



Role of Knowledge and Information in promoting Sustainable Development

Minj Hemant Prakash

Research scholar, Center for Indigenous Culture, Central University of Jharkhand, Ranchi, INDIA

Available online at: www.isca.in

Received 28th January 2013, revised 31st January 2013, accepted 10nd February 2013

Abstract

Sustainable development is a growing concern of the modern world. Most of the present generation problems are the result of technological and scientific successes. Scientific mode of production and consumption has led to the problem of unsustainable development because of the ignorance of morality and ethics of development as well as sustainable traditional knowledge. Modern scientific knowledge is trying to find a solution for the sustainable development but at the same time we cannot ignore the fact that the Traditional Knowledge is equally important to supplement the scientific knowledge. Sustainable development is an ecological problem so, the knowledge and people who are close to the nature will have potential solution and their involvement must come into policy discussion. This paper further discusses about the importance of Modern and Traditional Knowledge in sustainable development and how the available information is being disseminated through the various Information and Communication Technologies (ICTs) in India.

Key words: Sustainable development, Scientific, Traditional, Knowledge, Information.

Introduction

The human being is facing serious challenges of environment protection and sustainable development in the modern world. Changes brought by the Industrial Revolution (1750-1850) in agriculture, manufacturing, mining, transportation, and technology had a profound effect on the human society. We find the solution of eradicating poverty, food security, living standard, etc. in the modern concept of economic development but on the other hand we see that our environment is paying the price for it. It is to be noted that high economic growth rate is necessary to eradicate social illness but the degradation of the environment and natural resources ensures that we cannot continue fast economic growth. Man-made activities have added significant quantities of greenhouse gases (GHG) to atmosphere. These GHGs are important for maintaining sustaining climatic conditions on earth by absorbing solar radiation to make earth surface warm otherwise it would have been cold and unable to support life. A consistent increase of GHG in the atmosphere year after year has posed serious threat to human society and its sustainability. Consequently, increased temperature of earth is posing a potential threat to change the climate. Rapid industrialization has changed the concept of the use of natural resources to exploitation of natural resources.

Many developing countries rely on their natural resources as their real source of income. For example, in Nigeria, oil revenues have historically provided about 95% of foreign exchange earnings and 85% federal revenues. It is clear that, economic growth of developing countries like Nigeria is directly related to exploitation of natural resources. Therefore, proper utilization and conservation of natural resources are necessary for developed as well as developing nations for long lasting sustainable economic growth¹. Conservation along with

exploitation may sound contradictory but it is true and need of the hour. In order to sort out the problem, the concept of sustainable development came up.

The concept of Sustainable Development became a common theme in the debates on development strategies; ever since the famous Brundtland Commission introduced this concept in its Report in the mid-1980s. Brundtland Commission Report defined sustainable development as that development which “meets the needs of the present without compromising the ability of further generations to meet their own needs”. As per the definition of sustainable development, it is talking about two basic concepts, intra-generational and inter-generational equity². However, sustainable development is having a major focus on intergenerational equity. To ensure intergenerational equity, human being should acquire and disseminate set of relevant knowledge, information and practices which will ensure sustainability of present and future generation.

Recognizing the importance of vast set of knowledge and information possessed by human society; this paper analyses the importance of traditional knowledge as well as modern scientific knowledge in finding feasible solutions for sustainable development.

Importance of traditional and modern scientific knowledge in sustainable development

Proper information and knowledge at the right time and right place can help to find out a feasible solution for sustainable development. As per UNESCO (1982), assimilation of scientific and technological information is an essential precondition for development³. It has been widely recognized that sustainable economic growth cannot take place without a strong scientific

science base. Most of the present generation problems are the result of technological and scientific successes of modern science. Scientific success in nuclear power, agriculture, water consumption, use of forest resources, etc. has become a part of human necessities and it is driven strongly by market force. Unsustainable mode of production and consumption has led to the problem of unsustainable development because of the ignorance of morality and ethics of development as well as sustainable indigenous knowledge. Scientific research and development is necessary to understand the scientific aspect of technology and resources.

In search of modern scientific knowledge as a solution for sustainable development, one should also remember that traditional knowledge which exists within communities is equally important. Traditional knowledge (TK) generally refers to the long-standing information, wisdom, traditions and practices of certain indigenous peoples or local communities⁴. Traditional societies in many cases have built up knowledge over long periods about changes in the environment and have developed elaborate strategies to cope with the changes. However, traditional knowledge systems in mitigation and adaptation have for a long time been neglected in many developmental policy formulation and implementation. Traditional and indigenous peoples, who have survived over long periods to many kinds of environmental changes, including climate change, may have valuable lessons to offer about successful and unsuccessful adaptations which could be vital in the context of sustainable development. For example, Aymaran indigenous peoples of Bolivia have been coping with water insecurity and scarcity over centuries. In order to collect rainwater in the mountains and pampas they have developed a sophisticated system of rainwater harvesting by way of constructing small dams. This traditional technique of rainwater harvesting has proved to be vital not only to people but also to livestock in times of droughts. Additionally, it has been found that these water reservoirs serve as thermo-regulators of humidity and help reduce the risk of skin cancer as they diffuse harmful sun rays. One of the remaining hunter-gatherer communities in East Kalimantan is the Punan people. According to the phases of the moon, they decide upon activities such as planting agricultural and tree crops, clearing cultivation areas, hunting etc. But with the changes of climate these lunar signals may no longer coincide with the favourable times for these activities and the Punan may be misled into taking their decisions⁵.

Traditional knowledge holds the basis of human relation with nature but it doesn't mean that it is the only solution to the modern day's problem. Even, modern science alone is not sufficient in finding the solution of sustainable development. Here, the role of modern science comes into play to do further research on TK in making a part of the main discourse of sustainable development.

The importance of TK has been realized in many international forums. The Rio Declaration, the Convention on Biological

Diversity, the documents coming out of the World Summit on Sustainable Development, and a whole host of other international instruments and forums have emphasized the current (and future) relevance of TK. Institutions such as the World Intellectual Property Organization, the International Labor Organization (especially Convention 169), the Food and Agricultural Organization, the World Health Organization, UNESCO, UNEP, UNDP, the UN Commission on Human Rights, and a number of other international organizations have similarly given its importance. The World Conference on Science, organized by UNESCO and the International Council for Science (ICSU), in its Declaration on Science and the Use of Scientific Knowledge, explicitly recognized the importance of TK and the need to respect and encourage its use for various forms of human endeavor⁴.

It is particularly instructive that the United Nations Committee on Trade and Development (UNCTAD), which essentially deals with international economic relations, has also given TK considerable importance. Since 2000, when its member States decided to address the issue of the use and protection of TK, it has promoted work on the subject, including bringing together 250 experts from 80 countries in October-November 2000, to deliberate on the subject. The book coming out of that has a series of articles dealing with diverse aspects of the role of TK in human welfare and sustainable development⁴. Services like food distribution, education, climate forecasting and warning, and community care also continue to be performed through institutions using traditional means, and in some cases even modern institutions of the government or corporate sector are discovering the value of this. In a Food for Work program in Nepal, significant losses of food in the distribution system were reduced when the program switched to the use of local technologies and networks. Rates of maternal mortality in childbirth were reduced significantly when traditional institutions (including the traditional birth attendant) were used in combination with modern communications⁴.

Traditional knowledge and modern scientific knowledge have been acquired by human being by their continuous interaction and learning from the different attributes of nature. Hence, they should be seen as an opportunity to explore solution for the modern problem.

The role of ICTs in promoting sustainable development: Indian context

Sustainable development is more complex form of development because it doesn't only depend on the resources utilized and equity but also depends on the people's culture, choices, accessibility, availability, etc. Particular sets of developmental practices associated with the particular sets of information and knowledge. Hence, it is necessary for a society or an individual to have enough information to make further choice and incorporation. One of the major reasons for the economic disparity in urban and rural or haves and haves not's is

inequitable access to information and knowledge. Rural isolation and deprivation can negatively impact growth and certainly growth cannot be sustainable unless it is inclusive. This is especially true of a nation like India where more than 70% of the population resides in rural areas and is largely engaged in low productivity agriculture and allied activities⁵. Even after sixty five years of independence, rural India is characterized by severe poverty, illiteracy, lack of health services, lack of employment opportunities and overall backwardness. Rural areas are often regarded as information-poor and information provision has always been a central component of rural development initiatives. Keeping in view these predominant features of rural India – Information and Communication Technology (ICT) has earned its reputation to be the key to information-flow for intensifying the development efforts in rural India and is being considered as an imperative strategy for achieving the goal of sustainable rural development⁷.

ICTs should not only be available and affordable, but must also deliver relevant and usable content to the target beneficiaries. The latter must in turn be able to access, assimilate and make meaningful use of the services and content delivered through ICTs. Both content and capacity building are essential if ICTs are to achieve their promised impact on rural development. There would be a relatively small percentage of the rural population who would benefit from connecting without much else being done. These are the literate, employed/self employed persons who can understand and benefit from the available English language content. However for the vast majority in rural India, language if not literacy would be a major barrier. At present, the overall literacy rate in India is 75% and rural literacy stands at 68.9%. Even if literacy is not an issue, relevant content would need to be available in regional languages⁶.

ICT plays an important role in sustainable development in two ways, by increasing access to educational material on sustainability (e.g. via distance learning, educational networks and databases) and secondly, by increasing interaction through communication technologies (telephone, mobile, newspapers, magazine, etc.) to promote sustainable development. ICTs also serve as an instrument of awareness creation and feedback giving rural people a voice in the nation's sociopolitical life. ICTs can act as a channel of delivery of e-Government services including health and education. Thus bridging the digital divide also bridges the overall infrastructural gap and addresses other constraints faced by rural areas⁶.

It is interesting to note that the inventions of information and communication technologies (ICT) like, printing press, TV, computer, etc. which had boosted the expansion of the industrialized economy is now directing the whole system to go for sustainable development. In the past decade, India has seen a telecommunications revolution in urban as well as in rural areas. The growth of rural Tele-density has risen to 36% as on 30th August 2011 from a mere 1.7% in 2004. In fact, today rural

Tele-density is growing at a much faster rate than urban Tele-density. At the beginning of 2011, there were 282.29 million rural connections (most of which are wireless), as compared to a mere 4.84 million (only landline) phones in the year 2000⁶. Recognizing the potential role of telephone communication in the field of development, Department of agriculture and cooperation, Govt. Of India launched Kissan Call Centre scheme on 21.01.2004 with an objective to deliver knowledge and information exactly as per the requirements of the farming community at free of cost⁸. The Call Centres can be accessed by farmers all over the country with common Toll Free Numbers. This system would also help keep a record of what is being delivered to the farmers in terms of knowledge and information.

Short term and long term courses offered by various universities and institutions are also playing a huge role in equipping students with the issues of sustainable development. In rural area where educational infrastructure and accessibility is poor and attending traditional schools is difficult or almost impossible, Open and Distance Learning (ODL) can be used to bring education to the doorsteps. ODL if used in the right format will surely help in overcoming poverty and making the women financially independent⁹. For example, IGNOU is offering a number of relevant courses which can equip rural people with the whole aspects of sustainable development and thereon they can bring things into practice.

Community Radio (CR) is also a potential medium for reaching various communities with specific objectives. Community radio means radio broadcasting with the objective of serving the cause of the community in the service area by involving members of the community in the broadcast of their programs. It affords a unique advantage of receiving transmissions through low cost battery operated portable receiving sets. It is confined to a small geographical area. It is a radio station operated in the community, for the community, about the community and by the community. It can be managed by a group of people, such as farmers, fisher folk, artisans, women, youth etc. It serves a community, which uses common resources for livelihood, has common development issues and concerns, which are relatively localized, nevertheless connected to national and regional development goals. CR presents opportunities to participants to share their personal experiences in relation to development policy and programs and attempts to facilitate efficient implementation of programs relating to health, nutrition, education, sanitation, women empowerment, agriculture etc¹⁰. Radio media has a number of attributes that makes it an effective tool in promoting women's participation in decision-making processes and governance structures. It is not controlled corporate and government interests which allows it to speak to issues independently. Women should be encouraged to bring their vision and leadership, knowledge and skills, views and aspirations into the development agenda from the grassroots to international levels. Women should be assisted in conflict situations and their participation in peace processes. Community radio uses local language that makes the information and the

discussions on health issues accessible to local communities. It transcends literacy barriers, which allows and encourages a great number of women to use it as their primary source of information¹¹.

The Human Resources Development Ministry and the Indira Gandhi National Open University (IGNOU) with the help of Prasar Bharati launched Gyan Vani CR in 2001 operating initially through Allahabad, Bangalore, and Coimbatore FM stations in India on test transmission mode, with the network expected to expand to a total of 40 stations. It operates as 'Media Cooperative' with the day-to-day programs being contributed by various educational institutions, NGOs, Government and semi-Government organizations, UN agencies, Ministries [Agriculture, Environment, Health, Women and Child Welfare, Science and Technology], besides National level Institutions (NCERT, NOIS and State Open Universities). Apart from it there are many CR operating in various parts of India like, Our Voice (Namma Dhvani) of Karnataka, Radio Namaskar, Micavaani CR, Holy Cross CR, Sangham CR, Sivanthi CR, Delhi University CR, Uttarakhand CR (Kumaon Vani), 'Jago Mumbai' CR, etc. It is now necessary to create significant awareness through CR among rural population in respect of socio-economic development programs being implemented by the Government and public sector banks, namely National Rural Employment Guarantee Scheme, Swaranjayanti Gram Rozgar Yojana, National Rural Health Mission, Integrated Child and Women Development Scheme, National Livelihood Mission, Self-Help-Group Bank Linkage Program, Pension and Insurance schemes, proposed food security etc¹⁰.

Information and Communication Technology (ICT) is in fact playing a big role in dissemination of knowledge and information about the sustainable development but here, we have to understand that it is only a medium. The whole content provided by the disseminating agencies can have biases or errors. Hence, they have to be very careful in selecting and promoting relevant information. If relevant information goes to the people then they will have a sufficient rational approach in selecting and implementing sustainable development practices.

Conclusion

Sustainable development issues is not a machinery problem, rather it is an ecological problem. We have to respect all the information and knowledge possessed by human society whether it's scientific or traditional knowledge. Regional difference will definitely have different applicability in congruence to local or traditional knowledge. So, they must be seen as a valuable body of knowledge which can be improved further by incorporating modern scientific knowledge. Assimilating Traditional and modern knowledge require very serious and honest involvement of practitioners, thinkers and

policy makers. It is encouraging to note that many international organizations and forums have taken Traditional Knowledge seriously in their discussion. Traditional knowledge is mostly remains with the knowledge holders and modern scientific knowledge is mostly remains with the urban and semi urban people. This inequitable distribution of information and knowledge in rural and urban is still very large. Various efforts have been made through Information and Communication Technologies (ICTs) to reduce the gap but ICT is only a medium. Disseminators, policy makers, intellectuals, etc. have to be very careful while disseminating information through ICTs so that, information gets accepted in the different communities without harming their culture, knowledge and requirements.

References

1. Civil Service Chronicle (CSC), The indispensability of sustainable development, environmental issues, IAS 2012 value addition-3, civil service chronicle, New Delhi, 55-56 (2012)
2. Kates, Robert W., Thomas M. Parris, and Anthony A. Leiserowitz, What is Sustainable Development?: Goals, indicators, values, and practice, *Environment: Science and Policy for Sustainable Development*, Routledge, 47(3), 8-21 (2005)
3. Barbara Kirsop, Leslie Chan, Subbiah Arunachalam, Access to Scientific Knowledge for Sustainable Development: Options for Developing Countries, *Ariadne*, 52 (2007) http://www.ariadne.ac.uk/_/issue52_/kirsop-et-al/ Accessed on January 10, 2013
4. Kothari Ashish, *Traditional Knowledge and Sustainable Development*, International Institute for Sustainable Development, Canada (2007)
5. Macchi Mirjam, *Indigenous and traditional peoples and climate change: issues paper*, International Union for Conservation of Nature, Switzerland (2008) http://cmsdata.iucn.org/downloads/indigenous_peoples_climate_change.pdf Accessed on November 15, 2012
6. Gulati Archana. G., Role of ICTs in Rural Development, *Kurukshetra*, Publication division, New Delhi, 60(3), 3-7 (2012)
7. Hazra Anupam, ICT: A Catalytic Intervention for Empowering Rural India, *Kurukshetra*, Publication division, New Delhi, 60(3), 9-11 (2012)
8. Digital RTI Mission (DRM), *Kisan call center*, (n.d.) http://www.digitalrtimission.com/uploads/3.KISSAN_CALL_CENTRE.pdf Accessed on November 20, 2012
9. Swamy Dr. Raju Narayan, Open learning as a tool to promote gender equality in rural India, *Kurukshetra*, Publication division, New Delhi, 60(3), 34-40 (2012)
10. Sharma Arpita, Harnessing potential of community radio for rural advancement, *Kurukshetra*, Publication division, New Delhi, 60(3), 19-23 (2012)
11. Siva Balan K.C. and Selvin Jebaraj Norman, Community Radio (CR) – Participatory Communication Tool for Rural Women Development - A Study, *I. Res. J. Social Sci.*, 1(1), 19-22 (2012)