

Farmer Perceptions on Indigenous Pig Farming in Kakamega District, Western Kenya

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ABSTRACT

Objectives for this paper were to: study farmer beliefs and perceptions on local pig farming practices; and to explore opportunities for improved located production in selected villages of Western Kenya. The paper seeks to understand why the local pig breed still remains the predominant breed in these areas despite numerous calls to introduce better exotic breeds. Most pigs in Kenya are of exotic breeds, intensively managed on commercial farms. Focus group discussions were used to gather data. Discussions were taped, transcribed and translated from Swahili to English. Farmers use pigs to guard homes at night, pigs also act as a charm to protect families against evil spirits. Women farmers manage the family pigs, men sell the pigs. Farmers identified feeding, marketing, and breeding as the main challenges affecting the sector. The discussions identified a number of opportunities for improved production, and likely strengthened the bond between the farmers, researchers and staff. This created an outlook that can now be used in further public engagement as ongoing research studies on appropriate feed, health and improvement of market access are being analysed.

Keywords: Western Kenya, pig farming, focus group discussions, farmer perceptions.

1. INTRODUCTION

Small-scale pig farming plays an important role in the livelihood of many families in the developing world (Lanada et al., 2005). In Kenya, most pigs are of exotic breeds and their crosses (Phiri et al., 2003), and are concentrated mainly around Nairobi District and its environs. These areas have the advantage of favourable climate perhaps conducive for intensive pig farming and farmers have easy access to markets (Wabacha et al., 2004; Kagira et al., 2008). Local

pig farming is a form of pig production system quite popular in Western region of Kenya. In these settings, families keep an average of 1 to 2 indigenous pigs, these pigs are usually tethered or allowed to scavenge on their own (Githigia et al., 2005; Mutua et al., 2007). One of the animals that you are likely going to see when you enter these homesteads is a tethered or a roaming pig plus a few scavenging chicken (Mutua *personal observation*). Pigs require minimal inputs in terms of family labour and feeding, perhaps an important motivation for farmers to raise pigs. Allowing pigs to roam freely is illegal and against the laws of Kenya (GOK, 1972), however, farmers in study villages have continued to engage in local pig farming despite the governments call to confine pigs. Confining pigs increases production and safeguards the public from diseases of public health importance.

The pig sector has a seemingly greater potential to reduce poverty, this cannot be realized unless we gather data on the perceived farming challenges, fears and benefits. The purpose of this study was to provide an in-depth investigation of the views, beliefs and perceptions about local pig farming; and to understand the constraints to a successful pig rearing enterprise as perceived by farmers and government officials who service these farmers. We believe that the results gathered will be used by policy makers in better addressing the needs of the local pig farmer.

2. METHODOLOGY

2.1 DESCRIPTION OF THE STUDY AREA

The study was conducted in Ikolomani and Shinyalu divisions of Kakamega district, Western Kenya. The district is inhabited by the Luhya tribe, mainly the Idakho and Isukha sub tribes. The divisions were purposively selected because of their popularity in local pig farming while villages were randomly selected from each division. Selected villages included Buhuli, Mundulu, Ikuhywa and Shilutsi. The main source of livelihood is farming, maize and beans are the main crops grown; livestock species kept include cattle, chicken, pigs, sheep and goats. Pigs are sold to earn family income which is subsequently used to cater for immediate family needs such as school fees and hospital bills (Mutua, 2010). Farmers own an average of 1 to 2 pigs which is kept mostly tethered or allowed to scavenge for food on their own with minimal food supplementation (Githigia et al., 2005; Mutua et al., 2007). The predominant breed kept is the native pig breed. Pig farming is a voluntary venture; there is no evidence to suggest influence of external forces. Farmers in the district had kept pigs for an average of 11 (± 8.7) years (Mutua, 2010).

2.2 FOCUS GROUP DISCUSSIONS (FGDS)

Four farmer focus group discussions were held in four villages of Ikolomani and Shinyalu divisions, Kakamega district. A senior village elder in each division assisted in recruiting the participants for the meetings. A total of 8 to 12 pig farmers, men and women, per village, were invited for the focus group discussions (FGD). A date for discussion was set jointly and a reminder invitation was sent to them one week before the date. Discussions were held in one of the pig farmer's home and were conducted in the early hours of the afternoon. Two other FGDs were done for the local extension government staff in the divisions of Ikolomani and Shinyalu. Sessions were held at the divisional headquarters. Those invited for these discussions included local livestock, veterinary, agriculture, health, adult education and social service staff working in the divisions.

2.3 ORGANIZATION OF FGDS

In order to ensure that all topics for discussion were included in each FGD, a checklist and interview catalogue was developed to guide discussions. Questions were designed to help the researchers in understanding community perceptions of smallholder pig keeping prior to biomedical studies. Topics explored by the farmers included responsibilities for pig keeping, reasons for pig keeping, challenges affecting the industry and the possible contents of a proposed farmer training programme. We asked the staff to state the challenges affecting pig farming in their divisions and what they thought needed to be taught to the farmers if pig farming was to be promoted.

Discussions began by general introductions led by a senior village elder; the group identified one of the participating pig farmers to lead the group with an opening word of prayer. Seating arrangements were organized to facilitate identification of key points raised by each farmer and also ensured full participation from all the participants. The moderator gave a brief overview of the research and summarized key expectations for the meeting. All farmers were encouraged to participate and consider each answer as relevant. The moderator called for open discussions in any language that the farmers were comfortable with.

Participants were informed about the use of a tape recorder that would be used to record the entire session. The FGDs with the staff was in English. Farmers' discussions were mainly in Swahili, whereby some farmers chose to combine both local Luhya language and Swahili, in which case the accompanying livestock officer translated the words to Swahili. Sessions lasted for an average of 90 minutes. Refreshments were offered to the farmers at the end of each discussion. Unique observations made during the discussions were

recorded in writing by an assistant moderator during the discussions. Additional notes were written after the session.

2.4 DATA MANAGEMENT

Sessions were audio-taped, double-transcribed and translated by the moderator who was fluent in both English and Swahili. Each tape was labelled with village names, date and letters A or B with A indicating the beginning of the session. The transcripts were compared to the written notes from the session and the summary notes made after the discussions. MaxQDA (Verbi software, Berlin, Germany) was used to identify similar themes across the transcripts during the analyses.

3. RESULTS

3.1 GROUP PARTICIPANTS

There were eight farmers in three focus groups and 12 in the fourth. The village with the 12 farmers included some who had not been invited for the discussion but turned up for the meeting and insisted they wanted to participate since they also owned pigs.

3.2 PIG KEEPING RESPONSIBILITIES

In three of the villages studied, women were identified as the ones responsible for the management of pigs particularly in the feeding. Men were rarely at home and could not therefore be entrusted with the responsibility of managing the pigs. This was an observation from a female participant. Men defended themselves, arguing that pig management required combined efforts of all, “*We use bicycles to go looking for the feeds, and women do the actual feeding*” one male participant commented. In Shinyalu Division, a female participant said she was a widow and she did everything all by herself, implying that it was possible for women to do all the work of managing the pigs on their own.

Marketing of pigs was a man’s responsibility; a woman could only sell her pig when her husband was not available. One male participant said “*She can even be chased away*” implying that her husband could chase her away if she tried to sell the pig alone. But a participant in a different village said he couldn’t just sell his pig without informing his wife; yet in a different village, women argued differently and said they were exploited when they went to sell their pigs and therefore preferred their men doing the selling instead. Anybody could sell

the family pig, but the selling again depended on who owned the pig, whether it was a child, wife or husband, and who was at home when the pig buyer came around looking for pigs to buy. *“It is important for the family to agree before any selling is done”*, was a comment from a male participant from Buhuli village.

3.3 REASONS FOR KEEPING PIGS

In all the farmers groups, income generation and faster growth rate compared to other livestock were mentioned as key reasons to keep pigs. Some farmers described pig keeping as a business like any other, while to others; pig farming was comparable to operating a bank account. One farmer said she used returns from pig farming to pay for her children’s high school fees. Another farmer in a different village concluded by saying *“A home with a pig cannot complain”*. To realize good returns, participants thought one needed to keep pigs in large numbers, at least 10 pigs and above. Pigs were reported to reach market weight easily and therefore provided pig farmers with faster returns than farmers raising other livestock.

Farmers knew pigs could be bred easily, had a gestation period of three months, could farrow twice in a year and produced many piglets in a single farrowing. One farmer observed that pigs were not comparable to other livestock species with regard to fecundity *“... for example a cow that can calve approximately once in a year ...”* In two villages, marketing of pigs was said to be good in the sense that there were many potential buyers making it easy for the farmer to sell her pigs. Pigs could be sold at home and farmers did not have to bother transporting the pig to the market or wait for market days to come *‘I don’t have to look for movement permits to be able to transport the pig to the market’*. Provided management was good, pigs could be marketed as early as six months of age.

There were additional reasons for keeping pigs that were mentioned in a few of the villages, this included; pigs require less space compared to other livestock species such as cows and could be raised by anybody, including children. Others said they had a special preference for pigs because pigs did not get sick easily, had fewer enemies than other livestock and were thus able to walk within the villages freely. Some families kept pigs for security purposes, adding that pigs could guard their homes at night; *“At night a pig is able to differentiate between strangers such as a thieves”* said one farmer. The local climate was favourable for pig keeping; farmers said high rainfall was good for pigs. Pigs were also thought to be good sources of manure.

According to the local staff, pigs were believed to offer protection and acted as a charm to protect against evil ones in the neighbourhood. This was said to have had an impact on the price of the pork with some specific pork sections costing more. One staff participant said *“A tail of a pig can cost up to Ksh 200”*.

Unlike the staff who openly talked about the cultural belief, farmers were reluctant to discuss this. In one of the villages, for instance, this topic was openly discussed at the end of the sessions and when the participants were taking refreshments. This happened after the livestock officer requested one of the farmers shed some light on the belief that had previously been mentioned during the meeting. One farmer participant explained that some specific parts of pork were thought to be more valuable and offered more protection. Another male participant explained how he carried a piece of pork in his wallet for fear of being bewitched by neighbours who perhaps were not happy with him.

3.4 RURAL PIG REARING CHALLENGES

In response to the question on small-holder pig farming challenges in the divisions, both farmers and the staff admitted there were many challenges that faced the pig sector. Farmers thought pig marketing was a huge problem because local buyers preferred white-coloured pigs because the black ones - which farmers commonly kept - were thought to have a low market value. Pig farming attracted little financial attention from the government and farmers lacked resources to improve the enterprise. A farmer participant called this “*lack of sponsorship*”.

The staff discussed the potential in local pig farming; one participant said “*Pig keeping is an enterprise that, if taken care of can be exploited, many farmers’ book piglets very early*”. This implied a shortage of piglets in the neighbourhood if one wanted to raise more pigs. The staff emphasized on lack of organized market channel for pigs which in turn forced pig farmers to accept any price that was offered to them by the middle men. One staff member said “*A pig worth Ksh 4,000 could be sold at Ksh 1,000, after being managed by the farmer for a year or even more*”. Lack of a local pork processing plant was thought to be one of the leading causes of the poor marketing. There were also concerns of unnecessary wastage of by-products at slaughter; the staff thought the leading pig processing plant (Farmers Choice Ltd) failed to buy pigs from their division because the pigs were eating grass, which was thought to have detrimental effects on the quality of local pork.

There had been less supply of pork in the local markets but according to participating staff members, the trend was changing with an upward growth of both demand and supplies. The price of pork was for instance said to have had increased from Ksh 100 to Ksh 140 per kilogram in the recent past. Housing was a serious problem during rainy seasons and pig farmers lacked necessary resources to construct houses for pigs. Some farmers were reluctant to tether their pigs; they argued that tethering denied pigs exercise, which farmers believed was crucial for pig’s healthy development. Again the tethers weakened fast and so some farmers could not afford to replace them regularly. The staff thought tethering was a bad management practice and needed to be discouraged;

pigs were destructive when left free and noted that roaming pigs could be poisoned. Farmers had realized this when they complained about attacks on their pigs. A case of salt poisoning by a neighbour was reported in one of the villages. They observed that free-range pigs were common sources of neighbourhood conflicts within their villages.

A cultural belief about pig keeping exists in the study area, which the staff thought could potentially impact pig farming in the area. This topic drew heated debates among the participants. “.....*some people refuse to be involved in anything to do with pigs, they give funny excuses but they don't just want to keep pigs, others say they have demons in their homes whose power could be diluted by pigs*”, said a female participant working as a social worker in one of the divisions. Others thought there was a biblical interpretation behind pigs and pig keeping, and citing an example in the bible where pigs possessed by demons were cursed.

Interestingly farmers did not know that pigs could be treated whenever they became sick; they could not identify common pig diseases and further discussed about the lack of doctors for pigs in the area “*We have only doctors for cows*”, one farmer commented. External parasites were thought to be common in most of the villages. According to the staff, this problem was as a result of few veterinary staff delivering animal health services in the two divisions. They further discussed about the poor infrastructure that affected the accessibility of some pig keeping villages and thus hindered the delivery of these services in such villages. They gave an example of a village in Shinyalu district that becomes completely inaccessible during the rainy seasons; “*Some villages have pigs but one cannot get there to attend to the pigs*” noted one of the participants.

Farmers further complained of lack of knowledge on different pig breeds and wondered which breed of pig could grow faster in their local setting. They were not satisfied with the common practice of pig farmers having to pay a piglet to boar owners after their sows had successfully been bred. Farmers did not know about the existence of other methods of breeding pigs such as the use of artificial insemination. The staff admitted having received complaints from farmers with regard to pig breeding; inbreeding was thought to be very common. Mabaga Farmer training Centre (Bungoma) was thought to be the only centre that served as a source of improved breeds in the whole of Western province. They further noted the particular lack of knowledge on breeding among the pig farmers; most of rural pig farmers were said to be women “*who are not even aware of the signs shown by pigs on heat, when to serve and how to serve*” was a concern from one of the staff. In one of the farmer groups, a participant talked of his sow that had only farrowed once in the year and wondered why that had happened. Sows with insufficient teat numbers were reported to be common.

Some thought pigs were very destructive and dirty, and could eat anything if they were hungry to the point that they, “*can even bite your child*”, noted one of the participants. Only the staff discussed, as a challenge, the effects of religious differences on local pig farming. “*For example, some denominations such as the Seventh Day Adventist don't even touch the flesh from pigs, they are seen as*

unclean animals (as read in the book of Numbers 11:1–20 and Leviticus 11)” said one participant. *“Some of the staff will therefore inspect the meat by law and not by faith”*, he added. Muslims living in the areas were said to be against issues related to pig farming. This was said to affect the selling of pork in the market centres, one participant said *“There is less pork served in the local hotels because Muslims and even some other faithful are not likely to enter hotels where pork is served”*. On the same note, a participant indicated that some people never liked pork because of its fatness. The staff thought the existing local belief on pig rearing negatively impacted on pig rearing as a business.

Additional concerns raised by the staff were that of lack of sufficient space to keep pigs, resulting in youth groups not venturing into pig keeping because their parents failed to give them space. They perhaps lacked the motivation to do pig farming. Record keeping was said to be poorly done in the areas.

3.5 FARMER TRAINING

We asked both farmers and staff groups to describe the topics they needed to be included in the training package that was to follow the FGDs. With regard to pig feeds, farmers wanted to know the available feed types and the number of times a pig needed to be fed. For diseases, they wanted to be taught the clinical signs to look for in a sick pig, and causes of disease, with one farmer citing a common example of a pig failing to eat. They further wished to know what treatments were available for pigs and where they could get help when their pigs got sick.

Considering the lack of animal health staff in the divisions, the staff said farmers needed to be taught how to perform simple procedures such as deworming on their own. They argued that it was hard to respond to some farmers since these farmers could not afford to pay for the staff’s mileage charges. They said pig farmers needed to be provided with sample drugs and with demonstrations on how to administer the drugs. Farmers wanted to be taught about pig housing; some didn’t know if pigs were supposed to be kept indoors or outdoors. In one of the farmer groups, a participant asked if tethering of pigs was okay and if farmers could tether pigs on the neck and instead of on the legs. The staff thought farmers needed to be taught how to build pig houses using locally available materials. Farmers interested in building pig houses would then be given housing plans by the government officers.

Knowledge on sow productivity was discussed at length, specifically, farmers wanted to know how to breed sows and what determined how many piglets a sow produced. With regard to the pig breeds, they wanted to be taught the ones that grew faster and perhaps those that could thrive well under local conditions. Farmers further wanted to know the various financial options available to local smallholder pig farmers. The staff thought this was possible but said pig farmers needed to be encouraged to form small groups that could enable them to apply for government loans and also have easy access to market

outlets. These would help farmers market many pigs at once, which is possible if farmers came together and did group marketing. *“Such groups can be used to apply for credits from the government offices”*, said one of the participants. They further observed that farmers needed to be taught how to make proper use of pig by-products at slaughter, which could reduce part of the wastage that occurs at slaughter.

At the community level, farmers need to be reminded about the importance of co-existing together peacefully and how to reduce neighbour to neighbour conflicts brought about by poor pig husbandry practices. One staff member said, *“Train the society on how to live together, i.e. the importance of a neighbour”*. Concerning the existence of cultural beliefs about pig rearing, pig farmers needed to be taught about the potential effects this has on the industry. *“Farmers need to move from the existing cultural beliefs and take pig keeping positively”* was a comment from one staff member. The staff reported rural villages where pigs were slaughtered illegally at homes and pork was reportedly consumed without being inspected. Such practices were thought to be potential health risks that must be addressed during the training.

4. DISCUSSION

Pig farming plays an important role in the livelihood of many families in rural villages of Western Kenya. A number of factors may explain the continued popularity of local pig farming in the districts of Western Kenya; first, keeping free range pigs requires minimum amount of inputs, and secondly the financial risk involved is small, will little time and money being invested (Muys and Westenbrink, 2004). There is a good local demand for pork and most of the pork produced is consumed locally. We used focus groups to gather data on farmer perceptions; this was an initial part of a longitudinal study investigating pig farming in selected sub-locations of Western Kenya. The use of focus groups is common in social and health research (Morgan, 1997; Kruger and Gericke, 2003). A key feature of these groups is to actively encourage group interaction among the participants (Krueger, 1994; Webb and Kevern, 2001). Pig farmers and the extension staff in the study had the opportunity to come together and discuss issues pertaining to pig farming in their villages (for the farmers) and divisions of work (extension staff).

The local sector faces many challenges that will need to be addressed before reasonable gains are realised. The staff thought that pig farmers needed to organize themselves into groups and combine efforts to secure marketing contracts for their pigs if they were to get better returns for their pigs. Improved marketing through formation of farmer groups, access to credit and equipping the farmers with basic knowledge on pig farming present opportunities to profitable pig production in the district. The belief that pigs are dirty and can eat anything is not true and needs to be discouraged. Pigs are indeed are very clean

animals but can be messy if maintained in an unclean environment. Pigs can eat anything if left without food.

Women in this study appeared to take the lead in the management of the family pig; men are rarely at home and cannot therefore be entrusted with pig farming. This is not surprising since, according to Muys and Westenbrink (2004), pigs are traditionally owned by women. Women play crucial roles in both domestic and economic life of the society (Damisa and Yohanna, 2007); promoting pig farming in the villages is therefore equivalent to promoting the life of the whole society. Typically a farmer will raise one pig at a time; the pig will be sold out after reaching a typical market age of 9 to 12 months, usually weighing 30 (± 11.4) kg. Pig buyers, usually butchers, will walk from homestead to homestead sourcing for pigs to buy, a reason why farmers said pig marketing is better compared to other livestock species. Part of the money received will be used to buy a piglet (usually at a cost of Ksh 777 SD=174) that will in turn be raised to maturity. Interestingly, men are the ones who sell the family pig(s), and likely dictate on how the family uses the money (Mutua, 2010). Although this is perhaps in line with the cultural expectation that men are the decision makers in most rural families, it may signify the minimal involvement of women in family decision making. Involving women in decision making will not only act as an incentive for them to engage more in agriculture but will also contribute to overall goal of increased productivity and poverty alleviation. Pig investments in the study areas should involve women owing to their role in the society.

Although agricultural extension is a powerful tool with a rich potential to empower and support rural livelihoods (Anon, 1999; Rola et al., 2002), the current extension system in Kenya is ineffective and not able to meet the needs of the local farmer (Muyanga and Jayne, 2006). Observations by the researchers indicated that extension networks in the study villages, particularly those addressing the needs of the pig farmer, were weak. Farmers did not know if pig veterinarians existed, this further point to poor farmer-extension worker interactions. The training topics highlighted by the different groups were an indication of knowledge gaps in pig management in the villages. Such topics will need to be considered in future planning and strengthening of extension networks, particularly in designing field training manuals.

The focus groups generated concepts about rural pig keeping that would not have been captured in a pre-structured questionnaire conducted as one-to-one interviews. The belief that a pig could be used as charm for protection against the evil people in society, the fate of the pigs that had been possessed by demons and the discrepancy about which spouse is responsible and allowed to sell the pig presents good examples for these. These beliefs might however have a negative effect on pig farming. If farmers view pigs as an escape from poverty, then they need to be educated on potential consequences of holding on to those views. One advantage of focus groups is that they allow for active discussions of taboo topics and encourage open discussions on embarrassing topics during participant interactions (Kitzinger, 1995; Stevens, 1996; Webb and Kevern, 2001).

It was important to compare the perceptions of the staff with those provided by the farmers, and to observe the similarities and differences in opinions between the two. There is the obvious expected difference in knowledge between the staff and the farmers. Issues that were mentioned across the farmers groups and repeated by the staff were considered crucial and gave an indication that participants had similar opinions about pig farming. The participating staff worked with the pig farmers in the delivery of various services, it was therefore not surprising that they highlighted points that had already been discussed by the farmers. The staff addressed issues on success and sustainability of pig farming in Western Kenya. For example, poor infrastructure is key to delivery of animal health services and necessary for disease surveillance. Its effects can be felt even more if there are limited veterinary service providers. Staff observed that informal slaughter of pigs was common in the interior villages. In such areas, the farmers do not only go against the regulations of consumption of meat without meat inspection but also may cause a health hazard for consumers.

Key areas where farmers had limited knowledge on pig farming were identified during the discussions, for example, when farmers suggested pigs should be left free arguing that tethering prevented pigs from getting enough exercise. The staff on the other hand advised that pigs left free were more likely to be poisoned by neighbours and were the potential causes of neighbourhood to neighbour conflicts. These conflicts were either as a result of the pig farmer's failure to tether her pig or using weak tethers allowing the pigs to break loose and destroy neighbour crops. Farmers will need to be adequately trained on better pig husbandry practices and on the control of potential public health risks, of importance is *Taenia solium*, an important zoonotic disease transmissible between pigs and humans.

Humans are the definitive host for *T. solium*, and harbour the adult tapeworm after consumption of infected under-cooked pork. Ingested cysticerci develop into adult tapeworms in the human gut. Pigs acquire the infection after ingesting *T. solium* eggs that are passed in human faeces. Allowing pigs on free-range pigs is a risk factor for the infection. Neurocysticercosis in humans occurs after one has consumed food contaminated with taenia eggs, cysts develop in the brain tissue.

Considering the limitations of focus groups as a data collection tool (Stevens, 1996; Morgan, 1997), these findings cannot be generalised to the entire pig population in Kenya. The results may however provide some indication on farmers' perceptions about small-holder pig keeping in other areas of East Africa where pigs are raised under similar settings. Selection bias may have occurred in recruiting the participants because this was done through the help of village elders. They may have proposed names of participants who were close friends and may have excluded some successful pig farmers. Separate discussion fora for women and men may have provided more open discussion however, with the genders together the discrepancies between the role of men and women in pig rearing and selling were highlighted. Consultations between

the moderator and village elders led to the conclusion that the focus groups would be more acceptable in the communities if both genders were combined.

5. CONCLUSIONS

The study generated concepts about the sector that would not have been captured in one-to-one interviews. The many challenges observed will need to be addressed before reasonable gains are realised; improved marketing, access to credit and equipping the farmers with basic knowledge on pig farming are key to profitable pig production in Western Kenya. The different training topics suggested by farmers and the staff will need to be considered in formulating rural extension tools to ensure that the training workshops are tailored to meet the needs of the participants. Future research needs to directly address the issues raised by the farmers and staff to enable the smallholder pig sector to thrive in this region of Kenya. There is need for more research on some of the cultural beliefs mentioned by the farmers, for instance, the use of pork as protection, perhaps a research to establish the origin of the beliefs and to what extent this has influence rural pig farming. We conclude by stating that rural pig farming in Western Kenya is there to stay; the focus groups likely strengthened the bond between the farmers, researchers and staff. This is an outlook that can now be used in further public engagement while ongoing research studies on appropriate feed, health and improvement of market access are being addressed.

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Farmer Perceptions on Indigenous Pig Farming

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