

# **Innovation of a Farmer Transforming Social and Economic Living Conditions: A Case Study of Farmer Inventing Tractor**

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## **ABSTRACT**

*Necessity is the mother of invention. Although there is a relentless problem of lack of mechanical and scientific knowledge in countryside, rural people becomes grassroots innovators to solve their and community's problems by coming up with solutions. Rural Entrepreneurship is often conceived as innovation, creativity, the establishment of new activities, or some kind of novelty. The rural entrepreneurial ventures play a vital role in providing employment opportunities and income for the needy people in rural sector. It helps in sinking the exodus of people from rural to urban areas in search of livelihood and provision of employment opportunities. As the population pressure grows in the land-scarce and developing countries like India, the growth in the agricultural production cannot absorb the ever increasing rural labour force in farming employment. This leaves the rural non-farm sector in the form of rural SMEs (small and medium entrepreneurial ventures) to absorb those released from agriculture but not absorbed in the urban industries. The rural sector is best poised for a rapid expansion in the small and medium industry arena.*

*In the present scenario, majority of the rural natives are unaware of technological skills, marketing etc. Shortage of funding and raw materials, lack of proper infrastructure and communication facilities etc. are main difficulties faced by rural entrepreneurs. The*

*policy makers and executors have to find scope and space in the farm based entrepreneurial ventures to address to the daunting problem of unemployment in the country. The experiences of the people involved in such ventures needs to be cashed and used to make shift in the policy paradigm in the given context. The present paper is an attempt to analyze the case study of a rural entrepreneur of India and analysis is done about his life experiences leading to the advent of innovation, which have transformed the lives of rural agricultural community.*

## **Key words:**

Rural entrepreneurship; Innovation; Employment; Technology; Technical Knowledge

## **1. INTRODUCTION**

*Innovation is the specific instrument of entrepreneurship. The act that endows resource with a new capacity to create wealth.*

Peter.F. Drucker

Innovation is the mental process of creativity that leads to the creation of novel ideas and concepts that are functional, useful and in practical form. (Sullivan, 2008). It is defined that innovation is the application of better solutions that meet new requirements, expressed needs, or existing market

needs.(Maranvilli, 1992). It is a skilful way through which more effective products, services, technologies or ideas that are available to the markets, governments and society. It is the specific tool of entrepreneurs, the means by which they take advantage of change as an opportunity for a different business or a different service It is the capability of being presented, learned and practiced. (Frankelius, 2009). "Peter F. Drucker (2002)", has stated that *Innovation is the specific task of entrepreneurship, whether in an existing business, a public service institution, or a new venture started by a single individual in the family kitchen. It is the means by which the entrepreneur either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth.* It is clear that innovation is all the scientific, technological and commercial activities that are indispensable to put into operation of a new manufactured device, the investment in the design of new product – as a basis for economic transformation (Salge and Vera, 2012). According to the linear model of innovation, there are two sources of innovation: the traditionally recognized source is *manufacturer innovation*. This is when a person or agent innovates in order to sell the innovation. Another source of innovation is *end-user innovation*, when a person (agent or company) develops an innovation in order to fulfil his own needs because existing commodities do not meet their needs (Hippel,1998). The robotics engineer Joseph F. Engel Berger asserts that only three components are vital for innovation.

1. A recognized need,
2. Competent people with innovative ideas
3. Financial Assistance (Kalmarek, 2012).

Early models of innovation(both explicit and more importantly, the implicit mental models) presented innovation as a linear phenomenon where each aspect was considered modular and unconnected to other parts of the innovation process. The theory identifies two traditional approaches to innovation; “Technology push” and “Need pull”, where necessity becomes the mother of invention. According to the earlier approach, innovation is perceived as exogenous and driven solely by scientific advances. The later approach refers to innovation as a response to the expressed demands or need for new products and processes. Sometimes the 'push' will dominate, sometimes the 'pull' but successful innovation requires an interaction between the two. The innovation process passes through various stages- beginning from problem/need analysis to the generation of idea, evaluation of idea, device planning, product development and testing to finally product marketing (Tidd, 2006).

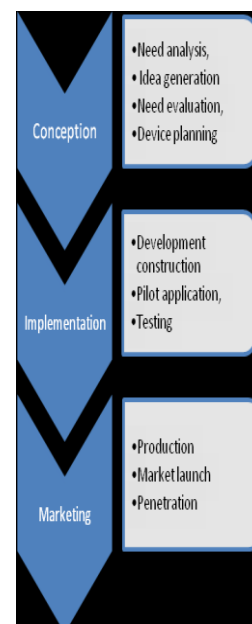


Fig.1. Three phases of Innovation Process

## 2. RURAL INNOVATION AND FARMING:

Rural Innovation and Farming is focused on identifying the key entrepreneurial and innovating leverages that increase the overall

livelihood and quality of life of small farmers and rural inhabitants (while sustaining food security). To achieve this various researchers and field practitioners in India and abroad have created successful models of entrepreneur centered innovations that use agriculture and sustainable rural development as the basis of economic growth. Various studies have attempted to chalk out a roadmap for making institutional changes favoring rural entrepreneurship and developing a plan of action for reaching at the top of ladder in rural innovation by applying entrepreneurial principles and concepts of capacity building prevalent in the corporate world. In today's global interconnected world, the term "global" should consider "rural" in the context of the Indian economy, since countryside innovations are very essential to build societal capital as a path towards sustainable development and value creation. Since the dawn of Industrial revolution, industry has focused on "factors of production" as a means of gaining competitive advantage and it is only in the recent past that "*innovation*" has become an imperative to achieve "*sustainable competitive advantage*". In the case of India, we have to reach inclusive growth and have a seamless transition from "*factor driven*" to "*efficiency driven*" to "*innovation driven*" to take our rightful place in the world economic order (Sharma, 2013).

### 3. RURAL INNOVATION AND ENTREPRENEURSHIP

Entrepreneurship is the affecting engine of innovation, employment and economical growth. It creates a new idea that led to a real successful and amazing creation. It gives a chance to people (Entrepreneurs) to create their own employment in order to raise their socio-economic living settings in the society. " The terms *entrepreneurship* and *innovation* are inter-related. Innovation is often the process through which an entrepreneurial business is

built because of the competitive advantage it provides. On the other hand, the act of Entrepreneurship is the new innovation, creativity, the establishment of a new organizations or activities or some kind of newness in rural segment. It is clear that entrepreneurship is the process of compelling that mobilizes new resource to meet unmet and articulated needs. The fundamental nature of entrepreneurship is the readiness to suppose risk arising out of the creation and implementation of new ideas. Technological entrepreneurs are so eager to build a startup company that is linked to technological innovation (Sullivan, 2008).

Entrepreneurship can be a vehicle for leveraging existing community strengths and diversifying local economies, while also challenging obtainable businesses to be more proficient and innovative (Paul and Sharma, 2013). Entrepreneur is a person of talent and capability to create new machinery and adopts new methods of production at his own risk (Patel and Chavada, 2013). Promotion of entrepreneurs and of entrepreneurship can be stimulated through a set of supporting institutions and through intentional innovative action which stimulates changes and fully supports capable individuals or groups (Shereif, 2005). A few examples of Rural Entrepreneurs and innovations are as below:

Usman Shekhani who belong to Kanker, Chhattisgarh, created a stick-making machine. The unique handy cutter consists of a wooden bracket, high-speed steel blades, adjustable screws and spring loaded pushing roller. This device helps in cutting a bamboo strip into five sticks at a time and thus improving the efficiency of stick making and reducing the cost per stick. By adding, the device is not costly, easy to work and easy to repair.

T. Guraviah, a rural farmer (Entrepreneur) created a seed drill cum herbi sprayer in order

to fulfill the needs of the farmers It consists of many functions: Makes furrows, drops the seed, adds fertilizer, closes the furrow and sprays weedicide.

He do not have the requisite knowledge of technical skills to make such a amazing device. However, Guraviah with his passion to serve the farmer union, and lot of knowledge and experience in farming evolved a new model of developing innovation by public brainstorming and ensured a quickest method of developing farm apparatus (Paul and Sharma, 2013).

From the above studies, it has been have shown that rural innovation and entrepreneurship not only improved the productivity, competence of local farmers and artisans, but also improve the social and economic living conditions of entrepreneurs.

#### **4. NEED OR UTILITY OF RURAL ENTREPRENEURSHIP**

In a globalized world and even after industrialization, still large part of population in rural area live in below poverty line. The agricultural sector till continue to be the backbone of our economy and our society too. One of the negative results the agriculture workforce is that this sector is overcrowded as far as employment is concerned (Saxena, 2013). Entrepreneurship in rural areas is finding a distinctive blend of resources, either inside or outside of agriculture. This can be achieved by widening the base of a farm business to include all the non-agricultural uses that available resources can be put to or through any major changes in land use or level of production other than those related solely to agriculture. There is increasing demands for rural entrepreneurs because industrial units under taken, are providing much employment to men than machines. It has high potential for income generation in rural belt. because of employment-opportunities (Nandanwar, 2011).

According to a study conducted in the United States it has been found that rural poverty has become as extreme as that found in the inner cities, and a variety of attempts has been made to alleviate poverty through economic development policies. The latest approach for addressing this problem is the endorsement of emerging “home-grown” enterprises in countryside. The expectation is that these new ventures-a) will solve the problem of unemployment; b) will remain in the areas where they were spawned as they grow c) and will export their goods and services outside the community, attracting much-needed income.(Sherief, 2005).

The emerging economies of rural area serve as the stray fold for the creation of prosperity. The reviving of the rural economy can be achieved by stabilizing entrepreneurial ventures in rural areas. Entrepreneurial activities

imply economic development in rural sector. It has been found that entrepreneurial activities endorse economic and social conditions which is beneficial for the individual as well as the entire rural segment. Entrepreneurship is perceived as an instrument to improve the quality of life for individuals, families and communities and to sustain a healthy economy and environment. Petrin (1994) affirms that rural development is now being linked more and more to entrepreneurship. The acceptance of entrepreneurship as a central development force by itself will not lead to rural development and the advancement of rural enterprises. Thus, a rural entrepreneur is someone who is prepared to stay in the rural area and contribute to the creation of local wealth.

Various studies have shown that the rural entrepreneurship plays an important role in provision of employment opportunities which helps in reducing the migration of people

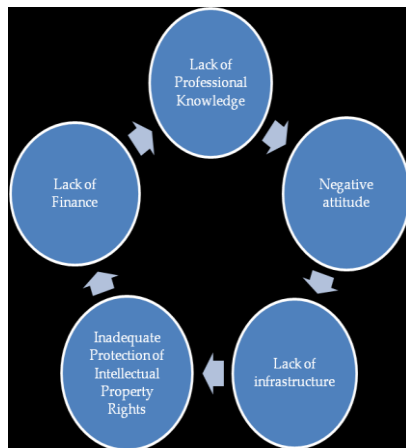
towards urban areas in search of livelihood were provision of employment opportunities. A rural entrepreneur tries to utilize the locally available resources in an effective manner. We have (2014) conducted a study in the Ponnakallu, district of Andhra Pradesh and reported that rural entrepreneurs are primarily motivated by the need for self employment, have keenness to earn money, need for self-determination for starting the new enterprises. As a result they create and develop a new ideas, to refine them into useful forms, and to use them to fulfill need and earn profits. This is a severe problem of lack of technical skills. It is important to keep in mind that the skills are needed to improve the quality of life for individuals, and to sustain a healthy economy and environment. (Lavanya et.al., 2014). Through the process of innovation, rural entrepreneurship plays a vital role in improving the socio-economic living conditions of rural people are as follows:

- **Proper utilization of local resources:** Rural entrepreneurship helps in the proper utilization of local resources like raw material and labour for producing purpose and thus increase productivity. It mobilizes rural resources to fulfill unmet demands and requirement (Kumar,2014).
- **Facilitate employment opportunities:** Rural entrepreneurship create large-scale opportunities for the people of countryside. In the globalized world, the govt. jobs are lessening and leaving many unemployed youth. To solve this problem, the entrepreneur and their enterprises are the only hope and means of direct and indirect process of employment-generation. (Saxena, 2013).
- **Promote Economic Growth:** Through the process of innovation, a countryside entrepreneurship (a rural farmer) promote economic growth of rural sector. It reduces

imbalanced growth of towns and cities, social tension etc. (Chand, 2009).

- **Prevents rural migration:** Problem of unemployment and poverty lead people to shift from rural to urban area for livelihood. Rural (countryside) entrepreneurship formulate imbalance between difference in income between rural and urban people and acts as a profitable source of job opportunities. (Kumar, 2014).
- **Improving living Standard:** Entrepreneurial activities for employment generation leads to increase in income and improve the living standard of rural inhabitants. New innovation and entrepreneurial actions make common man's life smoother easier and comfortable. It helps in making a variety of goods and services available to the society which led to improve socio-economic conditions of rural population. Possession of luxury, mobile phones, computers etc. are pointers to the rising living standards of rural people and all this done by the efforts of entrepreneurship.
- **Development of managerial capabilities:** The importance of entrepreneurship lies in the fact that it helps in identifying and developing management capabilities of entrepreneurs. An entrepreneur studies a problem, find out its alternatives, compares the alternatives in terms of cost and benefits implications and finally chooses the best alternatives. This application helps in sharpening the decision making skills of a countryside farmer. In addition, these management capabilities are used by entrepreneurs in creating new technologies and products in place of older technologies and products resulting in higher performance. (Chand,2014).
- **Awaken Rural youth:** Rural entrepreneurship can awaken the rural youth and introduce them to various avenues to

adopt entrepreneurship and endorse it as a vocation. (Saxena, 2013).



**Fig.2. OBSTACLES FACED BY RURAL ENTREPRENEURSHIP**

## 6. PROMOTING INNOVATION THROUGH POLICY INITIATIVE FOR THE ENHANCEMENT OF ENTREPRENEURSHIP

Enhancement of Entrepreneurship is one of the mechanisms adopted by the Government of India towards the upliftment of socio-economic conditions of rural population. The government's assumption is that encouragement for innovation will promote the enhancement of entrepreneurship, which will in turn accelerate the growth of rural economy. Many initiatives have been taken by the government of India towards strengthening the innovation ecosystem, the most important of which are: i) the establishment of the National Innovation Council, (Decade of innovation) whose mandate is to promote various innovation-related activities, and ii) the new Science, Technology and Innovation Policy 2013, which is projected to support entrepreneurship and science-led solution for sustainable and wide-ranging growth. (Abhyanker, 2014).

## 7. GOVERNMENT AGENCIES TO PROMOTE RURAL ENTERPRISES:

The government having realized the true potential of rural SME sector that has initiated a large number of programs and agencies aimed directly at boosting entrepreneurial ventures in the rural areas of the country. They are as below:

- **National Agricultural and Rural Development-Bank (NABARD):** This is the nodal agency that provides almost three fourth of all the financial support owed by the government towards elevating and enriching rural enterprise.
- **The Rural Small Business Development center (RSBDC):** This is one of the governmental program which is sponsored by the NABARD. The center facilitates the managerial and technical aid to the small and micro enterprises (SME) of the rural sector. It conducts training programs on rural entrepreneurship, skill up gradation, trainer training, awareness and counseling sessions across the country to make better the productivity of rural SME units.
- **National Small Industries Corporation (NSIC):** This central government organization is answerable for procurement and supply of indigenous as well as imported equipment and machinery on easy hire purchase for countryside SMEs, distribute raw materials and export finished products of small and medium industries of the rural sector.
- **Small Industries Bank of India (SIDBI):** This is the primary agency that distributes direct as well indirect financial assistance to all SMEs and coordinates the functioning of similar bodies under various schemes launched by the government from time to time.
- **Rural and Women Entrepreneurship Development-program: (RWEDP):** This body has the main objective of creating favorable business environment as well as build infrastructure and human capital which

helps the long term growth of small industries in rural belt.

- **Scheme of Funds for Regeneration of Traditional Industries (SFURTI):**

This organization aims at making the traditional industries of rural India commercially workable. Most small, micro and cottage industries are covered in its agenda (Sharma, 2012).

## 8. CONCLUSION

Rural entrepreneurship is the way of converting developing country into developed nation. Socio-economic conditions of the rural population have been improved by promoting rural (a countryside) entrepreneurship. Entrepreneurship is often considered as the search of new idea,, creativity, the establishment of new organizations or activities, or something new. To bring a change in rural sector, The policy makers need to focus on balance between Education (including modern vocational education training/skill development), Innovation (converting ideas into wealth and employment) and Entrepreneurship should be promoted. This paper focuses upon the role played by rural enterprises through the process of innovation in rural economic growth and how government agencies help to foster rural enterprises and promote innovation through policy initiative for entrepreneurship development. Policy implications for the promotion of rural entrepreneurship can be summarized as: (a) Sound national economic policy with respect to agriculture, including recognition of the fundamental contribution of entrepreneurship to rural economic development; (b) Policies for special programs for the technical and vocational skills and channeling of entrepreneurial talent; (c) Entrepreneurial thinking about rural development, not only by farmers but also by everyone and every rural development organization.

## 9. RATIONALE OF THE PRESENT STUDY AND METHODOLOGY

The present paper is a case study of the countryside (farmer) entrepreneur. The journey of the entrepreneur from conception of the idea till the successful launch of the venture envisaged highlights various principals of management behind success of any entrepreneurial venture. The content analysis of the story was done and lessons learned were extracted.

## 10. STUNNING CREATION OF MINI TRACTOR BY MASTAN VALI, VILLAGE PONNAKLLU, DIST. GUNTER, ANDHRA PRADESH

Mastan Vali is the only son to Pulla Saheb and Alla bee, who live in Village Ponnakallu, Dist Guntur of AP state. He studied in the village school up to 2 standard, discontinued studies and undertook to repairing cycles. He worked for 10 years in the village cycle shop before he was sent to work in Lorry workshop in Guntur. Having worked for 6 years in Guntur, Mastan returned to village and opened a cycle shop which he successfully ran for 4 years and thereafter took up farming till date.

### Learning:

1. **Lack of Technical and professional Knowledge:** There is a severe problem of lack of technical and professional knowledge among rural youth.
2. Adequate facilities for technical and professional training are yet not available to the majority of the rural population.
3. In the case of Mastan Valli, we have analyzed that he did not have technical and professional knowledge to make such a stunning device.

Ponnakallu is an farming rural community with Cotton as major crop. While running the cycle shop, Mastan observed the need of Cotton growing farmers. During the entire life of cotton crop, farmer needs to do weeding

periodically and this requires use of cattle or labour. Farmer finds it difficult to maintain the cattle and the labour is mostly not available, and even if available, do not come when he needs them. Mastan tried to evolve a solution to this impasse by developing a mini tractor.

#### **Learning:**

**1. "Necessity is the mother of invention":** The creation of new idea of technological invention of such a stunning device, created Mastan Valli in order to fulfill the expressed need of cotton growing farmers/Labour and requirement of cattle. He tried to evolve a solution of such a difficult situation by developing a Mini Tractor. As he has observed the expressed requirement of cotton growing farmers.

2. Moreover Science and technology inventions have their origin in the field and they reach the laboratory for theoretical backup.

#### **11. Functions of this device**

This tractor which is 31 inches in width and 3 feet in height has capability of working in between the rows of cotton crop without any difficulty. All farming activities required for growing the cotton crop after its transplantation, this tractor will be able to do without any help from labour. It can also transport one ton material in its trailer. By adding various attachments, this tractor can be used for much other agricultural activities. The tractor is powered with 10.2 hp engine and uses mostly the parts of three wheeler auto and that of tractor. Operating the attachment is by driver alone, can be adjusted to any height and is very well controlled by good locking system.

#### **Learning:**

**1. Science and Technology is a boon for agricultural farmers:** Technology is a blend of man, material and things so we can build up and satisfy the goals.

2. It is application of scientific development so that it is beneficial for human beings

There is good demand for this tractor especially for cotton farmers, as the availability of labour is becoming increasingly difficult and it is grown in millions of hectares in the country.

Innovator: Vali Mastan

Innovation: Mini Tractor

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#### **REFERENCES:**

[1] Abhyanker, R. (2014). "The Government of India's Role in Promoting Innovation", *Technological Innovation Management Review*, vol. 4, no. 8, pp.11-17, Retrieved from, <http://timreviewca/article/818>.

[2] Chand, S. (2014). "Entrepreneurship: Characteristics, Types and Functions of Entrepreneurship", Retrieved from, [www.yourarticlelibrary.com](http://www.yourarticlelibrary.com).

[3] Drucker, P. F., (2002). "The Discipline Innovation", *Harvard Business Review*, Retrieved from, <http://hbr.org/2002/08/the-discipline-of-innovation/ar/1>.

[4] Frankelius, P. (2009). "Questioning Two Myths Innovation literature", *Journal of High Technology Management Research*, vol.20, no.1, pp. 40-51.

[5] Hippel, E.V. (1988). *The Source of Innovatoin*. Oxford Oxford University Press. p. 30-38.

[6] Kalmarek, C. (2012). "The Essential elements of Successful Innovation", *Computer Communication Review*, vol. 42, no. 2, pp.107-109, Retrieved from, [www.sigcomm.org/sites/default/files/ccr/papers/2185376-2185393.pdf](http://www.sigcomm.org/sites/default/files/ccr/papers/2185376-2185393.pdf).



- [7] Kumar, C. (2011). "What are the Importance of Rural Entrepreneurship", Retrieved from, [www.preservearticles.com/the/importance-of-rural-entrepreneurs.html](http://www.preservearticles.com/the/importance-of-rural-entrepreneurs.html)
- [8] Lavanya, M.S., Hemalatha, S. & Indumathi, V.M. (2014). "Perspectives of Rural Entrepreneurship In India", *Journal of Management Research*, vol.31, no. 1, pp. 95-100, Retrieved from, [www.eecmbajournal.in](http://www.eecmbajournal.in).
- [9] Maranville, S. (1992). "Entrepreneurship in the Business Curriculum", *Journal of Education for Business*, vol. 68, no. 1, pp. 27-31.
- [10] Nandanwar, K. P. (2011). "Role of Rural Entrepreneurship in Rural Development", *International Referred Research Journal*, vol. II, no. 26, pp.12-14.
- [11] Patel, B. and Chavda, K. (2013). "Rural Farmers and Entrepreneurship in India: Challenges and Problems", *International Journal of Advance Research In Computer Science and Management Studies*, vol. 1, no. 2, pp. 28- 37, Retrieved from, [www.ijarcsms.com](http://www.ijarcsms.com).
- [12] Paul, M and Sharma, A. (2013). "Entrepreneurship As A Tool For Rural Development", *Global Journal of Management Studies*, vol. 3, no. 3, pp. 319-322, Retrieved from, <http://www.ripublication.com/gjmbs.htm>,
- [13] Salge, T. C. & Vera, A. (2012). "Benefitting From Public Sector Innovation: The Moderating Role Customers and Learning Orientation", *Public Administration Review*, vol. 72, no. 4, pp.550-560.
- [14] Saxena, S. (2012). "Problem Faced By Entrepreneurs And Remedies To Solve It", *Journal of Business and Management*, vol.3, no.1, pp: 23-29, Retrieved from, [www.iosrjournals.org](http://www.iosrjournals.org).
- [15] Sharma, P. (2013). "Rural Entrepreneurship, Science and Technology, Innovation Farm Based Entrepreneurship Venture: A Case Study of Farmer Inventing Accustomed Machine For Tillage", *International Journal of Innovation Research And Development*, vol.2, no. 4, pp. 6-14.
- [16] Sharma, P.(2012). "Women's Venturing into the Business World, Challenges and Schemes Giving Boast to Women Entrepreneurial Spirit", *International Journal of Advance Research in Management and Social Science*, vol.2, no. 3, pp.70-84.
- [17] Sherief, R. S. (2005). "Entrepreneurship As An Economic Force in Rural Development", *African-Economic-Analysis*, Retrieved from, [www.AfricaEconomicAnalysis.org](http://www.AfricaEconomicAnalysis.org).
- [18] Sullivan, O. (2008). "Innovation", Retrieved from, [www.global.innovationnet/innovation-definition.pdf](http://www.global.innovationnet/innovation-definition.pdf).
- [19] Tidd, J. (2006). "A Review of Innovation Model", *Science and Technology Policy Research Unit*, Retrieved from, [www.imperial.aac.uk/tanaka](http://www.imperial.aac.uk/tanaka).