**Empowering Rural Youth through Scientific Piggery Farming based on Breeding and High Cost of Feed in West Jaintia Hills District of Meghalaya, India**

**Abstract**

This research study was undertaken to study the impact of piggery enterprise taken up by the rural youths under Attracting and Retaining Youth in Agriculture (ARYA) project in West Jaintia Hill District of Meghalaya. The study was conducted in five purposively selected villages in the district. From the study it was found that majority of the youths taking up piggery farming under the project were in the age group of 31-35 years (34 %) with the minimum qualification of 10th passed (58 %). Majority of the youths who have taken up this enterprise were male (70 %) and all of them belong to Schedule Tribe community having more than three years of experienced in pig farming. It was found that all of the selected youths reared pigs for breeding purpose with an average body weight of piglets recorded at 7.4 kg and adult average body weight of 80.8 kg. the mortality rate was found to be only 4 percent in comparison to 20 percent before the inception of the project. The gross income recorded was Rs. 6.24 lakh with a benefit cost ratio of 2.8:1. After analysis of the constraints perceived by the rural youths toward piggery farming using Rank Based Quotient (RBQ) analysis method, it was revealed that majority of the youths ranked “High Cost of Feed” as the most important constraints with an RBQ value of 96.6 followed by less availability of land (90.5), difficulty in procuring raw material for low cost feed formulation (87.3), high mortality due to Swine fever (80.8), lack of improved breed (75.6), no insurance facilities (71), price fluctuation (70.5), lack of proper marketing channel (70), poor management (55.6), difficulty in procuring piglets (44.3) and high cost of treatment (33.6). The number of the youth who were attracted towards this enterprise on the seeing the progress of the selected youths were 37 numbers.

Key words: Piggery, ARYA project, Rank Based Quotient (RBQ), Enterprise.

**Introduction:**

Youth in general are the main protagonists in the sustainability of India. With the increase in population year after year, youth are facing a crisis in job availability and sustainability. This crisis has occurred even in rural areas where rural youth are migrating towards towns and cities in search of jobs. The heart of the social growth of our nation is through agriculture and its allied activities (Saini et al, 2023). It plays a major role once the youth grasp the opportunity of what this sector has to offer. On the other hand, the ARYA project plays a part in empowering the rural youth to move toward Agriculture and its allied activities with an entrepreneurship perspective. In the ARYA Project, youth will be interested in taking farming as a profession only if farming becomes both economically and intellectually attractive (Choudhary *et al*, 2022).

The ARYA Project, launched by ICAR on July 16, 2015, is focused on attracting and retaining rural youth in agriculture and its allied activities (Sahoo *et al*, 2023). The primary objectives of the project include improving the social and economic status of rural youth by engaging them in agriculture and allied activities, offering tailored training and capacity building for skill development, and fostering agricultural entrepreneurship among tribal rural youths as a sustainable business pursuit. It is anticipated that with appropriate guidance, rural youth will be empowered to pursue agriculture and its allied activities as viable business ventures (Bairwa *et al*, 2014). Adhering to the above objectives, ARYA Project was initiated in the year 2019 by KVK Jaintia Hills.

The northeastern region of India places special importance on pig husbandry as it significantly improves the social and economic status of tribal farmers. In Meghalaya, pig farming is particularly prominent, with high demand for pork within the state. Despite daily consumption, the local production is insufficient to meet the local demand, leading to the import of pigs from other states such as Assam, West Bengal, and Punjab. Consequently, the price of pork in Meghalaya increases annually due to supply constraints. Recognizing this, the ARYA program in KVK Jaintia Hills is actively promoting piggery farming as a viable entrepreneurial opportunity for rural youth in the West Jaintia Hills district.

**Methodology:**

The study was conducted in 5 purposively selected villages i.e. Niawkmai, Raliang, Mulum and Nongkynrih village of Laskein Block and Nangbah Village of Thadlaskein Block, West Jaintia Hills District. A total of 50 number of youths were selected who have directly benefited from Attracting and Retaining Youth in Agriculture (ARYA) Project. The selected youths were between the age group of 18-45 years as per the guideline of the project. Prior to starting of the enterprise, the youths were provided skilled training programme for a period of 7 days on scientific piggery farming. Post the training programme, the youths were guided as how to start their own unit after proper site selection and technical support from the office of Krishi Vigyan Kendra Jaintia Hills. Each youth started rearing 10 numbers of pigs mainly focusing on both breeding and fattening aspects. Primary data were gathered through structured questionnaires, interviews, and direct observations by visiting their farms, while secondary data were obtained from various published and unpublished documents including various focused group discussions with government and non-government organizations involved in piggery farming. The study was conducted for a period of 3 years from 2021-2024. Data recorded were an average of all the youths involved in the enterprise in a particular village. The constraints perceived by the youths in taking up piggery farming were recorded and analyzed using rank-based quotient (RBQ) technique.

**Results and Discussions**

**Table 1: Socio-Personal data of youths**

|  |  |  |
| --- | --- | --- |
| **Category** | **Sub-Category** | **No. of youths** |
| **Age (Years)** | **18-22** | 11 (22%) |
| **23-26** | 6 (12%) |
| **27-30** | 16 (32%) |
| **31-35** | 17 (34%) |
| **Educational qualification** | **Primary (up to Class 5th)** | 12 (24%) |
| **Secondary (up to Class 10th)** | 29 (58%) |
| **Higher secondary (up to Class 12th)** | 5 (10%) |
| **Graduation** | 4 (8%) |
| **Gender** | **Male** | 35 (70%) |
| **Female** | 15 (30%) |
| **Caste** | **SC** | 0 (0%) |
| **ST** | 50 (100%) |
| **Others** | 0 (0%) |
| **Experience in piggery farming** | **Less than 1 year** | 13 (26%) |
| **1-2 years** | 10 (20%) |
| **2-3 years** | 13 (26%) |
| **More than 3 years** | 14 (28%) |

Table 1 revealed that majority of the youths were in the age group of 31-35 years (34%) followed by 27-30 years (32%), 18-22 years (22%) and 23-26 years (12%) which was supported by the findings of Nirmala *et al* (2025) who also revealed in her study that majority of the pig farming entrepreneurs were male within the middle aged group (25 to 36 years) and were literate with high school education.. This might be due to the reason that this is the critical age group for government job aspirants and after several trials, they have finally decided to take up farming as a primary source of occupation. This is also an age group where most of the youths already started having a family and is of urgent need to have a stable source of income. When it comes to educational qualification, majority of the youths (58%) have completed their secondary school education and could not complete their further studies either due to financial problems or helping their parents in farming activities Piggery farming usually requires labor so most of the youths i.e. 70% were male followed by 30% female. West Jaintia Hills District being a tribal dominated belt, all the selected youths belong to scheduled tribe with majority (28%) of the youths have an experience of more than 3 years in piggery farming.

**Table 2: Productive and Economic Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of village** | **Particular** | **Before ARYA Project** | **After ARYA Project** |
| Niawkmai | Weaning size of piglets (kg) | 5.1 | 7.2 |
| Adult body weight (kg) | 39.8 | 80.2 |
| Purpose of rearing | Breeding | Breeding |
| Selling price of piglet (Rs. | 4500 | 5000 |
| Mortality rate | 20 % | Nil |
| Litter size (nos.) | 5 | 8 |
| Cost of production (Rs.) | 1,62,000 | 2,25,200 |
| Gross income (Rs.) | 3,24,000 | 7,20,000 |
| Net income (Rs.) | 1,62,000 | 4,94,800 |
| Benefit Cost Ratio | 2.0:1 | 3.1:1 |
| Marketing Channel | Middleman | Direct linkage with customers |
| Number of youths attracted | - | 10 |
| Nangbah | Body weight at of piglets during weaning | 5.6 | 7.4 |
| Adult body weight (kg) | 40.1 | 81.5 |
| Purpose of rearing | Breeding | Breeding |
| Selling price of piglet (Rs. | 4500 | 5000 |
| Mortality rate | 20% | 10% |
| Litter size (nos.) | 5 | 8 |
| Cost of production (Rs.) | 1,84,400 | 2,04,800 |
| Gross income (Rs.) | 3,15,000 | 5,60,000 |
| Net income (Rs.) | 1,30,600 | 3,55,200 |
| Benefit Cost Ratio | 1.7:1 | 2.7:1 |
| Marketing Channel | Middleman | Direct linkage with customers |
| Number of youths attracted | - | 7 |
| Mulum | Weaning size of piglets (kg) | 5.8 | 7.4 |
| Adult body weight (kg) | 40.5 | 81.0 |
| Purpose of rearing | Breeding | Breeding |
| Selling price of piglet (Rs. | 4500 | 5000 |
| Mortality rate | 20% | Nil |
| Litter size (nos.) | 5 | 8 |
| Cost of production (Rs.) | 1,89,100 | 2,25,200 |
| Gross income (Rs.) | 3,50,000 | 6,40,000 |
| Net income (Rs.) | 1,60,900 | 4,14,800 |
| Benefit Cost Ratio | 1.8:1 | 2.8:1 |
| Marketing Channel | Middleman | Direct linkage with customers |
| Number of youths attracted | - | 7 |
| Nongkynrih | Weaning size of piglets (kg) | 5.6 | 7.4 |
| Adult body weight (kg) | 40.1 | 79.5 |
| Purpose of rearing | Breeding | Breeding |
| Selling price of piglet (Rs. | 4500 | 5000 |
| Mortality rate | 20% | - |
| Litter size (nos.) | 5 | 8 |
| Cost of production (Rs.) | 1,84,400 | 2,14,800 |
| Gross income (Rs.) | 3,15,000 | 6,40,000 |
| Net income (Rs.) | 1,30,600 | 3,55,200 |
| Benefit Cost Ratio | 1.7:1 | 2.9:1 |
| Marketing Channel | Middleman | Direct linkage with customers |
| Number of youths attracted | - | 7 |
| Raliang | Weaning size of piglets (kg) | 5.8 | 7.6 |
| Adult body weight (kg) | 41.5 | 82.0 |
| Purpose of rearing | Breeding | Breeding |
| Selling price of piglet (Rs. | 4500 | 5000 |
| Mortality rate | 20% | 10% |
| Litter size (nos.) | 5 | 8 |
| Cost of production (Rs.) | 2,27,800 | 2,16,400 |
| Gross income (Rs.) | 3,30,000 | 5,60,000 |
| Net income (Rs.) | 1,02,200 | 3,43,600 |
| Benefit Cost Ratio | 1.4:1 | 2.5:1 |
| Marketing Channel | Middleman | Direct linkage with customers |
| Number of youths attracted | - | 6 |

From table 2, it was found that the youths would rear pigs for breeding purpose with the average litter size recorded was 8 numbers of piglets after the inception of ARYA Project as compared to 5 numbers before the inception of the projection. Average body weight of the piglets and adult pigs were recorded as 7.4 kg and 80.8 kg as compared to 5.58 and 40.4 kg respectively prior to the inception of the project. Price of piglet was rupees 5000 as compared to 4500 before the project due to its smaller size. Average mortality rate has also been reduced from 20% to 4%. When it comes to the economics parameter, the gross income recorded was Rs. 6,24,000 with a benefit cost ratio of 2.8:1 as compared to gross income of Rs. 3,26,800 and benefit cost ratio of 1.7 before the inception of the project. The marketing channel followed was by direct linkage to the retailers or through various cooperative societies. Hence it is clear that the youths under this project have got a much better result in terms of production as well as income after the inception of the project. These findings were also supported by Gowda et al (2023) in their study on Economic Performance promoted under ARYA and relationship with entrepreneurial competencies. In their study, they have found that piggery enterprise was the most efficient enterprise in terms of gross return to gross value of input used out of the total 9 enterprises taken for the purpose of the study. The total number of other youths who were attracted towards this enterprise on seeing the progress of the selected youths were 37 numbers.

**Table 3: Constraints perceived by the ARYA Youths towards piggery farming**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CONSTRAINTS (N=50) \*** | **RANK** | | | | | | | | | | | | |
|  | **I** | **II** | **III** | **IV** | **V** | **VI** | **VII** | **VIII** | **IX** | **X** | **XI** | **XII** | **Rank Based Quotient (RBQ)** |
| High cost of feed | 26 | 9 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 6 | 96.6 |
| Price fluctuation | 0 | 0 | 1 | 15 | 0 | 14 | 0 | 13 | 2 | 0 | 2 | 3 | 70.5 |
| Lack of credit facilities | 12 | 0 | 0 | 0 | 6 | 11 | 0 | 0 | 11 | 10 | 0 | 0 | 73.8 |
| Less availability of land | 0 | 15 | 15 | 8 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 90.5 |
| No insurance facilities | 0 | 0 | 0 | 10 | 0 | 9 | 23 | 3 | 5 | 0 | 0 | 0 | 71 |
| Lack of proper marketing channel | 0 | 2 | 3 |  | 12 | 7 | 8 | 12 | 3 | 0 | 0 | 3 | 70 |
| Lack of improved breed | 0 | 11 | 0 | 8 | 8 | 0 | 12 | 1 | 0 | 0 | 10 | 0 | 75.6 |
| Poor management | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 21 | 0 | 23 | 0 | 0 | 55.6 |
| High mortality due to swine fever | 0 | 8 | 13 | 4 | 10 | 0 | 2 | 0 | 6 | 1 | 6 | 0 | 80.8 |
| Difficulty in procuring good quality piglets and feeds | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 9 | 13 | 18 | 44.3 |
| Difficulty in procuring raw materials for low-cost feed formulation | 12 | 5 | 7 | 0 | 10 | 0 | 0 | 0 | 12 | 7 | 0 | 0 | 87.3 |
| High cost of treatment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 19 | 20 | 33.6 |

**\*N is the number of youths**

**Table 4: Preferential ranking of the constraints by Rank Based Quotient (RBQ) technique**

|  |  |  |
| --- | --- | --- |
| Constraints | RBQ value | Preferential Ranking |
| High cost of feed | 96.6 | I |
| Less availability of land | 90.5 | II |
| Difficulty in procuring raw materials for low-cost feed formulation | 87.3 | III |
| High mortality due to Swine Fever | 80.8 | IV |
| Lack of improved breed | 75.6 | V |
| Lack of credit facilities | 73.8 | VI |
| No insurance facilities | 71 | VII |
| Price fluctuation | 70.5 | VIII |
| Lack of proper marketing channel | 70 | IX |
| Poor management | 55.6 | X |
| Difficulty in procuring piglets | 44.3 | XI |
| High cost of treatment | 33.6 | XII |

table 3 and 4 revealed that after analysis of the constraints perceived by the ARYA youths using Rank Based Quotient (RBQ) analysis method, “high cost of feed” with an RBQ value of 96.6 occupied the first rank among the major constraints listed above which was followed by “Less availability of land” (90.5), “Difficulty in procuring raw materials for low-cost feed formulation” (87.3), “High mortality due to swine fever (80.8)”, “Lack of improved breed (75.6)”, “Lack of credit facilities (73.8)”, “No insurance facilities (71)”, “Price fluctuation (70.5)”, “Lack of proper marketing channel (70)”, “Poor management (55.6)”, “Difficulty in procuring good quality piglets (44.3) and “High cost of treatment” (33.6). Considering that feeding constitutes 70-80% of the total rearing cost and the recent increase in the price of concentrate feeds has made it very difficult for the youths to purchase these feeds due to their low purchasing capacity. It was also observed that due to unavailability of raw materials like maize, mustard oil cake, wheat bran etc. in the district, most of these components were purchased from other states thereby making the cost higher. It is therefore important to create an awareness for growing of fodder maize and other feed components in the district so that it will be easier for the youths to purchase the raw materials at a minimum price to make the district as well as the state self-sufficient in feed and fodder production. The present finding was strongly supported by finding Patra *et al* (2014) who found in their study that “High cost of feed” was the major constraint in pig farming and as high as 81.08% of the respondent cited it as a constraint of pig farming. It was also supported by the finding of Tochhwang *et al* (2013) who has found in their study that high cost of feed as one of the major constraints in pig farming. Farmers particularly the rural youths have minimal landholding, thereby could not expand their farming activities in most of the cases thereby occupying the 2nd rank in the list of constraints. During the recent years, there was an outbreak of African Swine Fever in few parts of the district thereby leading to mortality of pigs and incurring huge loss to the farmers making it the 4th rank constraint. It is therefore becoming very crucial for the biological laboratories and other companies to come up with a vaccine to eradicate this viral disease. Lack of improved breed is a major concerned for the rural youths as most of them had to rear indigenous breeds which have low productive and reproductive traits therefore occupying 5th rank. The other constraints occupying 6th and 7th rank are lack of credit facilities and no insurance facilities making it very difficult for the rural youths to take up piggery farming in a large scale due to financial crisis and recovering the loss incurred due to mortality without insurance. The constraints occupying 8th and 9th rank were price fluctuation and lack of proper marketing channel which hinders the rural youths in getting the actual price for the piglets as well as adult pigs as most of the pigs were sold to the middleman without proper weight measurement and just through assumption.

**Conclusion**

It is the need of the hour to have a minimum support price for the piggery farmers so that they can get the actual income they deserve. Since most of the youths follow traditional rearing system prior to the inception of ARYA Project therefore, most of the youths would rear pigs under poor management system which however is not much of a major concerned to them and thus occupying the 10th rank. The last two constraints occupying the 11th and 12th rank were difficulty in procuring good quality piglets and high cost of medication. Since in all the blocks there are veterinary dispensaries, farms and veterinary aid centers which connects cluster of villages, the medicines could easily be availed from these centers. Likewise, the piglets could be collected from the government farms and fellow farmers thereby making these constraints the least ranks among the selected list of constraints. The findings above were strongly supported by Suchiang *et al* (2017) in his study on Participatory constraint analysis of rearing *Niang megha* pigs by the tribal farmers of Meghalaya.

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**References**

1. Acharya S., Sahoo M. and Sarangi D. (2023); Empowering Rural Youth in Puri District through Mushroom Cultivation for Sustainable Livelihoods. Indian Journal of Extension Education Vol. 59, No. 2 (April–June), 2023, (10-15)
2. Bairwa SL., Khalia A., Meena LK., Lakra K. and Kushwaha S. (2014); Agribusiness Management Education: A Review on Employment Opportunities. International Journal of Scientific and Research Publications, Volume 4, Issue 2, February. 2014, (1-4)
3. Choudhury K, Gupta S, Pramod DC, Bijarnia SR and Kuri J (2022); Suggestions of trainers to better run the program of ARYA Project in Banswara district. The Pharma Innov 11(4): 1868-1870.
4. Gowda MJC., Rana RK., Pal PP., Dubey SK., Kumar A., Meena AS., Singh R., Bordoloi R., Bhaskaran A., Raut AA., Rajesh T., Kumar B. and Thimmappa1 K. (2023); Economic Performance of Enterprises Promoted under ARYA and Relationship with Entrepreneurial Competencies. Indian Journal of Extension Education Vol. 59, No. 2 (April–June), 2023, (10-15)
5. Nirmala TV., George N., Jiji RS., Mohan S., Geetha R., Joseph BA., Irshad A and Reddy AD. (2025); Awareness of Pig Farming Regulations Among Entrepreneurs: Implications for Farm Productivity. *Journal of Scientific Research and Reports*, 2025, 31 (6), pp.661-671. [⟨10.9734/jsrr/2025/v31i63162⟩](https://dx.doi.org/10.9734/jsrr/2025/v31i63162). [⟨hal-05112439⟩](https://hal.science/hal-05112439v1)
6. Patra MK., Begum S., and Deka BC. (2014); Problems and Prospects of Traditional Pig Farming for Tribal Livelihood in Nagaland. Indian Research Journal of Extension Education, 2014, 14 (4).
7. Sahoo M, Achary S., Nayak AP. and Sethy S. (2023). Effect of ARYA Programme in Employment and Income Generation of the Rural Youths. Indian Journal of Extension Education Vol. 59, No. 4 (October- December), 2023, (109-113)
8. Saikia AK., Gogoi G. and Neog M. (2019); Constraints Analysis of Small-Scale Pig Farming in Dhemaji District of Assam. J Krishi Vigyan 2019, 7 (2): 40-45
9. Suchiang R., Ray MN., Bora L., Borah M.C., Payeng S., Langstang F.E. and Borah B. (2017); Participatory constraint analysis of rearing Niang Megha Pigs by the tribal farmers of Meghalaya. Journal of Entomology and Zoology Studies 2017; 5(5): 1349-1352
10. Tochhawng L. and Rewani SK. (2013); Constraint Analysis of Backyard Pig Farming in Tribal Areas of Mizoram. Indian Research Journal of Extension Education, January 2013 13(1):123-125.
11. Saini, N., Kaur, D., & Mir, S. A. (2023). Youth Unemployment In India: A Multifaceted And Tenacious Challenge. Journal of Survey in Fisheries Sciences (ISSN: 2368-7487), 10(1), 3637-3643.