

Sample answer

The impact of the Three Gorges Dam on river processes - 2017 Q1C

Flood control measures such as dams can have a huge impact on river processes. The case that I have studied is the Three Gorges Dam on the Yangtze River in China.

The Yangtze River has been very important to Chinese people for many centuries. Over 350 million people live in the Yangtze Valley and the agriculture on the river's flood plain provides almost 70% of the country's rice supply.

It was decided to build a dam on the Yangtze River mostly because of flooding. The Yangtze River had a large volume of water after snow melting and after monsoons. This caused flooding due to the rising river level. The natural river processes of erosion, deposition and flooding have caused big problems in the past. Since 1860, over five million people have been killed by flooding from the Yangtze River. Also, the low water levels during the winter months have caused huge disruptions to river transport.

To solve these problems, the construction of the Three Gorges Dam began in 1993. The Dam is the largest in the world - it is 2.3km wide and 185m high. The Three Gorges Dam was completed in 2008 and it was operational by 2011. It is estimated to have cost €20 billion to build.

The construction of the dam has had many benefits. It could control the water level of the river, as part of the river has been turned into a lake which made the river deeper and slower. This helped to eliminate shallow water in winter and flooding in the summer. River transport was also improved. The Three Gorges Dam also produces hydroelectric power (HEP) which reduces the amount of coal used for energy, hence reducing carbon emissions. The dam has also brought increased tourism to the area.

There have also been some problems associated with the Three Gorges Dam. Nearly two million people were removed from their homes as the river water rose and flooded surrounding towns.

The Three Gorges Dam is also in an earthquake zone, and the weight of the dam increases the possibility of earthquakes. The movement of people to higher slopes has caused more deforestation in the area. This has led to more mud floods and landslides which add to the river's load. This extra load causes a build up of int the dam which, if not controlled, will reduce the efficiency of the dam.