

Original Research Article

Opportunities and Challenges of Rural Industrialization in Arunachal Pradesh: An Analytical Study

Dr. Wangda Gyatso Gyana*

Sr. Assistant Professor, Department of Commerce, Dera Natung Government College, Itanagar, Arunachal Pradesh, India

***Corresponding Author**
Dr. Wangda Gyatso Gyana

Article History

Received: 10.10.2023

Accepted: 18.12.2023

Published: 26.12.2023

Abstract: The concept of rural industrialization is gaining momentum as an important solution to a balanced region development, job creation and poverty alleviation in backward and resourceful regions. The situation of difficult terrain, meager population density, tribal social system and rich natural resources make the state of Arunachal Pradesh an interesting case-study for the analysis of rural industrialization. The study is analytical in presentation addressing the opportunities and problems of industrialization in rural areas of Arunachal Pradesh with an emphasis on resource-based industries, MSMEs, entrepreneurship, government interventions and institutional constraint. The paper draws on secondary data from government reports, scholarly literature and policy documents to underscore the tremendous potential, but also the ongoing structural barriers. The study finds that a process of rural industrialization can be transformative in Arunachal Pradesh and can be enabled by developing infrastructure, building capacities through skill development, integrating into the markets, and designing culturally appropriate policies.

Keywords: Rural Industrialization, MSMEs, Arunachal Pradesh, Entrepreneurship, Regional Development.

INTRODUCTION

Economic inclusive and balanced development in agrarian and geographically remote areas is largely attributed to rural industrialization (Datt & Mahajan, 2019). The promotion of rural industries is seen as a key component in creating employment and alleviating poverty in the Indian context, where most of the population lives in rural areas, and in reducing the migration flow of labour from rural areas to urban areas (Kumar, Singh, & Ete, 2021). The state of Arunachal Pradesh, one of the north eastern states of the Himalayas with hilly land with a predominantly tribal population and rich natural resource base has huge potential for the development of rural industries. The growth rate of industrialization is, however, low as compared to other parts of the country and rural industrial sector is plagued with various structural and socio-economic problems (Panda, 1998).

Micro, Small and Medium Enterprises (MSMEs), agro-based enterprises and traditional cottage industries are the main sources of industrial growth in the rural areas of Arunachal Pradesh, which

rely on indigenous skills and local raw materials. MSMEs not only serve as a catalyst for rural livelihoods but also contribute to decentralised economic growth and improved value addition to local resources. Research has revealed that MSMEs have a significant role in creating jobs and are engines of economic diversification in rural economies (Koka & Kaurinta, 2022). Moreover, bamboo, cane, horticulture and forest based products can have local industries created around them, which can connect the rural producers with the wider value chain, if supported with proper infrastructure and market linkages (Forest Survey of India, 2021).

In spite of these opportunities, rural industrialization in Arunachal Pradesh faces many hurdles. The lack of infrastructure makes industrial growth difficult; some factors that can create such problems are lack of roads, poor power supply, and connectivity. (Panda, 1998) Many remote areas still have limited access to institutional finance, which limits the growth of rural businesses and their access to new technologies (NABARD, 2022). Moreover, it has been

Copyright © 2023 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for noncommercial use provided the original author and source are credited.

CITATION: Wangda Gyatso Gyana (2023). Opportunities and Challenges of Rural Industrialization in Arunachal Pradesh: An Analytical Study. South Asian Res J Human Soc Sci, 5(6): 283-289.

noted that skill shortages and technological backwardness are the major impediments in improving productivity and competitiveness of the industries (Kumar *et al.*, 2021). Socio-cultural factors, which are related with the tribal community structure and land ownership norms, also affect entrepreneurial behaviour and industrialisation in rural areas (Panda, 1998).

The government, both at the Union level and at the State level, has tried to overcome these constraints by promoting skill development programmes, offering incentives and financial support for the development of the rural industrial sector (Ministry of Commerce & Industry, 2023). But there are shortcomings in putting policies into practice at the local level.

Arunachal Pradesh is a state in the north eastern part of India and is mostly tribalized with unique system of culture and economy. More than 77 per cent of the population live in rural areas and agriculture is the main occupation (Census of India, 2011).

The state economy can be described as mainly: low level of industrialization, limited private sector involvement and high dependence on central transfers. The traditional and subsistence based economic activities are predominant. As a percentage of Gross State Domestic Product (GSDP), the industrial sector is relatively small, suggesting that there is a potential for industrial expansion from the rural area (IBEF, 2023).

Conceptual Framework of Rural Industrialization

Rural industrialization is closely related to the concepts of balanced regional development, endogenous growth and small scale industrialization. Hirschman (1958) stressed backward and forward linkages and Schumacher (1973) called for “small is beautiful” industries for rural economies. In the tribal and hilly areas such as that of Arunachal, rural industrialization should be: Resource based, environment friendly, socially inclusive and culturally compatible. It is believed that MSMEs and village industries are highly effective in such scenarios as they need low investment and high employment elasticity (Kumar, Singh, & Ete, 2021).

LITERATURE REVIEW

1. Rural Industrialization and Tribal Economy

The varied aspects of rural industrialization are highlighted in the literature, especially for the tribal and resource-poor areas of India. Research in other Indian regions has suggested that the industrialization in the rural areas can help in filling the employment gap, encouraging value addition in these areas and decreasing the poverty (Datt & Mahajan, 2019). But very few scholars have however placed industrialization in a broader socio-economic framework in the context of the economies of North-Eastern States and the tribal economies.

In this context, Mandal's empirical study on economic inequality of rural tribal communities in Arunachal Pradesh is relevant. Mandal (2014) noted that the income distribution pattern is asymmetric in tribal rural economy and capacity to participate in technology and market transition is very low which can have a great impact on rural enterprise development and sustainability (Mandal, 2014).

2. Village industries and cultural resources

Apart from economic inequality, the author, Mandal (2007) explored the potential and problems of the traditional industries such as Khadi and Village industries of North Eastern states of the country with special reference to Arunachal Pradesh. The present study offers another historical and cultural background of the rural industrial activities highlighting traditional skills as well as the current challenges including low market integration and limited institutional support (Mandal, 2007).

This is because, in addition to highlighting the importance of preserving tribal crafts, handloom, and village industries, it also shows how these sectors can be used to diversify rural economies — if proper policy support and marketing linkages are provided and sustained.

3. Tribal Livelihood Practices and Environmental Constraints

Although not directly industrialization oriented, Mandal (2016) studied the practice of jhum cultivation (shifting cultivation) and various environmental and socio-economic impacts of traditional land use systems in Arunachal Pradesh. Results of this study indicate that the dominant rural livelihood practices such as subsistence agriculture affects the availability of land, allocation of labour and environmental sustainability which are all important factors for the industrial feasibility in the rural area (Mandal, 2016).

5. The MSME Mission's Support System for MSMEs and Rural Entrepreneurship

In addition to Mandal's regional studies, studies on MSMEs and rural entrepreneurship highlight the importance of small businesses to provide employment opportunities and improve the livelihoods of rural communities in India (Koka & Kaurinta, 2022). In particular, research indicates that MSMEs can be a driver of rural development if structural constraints (including infrastructure, access to finance, skills) are addressed.

RESEARCH GAP

Though there are studies that shed light on the rural industrialization and economic structures in tribal areas, there is a lack of comprehensive analytical

studies on rural industrialisation in Arunachal Pradesh. The paper identifies some key gaps in the literature:

1. **Limited Incorporation of Socio-Economic Inequality in Focused Industrialisation Research:** This inequality of tribal people is brought to the fore in the context of industrialisation in Mandal's work on the socio-economic inequality of the rural producers, which is rarely incorporated into focused industrialisation research. The existing research that directly correlates socio-economic differences and rural industrial outcomes is few (Mandal, 2014).

2. **Contextual Studies on Traditional Industries:** While village industries have been a subject of study by Mandal (2007), there is a need for more systematic study of traditional skills and crafts within a broader framework of rural industrialisation in the context of modernization.

3. **Environment and Land-Use Constraints:** Mandal's study on jhum cultivation (2016) highlighted environmental constraints and livelihood practices that could affect the viability of industrial activities, which is not sufficiently discussed in policy literature on rural industrialisation.

Policy Impact at Community Levels: Despite policy analyses generally abstracting at the state level, few studies, apart from Mandal's, examine the role of local social structures, inequalities, and traditional practices in the mediation of policy effectiveness in the grassroots.

OBJECTIVES

The study, based on the Research Gap, is analytical in nature which aims to understand the interaction between local resources, institutional structures, and socio-economic factors in influencing rural industrialization in Arunachal Pradesh. The study systematically captures enablers and structural barriers, and thus helps to advance the ongoing discourse on regional development strategies based on rural industrial transformation.

RESEARCH METHODOLOGY

Research Design: The study is descriptive and analytical in nature to comprehensively analyse the opportunities and challenges of rural industrialization in Arunachal Pradesh. The research combines both qualitative and quantitative aspects to gain a holistic perspective on the topic.

Nature of the Study: The study is analytical and attempts to interpret the trends, patterns and structural problems in the rural industrial development. It focuses on the cause-effect links between industrial development and socio-economic factors.

Sources of Data: The study is basically secondary based and it was collected from the following sources:

- i. Statistics and reports issued by the government agencies like Economic Surveys, MSME Reports and Policy statements etc.
- ii. Reports of national institutions like NABARD, Ministry of MSME and Planning bodies.
- iii. Statistical handbooks are also cited.
- iv. Scholarly journals, books, research articles and doctoral theses.
- v. Online databases and institutional websites that have a good reputation.

Scope of the Study: The study is limited to rural area of Arunachal Pradesh. The thematic scope includes: small and medium enterprise and cottage industries, Resource-based rural industries, Infrastructure, finance, skills and market linkages, and the government policies and institutional frameworks are in place.

Methods of Analysis: The data collected are analysed from:

- i. Percentages, ratios and trend analysis are examples of descriptive statistical tools used.
- ii. The rural industrial activities are analysed using comparative and sectoral approach.
- iii. Use logical interpretation in charts, tables and secondary indicators (as needed).

Limitations of the Methodology: Secondary data are used in the study and may not be as accurate and available as desired. Primary data at the district level is not included because of logistical challenges. Official statistics may not capture informal and unregistered rural enterprises.

RESULTS AND DISCUSSION

Opportunities of Rural Industrialisation

1. **Resource-Based Industrial Potential:** Arunachal Pradesh has a huge potential for industrialization being in rural areas due to its immense natural resources. The state enjoys the abundance of bamboo, cane, timber (regulated), medicinal plants, aromatic plants, fruits, spices and forest based non timbers products. The resources have huge potential for agro-processing, bamboo based industries, herbal products and handicrafts (Forest Survey of India, 2021). Industries of bamboo have potential to generate employment in the rural areas especially because of availability of bamboo raw material and traditional skills of the tribal communities.

2. **Contribution of MSMEs to Rural Economic Development:** The study suggests that Micro, Small and Medium Enterprises (MSMEs) contribute as backbone to industrialisation in the rural part of Arunachal Pradesh. MSMEs play significant role in employment generation, income diversification, reducing poverty and regional economic development. There are indications that MSMEs are a significant

proportion of industrial enterprises in the state, and provide employment to a large number of people, especially in the rural areas, after agriculture. They have relatively low capital cost, which makes them appropriate for the rural entrepreneurs and the self-help groups (SHGs) especially in remote areas and tribal areas. Additionally, rural MSMEs have also enabled inclusion of women, youth and tribal communities in economic activities as observed in the field. Women are participating in various self-help activities like weaving, handicrafts, food processing and marketing of local products. These businesses help improve family incomes, but they also help to empower women in the economy and ensure social inclusion. Examples of recent efforts for promoting SHGs under "Made-in-Arunachal" movement reflect the increasing significance of the community-based enterprises in the rural industrial development.

Cottage and village industry like weaving, handicraft, food processing, carpentry and blacksmithing have great importance in the rural livelihoods. These businesses have the potential to make substantial contributions to income generation, if they receive proper technological support and market access.

3. Creation of jobs and diversification of livelihoods:

A key conclusion of the study is that there is significant potential for rural industrialisation to lessen reliance on traditional subsistence farming. While the majority of the rural population still rely on agricultural activities for their livelihood, access to land is small, productivity is low, and agricultural employment is seasonal, thus limiting income generation. Rural industries offer alternative livelihood opportunities and livelihood diversification.

Households in the rural areas have gained employment and self-employment opportunities from handloom weaving, handicrafts production, bamboo business and agro-processing industries. These activities are especially significant for females and young people who may lack opportunities for an official position in the labor market. Hence, the growth of rural industries can help to decrease the rural poverty rates and curb distress migration to the urban centres. These results are similar to those of studies examining rural entrepreneurship and innovation, which highlight the importance of small businesses in improving the resilience and sustainability of rural communities.

4. Government Policies and Industrial Schemes: The government has several initiatives which offer institutional support for rural industrialisation in the state. The Uttar Poorva Transformative Industrialization (UNNATI) scheme, MSME development programs, and rural livelihood missions are examples of such schemes designed to encourage industrial investment, offer subsidies, and foster entrepreneurship (Ministry of

Commerce & Industry, 2023). Rural industrial development is also indirectly encouraged by infrastructure development programmes such as PMGSY and projects that aim to increase market access under the umbrella of digital connectivity.

5. Entrepreneurship and Self-Help Groups (SHGs):

Entrepreneurship, especially in the form of SHGs in rural areas is a great opportunity for inclusive industrial development. SHGs have played an important role in bringing the rural women together, encouraging micro-enterprises and creating financial inclusion (NABARD, 2022). Food processing, handloom & handicrafts based SHG have yielded positive results in the field of income diversification and empowerment of women in Arunachal Pradesh.

6. Strategic Border Location and Tourism Linkages:

The geographical advantage of Arunachal Pradesh on the border and the booming tourism industry in the state provide indirect opportunities for the rural industrialization. Rural enterprises can be boosted by increasing demand for local products, handicrafts, food products and hospitality services associated with the tourism value chain (Government of India, 2023).

CHALLENGES FOR RURAL INDUSTRIALISATION

1. The condition of infrastructure and its deficiencies is one of the critical challenges.

The study concludes that, though there are tremendous opportunities, lack of infrastructure is one of the most important constraining factors of rural industrialization in Arunachal Pradesh. Lack of good road network, inadequate power supply, small industrial estates, inadequate storage space, and lack of digital infrastructure make it difficult to develop rural businesses. Villages are still geographically remoteness as a result of the mountainous topography and the rising costs of transportations, which affects market accessibility.

Analysis shows that infrastructure constraints decrease the competitiveness of rural industries and deter private investments. The entrepreneurs are facing problems in moving the raw materials and finished products to the markets. These challenges are acknowledged in the state's Industrial Development and Investment Policy and the plan calls for establishing industrial estates, growth centres and enhanced connectivity programmes. But it is important to implement it properly to get a worthwhile result.

Thus, inadequate transportation facilities, electricity distribution, and a weak logistics sector continue to hamper rural industrialisation. The rugged topography and fragmented population make it harder to develop infrastructure, and privately owned infrastructure is less attractive (Panda, 1997).

2. Technological and Skill-Related Challenges: The study also reveals that most of the rural businesses are

still using conventional production techniques and low-tech inputs. Traditional skills are assets of the culture and poor modernization often leads to low productivity, poor quality of the product and weak competitiveness in the wider market.

The inadequacy of technical skills, capacity to work as an entrepreneur, and digital literacy limits innovation and business expansion. Rural entrepreneurs tend to be less exposed to modern marketing methods, electronic commerce platforms, quality certification systems etc. Research around rural entrepreneurship emphasizes on the role of digital technologies, which can be instrumental in improving market access, productivity, and enterprise competitiveness, provided training and support is provided. Most of the rural businesses still operate in traditional way leading to low value addition and low competitiveness (Kumar *et al.*, 2021).

3. Restrictions on market access and commercialization: Another significant finding is that it is more challenging for rural producers to gain access to larger domestic and foreign markets. The bulk of businesses are small and local. Rural products have limited commercial potential as there is no organized marketing network, product branding, packaging infrastructure, and market intelligence.

The handloom and handicraft products of Arunachal Pradesh have cultural value, but lack of market linkages is a problem which leads to low remuneration for the artisans. The same issues apply to the agro-based products and the bamboo businesses. Increase in market infrastructure, promotion of Geographical Indication (GI) products, and linkages between rural enterprises with digital marketplaces can greatly enhance income opportunities. The state's export promotion and branding of local products is thus a good sign.

4. Restricted access to finance: Even with policy measures, institutional finance is still not widely available for rural entrepreneurs. Credit availability for MSMEs and the rural industries is constrained due to factors like lack of collateral, financial illiteracy and low banking penetration (NABARD, 2022).

5. Social Distancing and the Need for Hand washing: The results indicate that availability of institutional finance is still a significant challenge for rural entrepreneurs. Most of the small-scale producers and tribal artisans do not have collateral, formal production records and lack knowledge about financial literacy, which hinders them to avail banks loan. This means that business owners often turn to informal credit providers or to their own personal funds that will have higher rates of interest.

While the government schemes and credit outreach programmes have been promoting financial inclusion, many rural businesses still suffer from a lack of funding, thereby limiting their expansion and modernization with technology. Some efforts to fill this financing gap have been made in the recent times through agricultural and entrepreneurship credit initiatives which require more outreach and simplified processes to achieve higher participation rates of rural entrepreneurs.

6. Marketing Activities: National and international markets pose challenges for rural industries, as a result of poor branding, limited marketing infrastructure and digitalization. Consequently, a lot of businesses continue to operate at a local level with low profitability.

7. Socio-Cultural and Institutional Constraints: Limited land ownership rights in the tribes, weak community decision making mechanisms and risk averse attitudes are often a constraint to entrepreneurial initiatives. Non-locally sensitive industrial development policies can be opposed or poorly executed (Panda, 1997).

8. The policy implication and recommendations are discussed: For sustainable rural industrialization in Arunachal Pradesh, the following measures are crucial:

- i. To enhance the infrastructure in the rural areas in a region-specific way.
- ii. To increasing skill building and vocational training that is adapted to local resources.
- iii. To improve credit facilities by cooperative banking and micro-financing.
- iv. To create opportunities for digital marketing and e-commerce for rural products.
- v. To foster enterprises that are based in the community and environmentally sustainable.

10. Sustainable Resource Use and Environmental Protection: The study shows that, due to the ecological fragility and biodiversity richness of the area, sustainable rural industrialisation holds significant importance in Arunachal Pradesh. There is the potential for the development of resource-based industries like bamboo processing, making herbal products, eco-tourism, and organic food processing without compromising on environmental sustainability.

But the unplanned industrial expansion may be a threat to forests, water resources and traditional livelihoods. Thus, future industrial policies have to take into account of both economy and ecology. The Industrial Development and Investment Policy makes a strong focus on environmentally sustainable industrial development and the preservation of the state's cultural heritage.

FINDINGS

1. The results highlight the need for a holistic and comprehensive approach in developing Arunachal Pradesh sustainable rural industrialization. Improving infrastructure, skills, technology uptake, financial access and market linkages should go hand-in-hand in fostering an enabling environment for rural enterprises. Women entrepreneurship, tribal entrepreneurship, digital marketing and value chain integration should be given special focus. Furthermore, the development strategies have to be environmentally sustainable and culturally appropriate in view of the ecological sensitivity and distinctive indigenous legacy of the State.

2. There are still some structural problems that are inhibiting the successful development of rural industries. A lack of infrastructure, such as roads, electricity, industrial estates, digital networks, etc., continues to be a significant challenge. The limited access to institutional credit, lack of collateral, and poor financial skills pose financial constraints to the expansion and modernisation of rural enterprises. Furthermore, technological backwardness, labour shortage and lack of market linkages contribute to lower productivity and competitiveness. There are numerous rural industries that remain small and lack access to wider domestic and international markets and so are limited in their commercial potential.

CONCLUSION

The rural industrialisation has tremendous potential to change the socio-economic scenario of Arunachal Pradesh. There is good potential for the growth of resource-based industries like bamboo/ cane products, handloom and handicrafts, agro-processing, medicinal plant processing, and eco-tourism based on the abundance of natural resources, rich biodiversity, traditional tribal knowledge systems and cultural heritage of the state. They can create jobs, promote rural livelihood diversification, alleviate poverty and boost local entrepreneurship, including that of women and tribal groups. The prospects for rural industrialisation further improve with the implementation of various government initiatives and industrial policies for promoting MSMEs, local value addition and sustainable industrial development.

Hence, with proper policy implementation, coordination of institutions and engagement of the communities, rural industrialization can act as a powerful tool to promote balanced regional development and inclusive growth in Arunachal Pradesh. By promoting sustainable resource use, developing the entrepreneur class and improving infrastructure, the government can unlock the abundant economic potential of the rural population to make a meaningful contribution to socio-economic development in the long-term.

REFERENCES

1. Census of India. (2011). *Primary Census abstract: Arunachal Pradesh*. Government of India. <https://censusindia.gov.in>
2. Datt, R., & Mahajan, A. (2019). *Indian economy* (78th ed.). S. Chand Publishing. <https://schandpublishing.com/indian-economy>
3. Forest Survey of India. (2021). *India state of forest report 2021*. Ministry of Environment, Forest and Climate Change, Government of India. <https://fsi.nic.in/forest-report-2021>
4. Government of Arunachal Pradesh. (2022). *Economic survey of Arunachal Pradesh*. Department of Finance, Government of Arunachal Pradesh. <https://finance.arunachal.gov.in>
5. Government of India, Ministry of Commerce and Industry. (2023). *Annual report 2022-23*. Government of India. https://commerce.gov.in/writereaddata/Annual_Report_2022-23.pdf
6. Government of India, Ministry of Tourism. (2023). *Tourism statistics at a glance 2023*. Government of India. <https://tourism.gov.in>
7. India Brand Equity Foundation (IBEF). (2023). *Arunachal Pradesh: State profile*. <https://www.ibef.org/states/arunachal-pradesh.aspx>
8. Kamutuezu, E. U., Winschiers-Theophilus, H., & Peters, A. (2021). *An exploration of factors influencing the adoption of ICT enabled entrepreneurship applications in rural communities*. arXiv. <https://arxiv.org/abs/2108.09789>
9. Koka, N., & Kaurinta, R. (2022). Review of micro, small, and medium enterprises (MSMEs) of Arunachal Pradesh. *Dera Natung Government College Research Journal*, 7(1), 76–82. https://www.researchgate.net/publication/366637456_Review_of_Micro_Small_and_Medium_Enterprises_MSMEs_of_Arunachal_Pradesh
10. Kumar, R. R., Singh, K. P., & Ete, L. (2021). Social innovation and entrepreneurship in Arunachal Pradesh: Opportunities and challenges. *Space and Culture, India*, 8(4), 48–59. <https://www.spaceandculture.in/index.php/spaceandculture/article/view/924>
11. Lokuge, S. (2020). *Theoretical opportunities for rural innovation and entrepreneurship research*. arXiv. <https://arxiv.org/abs/2010.12031>
12. Mandal, R. K. (2007). Khadi and village industries in North East India with special reference to Arunachal Pradesh: Retrospect and prospect. *Journal of Global Economy*, 3(2), 88–99. <https://ideas.repec.org/a/jge/journal/323.html>
13. Mandal, R. K. (2014). Economic inequality among the rural tribal people in Arunachal Pradesh: An empirical study. *Journal of Global Economy*, 10(1), 24–36. <https://ideas.repec.org/a/jge/journal/1013.html>
14. Mandal, R. K. (2014). Present scenario of handloom and handicrafts industries of the ADIS.

- Journal of Global Economy*, 10(3), 191–203.
<https://doi.org/10.1956/jge.v10i3.362>
15. Mandal, R. K. (2016). Jhum cultivation and environment in Arunachal Pradesh. *Journal of Basic and Applied Research*, 2(2), 94–101.
<https://jbarbiomed.com/home/article/download/59/56/56>
16. National Bank for Agriculture and Rural Development (NABARD). (2022). *Status of SHGs and access to finance in India*. NABARD.
https://www.nabard.org/content1_page.aspx?pageID=408&option=statements
17. Panda, B. (1998). Status of and sociological constraints to industrial development in Arunachal Pradesh. In *Sociological constraints to industrial development in North-East India* (pp. 225–236). Concept Publishing Company.
https://www.researchgate.net/publication/228247186_Status_of_and_Sociological_Constraints_to_Industrial_Development_in_Arunachal_Pradesh