

PRISMA Learning Series

August 2023

What we learned from working in Pigs NTT



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|  Timeframe | : 2014 to Present |  % NAIC | : 411% |
|  Locations | : NTT |  Co-investment | : IDR 16 billion |
|  Total outreach | : 126,665 |  Farmer investment | : IDR 640 billion |
|  Total NAIC | : IDR 714 billion |  Number of partners | : 382 |

This lesson learned paper is about pigs in East Nusa Tenggara (NTT), a sector in which PRISMA has been instrumental in growing the commercial feed market, improving breed management, and managing the response to animal infectious diseases.



Why pigs in NTT?

PRISMA chose to work on pigs in NTT because NTT is one of the largest producer (behind Bali) and consumers of pork in Indonesia and income from pigs acts as an important safety net for smallholder farmers. NTT has the largest pig population in Indonesia, contributing 30 per cent of the national pig population. With an estimated 900,000 households rearing on average 2 pigs and 70 per cent of smallholders rearing pigs for extra income, pigs are the most important livestock for smallholder farmers in NTT.

Pig rearing is a strong part of the culture and is served at almost every religious ceremony and traditional event. It is also common practice to gift pigs, and in some areas, pigs form part of a women’s dowry. These cultural and religious traditions keep the demand for pigs high. Pigs are also a critical source of protein for domestic consumption, and 91 per cent of NTT’s population of 5.39 million are non-Muslim and considered pork eaters. There is also high female involvement in the sector, with women spending considerable time collecting fodder, feeding, cleaning the pen, and controlling the health of pigs. Despite the importance of pigs in NTT, the market is underdeveloped, and there is significant scope for pig business development.

Constraints in market functions

Pig farmers in NTT have limited access to quality breeds or good husbandry practices, including farm and breeding management and artificial insemination (AI). Farmers also have limited access to good quality feed, as well as information on using feed correctly. Pig health products (vitamins, supplements, vaccines, drugs) are not readily available, and African swine fever (ASF) outbreaks continue without good animal health practices in place. Since the trade of pigs and pork products are restricted by government regulations, this also hinders the restocking of pigs and recovery from COVID-19 and ASF outbreaks.

These constraints create opportunities for PRISMA to engage in the following underperforming market functions:



FEED

Promoting quality feed and feeding



BREED

Improving availability and access to live pigs and AI services



ANIMAL HEALTH

Strengthening and improving animal husbandry practices related to ASF detection, response, prevention and recovery



POLICY & REGULATION

Improving regulation for swine product movement



History of PRISMA's engagement in pigs NTT

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Phase 1. First generation interventions focusing on breeding

Phase 1 of the pig sector was delivered through co-facilitators, international and national NGOs trained and contracted by PRISMA to manage interventions on behalf of the program. In 2014, when PRISMA commenced its pig sector work on Flores Island, the centre of pig production in NTT, it worked with an international NGO, and its local partner.

The first generation of interventions, from July 2014 to July 2016, focused on breeding since farmers mainly used local breeds¹ as opposed to pure or cross breeds. PRISMA partnered with eight church-owned and private breeding farms to introduce better quality pig breeds, PRISMA partnered with eight church-owned and private breeding farms to introduce better quality pig breeds, along with improved fodder and rearing practices. Key activities included short trainings and workshops on farm management, a study visit to an advanced breeding farm in Java, and support to develop distribution channels for the improved piglets. PRISMA also initiated a partnership with one of the largest feed producers, so that breeding farms could either offer a bundled package (new piglet variety and improved feed) or refer farmers to the feed company for better swine feed.

Phase 1. Shift in priorities towards quality feed and addressing hog cholera

As a result of their low purchasing power, many farmers struggled to purchase the high-quality piglets. However, there was strong interest in the feed component of the interventions, and in the second semester of 2016, PRISMA decided to shift its focus to promoting quality feed, including feed that targeted local breeds. PRISMA also expanded its geographic scope and started working in Sumba (through one co-facilitator) and Timor (through another co-facilitator). With this second generation of interventions, PRISMA partnered with six additional feed companies. These partnerships included the second, third, and fourth-largest feed companies in Indonesia. PRISMA supported partners in stimulating demand for improved feed, developing distribution networks to remote areas, piloting marketing strategies, and providing information on good rearing practices.

Finally, the third generation of interventions involved collaborations between feed and animal pharmaceutical companies and an additional focus on animal health. During the development of the feed market, the team observed an absence of swine health products in NTT and followed up with a market assessment in 2017. Seeing an opportunity to capitalise on existing feed partners and their network of feed agents by bundling pharmaceutical products with swine feed, PRISMA partnered with the leading animal pharmaceutical company in Indonesia.

At the same time, there was a massive hog cholera outbreak that began in early 2017 in Flores, leading to an estimated 10,000 deaths before the government response kicked in. As deaths from hog cholera would have a direct impact on feed sales, PRISMA encouraged feed companies to raise farmers' awareness of good rearing practices, an important measure for preventing the spread of hog cholera. PRISMA coordinated several hog cholera workshops for industry stakeholders and approached the government about addressing the outbreak, which included advocating for lifting restrictions that prevented vaccines from being imported into Flores and increasing the district budget allocation for the hog cholera vaccine. Since PRISMA's pharmaceutical partner did not have a hog cholera vaccine, PRISMA initiated discussions with two other companies to import vaccines and linked them to the government. PRISMA also encouraged its partners to recruit veterinary assistants, who could provide vaccination services and supplement the existing network of government vets. Although PRISMA continued working with feed companies during this period, its primary focus until the end of Phase 1 was tackling the hog cholera outbreak.

¹ Due to in-breeding and poor diets, local breeds are more susceptible to sickness and mortality, take longer to reach full market weight, and have low productivity of sows with a high rate of stillborn.

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Phase 2. Initially focused on feed while also making the case to re-enter breeding

In Phase 2, the pigs sector no longer worked through co-facilitators and was managed in-house by the PRISMA team. With the hog cholera outbreak under control by then, PRISMA went back to prioritising its work on feed since there was potential for significant farmer outreach. In 2019, PRISMA continued working with two of its partners from Phase 1 and partnered with another two feed companies. At that time, the focus of feed partnerships was still around promoting the benefits of complete feed, but unlike Phase 1, which focused more on quality feed for local breeds, PRISMA supported companies to promote a broader range of complete feeds (pre-starter, starter, lactation, gestation, and grower-to-finisher feed) and concentrate feed. Although PRISMA did not renew its formal partnership with its pharmaceutical partner, PRISMA continued collaborating with the company and linking it to its feed partners.

Recognising the need for longer-term strategies that would strengthen the resilience of the sector, the team made a case in 2019 to work on breeding again. Unlike Phase 1, which focused mainly on improving the availability of good-quality piglets at the farmer level, the breeding partnerships in Phase 2 took a more comprehensive approach. This included improving the breed management system and supporting breeding farms to upgrade the breed by also producing parent and grandparent stock. The decision to re-enter breeding was also reinforced by concerns of a potential ASF outbreak.

As outbreaks of ASF began spreading in Asia, including in North Sumatra in August 2019 and in Timor-Leste in September 2019, PRISMA identified this as a strong risk for farmers in NTT and conducted simulations of the potential impact on NTT's swine population, as well as the resulting income losses for feed companies. These simulations were shared with the national government and also used to bolster the case internally for working on breeding, especially given the anticipated need to restock farms with ASF-free pigs.

Phase 2. Priorities shift due to ASF outbreak



Breeding becomes the priority for market resilience and recovery

When ASF hit in 2020, PRISMA shifted its strategy towards prioritising breeding, followed by animal health, and finally feed. PRISMA partnered with three private breeding farms in 2020 and another six farms in 2022, as well as the NTT provincial and district-level (Timor, Sumba, and Rote) animal husbandry offices. PRISMA's support included:

- Assisting breeding farms outside of NTT to undergo risk analysis procedures to legally export live pigs and chilled semen to NTT
- Pushing for the certification of local breeding farms in NTT
- Facilitating access to chilled semen for partners
- Improving partners' pig genetic and recording system
- Strengthening biosecurity measures on partners' farms, which included introducing strict protocols for sterilising the farm and restocking pigs
- Providing on-site technical assistance and training on good husbandry practice and breed management.
- Conducting breeding workshops with breeding partners and the NTT provincial and district-level animal husbandry offices, with the aim of improving the regulations around pig restocking and facilitating networking among pig breeders.

Another area of focus for breeding partnerships was on the commercialisation of AI since it offers several advantages over natural mating, including minimising the risk of disease transmission and introducing superior genes into sow herds. Among PRISMA's 13 private breeding partners, PRISMA supported one to be a semen bank holder and supported nine other farms in AI commercialisation. PRISMA's support includes capacity building on semen technology, the creation of certified AI inseminators and linking inseminators to semen producers, and disseminating information and knowledge about AI services through trainings to farmers and promotional activities.

Animal health interventions also critical for supporting the bounce-back from ASF

Alongside efforts to restock breeding farms and introduce AI services to NTT, the team also focused on animal health since ASF is an extremely contagious virus, with a high fatality rate and no available vaccine. It spreads quickly between infected pigs and contaminated equipment and food. Although official statistics have recorded 121,000 pig deaths by August 2021, PRISMA's comprehensive study of the pig sector suggests that deaths amounted to 50 per cent of the NTT pig population. In other words over 1.04 million pig deaths had occurred by March 2022.

In August 2021, PRISMA launched a pilot ASF awareness campaign to increase farmers' knowledge of ASF and biosecurity measures, which are critical for preventing further outbreaks and helping the sector rebound. The pilot campaign involved a collaboration with the animal husbandry district offices, animal health services stations (sub-district level), village government, and public and private partner companies. Due to COVID-19 movement restrictions, the campaign was mostly conducted through online platforms and radio. This included webinars, radio talk shows, and digital promotions.

Although ASF cases in NTT are decreasing, the lack of an ASF vaccine, limited access to ASF-free live pig sources, and improper restocking procedures could trigger another outbreak and hinder the recovery of the pig sector. Furthermore, knowledge of ASF prevention remains low with most farmers not knowing how to prevent a future ASF attack and 62 per cent of farmers applying inadequate biosecurity measures. As a result, in mid-2022, PRISMA launched a new ASF awareness campaign to reach a wider range of stakeholders and farmers across all 22 districts in NTT. The Deputy Governor of NTT Province inaugurated the campaign kick-off in July 2022.

In addition to increasing awareness of ASF, PRISMA is strengthening ASF detection, response, prevention, and recovery in NTT by:

- Building the capacity of animal health workers and lab personnel on ASF and surveillance
- Supporting a state-owned pharmaceutical company, to promote its newly released ASF serum convalescent product in NTT
- Collaborating with another DFAT-funded program, Australia Indonesia Health Security Partnership (AIHSP), to introduce a portable ASF diagnostic tool (LAMP unit), which will reduce the cost by nearly 75 per cent and time from several months to only 1-2 hours to detect ASF.

In early 2022, PRISMA signed a Memorandum of Agreement with the NTT provincial animal husbandry office to have a comprehensive collaboration with the government in ASF prevention, detection, and surveillance; breeding management and pig genetic improvement in NTT; and capacity building and policy changes that are conducive to the recovery of the NTT pig sector. The team also introduced a new market function around policy and regulation in its pig sector strategy. Under this area, the team is supporting the government to revise regulations so that LAMP results can be used as the basis for issuing a Free ASF Certificate, a requirement for the movement of pigs and pork products.

Feed interventions continue but with a different strategy

While breeding and animal health have taken priority due to ASF, PRISMA has continued working with its feed partners, albeit with a different strategy than when it first began in Phase 2. The triple impact of ASF, COVID-19, and the 2021 Seroja cyclone meant that many farmers did not have the financial resources to purchase complete feed. As a result, PRISMA supported partners to introduce second-tier, more affordable products such as concentrate, supplementary, and/or alternative feeds. PRISMA also supported partners to develop alternative marketing channels to reach smallholder farmers. In June 2022, PRISMA partnered with a new feed company, and currently has a total of 3 active feed partnerships.

Table 1: History of pig NTT interventions in PRISMA

| Type of partner | Province | Years | Functions |
|---|--------------------|--|------------------------|
| BREED² | | | |
| Private breeding farm (medium but previously small) | Phase 1 &2: Flores | Phase 1: Feb 2015 - Jan 2016 Phase 2: Sep 2020 - Sep 2022 | • Breed |
| Church owned breeding farm (medium) | Phase 1: Flores | Phase 1: Feb 2015 - Jan 2016 | • Breed |
| Church owned breeding farm (small) | Phase 1: Flores | Phase 1: Mar 2015 - Feb 2016 | • Breed |
| Church owned breeding farm (medium size) | Phase 1: Flores | Phase 1: Apr 2015 – Mar 2016 | • Breed |
| Church owned breeding farm (small) | Phase 1: Flores | Phase 1: May 2015 - April 2016 | • Breed |
| Private breeding farm (small) | Phase 1: Flores | Phase 1: Jun 2015 - May 2016 | • Breed |
| Private breeding farm (large) | Phase 2: Timor | Phase 2: Jun 2020 - Dec 2022 | • Breed (including AI) |
| Private breeding farm (small) | Phase 2: Flores | Phase 2: Sep 2020 - Aug 2023 | • Breed (including AI) |
| Private breeding Farm (small) | Phase 2: Timor | Phase 2: Aug 2020 - Aug 2022 | • Breed (semen bank) |
| Private breeding farm (medium) | Phase 2: Timor | Phase 2: Jun 2022 - Jun 2023 | • Breed (including AI) |
| District Government | Phase 2: Timor | Phase 2: May 2022 - Oct 2023 | • Breed (including AI) |
| Church owned breeding farm (small) | Phase 2: Flores | Phase 2: Jun 2022 - Sep 2023 | • Breed |
| Private breeding farm (medium) | Phase 2: Timor | Phase 2: Jun 2022 - Oct 2023 | • Breed (including AI) |
| District Government | Phase 2: Rote | Phase 2: Jun 2022 - Oct 2023 | • Breed |

² Farm sizes: small breeding farms have < 30 sows, medium farms have 31 – 75 sows, and large farms have > 76 sows

| Type of partner | Province | Years | Functions |
|---|--------------------------------------|--|---|
| Private breeding farm (medium) | Phase 2: Sumba | Phase 2: Jun 2022 - Sep 2023 | • Breed (including AI) |
| Private breeding farm (medium) | Phase 2: Sumba | Phase 2: Jul 2022 - Sep 2023 | • Breed (including AI) |
| Private breeding farm (small) | Phase 2: Sumba | Phase 2: Jul 2022 - Sep 2023 | • Breed (including AI) |
| District Government | Phase 2: Sumba | Phase 2: Jul 2022 - Oct 2023 | • Breed |
| District Government | Phase 2: Flores | Phase 2: Jul 2022 - Oct 2023 | • Breed (including AI) |
| FEED | | | |
| Feed producer (large) | Phase 1: Flores | Phase 1: May 2015 - Apr 2016 | • Feed |
| Feed producer (small) | Phase 1: Flores | Phase 1: Nov 2016 - June 2018 | |
| Feed producer (large) | Phase 1 & 2: Flores, Sumba, Timor | Phase 1: Oct 2016 - Dec 2018 Phase 2: Dec 2019 - Oct 2023 | |
| Feed producer (large) | Phase 1: Flores, Sumba | Phase 1: Nov 2016 - Jun 2018 | |
| Feed producer (large) | Phase 1: Flores, Sumba | Phase 1: Feb 2017 - Jun 2018 | |
| Feed producer (large) | Phase 1 & 2: Timor | Phase 1: Mar 2017 - Sep 2018 Phase 2: Nov 2019 - Nov 2021 | |
| Feed producer (large) | Phase 1: Timor | Phase 1: Sep 2017 - Sep 2018 | |
| Feed producer (medium) | Phase 2: Flores | Phase 2: Nov 2019 - Nov 2022 | |
| Feed producer (medium) | Phase 2: Flores | Phase 2: Dec 2019 - Nov 2021 | |
| Feed producer (medium) | Phase 2: Flores, Timor | Phase 2: Mar 2020 - Sep 2023 | |
| OTHERS: ANIMAL HEALTH, POLICY & REGULATION, COMBINATION OF FUNCTIONS | | | |
| Animal Pharmaceutical Producer (large) | Phase 1: Timor, Sumba | Phase 1: Aug 2017 - Sep 2018 | • Animal Health |
| DFAT Program | Phase 2: NTT | Phase 2: Aug 2021 - Jun 2023 | • Animal Health |
| Provincial Government | Phase 2: NTT | Phase 2: Jan 2022 - Jun 2023 | • Animal health • Breed • Policy & regulation |

What worked and what didn't?

Initial co-facilitator engagement



Too involved

Both co-facilitators were not accustomed to the MSD approach and organised and conducted marketing activities on partners' behalf and collected order requests from distributors. Some of the partners were not able to continue the types of marketing and promotional activities introduced by PRISMA, such as market storms, because they lacked the capacity to do so. With farmers identifying the co-facilitators (rather than the private feed partners) as the main providers of information, the co-facilitators inadvertently became the face of the companies that they were meant to support.



Lack of commercial viability of church-owned farms

Given the limited availability of private breeding farms in NTT, PRISMA ended up partnering with a number of church-owned farms during Phase 1. Most of these farms were not commercially sustainable operations, and the church even intervened when one of the farms became too commercially oriented. While working with the church-owned farms enabled PRISMA to establish the breed interventions in a thin market, it had implications on the sustainability of changes being introduced through these actors. Because of this, PRISMA decided to proceed with commercial farms in Phase 2.



Failed attempts to incorporate access to finance

Aside from challenges related to direct-delivery and the types of partners being engaged, PRISMA unsuccessfully tried to facilitate a loan service from the Bank of NTT to provide farmers with financing for improved piglets. PRISMA decided to phase out the access to finance component since farmers faced difficulties fulfilling the bank's credit requirements. In addition, there were already alternative sources of credit (both formal and informal) available at the village level. PRISMA also piloted an intervention with a credit union that purchased feed in bulk before distributing it to farmers. This also did not work since the union charged a high margin on the feed in addition to the interest rate on the loan.

Establishing a market for quality pig feed and encouraging more players into the market

In Phase 1, most of PRISMA's feed partners were unfamiliar with NTT, and those who already had a presence in the province were mainly dealt with poultry feed. These companies did not view NTT as a viable market for pig feed. Through its initial partnerships, PRISMA demonstrated the pig feed market potential in NTT. Within the first two years, the market had grown significantly, with sales from PRISMA's leading partner growing from 8 tonnes in mid-2015 to 232 tonnes by mid-2017. By 2018, several partners and distributors were growing their feed agent network independently of PRISMA's support. By 2019, the pig feed market in NTT was growing by 42 percent per semester. Using a similar business model, some of PRISMA's partners have expanded their pig feed business to other islands in NTT and other provinces. With PRISMA's help, one partner is even exploring expanding their feed business to the Democratic Republic of Timor-Leste.

In addition to PRISMA's initial seven partners, six additional feed companies had copied the feed business model and entered the market by 2019. Several companies had also put technical sales and service staff on the ground to manage the distribution channel to reach potential new farmers and to sustain the existing market. While numerous feed companies have since exited NTT, in part because of ASF and COVID-19, there are currently still nine PRISMA pig feed companies operating in NTT with more beginning to crowd-in again as the sector begins to recover.

Introduction of improved pig breeds but limited initial outreach

Improved pig varieties, which allow farmers to reduce pig fattening times from 18 to 8-10 months when using good quality animal feed, were very limited in NTT prior to PRISMA's engagement in the sector. There are now at least 7 breeding companies which provide faster-growing, high-quality breeds to all the main islands in NTT, with five also beginning to provide AI services. Although Phase 1 breeding interventions did succeed in introducing improved pig varieties to NTT, intervention progress was slow, and the initial breeding partners were only able to reach a small number of farmers (1,300 households). Many of these breeding farms were based in urban areas and did not prioritise reaching rural farmers. Hence, many early adopters of the new variety of pigs were largely urban, middle-class farmers. Poor farmers could not afford or access the improved varieties, and in the few instances where rural farmers purchased the improved variety, they could not keep up with the increased feeding and watering requirements.

Given the low outreach numbers and limited impact on poor farmers from initial interventions, the promotion of quality feed presented a better entry point for improving farmers' productivity. At least that was the case until ASF and hog cholera wiped out a large portion of NTT's pig population. Nearly 76 per cent of pig farmers were affected by ASF/hog cholera outbreaks, and 70 per cent of these farmers lost all of their pigs. Given the socio-cultural significance of pigs, most farmers are now looking to restock their farms once pig prices come back to normal and quality breeds are more easily available.

Critical role in hog cholera and ASF response



Initiating a government response for hog cholera

The hog cholera mass vaccination campaign would not have happened when it did if PRISMA had not elevated the issue of the rising hog cholera deaths to the national and provincial governments and facilitated the development of the hog cholera eradication roadmap. It was only after PRISMA directly contacted the Director General for Livestock and Animal Health Services (DGLAHS) at the Ministry of Agriculture in August 2017 that the national government dispatched a team the next day to investigate the hog cholera epidemic in NTT. Recognising the risks associated with the outbreak, the national livestock department sent 70,000 doses of hog cholera vaccines to NTT in September 2017, and also developed a protocol guideline for their department to identify, confirm, and treat hog cholera outbreaks in the future. PRISMA also encouraged the government to remove the "hog cholera free" status for Flores, which lifted the ban on importing hog cholera vaccines.

PRISMA also initiated a number of hog cholera workshops. A direct outcome of PRISMA's October 2017 workshop with private sector stakeholders was the training and certification of hog cholera vaccinators. In November 2017, PRISMA also organised a multi-stakeholder hog cholera workshop which, for the first time, brought together representatives from all three levels of government (national, provincial, and district) and representation from the private sector (feed and pharmaceutical companies and their distribution agents). The decision to develop a hog cholera eradication roadmap for NTT Province was one of the key results of this workshop. The roadmap, which was formulated in early 2018, helped to significantly reduce the cases of hog cholera.



Improving chances for recovery from ASF

While ASF remains an on-going challenge for the sustainability of the sector, if PRISMA had not been working in this sector, chances of recovery would have been much lower. PRISMA has contributed to the recovery not only by initiating large-scale ASF awareness campaigns but also by improving access to ASF-free live pig sources, which are necessary for restocking farms. PRISMA has held multi-stakeholder breeding workshops to coordinate how to combat ASF and develop a restocking and breed management system. As a result of PRISMA's efforts, there are now several partner breed farms that are thriving and free from the ASF virus, implementing strict biosecurity measures, and experiencing high demand for their piglets, fattened pigs, and/or pork meat.

Continued innovation to strengthen the sector



Adapting and evolving over time

PRISMA's pig sector team has been adept at adapting and evolving its strategy over the eight years in which it has been engaged in pigs. This included shifting from breed to feed in Phase 1 when it became evident that breeding interventions would have limited outreach, as well as decisions to re-enter and prioritise breeding in response to ASF and recognising the need to build more resilience in the sector. PRISMA's flexibility and ability to respond to external shocks (hog cholera, ASF, COVID-19, and the Seroja cyclone) is reflected not only in the changes to the overall sector strategy but also efforts to pivot activities with partners (e.g. promoting alternative, more affordable feed products; exploring alternative digital/online marketing channels; incorporating biosecurity support into breeding intervention designs). In 2019, PRISMA also conducted a farmer segmentation analysis and developed differentiated strategies for each of the main islands in NTT, where farmer and private sector behaviour differed between islands.



Market storms—a more affordable, efficient marketing innovation

With PRISMA's support, partners introduced a new marketing approach called market storms. Market storms leveraged existing venues and times (e.g. weekly livestock markets) where a large number of pig farmers would already be present. Feed agents and distributors would set up makeshift stalls in these markets and use various means to attract traffic and attention to their products. The market storms allowed them to gauge farmers' interest in products, attract more sales, educate a large number of farmers, and enhance the company's brand. Following PRISMA's suggestions, several partners also recruited veterinarians, who would provide free consultations during the market storms. The vets proved to be a strong crowd-puller, increasing farmers' confidence in the brand and, more generally, in feed products. To support partners, PRISMA developed an online Google map of physical markets in NTT, which included information on operation times and days, number of visitors, and contact details for market supervisors. Although feed partners have not continued market storms independently of PRISMA, in part because of COVID-19, the approach is an effective, affordable way to reach many farmers, and PRISMA continues to use this method in its ASF awareness campaign.



Innovations to provide more affordable or integrated solutions

PRISMA also encouraged partners to introduce product innovations, most notably bundled products, smaller package sizes, and more affordable feed products. As farmers raise more pigs, there are increased risks of disease outbreaks and pig mortality. This, in turn, can negatively impact the demand for feed. As a result, it is in the interest of feed companies to encourage their agents to stock pharmaceuticals. PRISMA presented the opportunity of tapping into the unexplored swine health market in NTT to a leading pharmaceutical company. By bundling its products with feed companies, the pharmaceutical company could capitalise on the feed company's existing distribution network and customer base. This was a win-win situation for both players, and the pharmaceutical company has continued working with feed producers even after concluding its partnership with PRISMA in 2018.

Based on PRISMA's recommendations, numerous feed partners have also introduced smaller packaging (10 kg instead of 50 kg bags). Smaller package size means the product will be more affordable for farmers, especially since they often have limited disposable income. The lower expenditure requirement, alongside the lighter packages, also makes it more accessible for women to purchase. In addition to smaller packaging, a number of partners also innovated on the feed product, developing more affordable alternatives. For example, one company produced a feed that was cheaper than complete feed but would provide more nutrients than pollard. Another company introduced a single-component feed that could be mixed with concentrate to reduce feed costs for farmers.



Leaving no one behind

Women play a major role in rearing pigs, with feeding as one of the most time-consuming activities. Using complete or concentrated feed can significantly reduce the workload and time for women, bringing the amount of time spent on feeding down from 5-6 hours daily to only 15-45 minutes. It can also bring more income into the household as a result of faster pig growth. At the same time, PRISMA found that women have substantial decision-making influence over the purchase of feed. For example, 50 percent of feed purchasing decisions were made by women and 32 percent by both the husband and wife. Income increases from pig rearing was used for expenditure categories under the control or interest of women. As a result, PRISMA supported partners in introducing more inclusive business practices that would boost sales and improve women's economic empowerment.

In addition to smaller packaging sizes, PRISMA also encouraged partners to conduct market storms at times when women farmers were more likely to be at the market; organise inclusive farmers meeting by selecting times (e.g. weekends) and locations convenient for women; and recruit women sales agents or veterinarians, particularly in remote areas, to improve product distribution and promotion to women customers. Three feed partners have hired female field staff as a result of PRISMA's studies on women's role in household decision-making.



Disruption breeds innovation

ASF, compounded by COVID-19, has brought devastation to the sector and impacted all of PRISMA's partners. Bans on social gatherings during COVID-19 was a major setback for the end market for fattening pigs, especially since pigs are typically consumed at mass cultural and religious events. The lower demand for pigs and massive number of pig deaths caused a significant decline in pig feed and pharmaceutical sales, forcing two of PRISMA's partners to postpone expansion plans in NTT and eventually exit NTT all together. All of PRISMA's breeding partners were hit by ASF, with some even experiencing two waves of the disease. Due to ASF, one of the partners, decided to discontinue its breeding operations in 2021. But with the disruption has also come an acceleration in the uptake of innovation by farmers from AI to procuring faster-growing pig breeds. There has also been an accelerated uptake of innovation from private partners as they develop more affordable feed alternatives, pivot to new online strategies to market and promote their products, and commercialise AI.

Key lessons

These are the key lessons that PRISMA learned from working in pigs NTT:



Thin markets may require a more hands-on approach initially, but it is necessary to have an exit strategy upfront and clear boundaries on how far the program is willing to go with its support.

NTT represents a typical thin, uncompetitive market with few market actors, largely unstructured value chains, and absent supporting market functions and rules. It is the third poorest province in Indonesia, with most of the population engaged in subsistence farming and relying heavily on government subsidies. There is limited industry, and companies from commercial hubs like Java consider it a difficult market to penetrate given the poor transportation infrastructure, geographically dispersed population, and the different culture.

In such a context, market systems development (MSD) programs can rarely achieve momentum by using the light-touch, facilitative approach usually associated with MSD. PRISMA's more intensive initial support was necessary to generate an appetite from feed companies and attract them to enter NTT. However, it is important not to go too far. For example, co-facilitators were the ones giving out information or even entertaining during the market storms, and feed companies were not sufficiently engaged in promoting their products. Ideally, there is a clear exit strategy for sustainability and to steadily build greater ownership with partners.



Especially in thin markets like NTT, it is important to identify a network of interested agents when trying to attract companies to enter the market.



PRISMA recognised that being able to make a strong case around the huge market potential for pig feed in NTT was key. However, this market potential was insufficient to attract companies to enter NTT, a location that companies often considered commercially unviable. PRISMA had met with potential agents in Flores in advance of making their pitch to feed companies. As a result, the team was able to demonstrate that they could provide a network of interested agents, which would be necessary for the company to build their distribution network. PRISMA even arranged field visits so that the companies could meet with potential agents. This helped to build the confidence among potential partners and led to a number of partnerships with some of the largest feed companies in Indonesia.



Even though there is a national language, customised and contextualised materials and influencing strategies are important for more effective information and marketing campaigns.

What works in the rest of Indonesia will not necessarily be applicable in the context of NTT. The province has numerous tribes with different local languages, dialects, and traditions. It's important that graphics feature people wearing traditional clothing and images that are most relatable to the local audience and radio advertisements or notices use local music and language.

PRISMA also uses change agents and influencers that are contextually appropriate. Approximately 90 percent of the population is Christian, and it is the only Indonesian province where Catholicism is the predominant religion. As a result, PRISMA is collaborating with church networks and leaders to disseminate information about ASF and encourage members of their congregation to implement biosecurity measures. In addition to leveraging the influence of churches and opinion leaders, PRISMA is working with local influencers, such as the popular comedy troupe KABOAX. As marketing and promotional material is the mainstay of many MSD programs, it is important to contextualise and customise strategies.



When there is a health emergency that needs urgent action, local media coverage can be used to kick-start a response from government.

When PRISMA approached the DGLAHS at the Ministry of Agriculture, the team sent a snapshot of an article from the local media which criticised the government for not responding to the hog cholera outbreak. The national government immediately deployed an investigation team, which visited the farm that was covered in the article while also assessing the broader situation across Flores.

When ASF spread to NTT, given the deadly nature of the virus and the lack of a vaccine, PRISMA encouraged local media early on to release articles about the outbreak. This was used to increase awareness around ASF, as well as accelerate the emergency response.



In crisis scenarios like ASF, PRISMA needs to react quickly and engage a broad range of stakeholders across the province. Nevertheless, activities should still be built on evidence of what channels are most effective and need to make a clear link between recommended actions and the crisis.

Most of PRISMA's sectors tend to work in a handful of districts in each province, but given how rapidly ASF can spread across geographies, it was necessary for PRISMA to work in as many districts as possible, with both public and private stakeholders. This is why the new ASF awareness campaign targets all districts in NTT and why the team is working with breeding partners across the islands (Flores, Timor, Sumba, and even small islands such as Rote, Sabu, Alor, and Lembata) to support pig restocking.

Constrained by COVID-19 restrictions, PRISMA was not able to send staff into the field to assess the ASF situation in 2020 and had to conduct the pilot ASF campaign mainly through online platforms. Once restrictions loosened, PRISMA conducted an in-house study at the end of 2021. The study used some leading questions that may have resulted in the potential for reaching farmers through social media and other digital platforms being overstated.

A follow-up investigation found that most farmers were getting information through radio, suggesting that the new ASF awareness campaign should probably have focused on radio as its primary channel.



It is important to work across and within the various levels of government.

While the national government can be critical for mobilising action and resources from all levels of government, at the end of the day, it is the lower levels of government which will continue the momentum and be responsible for implementing and monitoring agreed measures. As a result, PRISMA made sure to maintain strong relationships with the provincial and district-level governments, working closely with them to formulate and implement responses to animal diseases, such as the formulation of the hog cholera roadmap.





About PRISMA

PRISMA is a **partnership between the Government of Indonesia and the Government of Australia** to increase the productivity and income of smallholder farmers. Increased productivity contributes to food security and builds farmer resilience to market and agricultural shocks, including climate change.

PRISMA supports its partners to adopt **inclusive business practices** through co-investment, market research, and tailored business advisory support. Better business practices increase the availability of products and services that improve farmer productivity and incomes.

PRISMA also works with the Government of Indonesia to create a better business-enabling environment. PRISMA supports policy change that makes it easier to do business and promotes collaboration with the private sector to respond to market shocks and smallholder farmers competitiveness.

PRISMA is supported by the Governments of Australia and Indonesia and implemented by Palladium, with Technical Assistance from Swisscontact, Zurich.

Find out more:

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