

IRRIGATION WITH WASTEWATER – EXPERIENCES FROM NIGERIAN FADAMA DEVELOPMENT PROJECT

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Theme:

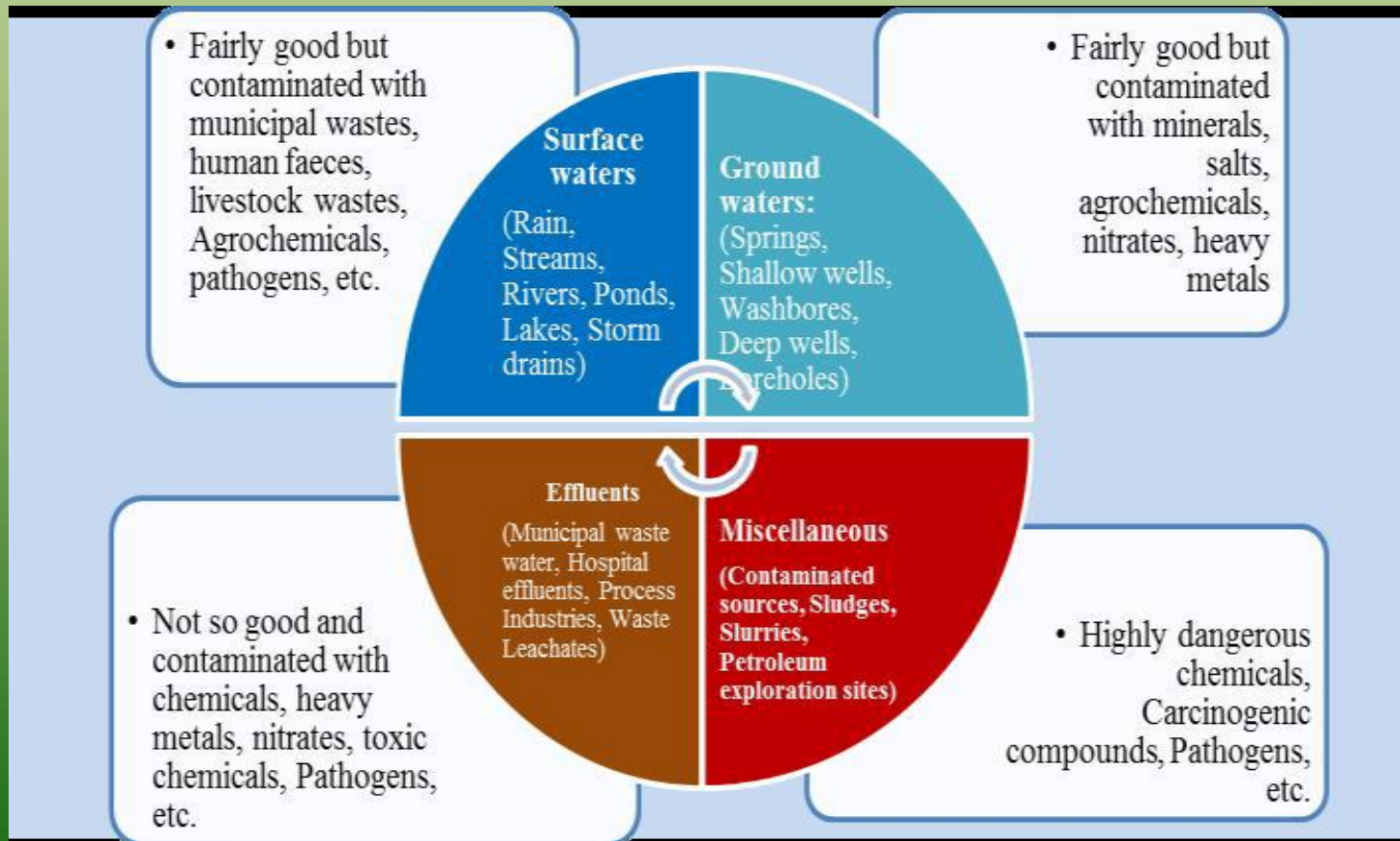
Harnessing opportunities for the safe reuse of wastewater in agriculture

Introduction and Objective

- Nigeria is a beneficiary of National Fadama (local word for low-lying flood plains) Development Project, initiated in 1990s by the World Bank.
- The project is ongoing through Phases I, II and III, covering all 36 States and further funded by African Development Fund and other Donors.
- Simple and low-cost improved irrigation technologies were adopted. Farmers, however, practiced use of wastewater, effluents and polluted waters for irrigation.
- Realized increased economic crops: up to 65% (Vegetables), 334% (wheat) and 497% (Rice) with improved quality of life. This paper described the quality of irrigation waters being used and their impacts.



Irrigation Waters Used in Fadama



Risk Factors and Mitigation Measures

Serial No.	Risk Factor	Effect	Mitigation measure
1.	Indiscriminate use of Agrochemicals -Chemical Fertilizers	-Eutrophication, nutrient enrichment, loss of fish in waters	-Judicious use under supervision
2.	- Pesticide and weedicides	- <u>Build up</u> of toxic chemicals	-Selective use under supervision
3.	Use of animal manures Insanitary conditions (e.g. urination, defecation)	-Pathogen contamination - Epidemics of water-borne infections (diarrhea, typhoid, dysentery, worm infestations etc)	-Improve sanitation around water sources
4.	Stagnant water	-Mosquito breeding	-Avoid stagnation of water; encourage free flow, apply biodegradable <u>larvicides</u>
5.	Dams/Culverts to control water flow	-Spread of Schistosomiasis	- clear weeds, apply <u>molluscicides</u> , control urination into waters
6.	Use of irrigation water for bathing and drinking	-It is a risky behavior as some of the toxic chemicals and infectious agents may enter the body	-Discourage such <u>behaviours</u>

Conclusions and Recommendations

- Fadama initiative by the Nigerian Government since 1996 is most welcome by the farming populations.
- Where there is water, there is food and Fadama farmers enjoyed improved quality of life through economic gains.
- However, with subsidized farming inputs and irrigation equipment, farmers used any available waters such as wastewater from open drains, effluents from small and medium scale industries, and polluted and eutrophic water bodies for irrigation thus compromising water quality and public health risks.
- There is need to improve irrigation water quality through technology use and implementing stringent water quality guidelines for effective reuse of precious water resources.

