



The impact of evidence-based stakeholder policy facilitation on pig-sub sector growth in northeast India

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Background

In northeast India, pig farming is one of the main sources of livelihoods for most households. About 80% of the tribal households there rear pigs. A large proportion of farmers keep one–three pig, with fewer keeping larger numbers. The number of pigs available per 100 persons in the northeast is 18 compared to four in the country as a whole. Nearly all tribal households consume meat, mainly pork, as part of their daily diets. Some northeastern states, such as Nagaland, import pigs from other Indian states—such as Assam, Uttar Pradesh, Haryana, Odisha, etc. and from neighbouring Myanmar, via informal trade routes..

Despite the importance of piggery in Nagaland, the state has not adopted a policy for planned pig production. In response to a request from the Nagaland Veterinary and Animal Husbandry Department, the International Livestock Research Institute (ILRI), with funding from North East Initiative Development Agency of Tata Trusts, supported the development of a pig breeding policy and a disease control program for classical swine fever.

The issue

Studies in Nagaland have reported that the pig population in Nagaland is the result of haphazard breeding within and between various breeds, such as Hampshire, Large black, Saddle black, etc. Pigs have been bred and crossbred

in the absence of any systematic and scientific breeding program. An earlier study conducted by ILRI found that the crossbred pigs in Nagaland did not perform well even under optimum feed situations. This means that there is a paucity of information about the genetic potential of available breeds/ crossbreeds (to perform) and the feeding and management systems required to support and extract best productive and reproductive performance from the existing pig population.

Furthermore, Classical swine fever (CSF), a highly contagious viral disease of pigs, has been found to cause significant threat to the pig production in India, particularly the northeast. The disease kills large numbers of pigs, destabilizing the rural economy. While there are some sporadic efforts to control the disease in the region, they have had limited impact, due to factors such as vaccine shortages in sufficient quantity (0.04 million doses per year against 7.64 million), a lack of cold storage facilities, poor disease investigation, reporting and treatment mechanisms, and a scarcity of accurate information on the incidence and impact of the disease on the smallholder economy. The *Lapinized CSF* vaccine is generally used to control the disease in India. The biggest limitation of this technology is its complete dependence on the availability and continuous supply of rabbits. Therefore, greater importance should be placed on producing *Lapinized* cell culture vaccine, which does not depend on the availability of rabbits, facilitating its production in larger quantities.

The intervention

Development of a pig breeding policy

Designed to enhance the sustainability of smallholder pig farming, the intervention sought to improve the genetic traits of the existing pig population in Nagaland state and develop appropriate adaptable and productive pig breeds/cross breeds. As a first step in Nagaland, ILRI assessed the **genetic profile** of the existing breeds, correlating them with production performance and identifying the right breed/s for the northeastern state. Realizing the importance of a sound pig breeding policy, the Nagaland government authorized the Department of Veterinary and Animal Husbandry lead the process. In response, the department called upon ILRI to facilitate the process on behalf of the state. ILRI and the department worked together to constitute an expert committee drawing on members from the Indian Council of Agricultural Research (ICAR)-National Research Centre on Pigs, ICAR-National Bureau of Animal Genetic Resources (NBGAR), Nagaland University, Assam Agricultural University and North East Initiative Development Agency.

Unlike conventional ways of developing breeding policies by experts, ILRI sought to support the government engage in iterative consultation process with all the relevant stakeholders, including representatives of producers, traders, entrepreneurs, input suppliers, non-governmental organizations, and government officials. ILRI first facilitated a breed mapping exercise, followed by focus group discussions in selected districts and a series of stakeholder consultations at state level. Finally, policy dialogue meetings were organized, involving delegates from state and national institutes. The findings of the participatory breed mapping exercise formed the basis of discussions followed by a review presentation of existing breeding policies in India, particularly in the northeast. Workshop participants subsequently recommended the key requirements of state pig breeding policy. The expert committee, after thorough deliberations, prepared the draft breeding policy with a detailed technical program for its implementation. This document was shared with the Department of Veterinary and Animal Husbandry, Nagaland, and the ministry of agriculture and NBGAR to ensure the recommendations did not conflict with existing policies. The policy document then finalized with the agreement of all stakeholders.

Classical swine fever

To address CSF, ILRI undertook a participatory epidemiology study which estimated the disease-related losses associated with mortality, veterinary treatment and animal replacement suffered by pig farmers amounted to INR 2.224 billion (USD 40 million) a year. The study also revealed that proper vaccination could prevent mortality-, treatment and pig replacement-related losses of INR 8,481 and 17.50 per pig, and INR 1,818 per pig respectively.

Led by a renowned disease control expert in India, ILRI undertook a technical review of the availability of vaccines against pig diseases in India, constraints to production and opportunities to increase their supply. Chaired by the

Animal husbandry commissioner, Department of Animal Husbandry, Dairying and Fisheries (DAHD), high-level regional and national policy workshops were organized to highlight the problem among key decision makers regionally and nationally. As per ILRI's recommendation, the commissioner constituted a high-level task force to develop a national CSF control program, with an initial focus on northeast India.

Outcomes

Nagaland pig breeding policy

The outcome of the process has been the launch of a pig breeding policy which reflects the views, needs and interests of all concerned. This is a paradigm shift from many breeding policies in India which are developed by experts without the involvement of key stakeholders. Most remain policies on paper without any follow up action by government or other stakeholders.

In fact, existing breeding policies in a couple of states are rather vague, limited to one or two paragraphs, without much detail on the recommendations. In contrast, the Nagaland policy contains information on breeding objectives, recommendations for action in specific locations and on certain production systems, a breeding a technical breeding program, the selection of breeding and replacement stock, required support and an implementation plan.



Nagaland pig breeding policy launched on 6 August 2016 by Radha Mohan Singh, the Indian minister for agriculture at a public meeting in Kohima, Nagaland

From this perspective, Nagaland pig breeding policy is the first such comprehensive policy in India. ILRI not only facilitated the development of the policy, it has continued to engage with the state government department on its implementation, a process which is proceeding satisfactorily. Moreover, the institute has asked by the Animal Husbandry and Veterinary Department, Assam, also in the northeast, to develop a similar policy for that state, as part of a new World Bank-funded project, Agribusiness and Rural Transformation, due to start in mid-2017.

Classical swine fever

The taskforce recommended control program was established in 2014. Funded by the national (90%) and state government (10%), its provisions paved the way for the strengthening of the existing cold chain facilities, activities designed to raise awareness of farmers of CSF and the provision of training to vaccination scouts. In addition, the DAHD has approved the production of CSF lapinised cell culture vaccine at the Institute of Animal Husbandry and Veterinary Biologicals, Hebbal, in Bangalore. The initial field trials have been completed, the effectiveness of the new vaccine validated and a licence for commercial production issued. The Bangalore institute has produced 100,000 doses of the freeze-dried cell culture-derived CSF vaccine and is in the process of scaling up production. The current customers include farmers and institutions throughout the country who are reportedly happy with the new vaccine. In addition, the Indian Immunologicals, Hyderabad, which secured the technology and seed vaccine from the Indian Veterinary Research Institute, has finalized clinical trials, received validation for the vaccine, and recently received a licence for a field trial. It is hoped that commercial production of cell culture vaccine by Indian Immunologicals, expected to take two–three years, will greatly resolve the issue of vaccine shortages in the country.

Expected impact

While the primary objective of the Nagaland breeding policy is to improve the genetic traits of the existing pig population, enhancing the potential of the sector to improve living standards of rural farmers, it is believed that it will disproportionately support less advantaged communities in terms of livelihood security, particularly women, and help the adaption of the pig production system—increased production and productivity—to the consequences of climate change. The policy is also expected to mitigate the current demand-supply gap for pig products and enhance opportunities for the development of pig-related businesses, and the export of pork and pork products. According to the Nagaland government, ‘the pig breeding policy together with various initiatives taken up by the government to promote piggery, will help accelerate overall growth in piggery sector and transform it to a sustainable commercial enterprise for the benefit of rural farmers and entrepreneurs in the state’.

As far as CSF control is concerned, the ILRI study influenced both decision makers and other stakeholders—including private vaccine producers—of the potential threats and opportunities associated with the disease. The evidence produced by ILRI has helped support increased vaccine production in an integrated CSF control program, an initiative which will benefit millions of pig farmers in India, including the 1.5 million pig rearing households residing in the northeast of the country. In ILRI project

villages, where vaccination have been carried out, mortality rates have dropped substantially. For instance, there have not been any reported cases of swine fever in the last 18 months. It is hoped that the state-wide vaccination program will prevent the losses estimated by ILRI in its epidemiological study, improving the health, nutrition and livelihoods of smallholder pig rearers and millions of consumers.



Conclusion

Both the initiatives have demonstrated how research institutes and government departments can work together and collectively deliver positive outcomes. It also demonstrates the potential of the role played by ILRI in bringing all the relevant stakeholders together to spearhead such an initiative.

Though the financial resources involved were minimal, the potential impact of pro-poor policies is wide and significant. Generating evidence to influence the policymakers is the first step in facilitating pro-poor livestock policies.



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V Padmakumar, Ram Pratim Deka and Iain Wright work for the International Livestock Research Institute. This is one of a series of briefs documenting the impacts of ILRI's research.

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