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Irrigation Challenges, Climate Change Adaptation and Sustainable Water Usage in Developing Countries. A Case Study, Nigeria

Authors : Faith Eweluegim Enahoro-Ofagbe

Abstract : Worldwide, every nation is experiencing the effects of global warming. In developing countries, due to the heavy reliance on agriculture for socioeconomic growth and security, among other things, these countries are more affected by climate change, particularly with the availability of water. Floods, droughts, rising temperatures, saltwater intrusion, groundwater depletion, and other severe environmental alterations are all brought on by climatic change. Life depends on water, a vital resource; these ecological changes affect all water use, including agriculture and household water use. Therefore adequate and adaptive water usage strategies for sustainability are essential in developing countries. Therefore, this paper investigates Nigeria's challenges due to climate change and adaptive techniques that have evolved in response to such issues to ensure water management and sustainability for irrigation and provide quality water to residents. Questionnaires were distributed to respondents in the study area, central Nigeria, for quantitative evaluation of sustainable water resource management techniques. Physicochemical analysis was done, collecting soil and water samples from several locations under investigation. Findings show that farmers use different methods, ranging from intelligent technologies to traditional strategies for water resource management. Also, farmers need to learn better water resource management techniques for sustainability. Since more residents obtain their water from privately held sources, the government should enforce legislation to ensure that private borehole construction businesses treat water sources of poor quality before the general public uses them.

Keywords : developing countries, irrigation, strategies, sustainability, water resource management, water usage
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