

INTRODUCTION:

The **2010 Pakistan floods** began in late July 2010 as a result of heavy monsoon rains in the provinces of Khyber Pakhtunkhwa (KPK), Sindh, Punjab and Baluchistan and affected the Indus River basin. Pakistan has a total land area equal to 796,096 square kilometers (307,374 square miles). Approximately one-fifth of Pakistan's total land area was underwater during the 2010 floods.

According to Pakistani government data the floods directly affected about 20 million people, mostly by destruction of property, livelihood and infrastructure, with a death toll of close to 2,000.

The Indus River originates in the Tibetan plateau. The river runs a course through the Ladakh region of Jammu and Kashmir, Gilgit, Baltistan and flows through Pakistan in a southerly direction along the entire length of Pakistan to merge into the Arabian Sea near the port city of Karachi in Sindh. The total length of the river is 3,180 km (1,980 mi). It is Pakistan's longest river.

UN Secretary-General Ban Ki-moon had initially asked for US\$460 million for emergency relief, noting that the flood was the worst disaster he had ever seen. Only 20% of the relief funds requested had been received as of 15 August 2010. The U.N. had been concerned that aid was not arriving fast enough, and the World Health Organization reported that ten million people were forced to drink unsafe water. The Pakistani economy was harmed by extensive damage to infrastructure and crops. Almost 65% of the labor force in Pakistan is involved in agricultural activities. Damage to structures was estimated to exceed US\$4 billion, and wheat crop damages were estimated to be over US\$500 million. The total economic impact may have been as much as US\$43 billion.

Monsoon rains were forecast to continue into early August and were described as the worst in this area in the last 80 years. The Pakistan Meteorological Department reported that over 200 millimeters (7.9 in) of rain fell over a 24-hour period in Khyber Pakhtunkhwa and Punjab. A record-breaking 274 millimeters (10.8 in) rain fell in Peshawar during 24 hours; the previous record was 187 millimeters (7.4 in) of rain in April 2009. As of 30 July, 500,000 or more people had been displaced from their homes. On 30 July, the head of the UN Office for the Coordination of Humanitarian Affairs, stated that 36 districts (out of a total of 139) were involved, and 950,000 people were affected, although within a day, reports increased that number to as high as a million, and by mid-August they increased the number to nearly 20 million affected.

By mid-August, according to the governmental Federal Flood Commission (FFC), the floods had caused the deaths of at least 1,540 people, while 2,088 people had received injuries, 557,226 houses had been destroyed, and over 6 million people had been displaced. One month later, the tally had risen to 1,781 deaths, 2,966 people with injuries, and more than 1.89 million homes destroyed.

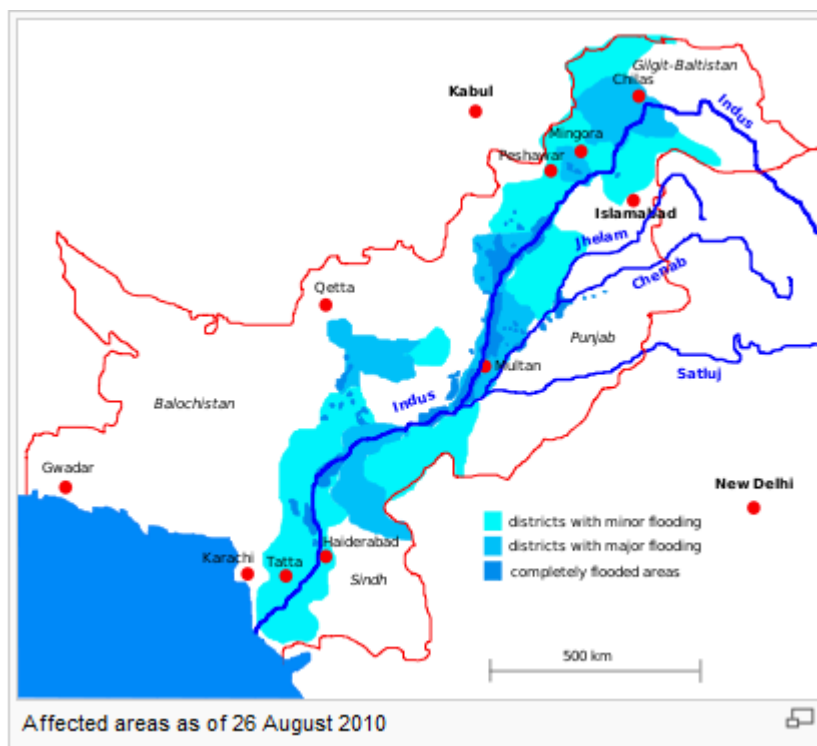
The Khyber Pakhtunkhwa provincial Information Minister said "the infrastructure of this province was already destroyed by terrorism. Whatever was left was finished off by these

floods." He also called the floods "the worst calamity in our history." Four million Pakistanis were left with food shortages.

The Karakoram Highway, which connects Pakistan with China, was closed after a bridge was destroyed. The ongoing devastating floods in Pakistan will have a severe impact on an already vulnerable population, according to the International Committee of the Red Cross (ICRC). In addition to all the other damage the floods caused, floodwater destroyed much of the health care infrastructure in the worst-affected areas, leaving inhabitants especially vulnerable to water-borne disease. In Sindh, the Indus River burst its banks near Sukkur on 8 August, submerging the village of Mor Khan Jatoi.

In early August, the heaviest flooding moved southward along the Indus River from severely affected northern regions toward western Punjab, where at least 1,400,000 acres (570,000 ha) of cropland were destroyed, and toward the southern province of Sindh. The affected crops included cotton, sugarcane, rice, pulses, tobacco and animal fodder. Floodwaters and rain destroyed 700,000 acres (3,000 km²) of cotton, 200,000 acres (800 km²) acres each of rice and cane, 500,000 tons of wheat and 300,000 acres (1,000 km²) of animal fodder. According to the Pakistan Cotton Ginners Association, the floods destroyed 2 million bales of cotton, which increased futures prices. 170,000 citizens (or 70% of the population) of the historic Sindh town of Thatta fled advancing flood waters on 27 August.

By mid-September the floods generally had begun to recede, although in some areas, such as Sindh, new floods were reported; the majority of the displaced persons had not been able to return home.



Aftermath of the 2010 Floods

The floods damaged 10,000 transmission lines and transformers, feeders and power houses in different flood-hit areas. Flood water inundated Jinnah Hydro power and 150 power houses in Gilgit. The damage caused a power shortfall of 3.135 gigawatts.

Pakistan suffered many outbreaks of diseases, such as gastroenteritis, diarrhea and skin diseases, due to lack of clean drinking water and sanitation, posing a serious new risk to flood victims. On 14 August, the first documented case of cholera emerged in the town of Mingora, striking fear into millions of stranded flood victims, who were already suffering from gastroenteritis and diarrhea. As if that was not enough, Pakistan also faced a malaria outbreak.

The International Red Cross reported that unexploded ordnance, such as mines and artillery shells, had been flushed downstream by the floods from areas in Kashmir and Waziristan and scattered in low lying areas, posing a future risk to returning inhabitants.

The United Nations estimated that 800,000 people were cut off by floods in Pakistan and were only reachable by air. UN also stated that at least 40 more helicopters were needed to ferry lifesaving aid to increasingly desperate people. Many of those cut off were in the mountainous northwest, where roads and bridges have been swept away.

Almost every aspect of Pakistan's economic and social life was affected by the 2010 floods and we are feeling the consequences even today.

The **census of Pakistan** is conducted decennially across the entire nation. The first census was conducted after independence in 1951, and again in 1961, 1972, 1981, and 1998. The 1972 census was delayed one year due to war with India, while the census in 1998 was delayed due to political issues. Pakistan's next national census was scheduled to take place in 2008, but it too has been delayed to 2010 or beyond due to political issues.

2011 Floods in Sindh Province

The **2011 Sindh floods** began during the monsoon season in mid-August 2011, resulting from heavy monsoon rains in Sindh, eastern Balochistan, and southern Punjab. It is estimated that 434 civilians have been killed as a result of the floods and 5.3 million people and 1,524,773 homes affected. Sindh is a fertile region and often called the "breadbasket" of the country; the damage and toll of the floods on the local agrarian economy is said to be extensive. At least 1.7 million acres of arable land have been inundated as a result of the flooding. The flooding follows the previous year's historic 2010 Pakistan floods, which devastated the entire country. 16 districts in the province of Sindh received unprecedented torrential monsoon rains followed by severe flooding again with economic and social consequences of a large scale.

Statistical Office of Pakistan

Until the recent creation of the Pakistan Bureau of Statistics (PBS) on 23 December 2011, the statistical office in Pakistan was called Statistics Division and it fell under the Ministry of Finance. The Statistics Division was comprised of three agencies: (1) Federal Bureau of Statistics (mainly dedicated to conducting the surveys during the intercensal period); (2) Population Census Organization whose main responsibility is the conduct of the Population of Census and Housing; and (3) the Agricultural Census Organization.

These three agencies were merged into one, PBS, with headquarters in the G9 sector of the capital city of Islamabad.

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Pakistan's next national census was scheduled to take place in 2008, but it too has been delayed and the government of Pakistan, as of this date, has not yet decided when it will be conducted. Between 1998 and the present time Pakistan has experienced many challenges. The 2005 earthquake in Azad Kashmir; the 2008 earthquake in Baluchistan; the uprising of a segment of the Pakistani population which has caused havoc in many parts of KPK and the Federally Administered Tribal Areas bordering Afghanistan. Pakistan has experienced during this period an unprecedented number of terrorists attacks which caused the displacement of millions of people who also needed urgent assistance to survive. And to this we must add the floods and droughts throughout the country.

The Federal Bureau of Statistics, which conducts all the surveys during the intercensal period, is still using the 1998 sampling frame. The urban area part of the sampling frame was last updated in 2005, but the rural part has never been updated. It is estimated that Pakistan is about 35-40 % urban and 65-60 % rural.

The 2010 and 2011 floods caught the statistical system of Pakistan off guard. Without any fresh census data, it was difficult to estimate the true human impact of the disasters and provide the necessary data to target specific and focused relief operations. Local authorities provided estimates of the affected population but they were not official estimates.

The cartography section of the PCO helped in the relief operation by providing maps for all the affected districts during the 2010 and 2011 floods. These maps were used by the UN agencies in their relief efforts. With the help of aerial photography and the maps provided by the PCO, the UN was able to map the extent of the catastrophe and provide relief to millions of people, as did the National Disaster Management Authority (NDMA).

The PBS has learned many lessons from these disasters. In order to be prepared for future disasters, it needs to identify areas of high vulnerability to disasters and have up-to-date data, updated maps and a solid GIS system (in progress), improve communication systems with its

regional and local offices so that relief operations can start immediately and be targeted and focused.

With fresh new data from a population census and subsequent surveys, the PBS will be able to allow the government and its partners to conduct risks assessments in order to mitigate the effects of disasters and minimize their impact. Reducing the risks posed by disasters is no longer optional for Pakistan and it is central to the development of the nation.

The work of the ACO was not greatly affected because the field work for the last census of agriculture in Pakistan ended at the end of June 2010. However, the Federal Bureau of Statistics, responsible for the surveys during the intercensal period, was affected. Some sample areas were inaccessible due to heavy water in the villages/blocks; therefore these areas were replaced with areas adjacent to the affected ones. As a result, indicators for education and housing variables at the district level were distorted in the PSLM (Pakistan Social and Living Standards Measurement Survey).

In 2011, the FBS faced similar problems but this time in the province of Sindh which was the most affected. In Hyderabad almost half of the sample areas were not accessible due to the floods. Moreover, many houses were demolished and caused the population to migrate to camps. Therefore, the listing work in such areas had to be halted for some time, even though the survey work of the FBS was not affected during the period of the floods, but afterwards when census blocks had to be chosen again, as replacement units, and relisted.