KS3 Geography. Africa.

3. Achieving water security in Southern Africa.

[INTRODUCTION] The city of Cape Town! A lot of buildings, many people - estimated to be around 5 million across the whole metro area!

That means a lot of people using a lot of water...and that's a problem! This is an area where it's always hard to predict when it's going to rain, or how much rain we'll get. If the water levels of our reservoirs get too low, then one day we might turn on our taps... and nothing would happen.

[SOUTH AFRICA] This region is the part of Africa that's furthest away from the equator. So we have distinct seasons, and quite cold winters. But for our water supply, that's not an advantage. Many of the hottest countries in Africa - Nigeria, or Cameroon, for example - get strong rainfall and have major rivers.

Down here, as clouds blow in from the Indian Ocean, they meet the Drakensberg Mountains, which make them rise and drop all their rain over there, in the East.

[BENGUELA CURRENT] And on our Atlantic coast, we have the Benguela Current. It drives an upwelling of cold water from the deep. And that cold water has an effect on this whole area: it cools down the air, which reduces rainfall.

[TABLE MOUNTAIN] Fortunately, we also have Table Mountain. And that increases rainfall and creates a unique biome. But we still live with water insecurity. And, just like most urban areas across the world, we use more water than we really need - and we waste a lot of it!

Here in South Africa, 50% of our water supply is used up by the agriculture sector. And, with a growing population, what's left is in high demand. To make things worse, old infrastructure means a lot gets lost through leaky pipes!

[2018 DROUGHT] Sometimes we experience extreme droughts. Here, in Cape Town, in 2018 things got bad...

['DAY ZERO'] We talked about 'Day Zero' - the day when the water could run out completely. We got really close to that day...

So the people here had to make changes. Water rationing was introduced for households and industry. There were public education campaigns that urged us to reduce consumption and everyone took it seriously. Eventually, rainfall did come, and it refilled our reservoirs. So Day Zero never quite arrived - luckily!

[CLIMATE CHANGE] But with climate change making weather patterns unpredictable water supply will continue to be a problem for South Africa. We need to keep looking for solutions.

[LESOTHO] One involves the small nation of Lesotho. Lesotho is in the Eastern highlands, and it's the source of the great Orange River. It has a lot of water!

[HIGHLANDS PROJECT] The Lesotho Highlands Water Project is a major construction project: a network of tunnels and dams, transporting water to South Africa and providing Lesotho with hydro-electric generation.

It's helped to meet some of our water needs. But, like most large dam projects, it's has some serious social and environmental impacts!

[OTHER SOLUTIONS] And with South Africa's demand for water continuing to grow, we're still going to need new projects. Such as building and digging for boreholes to access groundwater...and building desalination stations across the coast...and carefully harvesting rainwater. Of course we're going to need to conserve water. We can't afford to waste any of it!

[CONCLUSION] We know that climate change will continue to disrupt rainfall, and put pressure on our infrastructure - all around the world.

So the solutions we're developing here in Africa are raising awareness, and helping other countries with their water security issues!

So, with some clever new solutions, and changing the way that we think about water, we'll make sure to keep our taps flowing!