Available online at www.sciencedirect.com
ScienceDirect
Telematics and Informatics 26 (2009) 127–143
TELEMATICS AND INFORMATICS
www.elsevier.com/locate/tele

Achieving millennium development goals: Role of ICTS innovations in India

Siriginidi Subba Rao *

Deputy Director Head, Information Technology, Central Leather Research Institute, Adyar, Chennai 600 020, India

Received 3 July 2007; accepted 15 February 2008

Abstract

The paper outlines the problem faced by India, in dealing with its rural poor, who live in 600,000 villages with poor infrastructure and continue to do so, even after 60 years of independence and constitute about 72.2% of 1027 million. The paper also deals with means and measures to increase their income level. To achieve this, the government must redefine its policies and strategies, deploy information and communication technologies (ICTs) innovations with application and active participation from development organizations. It presents an overview of ICTs and their role in development, particularly in the context of millennium development goals (MDGs). Details select ICTs innovations of India in achieving MDGs. Further, it lists out India's position in relation to MDGs by highlighting India's target, current status and steps taken to achieve them. Concludes that with well thought out planning, comprehensive development strategies devised in the national policy and matching implementation process, it is hoped that India will be able to meet the challenges and achieve all the MDGs targets much earlier than the targeted dates. India's progress in achieving the MDGs will impact not only on its own people but also on the development of South Asia and the world.

Keywords: Information and communication technologies; Innovations; Millennium development goals; Achievements; India

1. Introduction

Information is the key to democracy. Information empowerment is fundamental to a successful democracy. The advent of information technology (IT) has nurtured the swift emergence of a global "information society" that is changing the way people live, learn, work and relate. Even after 60 years of India's independence, the most pressing problem for the country is still how to deal with its rural poor. Out of 1027 million people, 742 million (72.2%) live in rural areas and 285 million (27.8%) in urban areas as presented in Table 1 (Census of India, 2001). The rural populace are living in about 600,000 villages spread over 2.76 million km^2, across India with very poor or no infrastructure like roads, transport, power supply, clean drinking water, healthcare, education system, communication network, etc., further pushing them to poverty. According to India's first social

* Corresponding author. Tel.: +91 44 24911389; fax: +91 44 24912150.
E-mail addresses: ssrao@eth.net, siriginidi@gmail.com.

0736-5853/$ - see front matter © 2008 Elsevier Ltd. All rights reserved.
doi:10.1016/j.tele.2008.02.001

Table 1
Rural–urban distribution of population – India and select states

India/State/Union Territory*	Population			% Rural population
	Total	Rural	Urban	
India	**1,027,015,247**	**741,660,293**	**285,354,954**	**72.22**
Jammu & Kashmir	10,069,917	7,564,608	2,505,309	75.12
Punjab	24,289,296	16,043,730	8,245,566	66.05
Delhi*	13,782,976	963,215	12,819,761	6.99
Uttar Pradesh (UP)	166,052,859	131,540,230	34,512,629	79.22
Bihar	82,878,796	74,199,596	8,679,200	89.53
Assam	26,638,407	23,248,994	3,389,413	87.28
West Bengal (WB)	80,221,171	57,734,690	22,486,481	71.97
Orissa	36,706,920	31,210,602	5,496,318	85.03
Madhya Pradesh (MP)	60,385,118	44,282,528	16,102,590	73.33
Maharashtra	96,752,247	55,732,513	41,019,734	57.60
Andhra Pradesh (AP)	75,727,541	55,223,944	20,503,597	72.92
Karnataka	52,733,958	34,814,100	17,919,858	66.02
Kerala	31,838,619	23,571,484	8,267,135	74.03
Tamil Nadu (TN)	62,110,839	34,869,286	27,241,553	56.14
Pondicherry*	973,829	325,596	648,233	33.43

development report most Indians are still below the poverty line (about 26% or 260 million comprising 193 million in rural and 67 million in urban areas). As per 1999–2000 figures, poverty is increasingly concentrated in a few geographical locations (Punjab state has the lowest of 6.16%, followed by Haryana at 8.74% and Kerala at 12.72%; Orissa state has the highest of 47.15%, followed by Bihar at 42.60% and Assam at 36.09%) and among specific social groups (scheduled tribes at 43%, scheduled castes 36% and other backward classes 21%) (Dhar, 2006).

India being an agrarian society, agriculture plays a vital role in India's economy from the perspective of poverty alleviation and employment generation, and contributes a quarter of national income. However, its share has declined from 56.5% in 1950–1951 to 24.3% in 2001–2002 including the agriculture workforce from 76% in 1961 to 60% in 2000. With the current annual population growth of 15.5 million and existing policies, it would be difficult for India to keep pace with the rural development, until the government redefines its policies and strategies, deploy innovations of information and communication technologies (ICTs) with active participation from development organizations (DOs). The paper discusses an overview and role of ICTs in rural development and how India gears-up to achieve millennium development goals (MDGs) through innovations of ICTs in combating poverty, hunger, diseases, illiteracy, gender discrimination, etc., to achieve sustainable development among rural poor.

2. Overview and role of ICTs

ICTs denote a wide range of services, applications and technologies, using various types of hardware and software, often running over telecom networks. The services include familiar telecom services such as telephony, mobile telephony, fax, etc., and other services such as e-mail, file transfers, the internet, etc., wherein telecom services are used together with computer hardware and software. The applications cover video conferencing, teleworking, distance learning, management information systems (MIS), stocktaking, etc. The technologies range from old technologies such as radio and TV to new ones such as cellular mobile communications; networks may be comprised of copper or fibre optic cable, wireless or cellular mobile links, satellite links, etc. The hardware includes telephone handsets, computers and network elements such as base stations for wireless service. The software forms lifeblood of all these components in the form of sets of instructions behind everything from operating systems to the internet. ICTs comprise a variety of tools and facilitate improvement in information management and dialogue between individuals, groups, communities, etc. The tools include computer hardware, operating systems, application software (word processing, data processing, database management systems), as well as networks and intranets, telephone and electricity lines, radio and satellite systems by which they operate. Further, ICTs refer to the internet-based tools (the World