

Water World Case Studies

Topic	Case Study
Impact Of Unreliable Water Supply	<p><u>Sahel</u></p> <ul style="list-style-type: none"> • A poor, semi-arid region in Africa • Many people are subsistence farmers and nomadic herders • Rainfall has been in decline and becoming more and more unreliable in the past decades • Impacts: <ul style="list-style-type: none"> ○ Severe droughts in 1984-85 (leading to a famine in Ethiopia) ○ Droughts also in 2005 and 2010, leading to reduced food supplies as harvest failed ○ Desertification due to lower rainfall and eroded land ○ The decrease in rainfall and unpredictability has lead people to migrate to cities ○ Food and water insecurity
Humans Disrupting Water Supply	<p><u>Coca-Cola, Kerala</u></p> <ul style="list-style-type: none"> • The Plachimada aquifer in in the drought-prone Indian state of Kerala • Coca-Cola moved to the village in 2000, dug 6 wells and drained the aquifer • By 2004, news from the region described a desperate situation – the wells used by the villagers had dried up • Coca-Cola has since helped the people of the Plachimada by driving tankers full of fresh water to the village
Intermediate Technology	<p><u>Afridev Hand pumps, Tanzania</u></p> <ul style="list-style-type: none"> • Installed by WaterAid in the village of Chessa • The wells are dug 24m deep and fitted with an 'Afridev' hand pump • Allows 15 families to get clean, safe drinking water • It prevents diseases like cholera from drinking dirty water • Community took ownership of technology and responsible for its upkeep • Easy to fix - people in the village are trained to manage and maintain the pump
MEDC Large Scale Water Management Scheme	<p><u>Colorado River, USA</u></p> <ul style="list-style-type: none"> • The Colorado river is one of the most managed rivers in the world • It feeds the needs of seven US states and Mexico • During its natural state, the river had very low flow between September and April, whereas during the summer months, snowmelt caused a big rise in river levels • The Hoover Dam was built in 1936 and followed was the Glen Canyon Dam which was built in 1966 • Benefits: <ul style="list-style-type: none"> ○ Regular all-year water supplied for cities like Las Vegas ○ The reservoirs provide recreational activities, such as boating on the Lake Mead ○ Less flood risks as flood peaks are smoothed out ○ The dams generate electricity ○ Water can be used for irrigation • Costs: <ul style="list-style-type: none"> ○ Fish can't migrate – four of Colorado's fish species have been lost, including the squawfish ○ Sediment gets trapped behind the dam so sandbanks are lost ○ Loss of land flooded by the reservoir ○ Shrinking sandbanks mean some animals lose habitat ○ Less water downstream in Mexico ○ The Sediment affects the workings of the Hydroelectric Power generators

LEDC/NIC Large Scale Water Management Scheme	<u>The Three Gorges Dam, China</u> <ul style="list-style-type: none">• Built on the Yangtze River and was completed in 2012• Built to help improve its water and energy supplies for its increasing urban population• It's the world's largest dam and also home to the world's largest hydropower project• Benefits:<ul style="list-style-type: none">○ Reduced flood risk for people along the Yangtze river○ The electrical generators have a combined capacity of 22,500 megawatts (equivalent to 15 nuclear reactors, enough to replace 50 million tonnes of coal use reducing China's greenhouse emissions by 100 million tonnes of carbon)○ The river is more navigable for ships so transport and trade has increased• Costs:<ul style="list-style-type: none">○ Flooded a 600km stretch of land○ 1.4 million people were forced to relocate○ Good farmland has been lost because of the lake○ Increased risk of landslides in some areas, also causing people to have to relocate○ Very expensive, estimates range from US\$22 billion and US\$39 billion○ Sediment is building up behind the dam○ Important wetland areas have been destroyed
Impacts on Water Quality	<u>Bangladesh</u> <ul style="list-style-type: none">• Sewage disposal causes contaminated water and a perfect breeding area for diseases such as cholera• Dumping industrial waste such as mercury can reduce biodiversity in the waters• Plastic bags less than 0.025mm thick are banned because they block waterways and sewers, worsening flooding problems especially in the monsoon season. The water also becomes stagnant and diseases will begin to grow