



Status and trend of Piggery sector in the North Eastern region of India: A critical analysis

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ABSTRACT

Pig farming is a popular venture in the North Eastern Region (NER) for pork production and for generating additional source of income for the rural people. This study focuses on the trend of piggery sector in the NER during the years and its status up to the present census. Secondary data from different sources were used for this study to draw conclusive results. The pig resource in the NER in 2019 was 4.24 million, which has increased by 7.29 percent as compared to previous census. The indigenous breeds comprise of about 67.89 percent of the total pig population in the NER. The share of NER to country's total pig population was 46.85 percent in 2019. Amongst the North Eastern states, Assam has the largest pig population (2.09 million) with a share of about 49.47 percent. Out of the eight states in the NER, only the state of Assam, Meghalaya and Mizoram had observed an increased in the pig population resources during the current census. The percentage change of pig resources in the NER in the rural areas was only 5.51 percent, whereas in the urban areas, the percentage change was 33.78 percent during 2019. The state of Meghalaya and Assam observed a huge increase in the pig population in the urban areas with a percentage change of about +947.31 and +333.54 percent, respectively during 2012-2019. The pork production in the NER as of 2018-2019 was 85.1 thousand tons, which has declined by -0.37 percent over previous year. The share of NER in pork production has slightly declined during 2018-2019 (21.04%) over the previous year. Comparatively, the NER average yield (38.89 kg/pig) is much better than the national average yield of pork production (37.67 kg/pig) during 2018-2019. Current analysis shows that pig rearing is a popular venture in the NER. Though majority of the pig population consists of non-descript type with lower productive and reproductive performances, implementation of proper cross-breeding programmes and even development of popular and locally acceptable new breeds of crossbred desi pigs with high productive exotic breeds can be a viable option to meet the demand and to remove any production deficit in consumption if arises. Further, a much closer analysis of the pig population and status of pig farming at the village level will help in providing an idea for better planning and implementation of newer schemes.

1. Introduction

The livestock business is important to the rural economy and livelihood, but as urban populations rise, the livestock sector is expanding in both cities and surrounding areas. This industry provides 4.1 percent of India's GDP and 25.6 percent of the country's overall agriculture GDP (Islam *et al.*, 2016). Pigs are considered as an important livestock species to the members of the society who are socially and

economically disadvantaged. Pigs make up 2.0 percent of the overall livestock population in India, according to the 19th livestock census. Approximately 10 million pigs provide roughly 6.7 percent of the total meat production of the country (DAHD, 2014). Pig farming has become a significant source of revenue generation for impoverished, disadvantaged or landless farmers in the Northeastern states. The pig industry in the Northeastern states has significant

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problems, including a lack of feed and feed crops, infectious and metabolic disorders, low productivity of indigenous pigs, impact of climate change and global warming, which needs to be addressed enabling the sector to grow according to its potential. The bulk of India's pig population is of indigenous breeds (76.00%) though population of crossbred and exotic pigs increased by 12.7 percent from year 2003 to 2012. Pigs are mostly concentrated in the NER, where about 40% of the country's total pig population is raised (Kumaresan *et al.*, 2007). India's average meat yield of indigenous breeds is around 35 kg/animal, which is quite low in comparison to world average of around 78 kg/animal (Intodia, 2016). The value of output from pork during 2018-2019 was Rs 6613 crore (NDDDB, 2019) and has seen a substantial increase during 2020-21 at Rs 7481 crore (NDDDB, 2021). The North Eastern states, where about 50 percent of the country's pork is consumed by procuring live pigs from other areas to the tune of around 1.0 lakh pig heads each year, offers a great chance for rural youngsters to ensure employment in this industry. The current review throws a light on the comparison trends of pig population and pork production between the years 2012-2019 in the piggery sector of the country with special reference to the Northeastern Indian states.

2. Materials and Methods

Secondary data were collected for this study from various sources such as livestock census report, ISS report and BAHS report. The collected data were subjected to tabular analysis for drawing a logical conclusion. Statistical analysis using simple percentage was done to obtain an overall picture of the status and trend of piggery sector in the NER.

3. Results and Discussion

Pig population dynamics in the North Eastern Region (NER)

The data in Table 1 depicts a comparative population distribution of pig resources in the NER during 2012 and 2019. The pig resources in the NER region as of 2019 were 4.24 million, which has increased by 7.29 percent as compared to the previous census. The indigenous breeds comprise of about 67.89 percent of the total pig population in the NER. The crossbred pigs were 45.57 percent in 2012, which reduced to 32.11 percent in 2019. The growth rate of pig population in the NER is much better than of the country's, which has declined by -12.03 percent during 2019. The share of NER to country's total pig population was 46.85 percent in 2019.

Table 1. Comparison of pig population in NER during 2012 and 2019.

States	Year 2012			Year 2019			% Growth rate	% share in population during 2019
	Indigenous	Cross	Total	Indigenous	Cross	Total		
Arunachal Pradesh	318976	37369	356345	257785	13678	271463	-23.82	6.40
Assam	1022354	613668	1636022	1640760	458240	2099000	28.3	49.47
Manipur	94669	182546	277215	207772	27483	235255	-15.14	5.55
Meghalaya	409758	133623	543381	430311	276053	706364	29.99	16.65
Mizoram	32286	212952	245238	29404	263061	292465	19.26	6.89
Nagaland	122969	380719	503688	197605	207090	404695	-19.65	9.54
Sikkim	2451	27456	29907	15302	12018	27320	-8.65	0.64
Tripura	148891	213643	362534	101408	104627	206035	-43.17	4.86
NER	2152354 (54.43)	1801976 (45.57)	3954330	2880347 (67.89)	1362250 (32.11)	4242597	7.29	46.85
All India	7837306 (76.14)	2456389 (23.86)	10293695	7158544 (79.05)	1896944 (20.95)	9055488	-12.03	

Source: 19th & 20th Livestock census, GOI.

Figures in parenthesis indicates percentage share.

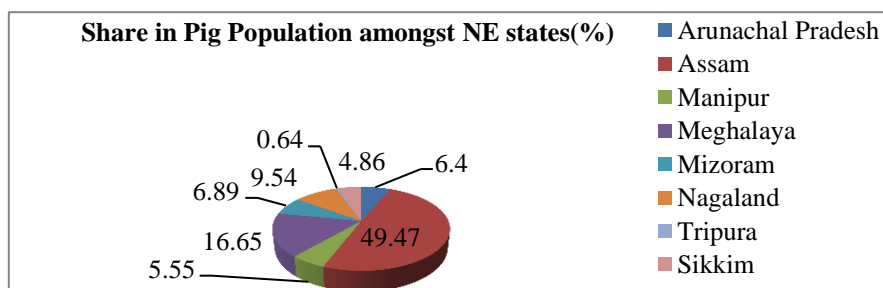


Figure 1. Share of pig population in the NER

A clear picture of the pig population scenario in the rural and urban areas in the NER is given in Table 2. The percentage change of pig resources in the North Eastern region in the rural areas was only 5.51 percent, whereas in the urban areas, the percentage change was 33.78 percent during 2019. The NER has experienced an increase in the pig population in both the rural and urban areas during 2012-2019 as compared to the negative growth rate in the country. The state of Meghalaya and Assam observed a huge increase in the pig population in the urban areas with a percentage change of about +947.31 percent and +333.54 percent respectively during 2012-2019.

There is a mix picture in the share of NER in terms of pig population in the country over the years. The present contribution (46.85%) of NER to national's total pig resources is showing a satisfactory result when compared

with 38.41 percent share during the 19th livestock census (Table 3). This indicates the importance of piggery sector as an enterprise to the people of NER and as a mean to improve their socio-economic status as well as boosting the nutritional security of the household.

Pork production in NER

The pork production in the NER was high during the year 2013-2014 with a total production of about 113.21 thousand tons (Table 4). The trend of pork production in the NER after 2013-2014 is not satisfactory. The pork production in the NER as of 2018-2019 was 85.1 thousand tons, which has declined by -0.37 percent over previous year. Considering the high concentration of pig resources in the NER as compared to other regions in the country, the pork production potential of the NER is still quite low.

Table 2. Pig population in the rural and urban areas in the North Eastern States.

States	Change in pig population in Rural-Urban Areas					
	Total numbers in rural areas			Total numbers in urban areas		
	2012	2019	% Change	2012	2019	% Change
Arunachal Pradesh	342291	259085	-24.31	14054	12378	-11.93
Assam	1618937	2024930	25.08	17085	74070	333.54
Manipur	236494	194011	-17.96	40721	41244	1.28
Meghalaya	541502	686685	26.81	1879	19679	947.31
Mizoram	144830	171883	18.68	100408	120582	20.09
Nagaland	433462	343175	-20.83	70226	61520	-12.39
Sikkim	29183	26732	-8.39	724	588	-18.78
Tripura	358954	203418	-43.33	3580	2617	-26.89
NER	3705653	3909919	5.51	248677	332678	33.78
India	9226070	8174084	-11.4	1067625	881404	-17.44

Table 3. NER share (%) of pig population to the country total during 2003-2019

Census	Population in India (In thousands)	Population in North East (In thousands)	North East share to India's total (%)
17 th Livestock census	13519	3816	28.23
18 th Livestock census	11134	4458	40.04
19 th Livestock census	10293	3954	38.41
20 th Livestock census	9055	4242	46.85

Source: 19th & 20th Livestock Census, Directorate of Economics & Statistics, and Animal Husbandry Statistics Division, Department of Animal Husbandry, Dairying & Fisheries, M/O Agriculture and BAHS Report, 2012

Table 4. Trend of pork production during 2012-2019 (Numbers in 000s tons).

Year	AP	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura	NER	All India
2012-13	3.83	14.61	6.88	10.15	6.89	30.63	0.3	11.73	85.02	453.05
2013-14	4.03	15.96	6.88	11.16	6.92	57.14	0.3	10.82	113.21	486.03
2014-15	-	16.54 [^]	-	11.09 [*]	-	-	-	-	-	464.11
2015-16	4.87	17.49	6.61	11.39	7.5	17.14	0.27	11.23	76.5	387.55
2016-17	5.33	18.72	6.85	13.84	7.37	17.01	1.01	12.43	82.56	468.8
2017-18	5.26	19.37	6.95	14.38	7.9	16.93	1	13.63	85.42	395.97
2018-19	5.48	19.4	6.62	14.93	7.95	15.77	1.06	13.89	85.1	404.46

Growth rate (2017-2018)	4.18	0.15	-4.75	3.82	0.63	-6.85	6	1.91	-0.37	2.14
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Source: Basic Animal Husbandry Statistics 2015, 2017 & 2019, GOI.

*ISS Report 2014-2015 (Govt. of Meghalaya)

^GOA (Govt. of Assam), 2019. Handbook of Animal Husbandry and Dairying.

The share of NER in pork production has slightly declined during 2018-2019 over the previous year. The share of NER was lowest in the year 2016-2017 with a share percentage of only 17.61 percent (Table 5).

Table 5. NER share towards pork production in comparison to national total during 2012-2019.

Year	Pork production in India (numbers in lakh)	Pork production in NER (numbers in lakh)	NER share of Pork production to the country's total (%)
2012-2013	453.05	85.02	18.77
2013-2014	486.03	113.21	23.29
2014-2015	464.11	-	-
2015-2016	387.55	76.5	19.74
2016-2017	468.8	82.56	17.61
2017-2018	395.97	85.42	21.57
2018-2019	404.46	85.1	21.04

Source: Basic Animal Husbandry Statistics 2017 & 2019, GOI.

Table 6 shows the number of pigs slaughtered for pork during 2018-2019 in the NER was 1741.44 thousand pigs with an average pork yield of about 48.89 kg per pig. Comparatively, the NER average yield is much better than the national average yield of pork production (37.67kg/pig) during 2018-2019.

Table 6. Productivity of pigs in terms of pork production (2018-2019).

Particular		
Number of pigs slaughtered for meat production in 2018-2019 (Thousand nos)	India	10734.89
	NER	1741.44
Meat production during 2018-19 (Thousand tonnes)	India	404.46
	NER	85.10
Average yield / pig (kg)	India	37.67
	NER	48.89

Source: Basic Animal Husbandry & Fisheries Statistics 2019, GOI.

4. Conclusion

The trend in the share of pig resources of the NER and the comparatively higher average yield of pork per kg signifies the importance of pig farming in this region. With increasing demand for pork and pork products, the piggery sector in the Northeastern states foresees further expansion and industrialization. The governments of the North Eastern States should encourage traditional pig farmers to produce high-quality pork by offering them incentives, in order to

prevent financial losses to the state and create attractive job opportunities. To avoid costly production, it is important to promote local production of feed and avoid putting strain on the feed sector due to increased meat production. With the advent of knowledge penetration and newer discoveries in the pork and associated industries, the future challenges will not be a hindrance in its growth and thus sees a bright future in the country.

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