

Application of Cooperative Based Economic Model for Sustainable Livelihood in Tribal Belts of North East India

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Abstract

This paper intends to suggest a comprehensive inclusive model for tribal women in livestock sector of North East Region (NER) for sustainable livelihood. The findings are based on recent empirical research conducted under a funded project of NASF ICAR around pork marketing chain of North East region with a cluster based approach. In doing so, the study also examines the role of institutions like research organizations, cooperatives, KVK etc. in the region for tackling challenges ranging from institutional barriers to socio-cultural dynamics. The outcome of the study drives a knowledge product on enterprising business model for the women farmers to turn the subsistence level backyard animal farming to commercialization. With the framework to economically empower tribal women of NER, the study proposes strategies by time periods (short run and long run). A working action plan based on "Model-Village approach" based on cooperative economic model is formulated for strengthening the actors of marketing chain. Sustainable livelihood framework is devised through mapping four aspects of sustainable livelihood -vulnerability, asset creation, market chain participation, structural transformation through community & institutional support. In long run, the sustenance of livestock (pig) business in North East is dependent upon tapping customers' diversified choice at local, national and international level through integrating the urban trading/local bodies (Municipalities, trade associations, welfare societies) with the public stakeholders (academic & research organizations). Business enabling environment will need capacity building of not only farmers but also of urban trading/local members on areas like digital literacy, global marketing channels, access to global customers (India Mart) with macro-dimensional intervention around infrastructural expansion.

Key words : *cluster based approach, sustainable livelihood framework, tribal women, model village approach, marketing chain, North east region, cooperative market model.*

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1. Introduction :

From the Classical to Modern Economic Growth Models, the role of unit 'household' in production function has shifted from consumers to producers where all production agents originate. The economy is moving from a supply centric model to demand oriented structure where specially the rural ecosystem for sustainable outcome needs to operate through cooperative based economic model. Such models have an empowerment rationale, where the confidence of local people, skill, and ability to cooperate - work towards the sustainable livelihood outcome. Furthermore, the ever evolving global economic structure illuminates the importance of devising an economic model or framework within which all the agents can operate for endogenous economic growth.

Globally agricultural cooperatives are major players, especially in European farming which accounts for 40 to 60 percent of agricultural trade (Ajates, 2020). According to United Nations (2021) agricultural cooperatives enable small producers to share the risks, gain market access and make investment in their activities. In India the growing initiatives towards enhanced research and effective implementation of National Cooperatives portray the commitment of the Government of India to work towards 'Sahakar se Samridhhi. In Handbook on cooperatives (2022), Dr. Sudhir Mahajan, Chief Executive NCUI considered that cooperative institutes could not upgrade themselves on application of technology and on adoption of work culture at professional level for innovative approaches. He therefore suggested on the application of inclusive model with the integration of expert institute, resource organisation, vulnerable sections of society along with expansion of cooperative network in the country.

2. Objectives and Methodology :

With the blend of theoretical frameworks and empirical findings based on a project titled, 'Pork Marketing Chains In North East India For Sustainable Livelihood of Tribal Women (Assam, Meghalaya and Nagaland)', the study aims to elucidate how such cluster based cooperative models can contribute to enhance the economic resilience, ensure equitable distribution of resources by preserving the environmental integrity upon which these communities are heavily dependent. The North East region of India, distinguished by its rich cultural heritage and diverse tribal communities, presents a unique economic landscape marked by both challenges and opportunities. Amidst this backdrop, the application of cluster-based

economic model is adopted as an avenue for fostering sustainable livelihoods among the tribal populations. This approach, grounded in principles of collective action, mutual aid, and shared ownership, all need to align closely with the indigenous ethos of community and solidarity that characterizes tribal societies.

3. Review of Literature :

Several important conclusions have been drawn from the primary data research on the pig industry and its effects on sustainable lifestyles in North East India's tribal regions, which were carried out in three different states—Assam, Meghalaya and Nagaland. These results cover a wide range of topics, from the dynamics of supply and demand in the pig market to more general socioeconomic effects, with a focus on women's empowerment and the diversification of household income.

The study reveals notable differences in the availability of pigs according to developmental stages: sow, boar, fatteners, and piglets. These variations may be due to changes in breeding procedures, market needs for pigs at different stages of development, or even the feasibility of growing pigs to various stages before selling them. Comprehending these dynamics is crucial in order to customize interventions that have the potential to improve supply chain efficiency and open up markets for pig producers. Furthermore, the stark disparities in consumption patterns between age groups—with the 18–40 age groups showing a particularly strong demand for processed pig products—are a noteworthy finding. This pattern suggests that value addition and processing could be areas of growth for the pig business. The industry may be able to increase value creation and perhaps boost pig farmers' profits by taking advantage of this need. Net profit margins for backyard pig farmers, who usually rear one to five piglets, are influenced by various factors. The key factors that curtail the production of piglets in the region consist of high initial costs incurred on pig stock purchase, equipment, feed, and shed upkeep. This high cost of inputs for rearing of pig is making this indigenous occupation increasingly unpopular affecting household incomes (Bhattacharjee M, 2023).

Women are emphasized for their active involvement in Self-Help Groups (SHGs), Non- Governmental Organizations (NGOs), or Village Organizations (VOs), as well as their knowledge of market prices. But a major flaw appears when you consider their limited involvement in the market chain and lack of commercialization of pig farming. The study also

finds that women's economic advancement, physical capital, and income are important factors influencing their ability to lead sustainable lives in the area. Therefore, improving these elements may result in more extensive socioeconomic advantages, such as decreased poverty and increased well-being for the community (Bhattacharjee M, 2022). Under the project it was found that a multifaceted strategy was indeed needed to address the identified problems, including developing market linkages, reducing input costs, building enterprise and business model, digitalization and effective waste management & bio security measures to revive the occupation of pig production in the region.

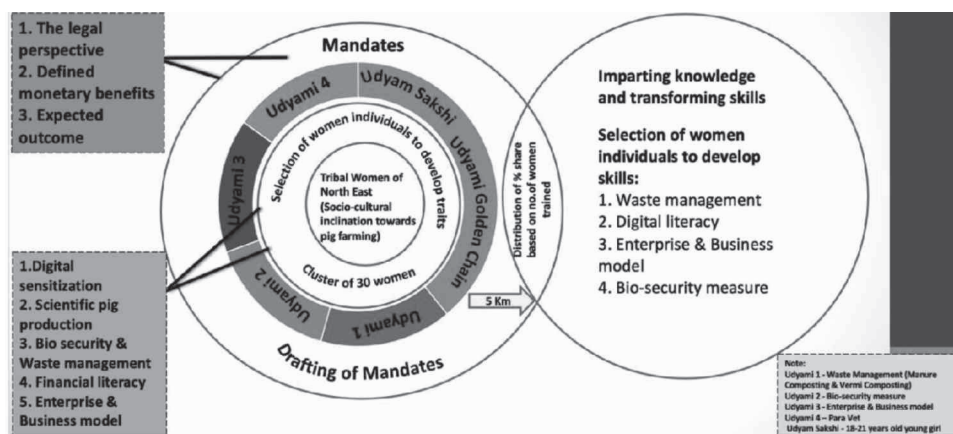
A study (2012) by Ministry of Development of North East region (GoI) on social assessment and tribal development framework found that pig rearing is one of the most common asset available in every household. Many of the households would like to continue pig rearing but requirement of training for skill development emerged as a necessary condition from the study. Therefore under the project extensive capacity building initiatives were conducted over a span of six to eight months to tackle the above mentioned challenges. 'Piggery Field School' was started and a cluster based approach was used to train a group of women around making feed from locally leftover crops, waste management through conversion of pig waste into fertilizer, use of digital apps to identify common issues related to pig health, processing of pork related items as a source of diversified income and devising a knowledge product for commercialization of pig farming. Post-Impact Analysis (analyzing the outcome derived from capacity building programs) was conducted on the women clusters post, capacity building programs and trainings imparted to them in the following 6 categories- Breeding Exotic pig breed, Pig Management, Minimization of feed cost, Bio-security measures, Marketing Awareness and Pork Processing & Value Addition. The post impact analysis portrayed significant improvement in skill development and knowledge gained by the cluster of women around pig production and management techniques, on the basis of which extensive framework is suggested (Bhattacharjee M, 2023).

4. Model framework suggested for Endogenous growth :

A working action plan based on "Model-Village approach" based on Cooperative Economic model is formulated: where the trained tribal women will further train the women to develop traits within the radius of 5 km. Udyami golden chain will be formulated with five designated Udyamis

(Udyami 1- Waste Management, Udyami 2- Biosecurity measure, Udyami 3- Enterprise & Business model, Udyami 4- Para Vet, and Udyam Sakshi-Digital awareness) who will be acting as knowledge disseminators to commercially transform the skills to the tribal women with socio-cultural inclination towards pig farming. The percentage share of the benefits by the golden chain members to be drafted based on: legal perspective defined monetary benefits and expected outcome.

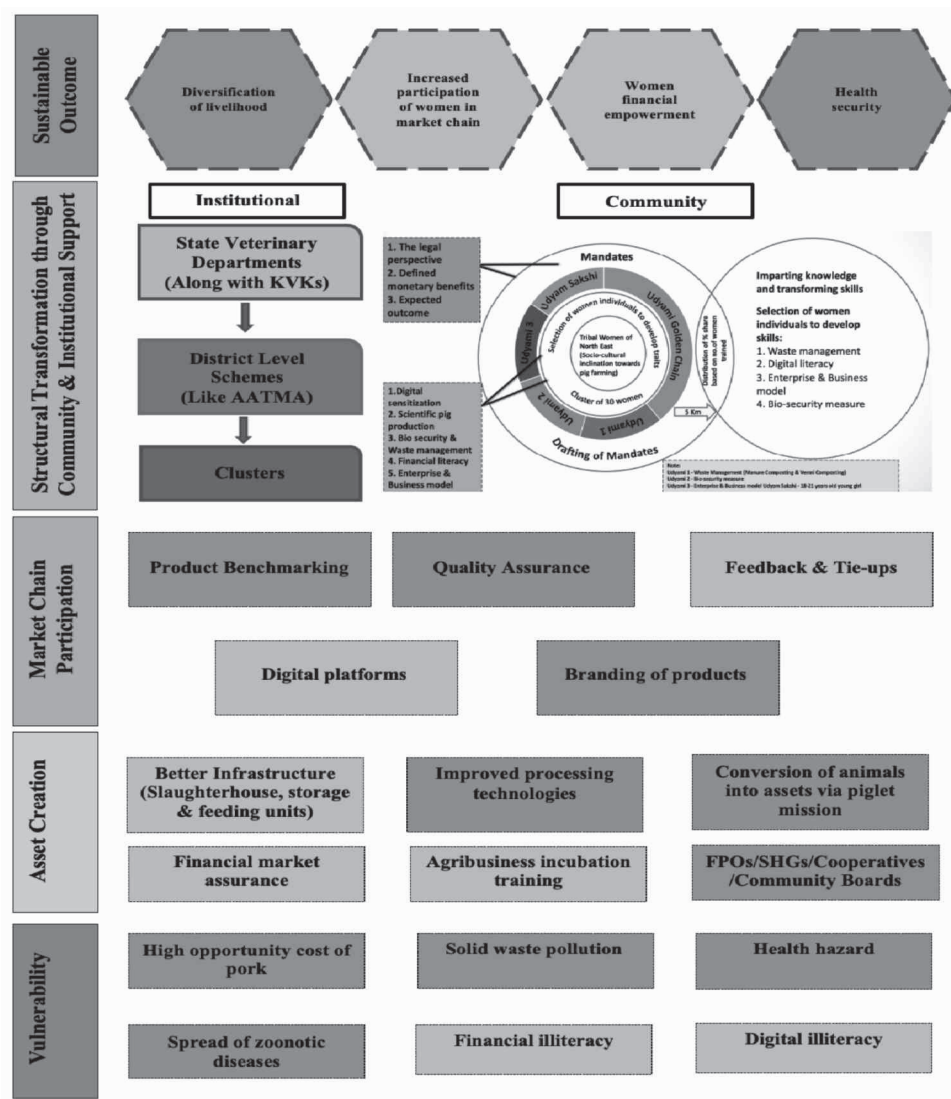
Figure 3a: Framework to economically empower tribal women of NER



Source: Compiled and constructed through impact analysis by the author under NASF-ICAR funded project.

In short and medium run, an innovative pathway is framed by integrating the skilled incubates located in clusters titled as Udyami (Udyami 1-waste management, Udyami 2-Bio-security measures, Udyami 3-Enterprise & Business model, Udyami 4-Paravet and Udyam Sakshi- Digital literacy) with the public stakeholders (academic & research organizations) for the efficient market participation. In long run, the sustenance of pig business is dependent upon tapping customers' diversified choice at local, national and international level through integrating the urban trading/local bodies (Municipalities, trade associations, welfare societies) with the public stakeholders (academic & research organizations) to prosper through market competitiveness. Furthermore, for efficient market participation and competitiveness, an enabling environment will need capacity building of urban trading/local members on areas like digital literacy, global marketing channels, access to global customers (India Mart) with macro- dimensional intervention specifically in infrastructural expansion.

Figure 3b: Sustainable livelihood framework devised through mapping four aspects of sustainable livelihood (vulnerability, asset creation, market chain participation, structural transformation through community & institutional support).



Source: Compiled and constructed through impact analysis by the author under NASF-ICAR funded project.

The Empirical framework explains the interaction between the defined heads – Vulnerability, asset creation, market chain participation, Structural transformation through community and institutional support for achieving sustainable livelihood outcome.

5. Role of Cooperatives in ensuring endogenous growth :

Theoretical models and empirical research exclusively prioritizes cooperative economic efficiency concept for balancing the socio cultural dynamics with sustainable livelihood. By definition, cooperative societies are in a good position to apply a cluster-based strategy that can greatly improve community livelihoods, in this case- especially for pig farming. The problems faced by rural households (including pig tribal farmers of North East India), can be creatively and sustainably solved by utilizing the group power, common resources, and communal spirit of cooperatives. Cooperatives can organize and facilitate training sessions for women by pooling resources, which will bring together experts to develop expertise within the community to provide ongoing training and support, ensuring that all members can benefit from shared knowledge.

6. Conclusions:

Knowledge is a precious resource, particularly when it comes to agricultural specialization. Cooperatives can combine their knowledge and experiences to create commercially viable knowledge goods like manuals, guides, or internet content. These could be success stories, cutting-edge methods created by the cooperative members. Cooperatives can position themselves as leaders not only in sustainable pig farming, but also in other agrarian related issues.

For agricultural livelihoods to be sustainable, diversification is essential. Cooperatives can play an instrumental role in initiating trainings to build capacity around processing methods, and marketing mechanisms which as per the empirical analysis is a necessity for reviving pig production. By carrying out these programs, cooperative societies support the larger objectives of environmental sustainability, women's emancipation, and economic development. Using the above mentioned cluster-based strategy, producers can scale and replicate solutions that can have a big impact on the community in general. Cooperatives not only have the power to completely alter the face of pig farming industry in tribal areas by working together, being innovative, and emphasizing sustainability but can also set a model to

be replicated as an enterprising solution to follow in the ever growing field of agriculture.

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