

# Issues and Strategies of Piggery Enterprise in North-Eastern Hilly Region of India

M. Norjit Singh<sup>1\*</sup>, Chongtham Sonia<sup>2</sup>, Y. Damodar Singh<sup>1</sup>, Chongtham Rajiv<sup>2</sup>, H. Sanjita Devi<sup>1</sup> and M. Vikramjit Sharma<sup>1</sup>

<sup>1</sup>Central Agricultural University, Imphal.

<sup>2</sup>ICAR for NEH Region, Manipur Centre, Lamphelpat, Imphal.

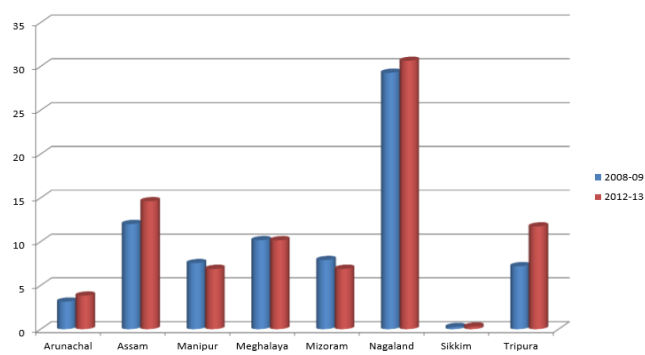
\*Corresponding Author: [norjit99@gmail.com](mailto:norjit99@gmail.com)

The eight states in North East (NE) India (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) are linguistically and culturally very distinct from the other states of India and are amongst the poorest in India with a much higher proportion of the population below the poverty line (35%) than the national average (26%). Agriculture is the prime source of livelihood for the majority (85%) of the rural population in this region. Although cereals dominate the cropping pattern in this region, livestock are an important component of the mixed farming systems and dependence on livestock as an alternative source of income is significant with livestock accounting for 18% of the value of output from the agriculture sector.

For the majority tribal population in NE India, livestock keeping especially pig keeping is the integral to their way of life, with 3.8 million pigs (over one quarter of the pigs in India) in the NE region of India. Meat consumers are becoming aware of the present scientific nutritive value of pork and so the demand for pork is equally increasing with its production. There is a growing demand for pork due to increasing per capita income, urbanization and changes in lifestyle and food habits. Considering the demand of pork in this region, immense opportunities prevail in improvement of productivity through adopting scientific interventions in routine management and health care services. But much of this demand is met from imports from other states in India and from Myanmar.

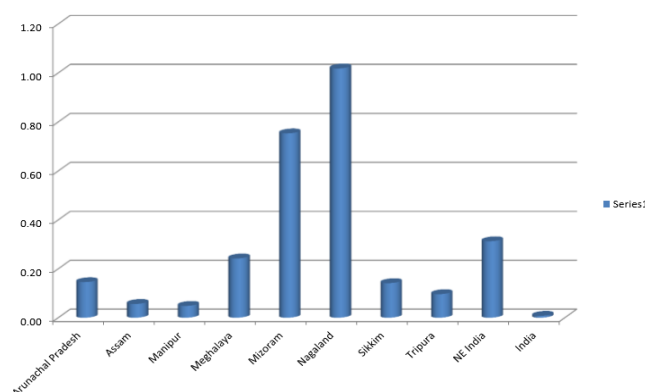
Entrepreneurship development in major sectors like feed formulation and supply, establishing pig breeding unit, artificial insemination facilities, mobile vaccination services, pork processing and use of pork by-product could make the enterprises a profitable one and generate employment

opportunities for farmers and youth engaged in this livestock sector.



Source: Basic animal husbandry and fishery statistics, 2014, DAHD, Govt. of India

**Fig 1: Pork production in NE India ('000 tonnes)**



Source: Household consumption of goods and services in India, 2011-12, NSS, Govt. of India

**Fig 2: Monthly per capita consumption of pork (kg).**

## Issues of piggery in NE India:

### 1. Lack of superior germplasm

The indigenous pig still occupies majority of pig population in NE region of India, even after implementation of various pig improvement programmes. The problem faced by the pig farmers is the lack of superior germplasm for cross breeding with local breed as they are poor in production and reproduction. The NE region has been importing pigs from the other region to fulfill the demand of this region because of high rate of consumption.

### **2. Lack of systematic breeding programme**

The pig breeding farm established to improve the indigenous pigs through upgrading with exotic breeds like Hampshire, Landrace and Large White Yorkshire. But expected results were not achieved due to lack of systematic breeding plans. This approach has led to mixture of crossbred pigs without a fixed percentage of inheritance.

### **3. Inadequate artificial insemination service**

In all the states of NE India, there is an inadequate artificial insemination service available to the farmers. In NE India, only in Mizoram 90% of pigs are improved genotypes.

### **4. Lack of compound feed manufacturer**

There is no compound feed manufacturer in the whole of the N.E. India. As a result, the utilization of non-conventional feed resources could not be maximized. NE India imports the concentrate feed from the other states of India. Because of high transportation cost, by the time it reaches the different states of NE India the cost of concentrate feed is very high. As we are well aware of the fact that 70-80% of the cost of production of pig goes to the cost of feed alone.

### **5. Lack of organized slaughter house**

Slaughter house is a place or a building, licensed by appropriate authority, where animals are killed under hygienic condition for human consumption. The region lacks organized slaughter house, which raises concerns about public health and food safety. The vast meat-eating community has to depend on those butchers' shops scattered throughout the city whose hygienic condition is below the satisfactory level. The butchers slaughtered the pigs with traditional method without maintaining any hygiene.

### **6. Lack of organized market**

There are no organized markets in all the states of NE India, which involves chains of middlemen who reap the actual benefit depriving the real producers of their rightful share. Pork is generally sold at the roadside or at weekly markets. The whole meat trade

in NE India states is handled and controlled by a group of people who have been in the business traditionally and the whole process of production, marketing, fixing of price etc. are done by them.

### **7. Lack of veterinary health service**

In many parts of NE India there is virtually no veterinary service and generally a very low level of awareness among producers of pig diseases and preventative measures. Laboratory diagnoses of the disease are rarely carried out. Unfortunately, most of the farmers neglect diseases and parasite infestation at the early stage which result in serious problems eventually leading to serious losses in the productivity and profitability.

### **8. Inadequate vaccination**

Despite the reported prevalence of swine fever in different states of NE India and the mortalities it caused, there are very few instances of vaccination against swine fever due to apparently inadequate knowledge about the disease, poor availability of the vaccine and lack of proper storage.

### **9. Poor transport facility due to the topography**

The NE region is mostly hilly due to which the transportation of pig from outside state takes a longer time than other places. The pig farmers are located in the interior places so, it is difficult for them to transport regularly to the market. Moreover, during the monsoon seasons there is heavy landslide in these areas, which in turn further aggravates the communication condition.

### **10. Technical constraints**

The majority of the pig farmers are in the rural areas. The education level is low. They follow the traditional practice done over the ages. There is lack of extension activities to introduce scientific way of feeding and management of pig to bring a change in the knowledge, attitude and skill of the farmers. The farmers do not know how to select piglets of high quality.

### **11. Lack of easy credit facility**

Finance has the key role to play for development of piggery. A pig farm should always be equipped with necessary equipments, nutritious food, medicines and chemicals. But most of the pig farmers are small and marginal. So, they do not have sufficient capital investment for establishing infrastructure. Negligence of bank to provide loans in livestock enterprise, applying loan takes lengthy procedure and to get a bank loan, land properties have to be mortgaged. But many farmers are landless and those who have land property are reluctant mortgage land for fear of losing it in case they are unable to repay bank loan. So, most of the farmers in rural areas go to the money lenders, like Mahajan or Dalai and pay higher interest which ultimately minimize their amount of profit.

### Strategy of pig rearing in NE region

There is immense potential to augment the productivity of pig farming and bridge the gap in production and demand of pork in NE India.

#### 1. Piggery development policy

There is a need to evolve a comprehensive piggery development policy in NE region of India involving the Agricultural University, Department of Agriculture, Department of Industry and the Department of Veterinary and Animal Husbandry.

#### 2. Breeding policies

The Government should encourage genetic improvement of the indigenous non-descript animals through crossbreeding with superior germplasm. Upgrading of indigenous breeds with exotic breeds should be done in keeping the interest of the farmers. At the same time, measures should be taken to conserve the indigenous pig germplasm i.e. improvement should be done through selective breeding.

#### 3. Adequate AI and pregnancy diagnosis facility

There should be adequate facility for A.I and pregnancy diagnosis at farmer's door to improve the reproductive potential of the pigs.

#### 4. Availability of good quality breeding pigs

There should be availability of good quality breeding pigs to the farmers so as to improve the productivity and reproductive capacity of the indigenous pig.

#### 5. Establishing a compound feed manufacturer

The Government should encourage establishment of compound feed manufactures unit for exploiting non-conventional feed resources, to produce economic ration. The cost of concentrate feed is very high in this region as it is imported from other states of India.

#### 6. Alternative feed resource

The emphasis should be given for use of non-conventional feed resources like cassava leaves, potato leaves, water hyacinth, banana stems and there should be establishment of a compound feed manufacturer for efficient utilization of non-conventional feed resource as a source of pig feed. Presently, much interest in tropical countries in the use of cassava leaves as a replacement for soybean meal and fish meal in pig diets. Fresh cassava leaves can be fed at 41% of the diet, with no apparent signs of toxicity. Water spinach (*Ipomoea aquatica*) does not appear to contain anti-nutritional compounds and has been used successfully for growing pigs as the only source of supplementary protein in a diet based on broken rice.

#### 7. Extension of health care services

NE India with its porous international border possesses huge threat for emergence of exotic diseases like PRRS and frequent occurrence of outbreak of swine fever, FMDs etc. Inefficient health care services and lack of availability of medicines and vaccines aggravate the situation further and often leads to failure of pig production system. Timely prophylactic measures and emergency of services for treatment of pigs should be made available.

#### 8. Modern disease diagnostic laboratory

There should be modern disease diagnostic laboratory to keep strict vigilance on diseases and their prevention. Unfortunately, most of the farmers neglect diseases and parasite infestation at the early stage

which result in serious problems eventually leading to serious losses in the productivity and profitability. It has been proved that adoption of treatment after outbreak of diseases is more expensive.

### 9. Availability of modern Slaughter House

Slaughter house or abattoir is a place or a building or premise, licensed by appropriate authority, where animals are killed under hygienic condition for human consumption. The slaughter house plays a vital role for supplying quality and wholesome meat to the consumers. So the slaughter house should have adequate facilities of potable water, electricity, drainage and affluent disposal system, cold storage, quality control laboratory, space for antemortem and postmortem inspection, byproduct utilization system etc. The butchers available in the towns should slaughter the required number of live animals only in the slaughter houses and pay a fee to the concerned authority.

### 10. Establishment of organized market

Establishment of organized networks of market so that the livestock farmers get due share for their products. Organized market involves participation of Government institution or Co-operative federation. The basic motive of the organization is to see that the consumer price doesn't fluctuate violently. This will eliminate the middlemen and the farmers will get the fair price of their products.

### 11. Technical Guidance and Training

Various training programs should be organized at various places to impart technical knowledge. Besides these regular training programmes, Government should organize short time training programmes for the extension of the scientific culture. To popularize the scientific culture of pig farming, the veterinary department should organize publicity programmes through different media such as books and pamphlets, TV and Radio broadcasting, exhibition etc.

### 12. Scheme for pig insurance

There should be provision for insurance to pig farmers in case of sudden death of pig, any epidemic condition, during any natural calamities like flood, etc.

### Conclusion

The NE India being an agricultural rural based the scope for piggery production has high potential, because of the food habit of the inhabitants, being mostly non-vegetarian. It also has significance in many spheres of the life of people viz., public functions, social gathering and religious ceremonies. So, the traditional local pig rearing system should be gradually transformed to scientific rearing practices. And suitable measures should be taken to overcome the various constraints faced by the farmers in order to harness the maximum production potential and improve the quality of meat of pig and its by products by state government and other NGOs, so that it can meet at least the growing demand of pork in the NE states of India. This will also uplift the socio-economic status of the pig rearers and overall development of the NE states of India.

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### Current status of piggery in North East India

**Table 1: Pig population in different states of India.**

State	Population 2012 (million)	Population 2019 (million)	Per cent change
Assam	1.64	2.10	28.30
Jharkhand	0.96	1.28	32.69
Meghalaya	0.54	0.71	29.99
West Bengal	0.65	0.54	-16.63
Chhattisgarh	0.44	0.53	20.01
Uttar Pradesh	1.33	0.41	-69.37
Nagaland	0.50	0.40	-19.65
Bihar	0.65	0.34	-47.14
Karnataka	0.30	0.32	6.25
Mizoram	0.25	0.29	19.26

**Source:** 20<sup>th</sup> Livestock Census 2019.

**Table 2: Pig population in North East India of India**

State	Population 2012 (thousand)	Population 2019 (thousand)	Per cent change
Arunachal Pradesh	356	271	-23.88
Assam	1639	2099	28.30
Manipur	277	235	-15.16
Meghalaya	543	706	29.99
Mizoram	245	292	19.18
Nagaland	504	405	-19.65
Sikkim	30	27	-10.00
Tripura	363	206	-43.25
Total	3957	4241	8.00

**Source:** 20<sup>th</sup> Livestock Census 2019.



Table 3: List of major indigenous and crossbred pigs in India.

Indigenous pig breeds		Crossbred pig breeds	
Name	Home tract	Name	Developed by
Ghoongroo	West Bengal	Rani	ICAR-NRC on Pig, Assam
Niang Megha	Meghalaya	HD-K75	AICRP on Pig, CVSc, Assam
Agonda Goan	Goa	Mannuthy white	AICRP on Pig, CVSc, Kerala
Tenyi Vo	Nagaland	TANUVAS KPM Gold	AICRP on Pig, TANUVAS, Tamil Nadu
Nicobari	Andaman and Nicobar	Asha	ICAR-NRC on Pig, Assam
Doom	Assam	Jharsuk	AICRP on Pig, BAU, Jharkhand
Zovawk	Mizoram	Lumsniang	AICRP on Pig, ICAR-RC for NEH, Meghalaya
Ghurrah	Uttar Pradesh	SVVU-T17	AICRP on Pig, SVVU, Andhra Pradesh
Mali	Tripura	Landlly	AICRP on Pig, ICAR-IVRI, Uttar Pradesh
Manipur Black Pig	Manipur		AICRP on Pig, CAU, Imphal
Purnea	Bihar and Jharkhand		

Source: ICAR-NBAGR website.

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