

Quest For Sustainable Development Through Rural Innovations – A Study On Pallesrujana

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Abstract— Sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. It is the attainment of a balance between environmental protection and human economic development, and equity in development and sectoral actions across space and time. It is possible through integration of economic, social and environmental approaches towards development. Sustainable development recognizes the interdependence of environmental, social and economic systems. According to CK Prahlad, The quest for sustainability is transforming competitive landscape and is forcing the companies to change the way think about products, processes, technologies and models, and the key to progress is innovation. In developing countries several traditional practices, that are sustainable and environment friendly, had become part of their life. But mostly these practices have been replaced modern but unsustainable practices and technologies. Integrating highly sophisticated modern technology with traditional practices sometimes produces the most culturally-suited and acceptable solutions, which also make them more viable. Therefore recognition at the policy level, of the significance of diversity, and the need to preserve it, is an important precondition for sustainable development. Pallesrujana, which means creativity in rural people, is a Non-profit organization that is focused on rural knowledge and creativity. This paper gives an overview of the

organization and few innovations, which brought in to limelight by Pallesrujana, which are viable and sustainable. Established in 2005, the organization has been nurturing and promoting the strength of rural areas. It scouts and documents the creativity and traditional knowledge of the grassroots innovators in the villages of Andhra Pradesh. This knowledge is processed in the formal system for validation, reengineering, value addition, patenting, incubation, business development, commercialization, and so on. Through highlighting the rural innovations and traditional knowledge to society, Palle Srujana is working for sustainable and balanced growth of the nation.

Keywords— Sustainability Development, India, Innovation, Palle Srujana

I. SUSTAINABLE DEVELOPMENT
You must be the change you wish to see in the world

Mahatma Gandhi

The realization of economic progress was linked to the physical quality of life index, or more complex and comprehensive Human Development Index. But there is a close relationship between economy and environment and the environmental costs of various development strategies has

recently led to the concept of 'sustainable development' which endeavours to incorporate environmental concerns in development concepts (Ninan, 1994). The term sustainable development has a broad meaning and has a number of definitions available. The widely accepted definition of sustainable development was given by The World Commission on Environment and Development (WCED). It defines Sustainable Development as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition captures the human concerns about environment, future and equity. It also seemed to be flexible and elastic enough to accommodate various ideological stances and development paradigms. The interdependence among environmental, social and economic systems is recognized by sustainable development. It promotes the equality and justice through people empowerment. In today society success is not simply measured by the profit, but economic prosperity, environmental stewardship and corporate social responsibility. Sustainable development fulfils the business needs that include cost and liabilities reduction, brand image and reputation enhancement and encouraging innovation and stimulating growth and strengthening communities. (www.dow.com 1995-2004). The principles of sustainable development include fulfilment of human needs for peace, clean air and water, food, shelter, education and useful and satisfying employment. Environmental issues are important, such as ecological integrity through careful stewardship, reduction of wastes, and protection of diverse species and ecological systems. Sustainable development focuses on local people through public involvement in the definition and development of local solutions to environmental and development problems. Achievement of equity is attained through the fairest possible sharing of limited resources among contemporaries and between our generation and that of our descendents. The definition of sustainable development relates conventional economic and social objectives that are part of development and incorporates long-term view that considers environment. There are four factors, which determine sustainable development, are Natural capital, Physical capital, Human capital and Social capital. Natural capital and social capital have generally been undervalued because both are public goods or club goods (i.e. goods that are indivisible but exclude non-members) (Pretty, 1998). Environmental sustainability includes improvement of essential ecological processes, biological diversity, and the natural resource been. Environmental sustainability is important for survival, health and social life (Veron, 1999). Life depends on nature for food production, water, energy etc. In developing countries the connections between health and

environment are particularly strong because growing agro-industrial pollution and risks added to the environmental health problems rooted in underdevelopment (Smith, 1997). Sustainable development is about improving the welfare of humankind, and if environmental degradation reduces this, it is a matter of concern. According to Redclift, 1987, for sustainable development to become a reality, it is necessary for the livelihoods of the poor to be given priority. From the perspective of developing countries and the poor, sustainable development involves finding solutions to problems or processes that threaten sustainable livelihoods like poverty, fuel, and fodder scarcity, and other forms of degradation etc. The poor depends on natural resources for their livelihoods and environmental degradation threatens these livelihoods. Development paradigms which seek to reduce poverty, ensure access to basic needs, and also promote sustainable use of natural resources, hold better promise of success than those that seek to distance the poor from their natural environment (Ninan, 1994). There's no alternative to sustainable development (Pralhad K). It's a misconception of companies that Even so, many companies are convinced that the more environment-friendly they become, the more the effort will erode their competitiveness. They consider that it would add to costs and will not deliver immediate financial benefits. The CEOs of the companies feel that making their operations sustainable and developing "green" products places them at a disadvantage vis-à-vis rivals in developing countries that don't face the same pressures. At the same time suppliers may not provide green inputs or transparency. They also believe that sustainable manufacturing would demand new equipment and processes, at the same time customers would not pay more for eco-friendly products during a recession. Most of the Executives started treating the need to become sustainable as a CSR and started divorcing from business objectives. But most of the companies realised the importance of sustainable development. And the quest for sustainability is starting to transform the competitive landscape, which will force companies to change the way they think about products, technologies, processes, and business models.

The key to progress, particularly in times of economic crisis, is innovation. It is important for the companies to know which products or services are most unfriendly to the environment and the ability to generate real public support for sustainable offerings and not be considered as "green-washing." (C K Prahalad)

INNOVATION

Innovation is the successful exploitation and commercialization of new ideas (Pittaway et al. 2004). Innovation covers all the technological, organizational and

marketing processes. It is a part of development and commercialization of new products and services that provide value to customers. Innovation occurs at four levels in the organization viz. Product level, process level, organizational level and business level. Innovation cannot be always at high-tech levels, it can be done at low technology levels also. Sustainable innovation is a process where sustainability considerations (environmental, social, financial) are integrated into company systems from idea generation through to research and development (R&D) and commercialisation. This applies to products, services and technologies, as well as new business and organisation models.

SUSTAINABLE DEVELOPMENT – INDIA

The concept of sustainable development in India is as old as its civilization. It is practised as a part of the culture since centuries. The great philosophers like Buddha, Mahavir, Mahatma Gandhi and Rabindranath Tagore believed in the concept of maintaining a healthy and close relationship with nature. India strongly believes in the Oriental philosophy of being friendly with nature. Worshiping the nature and believing the natural resources like earth, water, air as valuable resources is a part of Indian culture (Atmanand, 2009). Poverty and degraded environment are closely related in the places where the people depend on natural resource base for their livelihoods (S. Bahuguna). The education that promotes functional literacy, livelihood skills, understanding of immediate environment and values of responsible citizenship is a prerequisite for sustainable development. It is the fundamental right of every child, without any discrimination, to avail that type of education. Even now several traditional practices which are sustainable and environmental friendly are part of the daily life in countries like India. There is a need to encourage these sustainable practices rather than replaced by modern but unsustainable practices and technologies. (S. Bahuguna). The occupational, cultural and economic heterogeneity of Indian population is on the whole a major asset in making development sustainable. In Approach paper to 12th Five year plan, The Planning Commission noted that economic development would be sustainable only if it is pursued with a manner that protects environment. As the growth of economy accelerates these pressures are expected to intensify, and therefore there is a need to pay greater attention to the management of water, forests and land (Planning Commission 2007). Management of these resources would be effective when all the stakeholders participate. Strengthening of local bodies and democratic institutions leads to more sustained management of natural resources. It should not be forgotten that all the

members of society are the stakeholders of sustainable development. Women representation at local democratic bodies and making them effective and equal partners in the development process is mandatory. Those social groups that have been discriminated centuries together must be represented in local governance and need to be empowered to ensure that they are the part of effective and mainstream partners in development. Children are one of the valuable assets of the society as their development decides the fate of the society. It is the responsibility of the community to make children realize their potential, growing up healthy, enriching and fulfilling environment. The technologies that are used must be usable by and beneficial to the people of that particular area. It is better to upgrade and adapt the local technologies and skills to make them more efficiently. Local innovations and capacity building for developing and managing locally relevant and appropriate technologies must be encouraged and supported. Integrating highly-sophisticated modern technology with traditional practices sometimes produces the most culturally-suited and acceptable solutions, which also makes them more viable. This trend should be encouraged. There are many traditional systems, whose value and validity is to be recognised, are to be brought in to main stream of governmental thinking and policy. It is necessary to create appropriate mechanism for integrating these systems need to be created.

PALLE SRUJANA – QUEST FOR INNOVATIONS

Palle Srujana is the brainchild of Brig(Rtd.) P. Ganesham. He is an engineer from Osmania University. He served Indian army and awarded with Vishist Seva Medal by President of India. He is a specialist in armoured fighting vehicles and was responsible for many pioneering initiatives in the Army related to their design, production, sustenance, engineering support and modernization. He started the Andhra Pradesh wing of "Honeybee". Honey Bee is a network formed 20 years in Gujarat by Padmasri Prof. Anil K Gupta. Nature provides abundant knowledge and those who live in nature absorb it easily. The leverage such knowledge for the benefit of human comfort, improve the quality of life, preserve biodiversity, and above all maintain harmony with nature. The traditional knowledge and creativity that lies with villagers are simple and cheap. As they use local available resources. They are creative and sustainable. This knowledge inherits and passes to next generations. It is the duty of government and NGOs to document and preserve such knowledge. The knowledge holders should be awarded and rewarded, their knowledge should be patented so that the legal rights thereof should be bestowed on them. Honeybee has been established

with these aspects as its main objectives. This organization scouts and searches these knowledge holders and brings their knowledge in to main stream for recognition and disseminates it for the benefit of the society. Brig. Ganesham started Palle Srujana to support his activities in Andhra Pradesh. The major objective of Palle Srujana is to scout in the districts of Andhra Pradesh, especially remote areas. Every year they conduct "Shodh Yatra" in remote areas to bring out the traditional knowledge and creativity of rural folks. Brig. Ganesham organized "Shodh Yatra" in Vizag district in 2009. Along with "Shodh Yatra" Brig. Ganesham is promoting rural creativity and empowering the rural people by bringing their valuable knowledge in to formal world. "Gyan Shodh" – a social internship organized by Palle Srujana to bring the awareness of village knowledge among youth. These yatras are organized every year. The members and active participants in Palle Srujana are more energetic and enthusiastic in searching for innovation. These days Palle Srujana has become innovative partner in engineering colleges in and around Ranga Reddy district and Warangal. The following are the four innovations selected for the study that promote sustainable development.

1. **Mr. Vikram Rathod (Adilabad Dist.)** has studied up to 5th class. He owns four acres of land and grows cotton. Once he has sown paddy. Due to lack of water, it has dried up. He doesn't own electric diesel pump. He could not afford one. He bought an old bicycle and attached it to motor with a number of belts and pulleys. Once the cycle is pedalled, the pump started working and the water was pumped in to the fields. In a remote location where there is no power, this idea is a great sustainable device for irrigating fields. The innovator honoured by president of India in 2003 for his outstanding innovation which helped his tribal community.
2. **Chandrasekhar (Chittor Dist)** was pained to see the mosquitoes are hurting humans and animals and affecting their health and productivity. He believed that Nature has a solution for the mosquito problem. A group of young enthusiasts from the village karakollu under the guidance of Chandrashekar searched for a clean plant in Nallamala forests for three years. Tella Jumki (*Passiflora foetida*) was traced for its toxic nature. The juice of the leaves of this plant was then used on larvae and mosquito. The result was instantaneous and amazing. This process is is environmental friendly and is purely local. This idea was validated by SRISTI lab and the innovation

is processed for patent. Innovator went on to find out various other properties of the leaves and used them with some processing as pesticide, insecticide, blackening the hair, pain remover, for burns, for effective metal removal etc. This innovation was demonstrated at NAARM (National Agricultural Research and Management Institute) Hyderabad and NIF, Ahemdabad. The idea is under incubation and serious efforts are being made to find entrepreneurs for marketing the product.

3. **Payam Seetharamaiah (Bhadrachalam)** does farming in the small land of 2.5 acres he owns. His crops were affected by pest and the yield was low. Being poor he could not afford chemical pesticides. He and his wife noticed that one corner of their field was not affected by the common rice hipsa pest. They investigated and concluded that the tree in that corner could be the reason. They both planted branches of that tree in the entire field and that worked. The tree is known as Kodisa (*Cleistanthus collinus*) is a toxic plant and its vapours are poisonous. These vapours and few drops from the leaves carry poison to the root of rice and kill pest. They also found that the bark of the Kodisa tree can be applied as paste on wounds of animals and found to be an effective treatment. This sustainable solution to the poor farmenrs in remote area has received an award in the International Farm Agricultural Development Conference held in Rome, Italy during March 2000.
4. **K. Rajamallu(Bhoopalapally)** is a farmer and studies up to seventh class. He observed that by avoiding chemical pesticides and opting for herbal pesticides and opting for herbal pesticides, the farmers can save money and reduce harm to the crops and environment. He found that the fruits of "Vishamusti" tree are poisonous and used it as herbicide very effectively. Utmost case has to be taken while preparing the herbal solution. Children have to be kept away. Only 5 kg of these fruits are sufficient for spraying an acre of cotton crop. Sustainable, cheap and locally available herbicide needs to be encouraged and the innovator rewarded suitably

CONCLUSION

Necessity is the mother of invention. The innovations identified by Palle Srujana are mostly from those people who are either sufferers or very close to sufferers. All these innovations are by illiterates/barely educated people. But these innovations are environmental friendly and uses local resources. The cost of such innovations is bare minimum. There are some innovations, like Asu machine for weavers, Remote for all households, become commercially successful. These innovations are documented, disseminated and abstracted by Palle Srujana for sustainable development. Sustainable development ensures the well-being of individual by integrating social development, economic development, and environmental conservation and protection. The innovations of Palle Srujana are fulfilling all these criteria.

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