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Title of Abstract
EFFECTS OF LANDUSE INTENSITY AND GROUNDWATER POLLUTION IN THE NOR
BENIN–OWENA RIVER BASIN AND ITS IMPLICATIONS FOR INTEGRATED MANAGEM

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Text of Abstract
ABSTRACT
NGO's and the Ondo State government, Nigeria, have promoted the sinking or drilling of shallow b
through the Ondo State-Unicef assisted Water and Sanitation (WATSAN) project; so that water can be
using hand-operated pumps that are easy to maintain and repair. The project is also to assist the guin
endemic communities in the state. However, the shallow nature and the location of most of the bore
the midst of dense population settlements have made these boreholes susceptible to contamination
septic tanks, pit latrines and solid waste dumping sites. This study therefore attempts to investigate an
the physico-chemical and bacteriological contamination of groundwater in the catchment. Also exa
the role of "land use intensity" as a key factor towards unsustainability of groundwater resource and
forward to ensure sustainability and good water governance. Methodology includes descriptive analy
Boreholes water quality data and relating result to sanitation systems and waste disposal methods in us
quality result in 96% of the boreholes in the basin conforms to the World Health Organization (WHO)
able standard in terms of the physico-chemical and bacteriological composition. However, less than
degraded quality, with abnormal concentration of chloride (297mg/l), Faecal coliform count of 3 pe
turbidity (20FTU) and iron (0.43 mg/l) observed in the unplanned densely populated areas, where sol
and sewage are disposed untreated and uncollected sewage and decayed wastes are leached into the s
ceptive analysis (with increasing urbanization that ensued in stressed demand for land use, vulnera
groundwater and population pressure) revealed that some of the boreholes that were initially of good
have become degraded. The implication of these problems for integrated management is to adopt a
ate low-cost technologies for sanitation, wastewater reuse or collection and treatment, community invo
in building, operation and maintenance of systems. Hence by filtering all the key factors responsibl
unsustainability of the groundwater through long-term landuse planning, integrated with appropriate
ecological factors, groundwater quality standards and planned hydraulic parameters and having desire
economic levels: salary, per capita GDP and population growth rate sustainable development can be ac