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**DEPARTMENT: CIVIL ENGINEERING**

**LEVEL: 500 LEVEL**

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# QUESTION 1

*BRIEFLY DESCRIBE HOW A PRODUCTIVE BOREHOLE CAN BE DEVELOPED IN FRACTURED BASEMENT COMPLEX.*

# QUESTION 2

*WHAT ARE THE DISADVANTAGES OF LARGE DAM PROJECTS?*

1. **The construction of a dam is a costly investment.**: A large dam is described as a structure that is more than 15 meters high. This description means that there are more than 57,000 structures around the world. Major dams are over 150 meters long, and there are over 300 of them. Today, the cost of a large dam may be more than $20 billion, and it will take between 7 and 10 years to complete its construction. These are tools that many societies will use to make better use of.
2. **Dams can displace a significant number of people**: In the last two centuries, an estimated 500 million people have been displaced by dams due to the reservoirs behind each structure. As the nearby dry lands are submerged, we no longer have the luxury of using land that was previously used for a number of purposes. This means that local agricultural operations are experiencing a phase of disruption, even as the potential increase in available water promotes further irrigation.
3. **This technology disrupts local ecosystem:** Dams are generating a flood problem behind the system as a means of building a reservoir. This not only disrupts human operations; it also threatens natural wildlife ecosystems. This problem could destroy whole habitats, which could have a detrimental impact on the entire regional biome. Sea life, which depends on the unobstructed flow of a river, such as migratory fish, can be adversely affected by the decision to dam the stream.
4. **Some river sediment is beneficial:** Dams can have a profound effect on the region's overall aquatic ecology. The upstream transition produces a lack of settlement that travels down the waterway to sustain the entire aquatic ecosystem. It can also cause changes in temperature, chemical composition, and shoreline stability. The river beds downstream from the dam can be eroded by many yards in the first decade of operation. This damage will last for hundreds of miles downstream.
5. **Dams create a flooding risk if they experience failure:** We may use dams to provide us with a form of flood control, but the collapse of this system may have catastrophic implications for downstream communities. The Vajont Dam collapsed in 1963, just 4 years after its building had been completed outside Venice, Italy. The landslide created a tsunami in the reservoir during the initial filling, causing more than 50,000,000 cubic meters of floodwater to reach nearby towns and villages. Some sources suggest the wave was over 820 feet high. Almost 2,000 people died in this tragedy, all because the dam was built in a geologically fragile location. When the Banqiao Reservoir Dam collapsed in 1975 in China, an estimated 171,000 people died.
6. **Dams can have an adverse impact on the groundwater table:** As riverbeds undergo deepening, this issue produces a lower groundwater table along the river. This means that it is more difficult for plant roots to accomplish what is needed for survival. Homeowners in the vicinity must also dig deeper wells to draw water for their homes. This problem can also alter the mineral content and salts present in the fluid, causing harm to soil structures along the way. (Miller, 2020)

# QUESTION 3

*WHAT ARE THE EFFECTS OF WATER POLLUTION ON THE ENVIRONMENT?*

1. **Destruction of biodiversity: Water pollution depletes marine habitats and causes unbridled growth of phytoplankton in lakes**
2. **Contamination of the food chain: Fishing in contaminated waters and the use of waste water for livestock farming and agriculture can introduce toxins into food that are hazardous to our health when consumed.**
3. **Lack of portable water:** The UN says that billions of people around the world have no access to clean water for drinking or sanitation, particularly in rural areas.
4. **Diseases:** The WHO reports that about 2 billion people have no choice but to drink water contaminated with excrement, exposing them to diseases such as cholera, hepatitis A and dysentery.
5. **Infant mortality:** According to the UN, diarrhoeal diseases linked to lack of hygiene cause the deaths of about 1,000 children a day worldwide. (Iberdrola, 2021)

# QUESTION 4

*WHAT IS A SUITABLE APPROACH TO DECONTAMINATE THE RIVER WATER SUCH AS UREJE RIVER IN ADO-EKITI, WHICH GETS POLLUTED DAILY BY DOMESTIC AND AGRICULTURAL EFFLUENT?*

# REFERENCES

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Miller, B., 2020. *17 Biggest Advantages and Disadvantages of Dams.* [Online]
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