

Innovative Bottom-up solutions for Sustainable Development at Grass-root level

Ch Siddharth Nanda and Dr. Ankita Chakravarty Bhattacharya

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ABSTRACT: In this cut-throat competitive world today every organization is striving hard to achieve sustainable competitive advantage, where innovation and unique differentiation are the need of the day. Jack Welch had rightly said that an organization's ability to learn and translate that learning into action quickly ensured the ultimate success.

The present article aims at bringing to focus the concept and importance of Innovations at grass-root level in India; through few case studies and examples.

Keywords: sustainable competitive advantage, grassroots innovation, differentiation, rural market, business opportunities.

I. INTRODUCTION:

Innovation is the creation of better or more effective products, processes, services, technologies, or ideas that may be accepted by markets, governments, and society (Wikipedia). Innovations are vital for a sustainable growth of the organization and the nation as a whole. It is the "embodiment, combination or synthesis of knowledge in original, relevant, valued new products, processes or services". In today's competitive world where every one is striving hard to prove a point of better differentiation proves a point in it.

The vast untapped potential of India can be captured through the increase in the level of innovation and thereby creating wealth for the development of the nation. This is done by innovating for the economically weaker section of society and encouraging innovation at the grass root level. The fragmented course of economic globalization has paved the way for fresh opportunities and challenges for companies and businesses in India. The necessity to innovate, mostly driven by both national and local opportunities, severe competition and pioneering technology measures and advances has led to innovation. In order to reap the benefits of an increasing market for innovations, it is important that the potential is harnessed to the maximum

capacity for achieving sustainable social and economic growth transformations. Innovation is decisive for escalating growth patterns and will also help to reduce the poverty levels across various sections of the community. By application of technology and knowledge, new ways and processes, products can be developed to meet the requirements of all the sections of the Indian society.

Few Case studies and Examples of Grassroots Innovations

- **Solar Mosquito Destroyer:** It is an eco-friendly device to trap mosquitoes which does not use any electricity or harmful chemicals. The smell from the septic tank is used to attract the mosquitoes and when the mosquitoes get trapped they cannot get out and the direct sunlight exposure destroys the mosquitoes by generating solar furnace. It can be used with Biogas sources like Septic tank, Gobar gas tank, Slurry tank, Drainage tanks, Water tanks etc. It is an outdoor device which weighs nearly 1.5 kg and is highly portable.
- **Manual Milking Machine:** Safe milking of cows/buffaloes was a concern of Raghav Gowda (Karnataka) and it is also a requirement across rural India and this product is an efficient step in that direction. So he developed a machine which is a low cost, manually operated device that helps farmers to milk the animal hygienically and also reduces drudgery in the process. The machine has simple controls and can be easily operated by women as well. The creation of suction and low vacuum makes it suitable for other applications also. NIF has been giving marketing support to the innovator. As a result, this machine has also been sold to customers in Philippines, Uganda and Ethiopia apart from India.
- **Motor Cycle Mounted Sprayer** By Ganeshbhai Dodiya Bhavnagar: To overcome the problem of labour shortage the innovator has devised an insecticide sprayer mounted on a motorcycle. This sprayer is powered by the

engine of the vehicle. As the motorcycle is driven between the crop rows, the pump sprays pesticides on the crop. A student of IIT Bombay tried to improve the design of the sprayer but by taking power from the wheel instead of engine, he disappointed the innovator. Further work needs to be done to improve it. He won a Consolation Award in NIF's Third National Competition for Grassroots Innovation and Traditional Knowledge in 2005.

- The Multi Purpose Crutch: Rakesh saw that physically challenged people of his village faced acute difficulties while walking in sun, rain and in the darkness of nights. He realized that whenever they felt tired, and wished to sit down, they faced a lot of difficulty. Sitting on the ground was not possible as after doing so getting back on their feet would be quite difficult task. Also, it was difficult for them to see and walk in the dark. This made him think hard and he conceived the idea of a multipurpose crutch: a crutch, which can have a light and sound source, a sitting mechanism and an indicator also. He discussed the concept with his teacher Gopinath Pradhan of Gopalpur M.E. School and sought his help. A local carpenter made wooden frames for the crutch. It took Rakesh one year to add on the extra features and he had it ready in 2003. He had made a crutch that has a foldable seat, a headlight, an alarm and even an umbrella holder cum stand. Rakesh has been a bit of an inventor and in his efforts to develop innovative products he has been guided by his uncle while his father, though not against his experiments, urges him to do well in studies as well. The crutch incorporates multiple use options. It has light wooden frame fitted with a buzzer, a glow light, a seat and an umbrella stand. A user can walk with the help of this crutch very comfortably despite all the add-on features. There have been designs of seat being incorporated in crutches but in those cases, both the crutches have been involved in the seating mechanism while in Rakesh's model the seat along with other simple utilities have been provided in a single crutch. For the mute user Rakesh's model has a battery-powered buzzer, which can be switched on

while crossing roads; the buzzer can warn other passersby or any rushing vehicle. The upper part of the crutch has a light for night use and the lower part has a red indicator bulb. A 9-volt battery powers all these circuits. The user can unfold the seat to rest on and fold it back after use. The crutch has a side stand, which accommodates a foldable umbrella. When going out in sun or in rain, the user can open out the umbrella and use it. Even while being seated, the user can use the umbrella.

II. CONCLUSION:

It has been proved that rural India clearly plays an important role for the economic development and innovations at the grass root levels fuel this growth. The innovations that have been carried out at grass roots levels across India have become popular and are increasingly being employed to render enhanced results. It has been seen that innovations at the grass root level made by individuals not only improves economic aspect it also helps in generating self-employment opportunities and enhancing entrepreneur skills. Such innovations can work wonders when they get a continuous support from various organizations as they require formal infrastructure and understanding of market demands and global best practices.

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