

Effective Irrigation schemes as means of rapidly achieving sustainable food security in Nigeria

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The dominant occupation of rural dwellers in Nigeria is farming (usually smallholder). This kind of farming system is typically rain-fed, has low level of mechanization, capital, land and labour respectively. The country is endowed with underground and surface water reserves coupled with favourable agro-ecological conditions. These are resources which ought to be fully exploited as means of increasing net food production, availability and affordability through effective irrigation that will in turn help in achieving sustained food security. Irrigated Agriculture has been an extremely important source of food production over recent decades. Irrigation will assume more importance over the next few years especially in the face of growing climate change. Cereal production through irrigation gives a yield of about 7,500 kg/hectare while the maximum from rain-fed crops is 3000 kg/hectare. Low input irrigation is still more productive than high input rain-fed Agriculture. While it is clear that irrigation has myriads of benefits; efficiency in the use of the water irrigated is perhaps of much more importance. This calls to question the system of irrigation deployed. High intensity irrigation for instance leads to water logging and salinization in some cases. The salinization of irrigated areas has been noted to reduce existing areas under irrigation by 1-2 percent yearly. Also, on a global scale, rain-fed agriculture is practiced on 83 percent of cultivated land and supplies more than 60 percent of the world's food. Drip irrigation and underground irrigation are two examples of localized irrigation. This is an increasingly popular form of irrigation in which water efficiency is maximized because water is applied only to the places where it is needed and little is wasted. Technological solutions are not all there is to it however. Such things as small-scale irrigation and the use of urban wastewater promise to increase water productivity as much as changes in irrigation technology. Efficiency of irrigation will almost certainly be improved by adopting some key practices. These include reduction of seepage losses in channels by lining them or using closed conduits, reduction of evaporation by avoiding mid-day irrigation and using under-canopy rather than overhead sprinkling, avoidance of over irrigation, controlling weeds on inter-row strips and keeping them dry, planting and harvesting at optimal times and frequent irrigation with just the right amount of water to avoid crop distress. Nigeria is well primed to adopt some of these effective practices which are both largely underutilized. Through a combination of adequate manpower development, timely provision of access to needed credit facilities and continuous extension services, judicious use of the seventeen dams and at least thirty rivers, Nigeria is well primed to achieve food security through effective irrigation.