

# Information and Communication Technology for Poverty Reduction

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## INTRODUCTION

It has been estimated that over 700 million of the world's poor live in Asia-Pacific region i.e., those who earn \$1 or less a day. Nearly one of three Asians is poor. It is claimed by multilateral agencies that the incidence of poverty (proportion of people below the poverty line) is slightly declining. Others question this claim and argue that the term poor should cover all those who cannot cope with survival, security, and enabling needs. If one were to apply this comprehensive definition of poverty, the poor certainly account for more than 900 million in this region. The poor experience shortfalls in economic welfare; gaps in access to good quality education and health care; deficiencies in the provision of physical infrastructure; and political barriers that stifle personal initiative and self-development. They are unable to participate in governance, which is necessary for a healthy democracy and peaceful development. The poverty encourages corruption, anti-social activities like drugs, smuggling, prostitution, and all sorts of deviant behavior. Poverty is considered an unacceptable human condition. Moreover, despite the vast advances that are being made in the spheres of science and technology, information and communication technology (ICT), medicine, capital mobility, etc., income disparities are ever widening, both within countries and nations – world's rich and poor nations. The trends in poverty reduction have recently worsened. The population growth in the developing countries is also adding to absolute number of poor. Overcoming poverty therefore remains the single most important challenge facing those involved in the development activities.

It has been recognized by all multilateral and bilateral donors involved in development assistance that expected outcomes could not be achieved in the area of poverty reduction. Poverty constrains implementation of development initiatives because the poor (the beneficiaries) are not able to participate and contribute effectively in development efforts. In the past decade, efforts were made to encourage beneficiary participation through non-government organizations (NGOs) and community-based organizations (CBOs). However, this could not be fully achieved because of many factors including illiteracy, lack of access to educational opportunities, and limited access to information and resources by the poor. Human development is a key ingredient in economic and poverty reduction. Governments have a crucial role to play in promoting human development. Any poverty reduction strategy should have, among others, three key elements namely pro-poor economic growth; social development; and good governance. The strategy must clearly state that lack of human capital is one of the primary causes of poverty. Without access to basic services, such as primary education and basic health care, the poor will have little opportunity to improve their lives and will be unable to contribute to economic growth.

## NEED TO CORRECT IMBALANCE

The GNPs and PCIs continue to grow everyday in the industrialized world, and their stock exchanges and business cycles overflow with unequal profitability and affluent recycling. They are at the cutting edge of all technologies, and are breaking new paths in bioengineering, space exploration, resources mining and operations, global trading and financing, modern living and international travel and leisure. A virtual wall of isolation separates them from the impoverished millions of the world who continue to flounder in basic agricultural and extracting industries and the underground economies. It is estimated that only about 600 billionaires, 98 percent of whom come from the developed economies,

control resources equivalent to 47 percent of the world population. This minority affluent (concentration of wealth in few hands) could contribute to conversion of this severe poverty into weapons of violence against society, subjecting civil society at large to constant threats of kidnapping, blackmail, and physical harm resulting into increased social violence. Control of ICT power by minority affluent can further complicate the situation. Globalization of market (which was conceptualized as a positive step toward equalizing benefits of economic developments) is considered to be creating imbalance between rich and the poor. Mr. Juan Somavia former ILO Chief, warned of a popular revolt against globalization if it continued to benefit only the rich. Opening UNCTAD in Thailand, Mr. Kofi Annan, UN Secretary General, accused economic superpowers of standing in the way of poor nations as they struggle to developing their economies. Malaysian Prime Minister Mahathir Mohamad said, "I am frightened by preparations being made by certain corporations to take advantage of liberalization and globalization". These remarks become frightening when control of ICT power in the hands of rich is considered in this context. ICT be used to build an effective bridge between the rich and the poor. Reduction of poverty will help in successful globalization and development of old economies into new digital economies.

In the past decade, the technological advances particularly in the field of ICT have been so rapid that it has changed the shape of all economic activities in the world, and in pushing the world towards globalization. However, there is no demonstrated serious effort(except experiments) on the parts of the public or private sector to bring the benefits of ICT to the poor in terms of delivery of improved basic services like education, health care, and in equipping the poor with necessary information and skills to bring them into the mainstream of society so that they can be a productive partners of globalization. In reality, the information gap is increasing between the haves and have nots resulting into increased power flow towards the elite who already possess the power and weakening those who are deprived of it which can result into increased poor populations, enlarged poverty, and potential social disasters. These will further constrain optimization of development efforts towards reduction of poverty and protection of environment. Globalization of market might result into increased gap between the rich and the poor countries and rich and the poor within developing countries. There is therefore an urgent need to bring information technology to the doorsteps of the poor.

ICT is creating a distance-less world where communication is becoming instantaneous and has placed immense power into the hands of, so far, of the haves and elite. It is impacting on all dimensions of life: education, health, quality of family, culture, leisure and arts, scientific and technological world. The way people do business globally will change beyond imagination. It is helping economies expand at an unprecedented rate, and competitiveness has become the motto of the day. Rich countries will continue to become richer and rich people will become richer faster than ever before resulting into a gargantuan ocean of the world's poor.

ICT can introduce new ways of participation by the poor man, women and young people in the global economy in cost-effective and poor-friendly ways thus creating opportunity to address the issue of poverty reduction. If serious efforts are not urgently made the 21 st century may see the greatest paradox in history: unprecedented science and technology growth in the hands of a minority urban elite; but huge oceans of impoverished poor suffering from illiteracy, ill-health, malnutrition, overpopulation growth, etc. The creation of knowledge is the basis for new prosperity. Access by the poor to high tech opportunities is the issue. This requires immediate attention of the researchers, planner and leaders so that it can be used for empowering the poor with knowledge and equip them with productivity skills. This will directly help in poverty reduction.

## **INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATIONS**

**Our biggest challenge today is to maximize the power of ICT in addressing the issues relating to rural development and poverty reduction. There is, therefore, a need to focus research efforts on design, test, and learn from innovative electronic media-based strategies, supported by ICT on strategies and ways of increasing participation of the poor in governance, make use of market information, and increase their access to a variety of resources to address the basic issue of poverty reduction. We must bring down the ownership, use and control of selective and digital technology from the elite and government regimes to the level of communities and the poor that they serve. We must vitalize the community media on large scale with the involvement of people. It is vital to bring information to the doorsteps of the poor (the beneficiaries). Today's communications media are excellent vehicles for conveying much-needed information. Hi-tech based internet and digital technologies are not only becoming a lot smarter, they are growing more user-friendly and can help communities in fighting poverty by arming them with information, knowledge and technologies. On the one hand, the affluent part of the world is hit by unprecedented overflow of information which is fast increasing day by day. On the other hand, millions of people in developing countries have absolutely no effective communication links to the outside world. There is therefore an urgent need to ensure access to ICT in rural areas or disadvantaged communities to disseminate simple, practical knowledge which will save lives, increase awareness and stimulate development. *Properly used, media can help reduce the conflict and strengthen organization* . It can help reduce poverty through providing information on how people of their type somewhere else are handling their situation. The poor have inadequate access to information, technology, expertise, and resources. Communication is no longer limited to electric radio or TV, digital technology based telecenters can provide access to the disadvantaged in rural areas to telephone and fax service, email, Internet and electronic networks, database and libraries. This information should radiate out so that the poor can learn from the poor.**

**The illiterates are still in large numbers even after 550 years after Gothenburg invented the art of printing. If the current trend continues, illiteracy will remain a major development issue well into the 21 st century. The prospects for human development which is basic to poverty reduction is not very encouraging in countries suffering from illiteracy and lack of access to information and resources. Illiteracy combined with lack of information is a barrier in path to good governance and adds to corruption. ICT based web site can work wonders in fight against corruption and improved transparency in governance. In a recent development, the central vigilance commission of the Government of India has established CVC website to fight corruption. "Corruption is considered a low-risk, high profit business", however, website can raise risk and reduce profit of corruption thus resulting into good governance and providing protection to poor.**

#### **COMMUNITY-BASED INFORMATION AND COMMUNICATION TECHNOLOGY**

**As a policy, all governments in the Asian region are investing more in infrastructures and communications; as a result, more and more rural areas being electrified. With the availability of energy in the villages, all types of information technology could be brought without much additional costs. There is no need to wait for roads and civil works; since the dissemination of messages with the developments in satellite technologies, are not dependent on these basic infrastructures. Rather, the availability of satellite facilities, WAP and other mobile connections facilitates the expanded movement of information to the most rural and remote villages. WAP phones (29 million) would outpace PC production. It is esteemed that there will be more than 800 million internet enabled mobile phone users by the end of 2005. At the same time, using the community approach, the costs can be shared to ensure sustainability and investments in ICT based human development initiatives at the grassroots makes it viable because the village makes its own workstations. The availability of these concepts will help identify the constraints to be overcome and the effective strategies which can help in the efficient implementation of the concept of taking knowledge to the**

rural poor. With relevant technology, more than 75 per cent of the rural populations can be reached which today are not served efficiently with basic services including education, health, information, skills, etc. In this context, ICT can help to empower the rural poor through equipping them with education, giving them information on market data anytime and anywhere thus helping them to get the benefit to market changes; likewise, health information can promote awareness about the importance of maintaining health from the viewpoint of quality of life, financial well being of the family, village productivity, and microenterprise development.

The major issues to be covered by community media may include the need to manage the environment in a sustainable manner; exploding rate of population and urbanization; food security; human needs with regard to health, education and literacy; peace and democracy; and poverty reduction. All these challenges require information, knowledge, supported by participatory process of social change. Communication is an essential element in this process because by establishing a dialogue with people it can empower people to take decisions for their own development, increased participation, provide information as a basis for change, and innovation, and help in sharing of knowledge and development of skills in addressing their problems. Until development communication is recognized as an essential component of sustainable development strategies by policy and decision-makers there will be little hope for use of information technology as resource for development interventions.

The "Smart Village" (Rural Information Technology Center) concept being tried in Malaysia to make access to the relevant information and education based on cost efficient high-tech in rural areas is a relevant experiment in this connection. Accessibility to information with quality - this is what media should be doing. Ideally, poor should be an active participant in designing of programs, implementation of programs, and Internet should feed the community with all information. It would do well to set up communication centers (telecenters)—radio, TV, Internet—as community devices requiring small facilities. Transition to more democratic governments in many developing countries will make it more feasible to promote participatory development process which can be further strengthened through the use of modern media. This will help the development agencies to play their catalytic role in poverty reduction more effectively because this will be a platform for directly working with the poor.

It is paramount to mobilize the media in awareness raising on poverty issues in the developing countries and to go for a multimedia approach in order to organize a maximum mobilization of the poor populations. Based on experience, it will be appropriate to combine radio, TV, print and Internet, by special designed radio programs (both national and regional), TV spots which will be repeated several times during prime time and linked to popular programs, and news (to cater for decision makers), print journalism to be linked to the civic journalism concept by inviting a few selected journalists who are motivated to launch a civic journalism group especially tailor made for poverty reduction and interactive Internet pages dealing with poverty issues on a national and international scale. The awareness campaign must also mobilize commitment from decision-makers and elite and powerful including military, religious groups and business houses.

For the above reasons, it is desirable to strengthen research efforts on strategies of developing Information Communication capabilities in rural areas to empower and enable the poor in participating in development activities and enable the development agencies to play a more catalytic and responsive role in the developing member countries to address the issues relating to poverty reduction. This will require active participation among the participatory agencies to carefully design a long-term and sustainable information technology-based intervention to poverty reduction. Based on the results of researches, large-scale initiatives could be designed to ensure access to information technology to the poor with inbuilt evaluative research. Such researches will encourage and enable the staff of

participatory agencies to apply new and innovative approaches based on ICT to address the issue of poverty reduction both through direct intervention and as support to poverty reduction projects and programs supported by various agencies. These experiences will be valuable opportunities for learning by doing in a short period, and developing how-to-do methods and best practices for poverty reduction on a long-term basis.

#### **ASIAN INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR POVERTY REDUCTION: A PROPOSAL**

Realizing that the traditional methods of education have not been able to cope up with the educational needs of growing populations, in particular in disadvantaged areas Asian governments started exploring with the use of educational technology to provide education services to disadvantaged areas. In principle, the move was very appropriate. However, because of the less risk-taking behavior of academics, this move remained limited in most of the cases to urban areas. Traditional universities started setting up external courses through correspondence, continuing education courses, continuation education courses, lifelong education programs, etc. But all these activities remained bound to the urban populations where media proliferated. Subsequently, open universities were established which started using mass media like radio, television and computer for distance education and online education. In Asia today there are more than 20 major Open Universities enrolling millions of students; also there are open schools providing secondary school education, and most recently government and commercial TV channels have been providing education courses on the air.. The majority of students who enroll in the courses provided by these institutions are either employed or urban-based people who want to upgrade their skills and knowledge. These facilities and programs have not reached out to the poor, disadvantaged, and marginalized who live in the rural areas, and are living at subsistence levels.

The governments of developing countries have already made capital investments into the setting up of Open Learning Systems and similar alternative institutions with the potential to serve larger populations. The need is to restructure the open learning systems so that these resources and facilities, which are already in place, can dramatically contribute to poverty reduction efforts through human development with greater focus on the poor and disadvantaged communities. The restructuring should start with a change in the foci of activities and a reshaping of the vision of the concepts and practices of distance education as they impact into the lives of the poor. There is also their inability to upgrade their own systems and capabilities to make full use of the latest technological developments in the area of ICT (including internet technology and digital technologies) already in widespread application in military and business sectors particularly in the developed countries. A third aspect for restructuring is their financial aspect. All these systems, even today, are dependent on governments for their capital and recurrent expenditures. They have not been able to maximize the business potentials of these areas. So even if they have the power of ICT they have not been able to use it in a productive and profitable way. Their programs have not been able to reach the disadvantaged and the poor who provide larger market. Open Learning systems are considered as second class by those who can afford to traditional universities. If they are able to reach the poor they can be considered first class. This is what they have to do.

There is, therefore, an urgent need for a catalytic agent, which can stimulate these systems beyond their present situations to serve the poor, which remain the largest markets for these universities. The poor are also largest human resources in any developing countries. They can make or break governments. But they are unable to organize and influence governance because they are unable to harness the needed information, knowledge, and organizational capability. They cannot lead; instead the urban elites take advantage of the situation and govern them. Therefore there is need to create a regional mechanism such as Asian Institute of Information Technology for Poverty Reduction (AIITPR) which can help in coordinating existing ICT based systems and experiments, then developing the grounds for replicating the

strategies based on ICT for poverty reduction Establishment of AIICTPR to help developing countries energize the existing open learning systems, facilitate their services to bring them to the community level so that the rural poor and disadvantage can take advantage of ICT. The proposed Institute can provide expertise, research support and coordinate the infusion of ICT in all these existing institutions. This can initiate globalization of education movement in Asia as the existing open learning systems can become a network work around this focal point. They can improve equality and efficiency of delivery of education services; and secondly, they can think together to reach the poor through the establishment of community ICT centers. Universities can be support system to community ICT centers at the community level whereas AIITPR can provide global support, design strategies, conduct research and network all the institutions across Asia using ICT including private sector initiatives.

The setting up of community ICT centers could start with the optimization of use of exiting hardware. Thousands of computers in various government agencies/institutions in developing countries, procured under various programs and projects, are lying underutilized or unused. Purchased many years ago, these are old models and to urban centers they are not of great use. Such equipment can be moved straight away to rural areas to form the heart of community information technology centers. Such centers can be set up in existing schools. In the beginning therefore there is no need to spend large amounts on hardwares. Through distance education local leaders can be provided training in the use of these basic hardware, software, email and Internet access and other programs. Communities can design their agenda in terms of what sort of information they want. Open learning systems can play a part in facilitating setting up of such centers with dual use. One for conducting open university courses; and second for utilizing the facilities for community information, global scanning of appropriate technology, and market research on low prices so that middle man will not be able to exploit the lack of information which hinders the growth of poor populations. Thus setting global village IT centers. In sum the proposed AIICTPR will:

- be a catalytic implementor of prototypes and development of information systems focused at poverty reduction;
- conduct requirement analysis for the creation of information technology infrastructure in rural areas required for poverty reduction;
- provide research support to programs of poverty reduction through human development;
- identify the interfaces between the information needs of the poor and ICT capabilities as well as identify the imperative for ICT infrastructure of the delivery of basic services including education and health for the poor in the networked economy;
- be responsible for responding to the imperatives for ICT training for the rural poor and build information skills development strategies for the poor youth to ensure that tomorrow's poor can compete effectively in an integrated market especially for services;
- take the lead in ensuring that the capabilities of ICT are fully utilized for the poor people and poor countries in all spares of life;
- greatly facilitate poor women's access to ICT-enabled help (including legal services) in order to protect their rights resulting in the empowerment of women which is urgently needed to ensure their participation in democracy, governance, and fight against poverty; and

create sub-networks on the basis of geographic areas, causes and correlates of poverty, and help the poor and indigenous people to participate and play an active role in the democratic processes and strengthening of peace through protection of human rights and reduction of poverty

## **CONCLUSION**

There is a dramatic transition in the global economy taking place today. The globalization movement, which involves new economic world order and trade arrangements, has put

developed and industrialized nations in the forefront of commerce. Then there is the shift taking place from the oil-powered economy to the technology-driven economy followed by digital economy. In both movements, the wealthy economies and affluent sections of society in these economies will control the origination, maintenance and continuous growth in the decades ahead. The marginalized poor, caught in the web of these activities, are not even aware of the subtle impact of ICT and its advancement into the digital economy. What the poor understand is oil – as it influences their everyday life at home, at work, in the farm or factory floor. They know it when lamps are lighted; when cooking stove heats water; when their three-legged vehicles spurt in the street. But the concepts of digital economy and ICT are beyond their grasp. This is their opportunity – if we want to open up a corridor of empowerment for them. Otherwise, the poor will suffer even worst, resulting in a potential hot lid of social unrest. We have seen how desperate poor people can seek revenge on their masters if the playing field is not leveled to give them opportunity. If left to market forces of digital economy, the poor will be left behind in light years, creating tension and potential disturbance to society. ICT can open corridor of opportunity – it is the key to empowering the poor and disadvantaged to gaining information to shape better decisions to determine their own destiny. ICT for the empowerment of people, people, people - this is the new economy of our new times. In conclusion, the proposed Institute of Information and communication technology for poverty reduction(AIICTPR)can play a lead role in achieving this dream in our generation and facilitate realization of the goal of empowerment of the poor for their effective participation in digital economy.

Internet will impact upon all forms of communications including telephones. It is expected that millions of consumers will be using Internet telephones this year. At the same time the dot.com economy is wildly flourishing. In this scenario, poverty has become more and more a global challenge and requires global communications strategies to address the same. Through information technology, large numbers of people, wherever they are and whatever the time can be provided much-needed educational services. Similarly, the skills development programs, as per demands of new digital economies, can be conducted to equip the poor to face these challenges and seize opportunities for improvement. Information technology can also be used to assist in strengthening good governance through increased participation by the poor in key decision-making activities. IT can also be effectively used in awareness raising of problems and risks relating to health and disease which are spreading today such as AIDS. Latest developments in herbal medicine and diet habits can be quickly conveyed to the poor to help them cope with diseases within their means. Finally, IT can help develop a cohesive global world where people with different religions, cultures, languages, and sociocultural histories, can, attitudinal and behavioral changes can live in peace and democracy.

#### **BIODATA and CONTACT ADDRASSES OF AUTHOR**

**Dr. Motilal Sharma** retired from the Asian Development Bank as Principal Education Specialist in the year 2002 after completing his service as an International Civil Servant for more than 19 years. Currently he is Principal Advisor of Worldview International Foundation , Sri Lanka and Chairman of Worldview Hindustan Foundation , India . He was born in Sardar Shahr, Distt. Churu, Rajasthan ( India ). He completed his Ph.D. degree in Education (M.S. University of Baroda, India); M.Ed. and M.A. in Political Science, (University of Rajasthan, India); B. Phil. in Educational Technology (University of Birmingham, UK); and a course in Non-formal Education (Michigan State University, USA). He started his career as primary school teacher and rose to the position of University Professor. He has teaching experience of about 20 years together with cumulative experience of more than 19 years in operational activities of the Asian Development Bank (ADB) as an International Civil Servant as well as work at the regional and international circles in education and training, especially as they apply to poverty reduction and sustainable development. Prior to joining ADB in 1983, he taught postgraduate courses, and guided research at the post-graduate and doctoral levels, in the field of education. He has published five books and more than 100 professional papers in

reputed journals of education. Thirteen of his doctoral students were awarded Ph.D. degrees in education.

While at ADB he has been mission leader over a period of about 19 years in multi-million dollar project preparation, administration, and evaluation in more than a dozen Asia-Pacific countries. As a mission leader, he has led teams of professionals of the highest competence from developed and developing countries, and donor agencies, as well as dealt with senior officials in various developing member countries of ADB. As part of his duties in processing of ADB'S multi-million dollar projects he has worked in path-breaking areas such as girls/women's education, poverty reduction, beneficiary participation projects, vocational/technical and skills development, Information and Communication Technology (ICT) and lately in peace development education.

He has prepared, implemented and worked as a resource person in international conferences, and have been acknowledged as an international expert in his professional field. In addition, he has done pioneering work in the areas of poverty reduction and ICT, and has been acknowledged internationally as one of the few global experts on open learning systems and distance education. The significant regional seminars he was responsible for, have included (i) Regional Seminar on Distance Education, Bangkok, 1986; and (ii) Round Table Conference on Distance Education for South Asian Countries, Islamabad, 1989, and several national seminars as part of project preparation and project supervision. The Regional Seminar on Distance Education, 1986, was a landmark event in the field of distance education as many of its resolutions were implemented by several DMCs of ADB and its two volume proceedings , were widely circulated and included in the ERIC's computerized system to make the same accessible throughout the world. He has participated as a keynote speaker and resource person and contributed technical papers in several international conferences and regional workshops. In addition, at ADB he published more than 30 professional staff/resource papers on various aspects of education development. Many of these were delivered at international and national conferences including the conference on "Using Technologies for Education and Training: An Economic Perspective" in the World Bank. He has been listed each year in the "Who's Who in the World" publication published in USA every year since 1994. Now he is working as an International Consultant and currently involved in World Bank education projects.

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