO_2
Total	300	19.8	280.2	4.3	27.6	24.2
including:						
Agriculture, fishing and forestry	0.08	0.06	0.02	0.0	0.008	0.003
Mining	186	7	180	0.6	10.1	8
Manufacturing	42.2	12.5	29.7	1.8	3.1	2.5
Supply with electricity, gas, steam and condensed air	37.1	0.2	36.8	1.7	13	13.3
Water supply, treatment of waste water	1	0	1	0.006	0.3	0.08
Construction	1.9	0.3	1.6	0.1	0.2	0.1
Retail and wholesale trade, repair of motor vehicles and motorcycle	2.1	0.007	2.1	0.007	0.03	0.005
Transport and storage	29.7	0.02	29.7	0.02	0.7	0.2
Other branches	0.2	0.1	0.1	0.08	0.2	0

Table 13. Air pollutant emissions from stationary sources by economic activity types and ingredients in 2009 (thsd. ton). *Source: Statistical yearbook of Azerbaijan Republic 2010 and Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic*

3.2. The GHG inventory, emissions per type

	2006	**2007**	**2008**	**2009**
Carbon dioxde (CO_2)	17 664.40	14 828.80	16 013.30	15 293.10
Nitric oxide (N_2O)	0.8	1.7	6.4	10.4
Metane (CH_4)	16.6	24.3	49.5	24.2
Hydrofluorocarbons	0.6	0.5	0.2	7
Sulphur hexafluoride (SF_6)	0.1	0.1	0.2	0.6
Perfluorocarbons	0.9	0.6	0.3	6.4

Source: Statistical yearbook of Azerbaijan Republic 2010 and Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic

Table 12. Air pollutant emissions generated greenhouse gases from stationary sources (thsd. ton)

	2000	2005	2006	2007	2008	2009
Azerbaijan	392.7	496.4	530.9	584	642.4	697
of which by ingredients:						
carbon oxide	148.2	353.7	378.3	415.8	457.4	496.3
nitrogen oxides	31.3	41.6	44.5	49.1	54.0	58.6
carbohydrogenes	56.4	67.6	72.3	80.0	88.0	95.5
specific pollutants	156.8	33.5	35.8	39.1	43.0	46.7

Source: Statistical yearbook of Azerbaijan Republic 2010 and Annual Report of Ministry of Ecology and Natural resources of Azerbaijan Republic

Table 13.Emission of air pollutants from mobile sources by ingredients (thsd. ton)

3.3. Information publicly available

In the Ministry of Ecology and Natural Recourses Ecological publicity department was established to provide public education and enlightenment on protection of environment. Within the department Public relations and publicity sector was established to provide participation in publicity policy of the Ministry and to give proposals on education, publicity and agitation concerning protection of environment and nature, provide propagation of enlightenment, ecological education and humanist attitude to nature, to give proposals in making posters and booklets, to provide information exchange with non governmental organizations concerning ecology and natural recourses. The sector ensures enlightenment of the public on ecological matters, proper assistance is provided to Territorial Ecological and Natural Recourses department in ecological publicity issues, regular meetings and press conferences are organized to provide the public with information on activity of the Ministry.

4. Verification

4.1. Statistical methods for QA/QC analyses

Below are the major elements that must be considered when developing QA / QC system in Azerbaijan, designed to monitor the inventory process:

- The inventory agency responsible for coordinating QA / QC;
- Plan for QA / QC;
- general QC procedures;
- QC procedures for a particular source category ;
- reporting procedures, documentation and archiving.

4.2. Calculation of data-verification indices

Comparisons with other independently collected data on national emissions is an option for rapid assessment of completeness, the approximate levels of emissions and the assignment of source categories. These comparisons are held for the different greenhouse gases on the national and sectoral levels, as well as on the levels of categories and subcategories of sources, depending on the extent permitted by differences in definitions.

The Ministry of ecology and national resources is ultimately responsible for the compilation and reporting of national greenhouse gas inventory.

In addition may be other independent publications on the subject (eg, scientific literature, or publications of other institutions or institutions). These documents provide material for comparisons with other national estimates.

The procedure for validation help assessment of uncertainty in estimates of emissions, taking into account the quality and context as the initial inventory data and the data used for verification . Increasing achieved as a result of verification confidence of documents along with detailed results of this procedure

References

1. Annual Report 2009, State Oil Company of Azerbaijan Republic, 2009
2. Azerbaijan Republic Electroenergetics System, Baku, 2008. Azerbaijani.
3. Balance of Fuel-Energy and material resources of Azerbaijan, 2009, Baku
4. Initial National Communication of Azerbaijan Republic on Climate Change under UNFCCC. Baku, 2000
5. Rafig Verdiyev The role of ecosystems of Azerbaijan -forests and wetlands - as water suppliers, ECORES NGO, Geneva, 13-14 December 2004
6. Statistical Yearbook of Azerbaijan, 2009 and 2010. State Statistical committee of Azerbaijan Republic.

Appendix

Acronyms and abbreviations

GHG	greenhouse gas
IPCC	Inter-governmental Panel on Climate Change
LULUCF	Land use, land-use change, forestry
QA	quality assurance
QC	quality control
SHMC	State Hydrometeorological Committee
GDP	Gross Domestic Product
WMO	World Meteorological Organization
SOCAR	State Oil Company of Azerbaijan Republic
NCCC	National Center on Climate Change NGO