

THE POTENTIAL OF PIGGERY AS AN ECONOMIC OPPORTUNITY FOR MODERN YOUTH IN BHUTAN AND INDIA: AN ANALYSIS

Csu Abhijit¹, Dr. V. Bala Ruby²

¹Research Scholar, Department Of Economics Vels University, Chennai, India.

Email: atlv.abhijit@gmail.com

²Assistant Professor, Department Of Economics Vels University, Chennai, India.

Email: balaruby.sms@velsuniv.ac.in

ABSTRACT

Researching piggery as a viable economic opportunity for the modern youth of Bhutan and India brings out the fact that it has the capacity to curtail youth unemployment while increasing food security. There is increasing interest in commercial pig farming, as there is also a sizable market for pork products, thus making piggery an appealing business opportunity. This paper presents the current state of piggery in the two countries and the young entrepreneurs' level of engagement in this enterprise including the cultural barriers and resource constraints. Review of the cases demonstrates nascent insights into the enterprises led by youths and their communities and their effort to promote better practices. There are also suggestions for enhanced youth involvement in the piggery undertaking including increased access to finances, training opportunities and more focused policies. It may be the case that, by doing so, the rural economic development of those communities will be enhanced and so engage the youth in sustainable agricultural endeavors.

Key Words: Piggery, India, Bhutan, youth-led initiatives, entrepreneurial venture

1. INTRODUCTION

Climate variations are all contributing to the rise in populations of young farmers around the globe. Just a few decades ago, this would have been regarded as unusual - for reasons outside the scope of this particular discussion. Some factors make the people keen on the agriculture sector today: after all, employment is the primary one. Both Bhutan and India have sizable populations of youth and problems of youth unemployment. Policies and plans aimed at the development of the national youth increasingly recognize agriculture as an economic sphere which possesses numerous opportunities for the new generation. In Bhutan, agriculture- with the connotation of residing in the country-side and rural, go hand in hand. It is in this agro-life space that modern day youths can find their niche and start their economic life from farming, of which pig farming is said to be more economically viable cleaner.

There has been a noticeable attraction towards pig farming as a secondary source of income among the young people in both nations. Additionally, there is hope that pig farming, as a commercial activity, can be viable in the long term by balancing the benefits and the costs associated with it. Seeing pigs as livestock, the paper, has been primarily women households and nuclear households in framing the analysis in order to target how much female participation there is in pig farming since men tend to go outside for earning purposes. Some of the research questions addressed included identifying the regions in the case study countries which are engaged in pig farming and the emerging breed societies and their income status of the pig farmers. As a result, in some cases, there is the need for a stronger public information program to properly orient target farmers. Pigs are important in the households, and the people in the rural areas value them for various economic purposes. Indigenous pigs (cross-bred with Hampshire and Guinea) have a delicious taste and many resources that no other pig has. They require no special supervision and are free to move about the village from one hut to another, and from forest to farms.

2. LITERATURE REVIEW

The current situation in South Asia regarding the availability of economic opportunities for the youth, particularly in the regions of Bhutan and India, is no better as their employment levels remain discouragingly high and the availability of sustainable livelihoods is deplorable. On the basis of these problems, a number of piggery, or pig farming, as it is commonly known, as an area with prospects of growth. Piggery, or pig farming, has recorded the least adverse effects in terms of the environment and has also been viewed as a crucial component of Bhutani and Indian rural economies in the past. Nevertheless, the recent progress in veterinary, accessing markets, and acceptance from consumers has turned piggery into a business opportunity fit for the younger generations. With the young people being the majority in the agricultural population of these regions, there is a need to examine how pig farming can be an income activity as well as promote self-dependence, innovation, and community among the youth. Such literature highlights such issues as economic development, food security, and cultural perception of pig husbandry as areas of concern.

This, in conjunction with the nutrition of both the local people and target markets, suggests that pig farming also has the potential to improve food security as a convenient protein source (Mishra & Jha, 2020; Wangchuk & Dorji, 2019).

Furthermore, the research has revealed that piggyery has great opportunities as a business, when the available agricultural land is limited and the youth are willing to supply the market with meat (Ghimire et al., 2021; Singh & Thakur, 2022). Additionally, socio-cultural elements are important determinants of young people's participation in piggyery. The increased availability of education and campaigns directed towards changing people's attitudes, which have previously held negative views towards pig farming, has been beneficial in persuading livestock's views. However, notwithstanding the positive indications pointing to the profitability of pig farming business, the industry has a low profile, which is not seen as a lost opportunity in regions for younger generation's business development, though there is a directly proportional relation between age and its aggression. Despite the rapid number of available literature, there are some concerning gaps present that need to be addressed in the future. For example, while the studies identified have focused more on the technicalities in piggyery management, none of them have sought to investigate the effects that such farming methods have on the socio-economics of the youth as a specific target group.

This entails not properly examining the issues of access to required resources, such as training, finance, and veterinary care, all of which are important for meaningful entry into the sector. Furthermore, the more nuanced socio-cultural constraints and gender dynamics related to youth engagement in piggyery have not been comprehensively explored, nor the economic factors of pig farming within sustainable agricultural integration. The present literature review seeks to combine the streams of literature that exists on the economic aspects of youth piggyery in Bhutan, and India, identifying patterns, problems, and prospects in the sector, as well as its gaps and domains calling for sustained and focused investigation. In this way, it hopes to highlight the importance of pig farming which is little understood beyond being an indigenous craft to a valuable business opportunity that has the prospect of dealing with major socio-economic challenges of the youth. Most of the other sections will further examine the economic aspects as well as socio-cultural viewpoints and entry restrictions regarding youth working in the piggyery sector, giving an all-round view of the prospects of this industry in bringing about socio economic transformation in Bhutan and India respectively.

The peasant youth's search for resources in raising pigs for modern consumption in Bhutan and India has not remained static over the years but moved with changing agricultural practices and the prevailing economic models.

In the years at the turn of the century, two nations appreciated pig farming as a way to ensure food self-sufficiency while also providing an income to rural areas. Research studies suggested that piggyery could provide alternative sources of income more so to the less advantaged section of the people as echoed in sustainable development goals (Nepal B, 2023), (S M Haldhar et al, 2023). Since the benefits became apparent, the government started stimulating pig farming activity more vigorously. Such initiatives focused on improving breeding methods and training young farmers, thereby creating a conducive environment for entrepreneurship in piggyery (Pasha M, 2023). In India, these policies increasing backyard pig farming were particularly appealing to the youth since it offered self-employment opportunities (Pradhan D, 2023). In the same way, initiatives in Bhutan sought to tailor local pig breeding practices, evidencing the importance of traditional knowledge on how to increase productivity (Kumar N et al., 2022). However, by the late 2010's the focus in India on piggyery intersected with a broader narrative centred on entrepreneurship and economic resilience in rural settings.

Most studies have pointed out how piggyery can assist in the integration of youths into agribusiness and even argued that young farmers who practiced piggyery were more likely to embrace change in the form of improved practices and technologies. Young farmers who practiced pig farming were also identified as more oriented to effective changes in their farms with regards to adoption of innovative practices and technologies (Nath A et al., 2021). The emerging discourse also affiliated pig farming to ecological sustenance since worms can be a good source of manure that can be reasonably used as organic fertilizer thus helping to achieve a circular agricultural economy (Molino J, 2024). Generally, the piggyery has historically developed as an economic undertaking and this has expanded benefits for youths to harness its potential impact in both Bhutan and India while dealing with relevant socio-economic issues (Malhotra SK et al., 2023). The search for piggyery as an economic opportunity for the youths in Bhutan and India holds good prospects and it allows for the pursuit and establishment of sustainable agricultural and rural development initiatives. With population growth coupled with increased demand for meat, such activities in pig farming have increasingly become attractive for young entrepreneurs in these regions.

Additionally, the emphasis on organic farming in the country also helps pig farming as it promotes practices that enhance soil and biodiversity (S M Haldhar et al, 2023). This formulation of agricultural policy encourages and motivates the youth to participate and be active in the piggyery industry to acquire modern and sustainable practices (Pasha M, 2023). Likewise, even in India, awareness regarding economic returns from livestock farming brought in focus pig rearing in mountainous and rural regions that practice subsistence farming (Pradhan D, 2023). Results also show that piggyery can serve as an additional agricultural practice that will diversify inputs and landscaping of household economies (Kumar N et al, 2022). Also, as the country progresses technologically in agriculture, the introduction of advanced farming

practices in piggery is proving to be motivational for youths (Nath A et al, 2021). There are still some barriers and obstacles that impede the progress, for instance, accessibility to markets, veterinary sources, or education about effective and optimum practices to be undertaken. Such barriers must be addressed if young farmers are to maximize the benefits of pig keeping as a commercial activity and achieving rural economic development (Molino J, 2024). This new way of creating wealth is organic and self-sustaining, making it suitable for modern youth in Bhutan and India.

Various methodologies have been used to study the piggery as a possible income-generating activity for the youth of Bhutan and India and its possible advantages. For instance, most qualitative studies look at the issues of the youths' engagement and the community's competence by showing that piggery is not only economically viable but improves community engagement and social ties. It is also shown that especially the younger generation can be easily attracted to pig farming with its low entry point, ease of management and quick returns which is most pertinent in underdeveloped rural areas when other agricultural options are fast becoming outdated (Nepali B, 2023). What, however, distinguishes the studies is the portion of the economic factors of production related to ventures of this nature. In this case profitability, expansion, and market prospects for pig farming are evaluated.

According to these investigations, there is an increased demand for pork in the nations of Bhutan and India, owing to dietary changes due to urbanization which draws the conclusion that pig husbandry can potentially provide a good return on investment (S M Haldhar et al 2023) , (Pasha M 2023). In addition, some of these approaches apply econometric model to estimate the effects of investment on the piggery industry which indicates that investment in pigg farming has the potential to transform the economy of a region through creation of employment opportunities and development of complementary sectors (Pradhan D 2023) , (Kumar N et al 2022). There has also been development of mixed methods designs which incorporate qualitative and quantitative approaches in studying the challenges and opportunities that piggery presents. This also extends to addressing the youth's barriers to entry such as veterinary, funding, or training availability (Nath A et al 2021). These methodological triangulations demonstrate the complexity of piggery as an income generating activity by showcasing the youth's aspirations in rural areas as well as the expected impact on the region's economic growth.

Piggery farming is an untapped economic opportunity which should be looked into by the youth of Bhutan and India. Its economic potential for rural areas should not be undermined, where this activity can generate extra income on top of employment and new job opportunities. The pig industry is likely to improve household incomes. For example, the youth can venture into piggery enterprises and help in alleviating poverty and unemployment in both countries. Also, since piggery is integrated into agriculture, it is a good option for rural diversification, promoting agribusiness and the entrepreneurial spirit among the youth. This discussion is supported by the sustainable livelihoods theory, focusing on the necessity of multiple income-generating activities to increase the capacity against economic adverse effects. More importantly, piggery as a business is easy to enter for the youth due to lesser investment when compared with other livestock forms.

This particular element is conspicuous in contexts where there are arguments to the effect of youth involvement in pig farming for resource optimization (Pasha M, 2023), (Pradhan D, 2023) since it has been evidenced that the capital is a basic requirement. Furthermore, the traditional sustainability of pig farming practices regarding pigs as feed converters and manure producers fits in with the emerging trends in agriculture that seek to promote sustainability in the industry (Kumar N et al., 2022), (Nath A et al., 2021). Nevertheless, some problems do exist, specifically in the area of knowledge transfer and adoption of technology, which begs the question of what education systems are in place to facilitate youth entrepreneurship within agricultural practice. As regards the diffusion of innovations theory, it may, for instance, be argued that focused training will facilitate the rate of adoption of relevant technologies, namely pig farming technologies, so that as a result it can become a business for the youth, (Molino J, 2024). If these two theoretical perspectives are integrated, it will be clear that there are positive prospects that pig farming can indeed be an economic activity that transforms the youth in Bhutan and India but the structures that support this objective have to be put in place.

3. OVERVIEW OF PIGGERY INDUSTRY IN BHUTAN AND INDIA

In Bhutan, especially in the western region, piggery has become an important agricultural commercial activity and it has been carried out for quite some time. Over the past few years, owing to the start of some projects and programs, the piggery in Bhutan has considerably improved. Practically every rural farmer in Bhutan keeps some pigs, ranging from one or two household pigs to intensive farms with over a hundred pigs. Piggery activity is also experiencing population growth at an annual rate between 9 to 26 percent.

In India, pig farming makes significant progress since its services were first introduced in the 1950s and 1960s. Significant improvement can be noted in the breeding and genetics of pigs, the formulation of high protein and energy

balanced diets with current technology, and the management of piggery units with environmental considerations and details. A combination of public and private investments in piggery and pig products such as pork sausages also contributed to the improvement. As for India, importation of exotic and indigenous pig breeds was also made, especially from Bhutan and Nepal, and hybridization results were achieved. This benefited both the prospects of pig breeding and feeding strategies, as well as the pig products fabrication industry and its sector's moving into national production and foreign business. A high proportion of the total pig population belongs to India's commercial pigs. Indigenous pigs are estimated to have reached 10,500,000 heads and together with others 7,727,500 that are commercial of various breeds. Indian domestic pigs consist of few regional varieties. There are at least 20 registered pig producers who run large systems in different areas of India, mostly in the North East Indian region. Such pig farms usually have thousands of sows and boars of regional and foreign lines.

Pigs in India are raised in various types such as indigenous confinement, free ranging, or in a commercial farm. Pigs are kept in those units that have lower economic returns since the management bears cost. Women play a vital role in the management and day-to-day operations of piggery units in India. It comes out that if the youth want to venture into business they stand a good chance in the piggery sub sector as it is economically rewarding. The returns from the well-established pig herd would be over and above what the family had before using it for expansion. The other livestock farming which is sheep has low returns compared to piggery, it can become a high profit income source. There are upfront costs associated with starting a 1,000-sow farm, but as building costs increase, other values in various sectors also increase. The investment risk is very high, but owning three or four farms can be very profitable. Pigs or rather piggery income for a small scale farmer in Bhutan and India is presented in the table below. Activities are not concentrated as in a commercial farm; there are diversified activities and piggery.

The communities are impoverished, with few inputs on pig production resulting in demand for cheap pork from the local markets. The piggery farming enterprises are regarded as collateral activities for the farmers. South east Asian countries, more so Bhutan and India, are in a position to increase the production of pork to match the forecasted rise in domestic consumption. Swine farming is one of the parts of the multifunctional classical agricultural family farming system. Pork is important for the day-to-day nutritional needs of the people. In terms of meat expenditure as a share of the total agricultural commodities expenditure, the average household in the urban areas of Bhutan and India spends 7.4 per cent and 4.3 per cent respectively. Even prior to urbanization, Bhutan had a pork shortage.

4. CHALLENGES AND OPPORTUNITIES AVAILING THE YOUTH IN PIGGERY SECTOR

With regard to employing the modern youth in the piggery sector, there are challenges and prospects from the different stakeholders such as the would-be entrepreneurs, the industry players, and government officials. Future youth entrepreneurs of piggery business in the country consider financial genre, access to input and technical know-how bottlenecks as the prime hitches in entering the industry. The youth in these two countries look forward to getting borrowing services from banks which presently seems impossible to them when attempting to participate at an individual level. More to this, up to some ethnic communities and also due to the prevailing situation of both countries, some youth may consider planting pigs considerably! There is the likelihood that this profession is for low caste people and any of their kin-folks especially parents of young females looking for a husband may feel inferior if her spouse is a pig farmer. Additionally, killing pigs may be interpreted by people as a sin, as pork is recognized as not a healthy meat.

At the same time, there exists a wide range of possibilities especially for the youths in the pig farming business. For them, pig farming is an avenue for self-employment for it has a high income generation potential. There is also an increase in the off farm income which is becoming common for unemployed educated youths residing in the villages. It shows that, if the youth take to piggery farming, it would actually provide employment opportunities within the local areas and thus curtail outflow of financial resources. A substantial section of society is increasingly seeking organic pork. Indeed, the doctors focus on, and the high blood pressure patients can consume pork raised through Good Agricultural Practices. Thus, youth desirous of working in the pig breeding off farm sector can integrate to enhance the piggery within the training village as well as neighboring villages to identify and harness local resources and potentials. Some areas do apart such where management of gut is crucial.

The piggery unit can participate in the development of appropriate and sustainable waste management technologies involving pigs in cooperation with other waste management agencies in the country. However the strategy in any policy remains the same, that is, to transform the system of the community into a modern system, this requires government support as well. So, if there is backing from the end of the government, as emphasized in various government policies, our youth would be able to engage the business of piggery.

5. CASE STUDIES AND SUCCESS STORIES

Case Study 1: Lhakpa Daza, “The Risk Taker”: Overcoming Adversities and Building Resilience Case Study 2: Thinley Zangmo, “The Mad Farmer”: Empowering Women and Sharing Knowledge.

Case Study 3: Pooja Rajpurohit, “From Site Supervisor to Pig Farming”: A Transformational Journey.

Case Study 4: Sonam Zangmo, “The Piggery Entrepreneur”: Innovations and Success in the Pig Farming Industry These studies help in understanding the stories of risky young people who started their own business by putting it all on the line. With a springboard from these experiences, these individuals came up with clever business ideas. To produce pigs in a sustainable and sustainable way, these entrepreneurs practiced innovative styling’s and aggressive bio netting measures. Among these outstanding people, Thinley Zangmo is perhaps the first one to have engaged in pig farming. She conducted women-only workshops to moot the idea of her knowledge of knowledge and help women pursue business. To effectively enhance her views on pig farming and build communities within the sector, Thinley Zangmo also leveraged contemporary channels such as podcasts and interviews. The sacrifices she makes and new ways she has invented opens the doors for many more.

These case studies provide evidence which demonstrates the growth potential within the piggery business sector as well as the promising young pig farmers who take the lead in the development of the sector. The continuation of these narratives draws attention to a plethora of success stories around the opportunities available for making an impact in this fast-paced and growing industry. Each case study bears one or the other title such as 'The Piggery Entrepreneur', 'Reviving a Lost Skill', 'From Site Supervisor to Pig Farming', 'The Risk Taker' and they all stood in telling their stories about the sheer grit and determination it takes to make a career in this business. In conclusion, all these case studies and success stories, throw back the suggestion that appropriate successes within the piggery industry are achievable by players who can dare the odds of taking risks, face and surmount obstacles and seek and make use of better modern ways of doing the business. Every story conforms with the fact that the entrepreneurial spirit in pig farming has a wide range of possibilities. As long as the imaginations of the young generation do not grow dimmed the prospect of this industry will be even more optimistic.

6. CONCLUSION AND RECOMMENDATIONS

The sector of piggery on the other hand can also be regarded as an economic venture for modern youth who have or do not possess formal education in both countries but certain issues persist. As such it would be helpful to develop piggery culture that is in harmony with the socio economic conditions and social structure of the country. The policies and schemes should be overhauled with the changing times in order to empower the needy and the deserving only. The scheme must have branches where funding would be complemented with full, partial, zero percent and low rate interest depending on the need of the applicant. It should include credit to producers, traders, markets, processors and producer companies. It is also recommended that convenient kiosks selling pigs be situated away from target market areas displaying information such as current demand rates and how to order on the internet. With a mobile vet lab down the certification agency has a higher opportunity of being able to undertake inspections of the pigs and piggery before or after giving out the funds.

Young entrepreneurs face complex issues that restrict their growth potential in the piggery industry, however they also have the possibility of changing the negative perception into a more positive one. Our study offers policy and strategy guidance to a range of players in this industry – policymakers, processors, academic and research institutions, and those who provide or support young people’s cooperatives on joint efforts to create more economic opportunities around piggery. The action plan comprises three pillars. First, start an initiative to help young people go into pig farming by providing support such as training, mentorship, soft loans, starting grants, husbandry and pig system consultancy, as well as affordable land and equipment facilities. Successful stories of scalable ranchers should be widely shared over popular platforms alongside the failures. Second, increase the participation of the youth in the civil society and policy networks that promote pig-friendliness and make the best livestock auctioneers and pig meat products. Finally, keep researching, but do we really believe the unexpected new intel will pull the youth into robotics for the long haul? It’s supposed to concentrate on the creating new pricing and provide friendly control and recommendations. Further studies are required to closely monitor the successful execution of suggested strategies and constant enhancement of pig welfare, husbandry, and pig production management systems.

“Think big, act small” to make sure there is an unshakable and expanding pillar in piggery also as business for young enterprises in Bhutan and India. Key players should start small first to test its viability, then increase their efforts and create employment opportunities. This is why we need many trainers, and with regards to improvement of the pig sector for instance, there is need for both male and female trainers. There are also three broad recommendations that we put forward concerning the above three advisory points in relation to actors in their various vertical markets.

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