

Information and Communication Technology in Rural Development: Ebonyi State

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Abstract

Through the provision of relevant technologies, Information and Communication Technology can be monumental in the growth of developing countries and in this era of technological growth it is only appropriate that it is fully utilized in all aspects of human lives. Ebonyi which is relatively a new state in South Eastern Nigeria could speed up its rural developmental process by incorporating ICT in the areas of health, agriculture and mining. In this paper, Information and communication technology and its role in development are critically examined; its constraints and ways to improving the influence of ICT in rural areas in Ebonyi state are also explored.

Keywords: *Rural development, Constraint, ICT, Ebonyi State, computing*

1. INTRODUCTION

With the high number of residents in rural areas, the goal should be to improve the standard of

living by empowering them and the provision of standard infrastructures. According to Hudson, H. (2006) information technology can aid greatly in rural development and poverty reduction within developing countries due to an increase in local people's ability to obtain information for sound decision making. It is increasingly revolutionizing production processes; access to markets and information sources together with social interactions, ICT also has an impact on government efficiency, fostering transparency and better communication and services with and to citizens (Global Information Technology Report 2007-2008). Integrating the mining, agriculture and health care sector in Ebonyi will aid development in urban and rural areas, especially in the rural areas, where most of these operations are mainly carried out. A well coordinated mining system would effectively curb the prevalent issue of illegal mining by locals in rural areas.

Sullivan, Strachan and Timmons (2007) opined that an ICT system in the health care sector would serve as a support system by the transfer of technical information and communicating best practices, evidence-based guidelines and innovative approaches to service delivery. Even with the potential of ICT to bring about increased efficiency in the use of development resources, less duplication of activities, reduced communication costs, and global access to information and human resources, none of these are guaranteed until people work together to make the most of a decentralized and accessible communication tool (Don R. 1997). This paper describes how ICT can bring about rural development and proceeding ways to achieving that.

Objectives of the study

- To examine the ways ICT can aid in rural development. The constraints of ICT in rural areas and recommendations.
- To provide a knowledge of information and communication technology.

Area Under Study

The scope of the paper is in the integration of ICT in mining, health care and agriculture as a rural developmental process in Ebonyi state. Ebonyi state of Nigeria is located within the south eastern axis of Nigeria. It was created on 1st October 1996, the (National population Commission,2006) estimates it has a population of about 3 million people spread in the state's

thirteen (13) Local Government Areas. It has a land mass of 5,533km² and lies approximately 6°15'N 8°05'E. It is boarded in the east by Cross River state, in the north by Benue state, in the west by Enugu state and the south by Abia state.

2. DEVELOPMENT THROUGH ICT

2.1 MINING OPERATIONS

Mining is a necessary foundation for industrial and economical development of any nation. It is essential in manufacturing, medical applications, domestic purpose, energy generation and almost in all facets of human existence. Metallic materials without which any industrial or technological development cannot take place - are obtained through mining, Bitumen and coal account for over 85% of materials for energy generation (Ogbonna et al 1999). As thus, it is apparent mining can be of aid in economical and technological development of a nation. Being reputed as one of Nigeria's most solid minerals endowed state and since most mining operations are carried out in rural areas, an integration of the Ebonyi state mining sector with ICT will promote investment, information management and availability and encourage transparency by checking irregularities in mining. This will create prevalence of economic and political growth in rural areas by provision of gainful employment and a rise in income.



Fig 1: ICT in mining operations

2.2 AGRICULTURAL DEVELOPMENT

Globally, information technology is being employed in all areas, agriculture inclusive. Farming which is one of the most predominant occupational practices in this region is still being carried out using traditional methods and in

small scale by settlers in rural areas, causing a yield in low output and income. To sustain the use of ICT as a practice in rural areas, there should be the existence of information centers well equipped with an effective system with a

database of farm records like farming specialization, scale of farming, income and output. This will serve as a communication system between farmers, ICT personnel's and customers. These centers should also readily aid farmers without access to ICT device like the mobile phone with needed information face-to-face and when necessary, in their local language, equipped with ICT training officers to intimate and train these farmers on how to make the transition from traditional farming method to an automated method and provide the means in doing so.

On the field, genetically modified crops with a DNA that has been genetically modified to have a resistance to certain pests, diseases and environmental conditions made accessible to farmers will aid increase in productivity, matching consumption demand. The use of technological advanced fertilizers, soil and crop sensors utilized correctly, will aid in soil management. The soil and crop sensors which provides for the input of data base on real-time, is a device providing farmers with an effective irrigation system. Information technology supports a whole lot of precision farming and actively leveraging the use of this in agricultural practices can tremendously aid rural farmers.

2.3 HEALTH CARE

With health centers located in most of its local government and its grass root program on women's health, the Mother and Child Care

initiative(MCCI), Ebonyi state health system prioritizes primary health care and seems to be going strong in that objective. However, there is a lag in the area of access and monitoring. Infrastructure like ICT information centers should be set up to educate women, using videos for impact. These centers should have an efficient health care management system (HCMS) with a record of relevant patient's information. The use of wearable technological health devices should be employed in the handling of patient's health in rural areas. These devices which are usually in the form of a wrist band or other jewelries are worn by patients and data gotten from these devices via monitoring system are analyzed by health experts in decision making.

In e-health strategy, telemedicine is also a very productive and effective approach and according to (World Health Organization, WHO 1998), it is the delivery of health care services where distance is a critical factor by all health care professionals by the use of information and communication technology for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of Health care providers all in the interests of advancing the health of individuals and their communities. It is advantageous in communities especially those in remote or rural areas with little health services and staffs because it overcomes distance and time barriers between

health providers and patients (Craig J, Patterson V. 2005). This comes in handy in the mother and child health initiative which bases its activities in the maternal health care of women in rural areas in Ebonyi state, women who are usually more accustomed to and trustful of traditional and often time unqualified midwives in child birth. Telemedicine can be a support to these midwives as well as health centre nurses in reaching out to specialist when the need arises, in real time to provide standard maternal health care to women living in rural communities and reducing

mortality rate of childbirth. ICT in health care can also be applicable in statistical analysis of health, family planning indicators, health manpower training and management.



FIG 2: Telemedicine

3. CONSTRAINTS TO THE USE OF ICT IN EBONYI STATE,;

In spite of the urgent need of utilizing information and communication technology, there have been certain challenges inhibiting the implementation process as pointed out in the table;

Power	<ul style="list-style-type: none"> • There is unreliable supply of electricity in rural areas which resorts to the use of generators which runs on fuel. The high cost of fuel and generators makes this process expensive.
Manpower	<ul style="list-style-type: none"> • Lack of trained personnel. • Little infrastructure in place to work with even when experts are willing to work. • The low level of computer literacy. • Unwillingness of trained workers to reside in rural areas.
Connection	<ul style="list-style-type: none"> • There is absence of internet connectivity marring the use of modern health facilities such as telemedicine, as its functionality depends on access to connectivity
Political	<ul style="list-style-type: none"> • Reluctance in the part of government to review ICT polices and implementation process. • Political instability. • A change in government comes along with different agendas and priorities.
Economical	<ul style="list-style-type: none"> • Low investment in ICT by the private and government sector • Low capital availability.

Table 1 Constraints to ICT use

4. CONCLUSION

Ebony state as is most regions in developing countries has more of its people living in rural areas and one of the goals of every Government should be to improve the social and economic lives of the people in these areas. Though yet to be achieved, this is achievable by enthusiastic pursuit of the following recommendations;

- Information and communications technology is a powerful tool in the growth and development of any society especially in rural areas and as such pertinent for ICT policies to be reviewed and implemented. The Government should be educated on this and the need for continuity in rural development by successive government.
- Human development in the form of training and skill acquisition in ICT.

- Providing the right incentives for skilled workers to work in rural areas and investing in information and communications technology in universities by both government and private sector to encourage young innovators.
- Setting up an ICT team to periodically monitor the development process of rural settlers.
- Improving infrastructures that promote ICT. The issue of unreliable electricity supply can be tackled by the use of alternate cost effective power supply like solar power and battery powered micro computers. Existing infrastructure like mobiles phones that support low bandwidth applications can be used for access to connectivity. Reliable broadband of 6mps used in linking distances, can be serve in the extension of low cost internet connections in urban areas at low costs to rural areas or to share VSAT connection to multiple facilities in more remote settings.
- National Information Technology Development Agency (NITDA) has launched corroboration in all states in Nigeria to push ICT to the grass root level in areas of development of ICT policies, management, monitoring, evaluation, financing and resource

mobilization. The Government of Ebonyi State can leverage on this by supporting this corroboration as well as other ICT corroborations.

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