

PAKISTAN

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In the aftermath of the terrorist attacks in the US, Pakistan's economy was severely hit by a cancellation of export orders and a drastic reduction in foreign exchange remittances by expatriate workers. However, the successful culmination of US-UK and allied actions in Afghanistan led to a reversal of the trend and the economy has picked up substantially.

Foreign exchange reserves have grown to more than US\$6 billion, the highest for any year during the past two decades. The second calamity to hit the country was extreme drought. This reduced the supply of irrigation water by 70% and resulted in a reduction of growth in the agricultural sector from 3.9% in 2000 to -2.4% in 2001. Mining and quarrying also showed negative growth, falling from +3.4% to -0.44%. Large- and small-scale manufacturing grew by 7.8% and 5.3% respectively during the year. Construction, as well as electricity production and distribution, fell from 5.3% and 5.5% to -3.1% and 4.1% respectively. However, there is now rapid growth in all sectors of the economy. Oil and gas exploration attracted an investment of US\$200 million during the year. Healthy growth in all sectors of the economy is forecast for 2002.

The Geological Survey of Pakistan (GSP) completed regional geological mapping of 4,580 km² on a scale of 1:50,000 in the country (1,280 km² in Loralai and Barkhan districts of Balochistan; 1,270 km² in Muzaffarabad, Kotli and Bagh districts of Azad Jammu and Kashmir (AJK); 400 km² in Dasu District, Northern Areas; 640 km² in Okara District, Punjab; 640 km² in Dadu District, Sindh; and 350 km² in Swat District, NWFP).

Geophysical investigations and drilling were carried out in the Maki Jhal area, Mastung District for sulphide mineralisation. Analyses of samples and further geophysical investigations are in progress.

Output of Principal Minerals ('000 t)

	1999	2000	2001
Aragonite/marble	408	582	468
Agr. Clay	1,200	1,275	1,130
Barytes	20.5	21.2	27.1
Bauxite	9.2	8.7	5.9
Bentonite	15.6	13.8	10.7
Chalk	6.5	7.7	7.7
China Clay	58.3	49.6	55.6
Chromite	13.9	26.8	9.9
Coal	3,203	3,117	3,262
Dolomite	327	288	257
Feldspar	25	43	30
Fire Clay	166	144	153
Fuller's Earth	19	15.3	13.4
Gypsum	284	377	624
Limestone	9,870	9,884	9,607
Magnesite	4.9	3.6	3.0
Rock Salt	1,275	1,313	1,393
Silica Sand	176	162	145
Soapstone	56.6	54.4	30.8
Sulphur	21.95*	20.19*	17.18*
Urea	3,758	3,887	4,162
Superphosphate	104	129	173
Ammonium Nitrate	335.9	377.4	360.4
Nitrophosphate	258.7	271.3	307.8
Cement	10,121	9,075	9,545
Coke	676.6	725.3	713.6
Pig Iron	1,140	1,132	1,384
Billets	325	390	400

Source: Central Statistical Bulletin Vol.50. No.3, figures for calendar year Jan-Dec 2001.

** From oil and gas refining.*

Exploration work for coal in four specific areas of Tharparkar has been completed and about 3,000 Mt of additional coal reserves have been proved. GSP has been awarded the task of sinking a shaft in the area to obtain bulk samples for combustion and other tests. Initial investigation has proved good-quality coal in the Chamalang-Baladakha area, Loralai District of Balochistan, and in Hangu and Orakzal Agency areas in the Northwest Frontier Province (NWFP). Further work on the Dilband iron-ore deposit in Balochistan has increased the ore reserve from 200 Mt to 270 Mt. Pak Steel has agreed to blend 20% of this ore with imported ore.

An investigation has been initiated to find new shelf carbonate-hosted lead-zinc deposits in Mashki Chah area, Chagai District. Good quality peridotite and topaz have been found in a new locality of the Northern Areas and detailed work is in progress. GSP's chemical laboratory analysed 584 samples, making 8,473 determinations of rocks and minerals.

Pakistan Mineral Development Corp. (PMDC) produced 659,372 t of salt and 288,484 t of coal during the year. Also, in June 2001, it completed a broad-based stream sediment geochemical sampling programme in the Northern Areas. Six host-rock areas bearing gold mineralisation were identified, along with 108 anomalous catchment cell areas with gold values ranging between 5 ppm and 112 ppm.

Metallurgical Construction Corp. (MCC) of China has shown interest in the development of a zinc-lead mine and concentrator at Duddar (Balochistan) where proven reserves amount to 14.3 Mt averaging 8.6% Zn and 3.2% Pb). A Memorandum of Understanding is under negotiation.

MCC was also awarded a ten-year lease over the Saindak mines, and plants. Under the agreement, signed in Beijing on November 30, 2001, the company will invest US\$39 million as working capital, pay US\$500,000 as annual rent and an annual royalty of 2% of the metal sales value to the Government of

Balochistan. The surplus cash generated will be split 50:50 between MCC and Government of Pakistan. The project is expected to produce 15,000 t of blister copper, 1.47 t of gold and 2.76 t of silver annually.

Lakhra Coal Development Co. (LCDC) has been wound up and the management handed over to Sindh Coal Authority (SCA). The President of Pakistan has directed that a bankable document to evaluate the development of the Thar coal-field (proved resources 189,000 Mt) should be undertaken immediately. The federal government will provide the necessary finances for the study. In the first instance, a shaft will be sunk in the coalfield to obtain bulk samples for pilot-plant-scale tests. A Chinese company has also shown interest in developing the coalfield and 150 Chinese geologists, engineers, drillers and workers are employed on the site.

Punjab Mineral Development Corp. (Punjmin), has submitted a proposal to the government to carry out a techno-economic feasibility study (bankable document) at a cost of Rs102.36 million for development of the Chiniot iron-ore deposit and its industrial utilisation with foreign collaboration. Punjmin continued its development activities and produced a total of 532,307 t salt, coal, dolomite, silica sand, fireclay and bauxite, and sold 463,486 t of these minerals.

Punjmin, also supplied 1.9 Mt of construction materials, including gravel, sand and limestone, to the Ghazi Brotha hydropower project of Pakistan's Water and Power Development Authority (WAPDA).

Sarhad Development Authority (SDA) initiated a systematic exploration of northern NWFP for regional stream-sediment geochemical surveys for precious and base metals. This regional geochemical survey was conducted under AUSAID technical and financial grant assistance from 1992 to 1995, with a foreign exchange grant of A\$1.3 million, and covered a 14,000 km² area of Chitral District. The SDA also extended the geochemical survey with its

own resources to Malakand and Hazara Division, covering a further 30,000 km². SDA completed first pass exploration coverage of northern NWFP over an area of 40,000 km² on a scale of 1:250,000 for gold and related metallic minerals.

To facilitate mineral exploration and to provide support services to the private mining concessionaires in respect of analyses and tests, a Mineral Testing Laboratory (MTL) was established by SDA in Peshawar. In addition to analyses of minerals, MTL is also engaged in research and development work for identification, categorisation and treatment of coloured semi-precious and precious stones. Bench and pilot-plant-scale studies for the extraction/ beneficiation of base metals are in progress.

SDA's Exploration Promotion Division (EPD) has also identified additional emerald mineralisation at various localities along a belt more than 50 m long belt between the Shamoza and Alpuri areas.

Frontier and Tribal Areas Development Corp. (FATADC) geologically mapped an area of 420 km² during the year. A scheme for determining additional reserves of copper occurrence in north Waziristan at an estimated cost of Rs25.64 million, and another Rs29.6 million scheme for establishing a Labour Welfare and Miners' Training Centre for the Orakzai Agency coalfield, will be implemented during 2002. Some Rs8.0 million in royalties were earned on minerals, and several prospecting licences and mining leases for marble, bentonite and limestone, were granted during the year.

Azad Kashmir Mineral & Industrial Development Corp. (AKMIDC) continued its exploration and evaluation work for base and precious metals (lead, zinc and gold) in Treri, Lamnian and Khilla at Muzaffarabad. Drilling and geophysical surveys have identified small lead and zinc anomalies. New occurrences of bentonite in Mirpur District, have also been located. Geological mapping on a scale of 1:50,000 was

completed over an area of 400 km² in the Poonch, Sudhnutti and Bagh Districts of Azad Kashmir. As a result of small-scale mining at the Nangimali deposit, 8.47 kg of rough ruby were extracted. Precious and semi-precious stones occurrences have been located in the Nuri Nar Gali, Doarian and Luat areas in the upper Neelum Valley. New ruby and corundum samples were provided to Gublien Gem Laboratories in Switzerland for evaluation.

Production

Of the 20 minerals for which production has been reported, most showed a decline in output in line with the slowing down of the economy and a slump in the construction industry. However, barytes output rose by 2%, china clay by 11%, coal by 4.5% and fire-clay by 6.4%. Gypsum production jumped by 60%. With increased activity in the housing and infrastructure development, particularly the commencement of work on Gowadar Port, the northern bypass in Karachi and the Saindak copper-gold project, the mineral sector is expected to perform better during 2002.

During the year, the Hydrocarbon Development Institute of Pakistan (HDIP) carried out a reappraisal of petroleum potential in the country's sedimentary basins, particularly in NWFP and offshore areas. HDIP laboratories analysed 4,500 samples. As a result of HDIP's efforts, compressed natural gas (CNG), an environmentally friendly and economic fuel, is gaining popularity in the transport sector and over 200,000 vehicles have switched over to CNG.

During 2001, Oil and Gas Development Co. (OGDC) carried out 2,226 line km of seismic and 162 line km of geological reconnaissance surveys, and drilled eight wells (20,145 m). OGDCL's two major development projects, Uch and Nandpur, were completed during the year. The company produced 7.57 Mbbl of oil, 263,543 Mft³ of natural gas, 61,032 t of LPG and 14,112 t of sulphur. OGDCL's updated estimates for the remaining recoverable oil and gas reserves, as of January 2002, stood at 152 Mbbl of oil and 10,357 billion ft³ of natural gas.

Privatisation of OGDC has been approved by the government and Merrill Lynch has been appointed as financial advisor.

During the year, 24 companies engaged in oil and gas exploration drilled 12 development and 34 exploration wells. Total metres drilled

during the year was 113,79 m. Five exploratory wells were abandoned as dry wells. At the end of the year, three exploratory wells were under drilling or production testing. Crude oil, gas and LPG production during the year amounted to 22.5 Mbbl, 920,725 Mft³ and 131,061 t respectively.