

PRISMA

Australia-Indonesia Partnership for
Promoting Rural Incomes through
Support for Markets in Agriculture



Australian Government

Report

Australia-Indonesia Partnership for Promoting Rural
Incomes through Support for Markets in Agriculture

Progress Report and Implementation Plan

February 2020



Table of Contents

Table of Contents	i
List of Abbreviations.....	iii
Executive Summary	6
1 Broader policy, institutional and environmental context	9
2 PRISMA – portfolio management and monitoring	10
2.1 Portfolio and intervention development progress	10
2.2 Progress of key performance indicators	11
2.3 Portfolio analysis	11
2.4 Challenges and highlights	17
2.5 Management response.....	19
3 Cross-cutting issues.....	20
3.1 Policy.....	20
3.2 Gender equality and social inclusion	21
3.3 Nutrition.....	22
3.4 Environment	22
3.5 Applied research	23
4 Quality and risk	23
4.1 Results measurement	23
4.2 Management Information System (MIS).....	25
4.3 Communications.....	25
4.4 Risk management	26
5 Stakeholder relationship management.....	27
5.1 Government of Indonesia national and subnational agencies	27
5.2 Development partners (DFAT programs) and civil society organisations	28
6 Operations	28
6.1 Human resource management.....	28
6.2 Operations.....	30
Annex 1 – Subsector Profiles.....	31
1. Beef	31
2. Coconut.....	36
3. Coffee.....	40
4. Crop protection.....	44
5. Dairy.....	47
6. Innovative Finance	51
7. Information and Communication Technology (ICT).....	54
8. Irrigation	57
9. Maize.....	60
10. Mechanisation.....	69
11. Mung bean	73
12. Peanut.....	77
13. Pigs	80
14. Poultry.....	84
15. Rice	87

16.	Seaweed	90
17.	Soil treatment	93
18.	Vegetable	98
Annex 2 – PRISMA Risk Matrix		103
Annex 3 – PRISMA QMT Results December 2019.....		104
Annex 4 – PRISMA Portfolio Development Plan.....		105
Annex 5 – PRISMA Projections up to Y20S2.....		107
Annex 6 – PRISMA Semester Outreach Breakdown (December 2019)		109
Annex 7 – PRISMA Value for Money Ex-post Y19S2		114
Annex 8 – PRISMA Capacity Building Plan 2020		115
Annex 9 – PRISMA Partner Details		116

List of Abbreviations

ADB	Asian Development Bank
AI	Artificial insemination
AIP-Rural	Australian-Indonesia Partnership for Rural Economic Development
ARISA	Applied Research and Innovation Systems in Agriculture
ASF	African swine fever
AUD	Australian dollar
Bappenas	Badan Perencanaan Pembangunan Nasional, or National Development Planning Agency
Bappeda	Badan Perencanaan Pembangunan Daerah, or Development Planning Agency at Sub-National Level
Balitkabi	Balai Penelitian Tanaman Aneka Kacang dan Umbi, or Indonesian Legumes and Tuber Crops Research Institute
BCC	Behaviour change communications
BPJS	Badan Penyelenggara Jaminan Sosial, or Social Security Administrative Agency
Bn	Billion
BPS	Badan Pusat Statistik, or Central Bureau of Statistics (Indonesia)
BRI	Bank Rakyat Indonesia (an Indonesian state-owned bank)
BUMDes	Badan usaha milik desa, or Village-Owned Enterprise
CAGR	Compound annual growth rate
CEO	Chief Executive Officer
CJ	Central Java province
COO	Chief Operations Officer
CV	Commanditaire Vennootschap, or limited partnership
DFAT	Department of Foreign Affairs and Trade (of the Government of Australia)
DOA	Deed of Amendment
DOC	Day-old chicks
EJ	East Java province
EMS	Environmental Management Strategy
ENSO	El Niño-Southern Oscillation
FAO	Food and Agriculture Organization
FAW	Fall armyworm
Fintech	Financial Technology
FI	Financial institution
GAP	Good agricultural practices
GDP	Gross domestic product
GESI	Gender equality and social inclusion
GCP	Good crop protection practices
GHP	Good handling practices
G-HIPPA	Gabungan Himpunan Petani Pemakai Air, or Association of Water User Associations (of farmer groups)
GMO	Genetically modified organism
GOA	Government of Australia
GOI	Government of Indonesia
GPP	Good processing practices
GRP	Good rearing practices
HEAT	Hostile environment awareness training

HH	Household
HIPPA	Himpunan Petani Pemakai Air, or Water User Association (of farmer groups)
HOP	Head of Portfolio
ICN	Intervention concept note
IDR	Indonesia rupiah
IP	Intervention plan
ISD	Intervention steering document
ISP	Intermediate service provider
K	Thousand
KPI	Key performance indicator
KUB	Kampung Unggul Balitnak, Balitnak's superior kampung' chicken
LTA	Long term advisor
Mio	Million
MIS	Management information system
MMAF	Kementerian Kelautan dan Perikanan, or Ministry of Marine Affairs and Fisheries
MoA	Kementerian Pertanian, or Ministry of Agriculture
MoV	Kementerian Desa, PDT dan Transmigrasi, or Ministry of Villages, Development of Disadvantaged Regions, and Transmigration
MSD	Market systems development
MSME	Kementerian Koperasi dan Usaha Kecil dan Menengah, or Ministry of Micro, Small and Medium Enterprises
MSME	Micro, small and medium enterprise
MSP	Machinery service provider
MT	Metric tonne
NAIC	Net attributable income change
NGO	Non-governmental organisation
NOAA	National Oceanic and Atmospheric Administration
NTB	Nusa Tenggara Barat (West Nusa Tenggara province)
NTT	Nusa Tenggara Timur (East Nusa Tenggara province)
OPA	Outcome performance assessment
OPV	Open-pollinated variety (a hybrid seed)
PA	Papua province
PES	Public service extension
PPI	Progress out of poverty index
PPP	Purchasing power parity
PMT	Project management tool
PRISMA	Promoting Rural Income through Support for Markets in Agriculture
PRIP	Progress report and implementation plan
PT	Perseroan Terbatas (limited liability company)
QMT	Quality management tool
RDKK	Rencana Definitif Kebutuhan Kelompok, or Group Requirement Definitive Plan
Ristekdikti	Kementerian Riset, Teknologi, dan Pendidikan Tinggi, or Ministry of Research, Technology and Higher Education
RML	Results measurement and learning
RPJMD	Rencana Pembangunan Jangka Menengah Daerah, or regional mid-term development plan
SAFIRA	Strengthening Access to Finance in Rural Agriculture

Setneg	Kementerian Sekretariat Negara Republik Indonesia, or Ministry of State Secretariat
SBCC	Social behaviour change communication
SCP	Systemic change progress
SME	Small and medium enterprise
SOP	Standard operating procedure
SRP	Strategic review panel
SROI	Social return on investment
SUSENAS	Survei Sosial Ekonomi Nasional, or Social Economy National Survey (of Indonesia)
TIRTA	Tertiary Irrigation Technical Assistance
TJPS	Tanam Jagung Panen Sapi, or Plant Corn, Harvest Cows
Tn	Trillion
UNDP	United Nations Development Programme
UPSUS	Upaya Khusus, or Special Effort Programme
USAID	United States Agency for International Development
USD	United States dollar
VCF	Value chain finance
WA	West Papua province
WEE	Women's economic empowerment

Executive summary

BACKGROUND

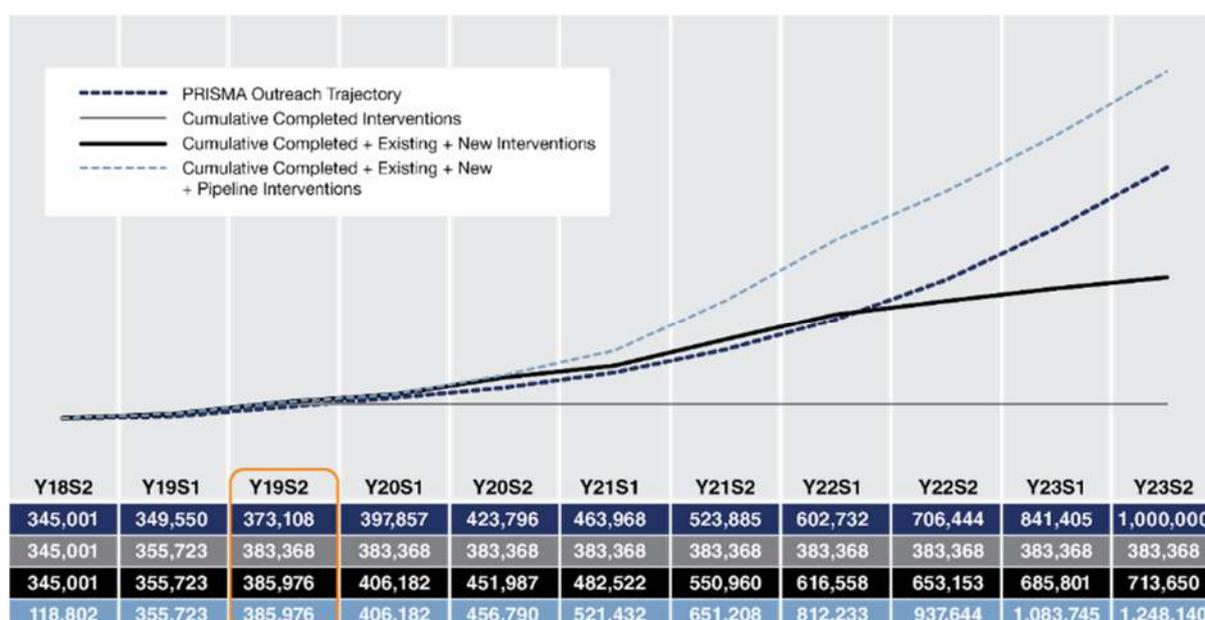
The objective of the Australia-Indonesia Partnership for Rural Incomes through Support for Markets in Agriculture (PRISMA) is to achieve a sustainable 30% increase in the net incomes of 1,000,000 smallholder farming households (HHs) in Indonesia by the end of 2023, including those HHs benefited in Phase 1. PRISMA builds upon the achievements of and lessons learned by the Australia-Indonesia Partnership for Rural Economic Development (AIP-Rural) and its value chain, finance, irrigation and research components. We are one of the largest market systems development programs in the world and address the most significant constraints to rural income growth, boosting farmer incomes in six provinces in Eastern Indonesia.

Throughout July to December 2019, PRISMA has continued to focus on portfolio development, quality assurance of our interventions, and drive of systemic change. We are starting to see results from the first semester of Phase 2, as seen by the growing number of partners and contracts. The hiring for Cohort 7, comprising 20 staff, was carried out this semester to increase our capacity for implementation and innovation of intervention. PRISMA also focused on the finalisation and roll-out of some key strategies and a key tool: the GESI Strategy, the Policy Strategy, the Capacity Building Strategy, the EPS Strategy and the Portfolio Management Tool.

PROGRESS

1. This semester, PRISMA has added 23 new interventions through partnership with 11 new partners.
2. Through existing and new interventions, PRISMA has reached 30,253 additional beneficiaries which increased the cumulative number to 385,976 HHs, with 145,429 HHs under USD 2.50 PPP and 250,145 HHs under USD 5.50 PPP. This positioned us at 103.45% of the trajectory (that is, 12,868 beneficiaries above the trajectory).

FIGURE 1: PRISMA OUTREACH TRAJECTORY AND INTERVENTIONS



3. The expected cumulative outreach for existing and new interventions is 406,108 HHs (153,028 HHs < USD 2.50 PPP; 261,398 HHs < USD 5.50 PPP) by the end of next semester, up from the 395,113 HHs projected last semester.

4. **PRISMA accumulated IDR 2.171 tn (AUD 217.45 Mio) net attributable income change (NAIC) with absolute NAIC per HH at IDR 5,049,900 (AUD 504.99)**, which is an increase of 239% on average, significantly above the target of 30%.
5. **Other key performance indicators (KPIs) continue to reflect increasing level of sustainability.**

TABLE 1: PRISMA KEY PERFORMANCE INDICATORS

KPI Tracking	Actual cumulative Y19S2	Actual Y19S2
KPI1 # Outreach (all farming HHs)	385,976	30,253
KPI1a # Outreach (< USD 2.50 PPP)	145,429	13,153
KPI1b # Outreach (< USD 5.50 PPP)	250,145	19,399
KPI2 Net income impact in IDR (all farming HHs)	2,171,452,414,202	99,649,141,498
KPI2a Net income impact in IDR (< USD 2.50 PPP)	791,766,584,509	44,614,350,519
KPI2b Net income impact in IDR (< USD 5.50 PPP)	1,355,201,986,521	65,401,739,969
KPI3 # ISPs	10,472	726
KPI4 WEE effectiveness	1.66	2.56
KPI5 ISPs' increased turnover in IDR	874,156,424,987	187,837,880,534
KPI6 # Intervention partners (public and private sector partners)	194	11
KPI7 Private partners increased turnover in IDR	87,126,889,877	83,180,088,421
KPI8 Additional/more inclusive investment in IDR	1,131,122,013,302	100,779,571,947
KPI8a Additional/ more inclusive investment in IDR (public and private sector partners)	136,249,568,221	3,162,303,500
KPI9 # Crowding-in business/institutions	1	-
KPI10 # Responding business/institutions	-	-
KPI11 # Policy engagements	4	-

6. **In regard to total intervention costs, social return on investment (SROI) is sitting at 3.81 in Y19S2**, with no increase from the previous semester. Investment per farming HH decreased to AUD 147.59 from AUD 153.03 last semester. Investment leverage shows the most significant positive change, with a 5% increase from 1.89 in Y19S1 to 1.99 in Y19S2.

CHALLENGES

1. **The most significant challenge was and is to rebuild implementation momentum.** This is reflected in the outreach trajectory and was addressed by, among others, reallocating resources from a planned-to-be-hired international long-term policy advisor to international long-term portfolio advisors, as recommended by SRP 10.
2. **Another measure to speed up momentum was the recruitment of an additional cohort of staff and the induction of a previously recruited cohort.**
3. **Currently the outcome in Maize is very uncertain and PRISMA's new strategies need to be reconsidered.** A lack of understanding of government planning and focus hampered our intervention design in this sector and may lead in Y20S1 to a missed opportunity and lower impact than possible.
4. **To address the implementation risk of African swine fever, we worked closely with public and private stakeholders and helped kickstart national and provincial dialogue.** Further efforts went into the coordination of preventive measures in NTT and Bali, and we adjusted our strategy to focus on sanitation and post-outbreak response.

HIGHLIGHTS

1. **Progression of strategies and interventions from the provincial to the national level became one of the more significant features of Phase 2.** For example, over 60% of our sectors include partners with whom we are working increasingly on national strategies; we have new contact points in partner organisations at the regional level in some sectors.
2. **Fostering ICT agriculture start-ups in Indonesia is a long-shot but has high potential for impact at scale.** The partner portfolio in ICT made good progress and confirms the action research strategy of Phase 1.
3. **The collaboration with PT Pupuk Kaltim has developed very well over the last six months and might become PRISMA's first successful collaboration with a state-owned enterprise.**
4. **In the Seaweed sector, our not-yet-formalised collaboration with the Ministry of Marine and Fisheries made good progress and is likely to be reflected in their five-year plan.** The goals are performance gains in the seaweed seedling market and transportation infrastructure.
5. **As a follow-up of the Bappenas and DFAT visit to Central Java, Bappeda of Central Java, on behalf of the provincial government, agreed to work together with PRISMA to achieve its targets as stated in the Regional Long-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah, or RPJMD) 2018 – 2023.** In October 2019, we organised a two-day workshop to present the current work plan to Bappeda and to establish the ground for further collaboration.

MANAGEMENT RESPONSE FOR THE NEXT TWELVE MONTHS

1. **Let the portfolio flow in order to confirm or revise the strategic decisions** made in the Subsector Review (SSR).
2. **Work towards a broader partner base per sector.** Almost all sectors can achieve higher levels of systemic change and resilience by increasing the number of actors involved.
3. **Enhance the use of data for analysis and decision-making across all interventions.** PRISMA will use the SSR and future PRIP development as a means for data-driven decision-making training.
4. **Search more consciously for recurring mistakes across the portfolios and sectors.**
5. **Finalise the defining, measuring and reporting of systemic change** using the new tools (vision radar, systemic change pathway, and systemic change progress).
6. **Establish the policy portfolio and move to policy strategy implementation.** In January 2020 PRISMA will develop a policy roadmap for the year, while moving in parallel towards the defined points of concrete action.
7. **Continue to monitor African swine fever (ASF) and support stakeholder coordination** in NTT and at the national level.
8. **Finalise interventions to fight FAW using conventional means and start implementation** as soon as our partners' product are registered; combine crop protection and maize seed interventions in order to safeguard farmers' investments.
9. **Move from transition recovery to full implementation mode.** A capacity building plan, hands-on support using the additional LTA resources, and a more coherent target-setting process will contribute to this.

1 Broader policy, institutional and environmental context

In October 2019, Joko Widodo and Ma'ruf Amin were inaugurated as President and Vice President respectively of the Republic of Indonesia for a five-year period (2019 – 2023). The five priorities of the new administration, as seen in Text Box 1, are favourable for Indonesia's economic and business growth. In the agriculture sector, promises were made to improve agricultural human resources and farmers' access to production tools.

Indonesian economy grew 5.02% (YoY) in 2019, lower than 5.17% (YoY) in 2018. Despite this decline, Indonesia's economic growth in 2019 was still far better than high-income countries such as the US, South Korea or Singapore. Global economic conditions such as the trade war between the US and China are still causing uncertainty in the market. As a result, global commodity prices have tended to decline; the domestic prices of PRISMA's main commodities, however, remain stable.

As part of the new cabinet, Jokowi selected Syahrul Yasin Limpo to become the new Minister of Agriculture, replacing Amran Sulaiman. Limpo's 100-day program includes synchronising agricultural data into a single source of reference, and creating Kontra Tani (agriculture 'command' centres) to enhance the

role of agricultural extension workers and maintain food security. The new Minister has stated that he is not entirely against imports, which will continue while improvements are being made to fix production problems. PRISMA is cautiously hopeful that any new agriculture import policies will be more aligned with market realities. We provided information to DFAT on both the new Minister of Agriculture and Minister of Bappenas in early November 2019.

Two agriculture-related laws were enacted by Indonesia's legislative body (Dewan Perwakilan Rakyat): the Water Resources Act and the Agricultural Cultivation Act. In general, PRISMA views both laws as a positive development. Law No. 22 of 2019 on sustainable agricultural cultivation covers many aspects, but one potentially game-changing clause is the provision of a legal basis for genetically modified organism (GMO) seeds. Notwithstanding the controversies surrounding GMO, it remains a potentially useful tool for increasing farmers' income and achieving food security. Law No. 17 of 2019 on water resources is a breath of fresh air for irrigation service providers, as the previous regulation did not specifically address businesses in the irrigation sector and as a result, irrigation actors did not have a sound legal basis for doing business. With this new water resources law there is a clear opportunity for the private sector to enter and develop businesses in the irrigation sector.

The rainy season of 2019 was delayed in the majority of PRISMA provinces, resulting in the delay of the planting season. The prolonged dry season contributed to generally lower revenue among PRISMA partners, some of whom may, as a result, act with increased caution in terms of an expansion plan or additional investment in 2020. Also, in 2020, the El Niño weather pattern is expected to be replaced by La Niña which will bring heavier rain than usual, increasing the risk of flooding and of pest and disease attacks.

Text Box 1

Five priorities of the President and Vice President of the Republic of Indonesia (2019 – 2023)

1. Building dynamic and skilled human resources who will master science and technology;
2. infrastructure development to continue the facilitation of access from production areas to distribution areas;
3. simplifying regulations to encourage an increase in number of MSMEs;
4. the simplification of bureaucracy to make it more streamlined and efficient, and
5. economic transformation through competitive manufacturing to reduce dependency on natural resources.

Threat of pest and disease attack remains a concern for PRISMA. The impact of FAW in Indonesia has been minor thus far; however, we have observed an increase in intensity since the beginning of the rainy season. According to the current trajectory, the height of impact potentially will occur in mid-2020. In the Pig sector, the Ministry of Agriculture officially announced an outbreak of ASF in North Sumatra in December 2019. If ASF hits NTT, there will be high swine mortality rate and significant price drop due to the ensuing panic. PRISMA is actively managing both risks at the national and provincial levels through private sector interventions and policy engagement.

2 PRISMA – portfolio management and monitoring

2.1 Portfolio and intervention development progress

With a total of 23 new interventions completing signed contracts, 11 of which are with partners with whom PRISMA has never worked with before, against a target of 26 contracts, the speed of portfolio expansion reached the expected level, despite lagging 3 interventions behind the internal target. PRISMA approved 35 IPs and 32 ICNs, against targets of 30 and 13 respectively. The new interventions consist of 7 in Central Java (CJ; adding up to total 10 ongoing interventions), 9 in East Java (EJ; total 15), 1 in Nusa Tenggara Barat (NTB; total 4), 6 in Nusa Tenggara Timur (NTT; total 10), and none in Papua and West Papua. Beef started 2 interventions (to give a total of 4), Crop Protection 5 (total 5), Innovative Finance 3 (total 6), and Pig 4 (total 4), making up 60% of the new interventions in Y19S2. However, as emphasised during the last Strategic Review, these numbers alone do not indicate much more than the level of activity and success in making deals: far more important is the quality of the interventions. We assess this in chapter 2.3 using the Quality Monitoring Tool (QMT).

This semester, two new sectors were launched: Poultry in NTT and Mechanisation in East Java. In the Poultry subsector, PRISMA partners with PT Sumber Unggas Indonesia to promote a better breed to farmers in NTT; in the Mechanisation sector, we partner with PT Rutan to promote the use of the combine harvester machine for rice farmers in East Java.

Our new interventions are expected to reach 207,849 HHs (90,533 < USD 2.50 PPP and 126,188 < USD 5.50 PPP) by 2023, adding up to 113,457 HHs (40,746 < USD 2.50 PPP and 60,971 < USD 5.50 PPP) if combined with the existing interventions.

To ensure the quality of our portfolio, PRISMA is observing the new approaches in our interventions (see Table 3) and the expected results (see Figure 2 and 3). In Phase 2, we have revised our QMT to accommodate the more specific quality criteria, and all the interventions in the current portfolio have gone through the QMT process. In addition, the sector vision, the intervention design, and the systemic change are being discussed during our regular six-monthly management team strategic review. All PRISMA's sector strategy and intervention designs are also going through a peer review process guided by assigned advisors.

2.2 Progress of key performance indicators



OUTREACH

This semester, PRISMA has benefited 30,253 additional HHs against a target of 23,558 HHs, which increased the total outreach to 385,976 HHs (145,429 HHs or 38% > USD 2.50 PPP and 250,145 HHs or 65% > USD 5.50 PPP). We are now 3.45% (or 12,868 smallholder farming HHs) above the target trajectory. The following subsectors were the main contributors:

- Crop Protection EJ 13,128 HHs (9,609 HHs above projection).** As already indicated by its success in the AIP-Rural program, PT NASA's ICT intervention proved to be very effective. In combination with its multi-level marketing and extension service system, the App that NASA had developed together with us helped to reach 12,939 smallholder farming HHs in CJ alone with quality agriculture inputs and product-related information. In the coming semesters, we will assess impact across Indonesia.
- Pig NTT +7,551 HHs (-14,448).** Most activities in the Pig sector this semester were related to preventing the spread of the devastating ASF, and implementing disaster response measures on multiple levels, ranging from HH-level biosecurity education, to implementing an improved breeding management system, to provincial and national awareness-raising workshops and implementation planning. As in the past, however, this semester's greatest impact came from PRISMA's feed intervention with multiple partners. The sales of our feed company partners continue to grow despite having slowed as a result of the ASF outbreak.
- Mung Bean EJ 7,025 HHs (+2,243 HHs).** Mung Bean continues to perform below expectations; however, the sector remains promising as a moderately growing part of the portfolio, with a good outlook due to the low number of significant players. PT EWINDO's limited resource allocation remains one of the reasons for the slow pace. On the other hand, we saw a good take-up by farmers (6,571 are beneficiaries from systemic change) and an apparently good potential to collaborate in the future with more partners.
- Irrigation EJ 1364 HHs (+668 HHs).** This impact stems from a TIRTA intervention.

However, the accumulated negative variance between projections as per the end of 2019 and actuals was minus 24,476 HHs or -55%, with the Pig and Maize sectors as main contributors. The reasons for this are assessed in the portfolio analysis section of this report.

FIGURE 2: PRISMA OUTREACH TRAJECTORY AND INTERVENTIONS

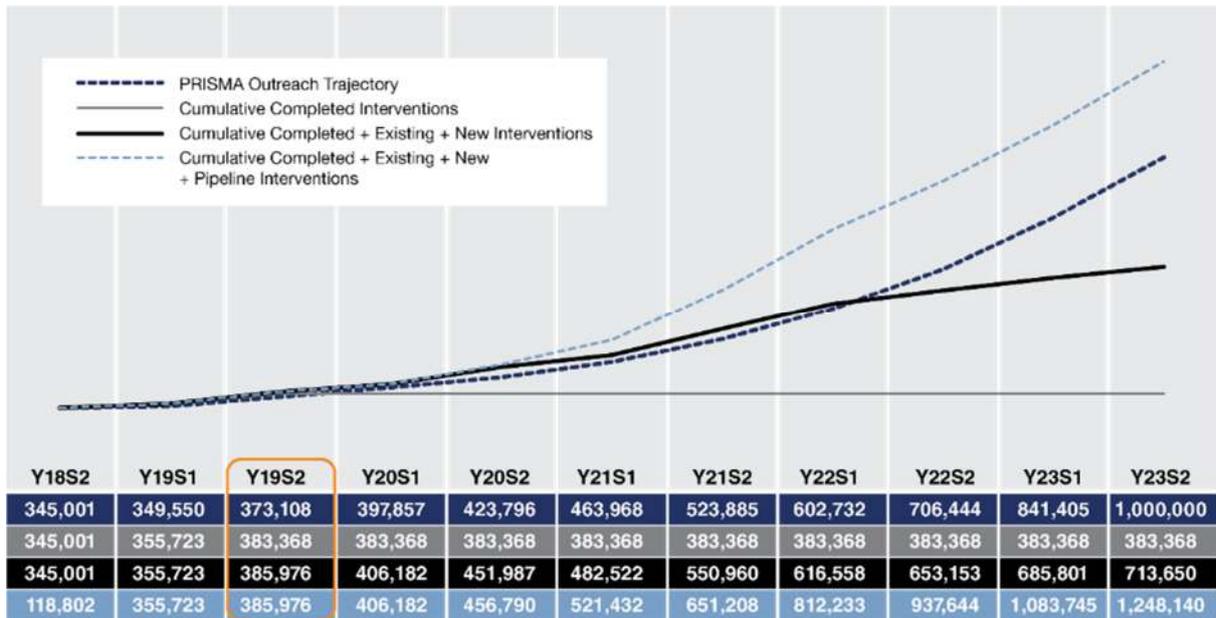
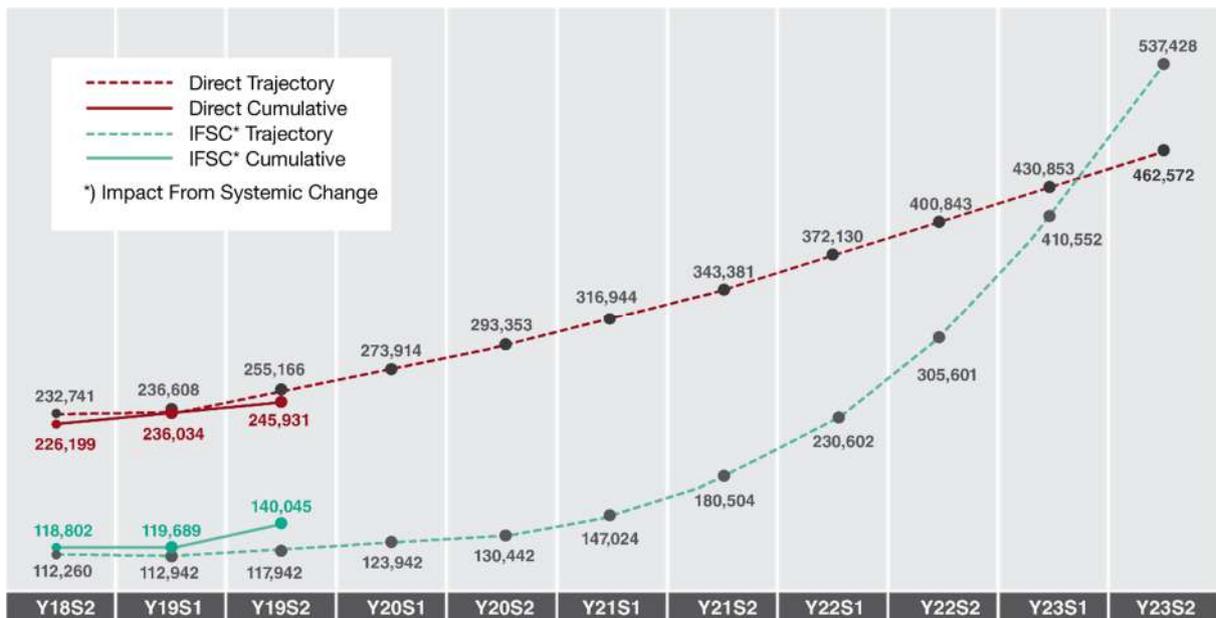


FIGURE 3: PRISMA DIRECT OUTREACH AND IMPACT FROM SYSTEMIC CHANGE OUTREACH



PRISMA has recorded higher outreach from systemic change (+22,103 HHs) and lower direct outreach (-9,235) compared to the new target trajectories. Although it is still too early to be used for strategic decision making, these actuals indicate the envisaged trend of indirect outreach change growing faster than change in direct outreach.

INCOME

In this semester, the average NAIC% per HH decreased slightly from 264.8% to 239% (AUD 479 to AUD 466) due to the large number of reported beneficiaries in the Crop Protection (PT NASA) and Mung Bean sectors, where NAIC was relatively low at an average of 39% (AUD 53) and 31% (AUD 44) respectively. An Indonesian person in extreme poverty (USD 1.90 PPP, based on 2018 SUSENAS data) consumes a food basket priced at IDR 10,748 or IDR 327,814 per month. Looking at the recently measured sectors, this means that the changes in the Peanut (+IDR 526,728), Crop

Protection (PT NASA; +IDR 435,144 or down from +IDR 6 Mio in Y18S2), Mung Bean (+IDR 526,728) and even Pig (+IDR 1,002,932 or down from +IDR 3.5 Mio in Y18S2) sectors need close attention, as they are unlikely to provide sufficient incentives to support sustainable adoption of the new practices and products.

More positive progress was made in our Irrigation, Crop Protection (Agricon) and Innovative Finance sectors, where increases were IDR 5,573,386, IDR 3,489,249 and IDR 4,761,533 respectively.

The accumulated additional production value (or NAIC) this semester reached IDR 2.171 tn (AUD 217.45 Mio) or IDR 5,049,900 (AUD 504.99) per smallholder farming household.

OTHER SELECTED KPIS

KPI 3 and KPI 5. During the reporting period, the number of additional intermediate service providers (ISPs) increased by 726 and ISP turnover reached IDR 188 bn (AUD 18,8 Mio; +AUD 19 Mio); 716 of the new ISPs come from Crop Protection (PT NASA), and IDR 172 bn (AUD 17.2 Mio) of increased turnover in the Pig sector serves as evidence of sustainability of the changes in the Pig sector in NTT. Crop Protection, as the second largest contributor, added IDR 13.3 bn (AUD 1.3 Mio) to ISP turnover.

KPI 6. The number of partners increased by 11 to 27 (14 of which we had not worked with before, in AIP-Rural), working in 39 interventions in 27 sub-sectors in 13 sectors. In total, including those signed up under AIP-Rural, PRISMA has now engaged 53 public partners, including 17 state-owned enterprises. Together with the fact that we were able to continue collaboration with some of the most important partners (such as EWINDO, Syngenta, Corteva, BISI, and Dinas Pertanian NTT), this can be seen as a sign of increasing systemic change in some sectors. On the other hand, we need to gain a better understanding of why some proven partners are no longer (or not yet) involved in our strategies. We will assess this in more detail next semester when we expect the partner portfolio to reach a rather more stable level.

KPI 8 and KPI 8a. Cumulative partner investment increased slowly by IDR 3.16 bn (AUD 316,230) whereas the total investment (by partners, ISPs and HHs) continued to grow at a constant rate of slightly above 10% (IDR 100,779,571,947 or AUD 10 Mio); 12% or IDR 136 bn (AUD 13.6 Mio) of the total investment (AIP-Rural and PRISMA) comes from private partners, with the remaining 88% (IDR 994.8 bn or AUD 99.48 Mio) originating from smallholder farming households. The slow investment growth shown by our partners is to a large extent a result of the halt put to all collaborations between mid-2018 and early-to-mid-2019.

TABLE 2: PRISMA KEY PERFORMANCE INDICATORS

KPI Tracking	Actual cumulative Y19S2	Actual Y19S2
KPI1 # Outreach (all farming HHS)	385,976	30,253
KPI1a # Outreach (< USD 2.50 PPP)	145,429	13,153
KPI1b # Outreach (< USD 5.50 PPP)	250,145	19,399
KPI2 Net income impact in IDR (all farming HHS)	2,171,452,414,202	99,649,141,498
KPI2a Net income impact in IDR (< USD 2.50 PPP)	791,766,584,509	44,614,350,519
KPI2b Net income impact in IDR (< USD 5.50 PPP)	1,355,201,986,521	65,401,739,969
KPI3 # ISPs	10,472	726
KPI4 WEE effectiveness	1.66	2.56
KPI5 ISPs' increased turnover in IDR	874,156,424,987	187,837,880,534
KPI6 # Intervention partners (public and private sector partners)	194	11
KPI7 Private partners increased turnover in IDR	87,126,889,877	83,180,088,421
KPI8 Additional/more inclusive investment in IDR	1,131,122,013,302	100,779,571,947
KPI8a Additional/ more inclusive investment in IDR (public and private sector partners)	136,249,568,221	3,162,303,500
KPI9 # Crowding-in business/institutions	1	-
KPI10 # Responding business/institutions	-	-
KPI11 # Policy engagements	4	-

VALUE FOR MONEY INDICATORS¹

In regard to total intervention costs, PRISMA's social return on investment (SROI) is sitting at 3.81 in Y19S2, representing no change from the previous semester. Investment per farming household decreased slightly to AUD 147.59 in Y19S2 from AUD 153.03 in Y19S1, whereas investment leverage shows the most significant positive change, namely, a 5% increase from 1.89 in Y19S1 to 1.99 in Y19S2. These developments do not come as a surprise, taking into account that more spillover impact is resulting from Phase 1 interventions, without any additional costs.

Our Crop Protection sector is leading the SROI and Investment per HH chart at 24.60 and 27.20 respectively, followed closely by the Pig sector at 22.05 and 26.23. Meanwhile, in Investment Leverage, the Pig sector is leading (at 20.21), with Crop Protection in second place (at just 4.76).

In regard to direct intervention costs, changes this semester have been +3% for SROI, -6% for Investment per Farm Household, and +8% increase for Investment Leverage.

2.3 Portfolio analysis

The current portfolio consists of 39 interventions and reached 385,976 HHS (145,429 < USD 2.50 PPP and 250,145 < USD 5.50 PPP) as per the end of 2019. These results exceed the target projection of 12,868 HHS but fall short of PRISMA's own projection by 8,008 HHS. The main reasons for this shortfall lie in the Maize and Pig sectors. In the Pig sector, we underestimated the difficulties of re-engaging several of our former partners who are used to relatively direct support through our cofacilitators. PRISMA categorically avoids this type of support, as it mitigates against any impetus

¹ All value-for-money reported in this document pertains to total intervention cost. Please see Annex 1 (sector summary) for more detailed information of value-for-money according to sector.

towards systemic change in the markets. In addition, the team invested significant resources in the national and provincial level disaster response addressing the ASF virus. Impact from systemic change was expected in Maize NTT but did not materialise, because production of quality seed stagnated at 2018 levels, in part due to underperforming market players producing foundation and extension seeds.

Maize has turned out to be a challenging sector in Phase 2. The strategy in Madura suffered from 2018 when the Upaya Khusus (UPSUS) program was cancelled until 2019 when it was reintroduced, under high levels of unpredictability (with volume increasing significantly over time in the year). We learned only recently that Madura was assigned 875 MTs of subsidised hybrid seed for the current season, 500 MTs of which were provided by our AIP-Rural partner PT BISI. Although we know that a significant section (up to 60%) of smallholder farming households continued to plant hybrid maize in 2018 when subsidised seed was unavailable, we were unable to report any additional outreach as the total market size is unknown. During the distribution of seed, the government used PRISMA's GAP tools. However, attribution will only be possible after in-depth investigation regarding the extent to which the government extension services followed our recommendations as a whole, and whether the government continued to reallocate subsidised seed to new areas. We will, therefore, gather further evidence of PRISMA's attribution before reporting any impact in Maize Madura from AIP-Rural's public-private interventions.

Despite the difficulty of prediction in the Maize sector, the risk diversification of our strategies significantly improved. When projections are included, Beef, Crop Protection, Finance, Irrigation and Mung Bean expect to contribute 9%–16% to the total portfolio by 2023, and another 5 sectors expect shares of 5% or 6%. The risk in the Pig sector (see below, Chapters 2 and 4.4) is reflected in a merely moderate growth of 44,957 HHs, and the uncertainty in Maize, which is reinforced by the spread of the FAW, is reflected in expected expansion by only 37,893 HHs.

PRISMA Phase 2 promised to deliver interventions of higher quality, that is, in terms of greater systemic change impact. We believe the current interventions fulfil this aspiration with regard to several aspects. As with last semester, we present an overview to visualise this (see Table 3, below).

TABLE 3: NEW APPROACHES IN PRISMA PHASE 2

SECTOR & INTERVENTION	PARTNER	NEW APPROACHES
Rice-Agrosid	PT Agrosid Manunggal Sentosa/PT Primasid Andalan Utama	
Maize-Corteva	Corteva Agriscience (PT DuPont Indonesia)	
Maize-Distan NTT	Dinas Peternakan NTT; BPPT NTT	
Maize-Syngenta	PT Syngenta Indonesia	
Promotion of quality beef feed	KJUB Puspetasari	
Promotion of quality beef feed	CV Fermen Hipro Feed	
Promotion of quality, commercial fertilizer	PT Pupuk Kalimantan Timur	
Irrigation-seed companies	PT East West Indonesia (EWINDO)	
Combine Harvester Market penetration	PT Rutan	
Sierad Feed NTT	PT Sierad Produce, Tbk	
Patriot Feed NTT	PT Panca Patriot Prima	
Indochem Feed NTT	PT Sinar Indochem	
STM Feed NTT	CV Sinar Terang Madani	
Sumber Unggas KUB Chicken NTT	PT Sumber Unggas Indonesia (SUI)	
Commercialization certified mung bean seed	PT East West Indonesia (EWINDO)	
Promoting certified mung bean seed and GAP	CV Semi	
Source off-taking partnership	PT GarudaFood Putra Putri Jaya, Tbk	
Women Targeted Intervention: Arisan Mapan	PT Rekan Usaha Mikro Anda (Gojek Group)	
Agriculture Digital Data Exchange	PT Agri Tekno Karya (HARA)	
Improving flow of information - Multistakeholder	PT Ditant Brinanta Jaya; PT BISI International, Tbk; Kopdit Swasti Sari	
Expanding Innovative Agri-Financing	PT Crowde Membangun Bangsa	
Expanding Agri-Input Financing through YARO	PT BISI International, Tbk	
Expanding Innovative Agri-Financing	PT Tanijoy Agriteknologi Nusantara	
Innovative marketing strategies to increase adoption of selective safer pesticides & Good Crop Protection Practices (GCP)	PT Bina Guna Kimia (FMC)	
Improving Marketing Strategy for Soil Treatment Product and Good Crop Protection Practices (GCP) through Farmers Education	PT Agricon Indonesia	

LEGEND:		
Built in research within the interventions	Business planning	National level strategy
Intervene in interconnected market systems	Retailer/agent training	Downstream
Policy (corporate) level intervention	Multi-stakeholder partnerships/ collaboration	Multi-sector

All interventions are now embedded in their own individual five-year sector vision. These visions were developed in line with a new guideline and use a similar dimension as the new SCP tool. All visions were reviewed and, together with the planned interventions, provide the basis for the QMT. They are shown in Annex 1, including the spider diagram introduced last semester.

As planned, we used the Systemic Change Progress (SCP) tool for the first time. However, as the first semester to combine an SSR and impact assessments for some of the reviewed interventions, Y19S2 can only serve as a baseline, and assessment of progress will only be possible from next semester onwards.

A less progressed picture emerges when we look at partner diversification within each sector. Here we still need to catch up with the levels achieved in AIP-Rural.

Using the QMT scoring, the January 2020 strategy meeting not surprisingly saw most of the interventions qualifying as “Let flow” or “Push”. Only 7 interventions need changes or innovation, Coconut will be dropped, and Coffee will only continue if we can win a strong partner for a promising collaboration during the next semester (see Annex 3).

2.4 Challenges and highlights

CHALLENGES – RECOVERY FROM TRANSITION DISRUPTION

The most significant challenge was and is to rebuild implementation momentum. This is reflected in the outreach trajectory and was addressed by, among others, reallocating resources from a planned-to-be-hired international long-term policy advisor to international long-term portfolio advisors, as recommended by SRP 10. This allowed us to keep all our experienced expatriate MSD specialists and to assign them to portfolio management, including direct on-the-job coaching and mentoring tasks, while maintaining responsibility for special issues, namely, capacity development, GESI, environment, nutrition, applied research and finance. This change resulted in the reallocation of several sectors to other portfolios and will be finalised in early 2020 with the move of rice to Portfolio 7.

Another measure to speed up momentum was the recruitment of an additional cohort of staff and the induction of a previously recruited cohort. By adding another 20 new portfolio and results measurement staff, we now face the challenge of fully integrating them into the team and supporting them in their technical development. This requires strong efforts, not only from the Portfolio Advisors and Heads of Portfolio, but also from senior staff.

Some questions related to the visa complications faced by all expatriates at the beginning of 2019 remain unresolved and the overall issue continues to burden these managers and their families. This has contributed to some tension negatively influencing the work of many members of the senior management team and to heightened sensitivity in challenging situations or where triggers are present which affect the staff member subconsciously, such as a change in government regulations related to visas, or poorly communicated management responses.

CHALLENGES – PORTFOLIO MANAGEMENT

Reliability of outreach projections is still low and makes strategic decision-making, such as resource allocation or management focus, more difficult. In AIP-Rural, we reached a relatively good level of reliability of its projections. However, the main reason was that teams tended to strive for short-term (that is, same semester) outreach and neglected systemic change in some cases, thereby trading systemic change for outreach projection accuracy. PRISMA will not fall into the same trap this phase, but outreach projections are likely to remain volatile. Another reason for less accurate projection is most of the projections are coming from pipeline interventions rather than ongoing interventions. By nature, the accuracy of projections for ongoing interventions is much higher than pipeline interventions. As we convert more interventions from pipeline to ongoing, the accuracy will increase. Nevertheless, we will continue to include the projections in future planning and reporting.

Maize sector was one of the main pillars of the AIP-Rural achievements. However, it remains uncertain in this phase and PRISMA’s new strategies need to be reconsidered. A brief internal analysis concluded that we did not pay enough attention to the details of government planning for Madura, either at the local or national levels, for example, when, where and how much subsidised seed would be released into the markets. This may cost us a good part of the impact of the planting season 2019 (harvest in Y20S1) if it transpires that local government did not follow PRISMA’s Phase 1 recommendations. In NTT, we spent significant resources on promotion strategies for OPV seed, and there is a risk that this may come at the cost of missing out on opportunities of a stronger push towards hybridisation in the province in collaboration with private and public sectors.

To address the implementation risk of African swine fever, we worked closely with public and private stakeholders and helped kickstart national and provincial dialogue. Further efforts went into the

coordination of preventive measures in NTT and Bali, and we adjusted our strategy to focus on sanitation and post-outbreak response. It remains unclear whether the resources absorbed by these activities will ever result in attributable outreach. However, in terms of resilience they might have been well-invested, as the example of hog cholera demonstrates: the responsiveness and response-readiness of the NTT provincial government was demonstrably higher than in other provinces.

CHALLENGES – POLICY AND CROSS PROGRAM COLLABORATION

Despite PRISMA providing two dedicated and well-qualified members of staff to the policy sector, the policy team has only recently been able to finalise its strategy. This was a result of difficulties in defining the policy direction and being able to translate this into a common understanding between DFAT and PRISMA, particularly regarding the principle of “influencing the influencers”. The parties took time to agree how this principle, as defined in the tender proposal and Head Contract, would work in practice and on which level of policymaking we should focus. However, we still believe that this investment of implementation capacity was justified by the potential gains from successful policy interventions emerging from sector constraints at the local or even national level. The Seaweed sector is an excellent example of this.

HIGHLIGHTS – PUSHING THE BOUNDARIES

Progression of strategies and interventions from the provincial to the national level became one of the more significant features of Phase 2, reflected in various aspects of the program. As **Table 3 shows, over 60% of our sectors include partners with whom we increasingly work on national strategies;** new contact points in partner organisations at the regional level are in the Crop Protection (Bayer) and Maize (Corteva), while higher level contacts in Indonesia are in, among others, Maize (with the CEO of BISI) and Seaweed (Ministry of Marine and Fisheries).

Fostering ICT agriculture start-ups in Indonesia is a long-shot but has high potential for impact at scale. The partner portfolio in ICT made good progress and confirms the action research strategy of Phase 1. With HARA, Crowdee, Mapan, Grab Kiosk and Tanijoy, PRISMA collaborates with some of the most engaged ICT start-ups in agriculture in Indonesia. Initial results are promising, but it remains to be seen to what extent sustainable changes can be achieved.

The collaboration with PT Pupuk Kaltim has developed very well over the last six months and might become PRISMA’s first successful collaboration with a state-owned enterprise. This is even more interesting as the strategy is focused on entering the commercial fertiliser market under competitive conditions, with PRISMA contributing our private sector knowledge.

In the Seaweed sector, our not-yet-formalised collaboration with the Ministry of Marine and Fisheries made good progress and is likely to be reflected in their five-year plan. The goals are performance gains

Text Box 2

PRISMA and KOMPAK collaborate on beef sector development in Aceh

Following the DHOM visit to Bener Meriah, Aceh Province in May 2019, PRISMA together with KOMPAK conducted market research in the cattle sector in several districts in the province. Using PRISMA’s experience of working in the beef sector, we provided new market insights and proposed a sustainable, market-led solution for cattle sector development in Bener Meriah and beyond. At the core of our recommendation was an alignment of government and private sector investment.

Inspired by the initiative of the Bupati of Bener Meriah, the Livestock Department of Aceh invited PRISMA and KOMPAK teams to present their findings during the Provincial Livestock Workshop on ‘Aceh Animal Husbandry Development Synchronisation Coordination Meeting’ on November 22, 2019. In the meeting, the provincial government and eight district governments committed to allocating a total of AUD 1 Mio (IDR 9.5 bn) as part of their yearly budget plan from 2020 to 2022 for the development of the cattle sector, especially for securing quality cattle feed. This was followed up by an official visit from Aceh to KJUB Puspetasari, one of PRISMA’s feed partners in Central Java, to gain a better understanding of the beef feed business and to consider the possibility of a collaboration opportunities in Aceh.

PRISMA and KOMPAK played complementary roles in this assignment, where PRISMA led in designing and conducting the assessment, developing strategy and recommendations, and sharing the findings with the relevant stakeholders. PRISMA also presented the feed business case to several feed mills. Meanwhile, KOMPAK organised the field visits, provided key market insights, and currently is continuing to support the Bener Meriah government in executing the cattle development plan and facilitating linkage with private sector feed mills, including PT Mabar.

in the seaweed seedling market and transportation infrastructure. As of the end of 2019, we are waiting for the formal support letter from Bappenas and expect to formalise the collaboration with the Ministry early 2020.

As a follow-up to the Bappenas and DFAT visit to Central Java, the Regional Development Planning Agency (Bappeda) of Central Java on behalf of the provincial government agreed to work together with PRISMA to achieve its targets as stated in Regional Long-Term Development Plan (Rencana Pembangunan Jangka Menengah Daerah – RPJMD) 2018 – 2023. In October 2019, we organised a two-day workshop to present the current work plan to Bappeda and to establish the ground for further collaboration. Potential areas for strategic coordination and collaboration with other government programs emerged in the Irrigation, Mechanisation, Finance (Kartu Tani) and Beef sectors. However, in the workshop, several of the sectors/commodities were not represented by the appropriate person from Bappeda, leading to sub-optimal discussions. It requires further discussion to explore collaboration on the relevant sectors/commodities.

PRISMA's experiences and learnings on GESI were shared more broadly through a joint publication of a learning brief "Practical Tools and Frameworks for Measuring Agency in Women's Economic Empowerment". The brief not only highlights PRISMA's learnings on working with the private sector for inclusive business models but also includes a critical analysis of different approaches to integrating agency in programs. PRISMA will continue to find opportunities for sharing more experiences and learnings, in order to progress towards our goal of becoming a program of reference for WEE in MSD by 2023.

2.5 Management response

PORTFOLIO DEVELOPMENT

Let the portfolio flow in order to confirm or revise the strategic decisions made in the SSR. After a year of re-start and recovery, the stage is set for a year with fewer dramatic decisions at sector level than in many earlier semesters, and strategy implementation proceeding at full speed.

Work towards a broader partner base per sector. Almost all sectors have the potential to achieve higher levels of systemic change and resilience by increasing the number of actors involved, whether in terms of crowding-in or responding to change. However, this needs to come naturally and should not be forced if the main interventions are yet to run at full speed.

Enhance the use of data for analysis and decision-making in all interventions. The development of this PRIP has demonstrated the limited capacity of several of the newer staff to analyse systematically the information available and condense it to obtain clear, rational strategy decisions. PRISMA will use the SSR and future PRIP development as a means for data-driven, decision-making training. The SSR process already works in this direction, but both processes can be more inclusive and go further in terms of critical analysis and strategic conclusions.

PORTFOLIO QUALITY ASSURANCE

More consciously search for frequent mistakes across all our portfolios and sectors. Mistakes and lessons learned are often very intervention- or sector-specific. In 2020, we aim to look across all our portfolios and sectors, to try and identify systematic challenges that have so far gone unnoticed. For example, from the Coffee and Maize intervention implementation, we can learn that impact can unnecessarily get lost when we move a sector from the responsibility of one team to that of another, simply because we lose sight of seasonality. A simple lesson learned from this to have a checklist for handover that puts the seasonal calendar at the top. From Maize and our Kiosk study we can learn that a more systematic assessment of government plans is needed, whether in terms of subsidy implementation or law-making at the national level. We will take a systemic approach to addressing such lessons learned.

Finalise the defining, measuring and reporting of systemic change using the new tools (vision radar, systemic change pathway, and systemic change progress). PRISMA's greater effort to streamline sector vision, intervention design and results measurement, in a process that clearly focuses on systemic change, took somewhat longer than expected; however, it is now moving from experiment to useful standard. At the

same time, we must ensure that this process does not become too heavy and will continue to carefully assess its usefulness and related staff capacity.

POLICY INFLUENCE

Establish the policy portfolio and move to policy strategy implementation. Following the stock-take and policy strategy development, in January 2020 PRISMA will develop a policy roadmap for the year and move in parallel towards sustained concrete action. This includes a closer collaboration with our Communications team and a reassessment of the role that Provincial Management can and should play.

Continue to monitor ASF and support stakeholder coordination in NTT and at the national level. The likelihood that the disease will spread in Indonesia is high and the impact is likely to be heavy. We support MDF in Timor Leste in the implementation of our Pig intervention, and will learn from that program what works and what does not in ASF-affected areas. Our current strategy takes several scenarios into account; however, others might emerge from this collaboration.

Finalise interventions to fight fall armyworm with conventional means and start implementation as soon as our partners' product are registered. In this context it will be important to combine crop protection and maize seed interventions, in order to safeguard farmers' investments in more expensive seed.

PRISMA TEAM

Move from transition recovery to full implementation mode. This includes the induction for Cohort 7 in January and on-the-job training during the following months. However, in order to speed up the process of integration and learning, PRISMA will follow an annual capacity building workplan (see Annex 7), continue to use the additional LTA resource for intensive and systematic coaching, and develop a more coherent target setting process which links all individual targets with the EOPO in a transparent way.

3 Cross-cutting issues

3.1 Policy

In December 2019, PRISMA completed our Policy Engagement Strategy (PES) which is a culmination of multiple discussions with various stakeholders. The strategy serves as guideline for PRISMA in enhancing our policy engagements into more strategic topics. The program's policy work is based on three key principles: being evidence-based, influencing the influencers, and market systems development.

Going forward, PRISMA focus on operationalising the strategy and treating it as a living document. Policy engagement is often about being ready with the right insights and waiting for the right time. The program must be opportunistic in capturing opportunities by structuring our wealth of insights and building a network of influencers. Preparation is ongoing to increase the capacity of the policy and sector teams with regard to political economy analysis. A draft policy workplan is being prepared and will be shared with DFAT by the end of January 2020.

As a new topic for us, policy is both important and challenging. AIP-Rural had several policy engagements; however, these were ad hoc, and except for a few cases the majority did not yield the expected results. The challenge for PRISMA is to harvest the insights and evidence emerging from our wealth of experience on the ground and disseminate it effectively through influencers, and the Policy team will continue to look for ways to ensure this.

Our senior management will allocate more time for policy engagement to elevate PRISMA's importance. To drive the policy work, a Core Policy Group has been formed consisting of the CEO, CQO and Policy HoP with support from the Technical Program Director (Prashant Rana) and the First Secretary- Rural Development and Climate Change of DFAT (Kate Snowball). This core team will work within PRISMA to aggregate policy engagement topics and bring in relevant sector teams as necessary. PRISMA will also seek contacts and support from the Palladium network through the Contractor's Representative (Oliver Mathieson) and other senior members.

3.2 Gender equality and social inclusion

PRISMA's main focus this semester was on the finalisation and roll-out of the Gender Equality and Social Inclusion (GESI) Strategy. The strategy reflects PRISMA's vision, mission and overall approach, with tangible milestones for each market segment (women, people with disabilities, youth and indigenous people). The strategy document was presented at a townhall meeting in July and operationalised through capacity building sessions for all portfolio teams including implementation, results measurement and communications.

Emphasis was placed on improved WEE mainstreaming across the GESI team. Focal persons in the GESI team were identified to work with the different sector teams to provide technical support in using the various tools for improved analysis and intervention design. The purpose of these focal persons is to build a sound understanding of the sectors to ensure greater consistency and improved cross-sector collaboration. While this is progressing gradually, PRISMA will review the effectiveness of this system over the next semester.

PRISMA developed our first women-targeted Intervention as part of the twin-tack approach to WEE. Through a collaboration with Arisan Mapan, a tech social enterprise focusing on giving access to low-income communities in Indonesia, the partnership provides agriculture inputs to farmers through a women-led savings group. We expect to see positive shifts in women's roles as finance managers and decision-makers in households, and a more active contribution to agriculture expenditure through improved access to information and inputs. An initial capacity building session was completed with the GESI and sector team representatives on identifying women-targeted interventions, and the GESI team will conduct further analysis to better support teams in identifying these constraints and opportunities.

Strategic studies were initiated to learn from inclusive marketing strategies. Two studies were completed to capture the effectiveness of female agents in agriculture as a marketing strategy adopted by the private sector. The results of these studies are currently being analysed and will be consolidated to provide new insights for PRISMA and our partners into inclusive business strategies. A communications plan has been developed to share the findings of these studies internally with sector teams, with our private sector partners, and more broadly with other development programs through a series of papers.

PRISMA enhanced our engagement with other development initiatives as part of its strategy to become a program of reference for WEE in MSD by 2023. This semester, the team contributed to the SEEP Network's Steering Committee for WEE and co-authored a learning brief on "Practical Tools and Frameworks for Measuring Agency in Women's Economic Empowerment".

In order to measure progress in WEE over time, a KPI was established as the ratio between relative female access and the relative female participation in agriculture. The GESI team has measured this indicator in five subsectors. However, as the KPI only focuses on access figures, the calculation does not help the team understand progress in WEE, as that would require more analysis on both the access and agency dimensions (i.e. to what extent women have been empowered as a result of attending training/information sessions). While the KPI can continue to capture as an indication of general good quality intervention design and management, in order to assess changes and movements in WEE, PRISMA will need to adjust the methodology. RML and GESI team have initiated a discussion on this and aim to define a more suitable KPI that can be measured and assessed for WEE.

The WEE measurement approach was to be defined for the improved learning and reporting of WEE impact. In order to improve our data collection on WEE, PRISMA developed indicators for each of the six dimensions and conducted a review of the current impact assessment process. To monitor for risks and unintended consequences, PRISMA decided to include an assessment of all six dimensions in every impact assessment. The GESI team will also review its sampling strategy, indicator and questionnaire design, and provide training to enumerators to ensure better capture of and more consistent data for learning and reporting. Due to the aforementioned priorities, there was limited progress in conducting qualitative assessments. This will be a focus for the next semester, where the program will pilot at least one assessment to capture more qualitative indicators.

In the next semester, the momentum will remain high on mainstreaming WEE across the team, improving our measurement strategies and playing a more active role in sharing PRISMA's strategy and approach more broadly. Efforts will also be made towards the better understanding of other neglected market segments through behavioural research, People with Disabilities and Youth.

3.3 Nutrition

This semester, progress was made in preparing a framework to identify opportunities and measure our impact. As there are several pathways by which agriculture can influence nutrition, we used learnings from other programs to select those which overlap with our focus, which is income increase for farmers. On-farm food availability and diversity was selected as the main pathway by which to achieve impact on nutrition. Despite its closer link to PRISMA's main KPI, learning from other programs showed that the increased income pathway requires a social behaviour change communication (SBCC) approach to ensure income increase is well-translated to spending on nutritious food and/or health services and hygiene. As the SBCC element may not be relevant to every business case, we will further track spending patterns and collaborate with other nutrition- and/or health-related programs to find opportunities to strengthen the increased income pathway.

Ensuring the relevancy of PRISMA interventions vis-à-vis issues of nutrition continued to be a challenge as the cause factors may differ between areas and multiple cause factors may co-exist. To reduce the risks and ensure every relevant opportunity is identified, the nutrition team has been constructing a nutrition constraint tree for all PRISMA's working provinces. Findings from this analysis will be analysed against with PRISMA's existing subsector strategies to identify relevant opportunities. The concluding report is expected in February 2020.

PRISMA hired a research firm specialising in public health nutrition to design a nutrition impact evaluation framework for Phase 2. The framework aims to address an inherent challenge, namely, to capture changes attributable to PRISMA despite the many other external initiatives to reduce problems associated with nutrition problem (such as stunting) running in parallel with our intervention. By December 2019, a general impact evaluation design had been finalised; next semester, the framework will be piloted within selected interventions.

PRISMA will develop a simple guideline on capturing behaviour changes at household and partner level. This will enable the team to report on qualitative insights from interventions to compliment the more robust quantitative data provided by the new evaluation framework.

3.4 Environment

PRISMA has successfully updated our Environmental Management Strategy (EMS) to become the Environmental Protection Strategy (EPS). This was directly followed up by program level socialisation, in particular on the new features which include elements of climate smart agriculture to capture positive environmental impact, and good practice on the mitigation of the effects of climate change. Formal adoption of the EPS into the program's intervention life cycle was also carried out this semester. The EPS will then be mainstreamed in PRISMA's ICNs, IPs and periodic reviews of ongoing interventions, as part of PRISMA's QMT. In addition, an environmental review of ongoing interventions will also be conducted to ensure their compliance with the EPS; this includes the feasibility of capturing positive impact via climate smart agriculture practice.

As a non-environment specific program, PRISMA staff levels of capacity, experience and sensitivity towards environmental issues vary. The environment team sought support this semester from external experts to provide technical consultation on our potential environmental risk, impacts and opportunities to deliver positive impact. PRISMA has selected two consultants, one international and one national, to provide this. An additional process is underway to expand the pool of experts, to ensure the timely availability of input in this regard.

We will continue to monitor risks associated with environment and climatic conditions, and will consider both in developing and implementing our interventions. The El Niño-Southern Oscillation (ENSO) neutral phase was observed during 2019, with El Niño gradually subsiding. Based on the National Oceanic and Atmospheric Administration (NOAA) prediction for 2020, this neutral phase is expected to persist, an El Niño to subside further. La Niña is expected to gather strength and result in an increase in heavy rain intensity in Indonesia. These phenomena are expected to continue increasing in strength in the future, and thus could lead to various types of risk ranging from, among others, flooding and increase in pest and disease occurrence.

3.5 Applied research

Based on the Strategic Review Panel (SRP) recommendation in August 2019, PRISMA's applied research work has refocused our strategy to better support PRISMA team efforts in embedding built-in research into program interventions. The SRP also recommended that we focus more on our core activities, and reign in those which do not directly contribute to program goals and/or require high opportunity costs for a less than clear reward. As part of follow up, the Applied Research team has intensified its focus on providing inward support to the sector teams with its research-related initiatives. Current and forthcoming applied research work includes managing and supporting research components of animal feed, ASF, maize, rice and dairy. This list may grow if interventions find other important elements of their activity which require research support.

The applied research team has provided support in linking PRISMA's sector team with research institutes and research initiatives (seaweed to ACIAR and Lokatakalar maize to the research unit of Brawijaya University and coconut to Balitpama). Ongoing efforts will be made to offer this support.

4 Quality and Risk

4.1 Results measurement

Results measurement system continued to comply with the DCED Standard. Depending on the findings from the mid-term review in 2021 PRISMA will decide whether a DCED audit is needed. We are currently focusing on the development of our portfolio and design of new interventions, therefore it will be more useful to conduct the audit when the system is in fully use.

PRISMA conducted the Result Measurement and Learning training for Cohort 6 staff, with Phitcha Wanitphon (a DCED consultant) as the main trainer. Twenty-eight staff members were trained over a five-day period covering the complete result measurement process in PRISMA; the DCED standard version VIII April 2017 was used as the basis of the training. Further training is planned in Y20S1 for the 20 new Cohort 7 staff.

A new poverty scorecard has been finalised and used for Intervention Design and Result Measurement starting from this semester. The scorecard was developed by Mark Schreiner using micro data obtained from Survei Sosial Ekonomi Nasional (SUSENAS) 2018. A total of seven sets of 10 poverty indicator questions was created (one for each of our working provinces and one scorecard that represents the whole of Indonesia, to assess farmers outside of PRISMA's working provinces). As the living standards of Indonesian people has been increasing considerably during the last five years, the two poverty lines we used before were updated. Previously used USD 2.00 2005 PPP and USD 2.50 2005 PPP poverty lines are currently comparable with the newly developed USD 2.50 2005 PPP and USD 5.50 2011 PPP respectively. Based on these new lines and changes in the definition of USD 2.50 2005 PPP line, PRISMA and DFAT need to re-evaluate the target of 60% outreach below USD 2.50 2005 PPP. This will be done following SRP 11 in March 2020.

PRISMA has drafted a collaboration plan with BPS to explore shared objectives between the two organizations. Primarily the collaboration plan works around the role of BPS as the official data disseminator (e.g. provides training or other forms of data dissemination to PRISMA) and PRISMA as the provider of valuable insights and suggestions on specific agriculture sectors to BPS (e.g. provide insight on non-conventional crops such as seaweed). In line with the idea, PRISMA established initial contact with Directorate of Statistical Dissemination and Directorate of Balance Expenditure in December 2019. After further internal discussion, we will discuss with the relevant counterparts at BPS in first half of 2020.

In the reporting semester, PRISMA completed a subsector review of 14 interventions. The subsector review placed each intervention into one of six categories based on its scale and probability of success. The six categories are (from the least to the most favourable): Push, Let Flow, Change & Improve, Innovate, Ended and Dropped. The three Soil Treatment interventions in East Java, NTB and NTT lead with 75, 76.25 and 77.5 QMT scores each respectively, putting them into the Push category. Other subsectors in this category are three Maize and Beef Central Java interventions. Three interventions (Beef Central Java, Peanut East Java, and Peanut Central Java) are in Let Flow; four interventions (three from Mung Bean and one from Maize) are in Change & Improve. See Annex 3 for more detail information.

PRISMA established the baseline for our Systemic Change Progress Curve based on the cumulative data from all our interventions up and including this semester. This curve will be used to analyse the outcomes at the systemic change level for each intervention. The team can use the rubric to identify parts of the intervention which need to be improved to achieve systemic changes. The SCP results are also used as OPA indicators.

Impact assessment data from Phase 1 up to and including this semester has been collected, reformatted into a standardised structure, and is ready to be utilised for a range of analysis. We expect this analysis to help the teams to better develop and improve their interventions. The impact assessment databank will be stored on PRISMA's server to ensure a more efficient sharing process of the data.

Based on the SRP recommendation, PRISMA plans to conduct a series of evaluative studies to get an in-depth examination and analysis of relevant issues. The proposed topics for 2020 include (1) what farmers do with their extra time obtained from time-efficiency due to our interventions; (2) what are the effectiveness of using different kind of ISPs in the market system (e.g. retailer, traders, lead farmers) to reach

Text Box 3

PRISMA is using the BPS Susenas 2018 data or PRISMA poverty scorecard data to target those farming households at the higher levels of poverty during the intervention development process. Based on the incidence of poverty, the PRISMA RML team has assigned each district in the six provinces to one of three categories:

Green for districts with a population of more than 60% poor (using the USD 5.50 2011 PPP poverty line)

Yellow for districts with a population of between 40%-60% poor (using the USD 5.50 2011 PPP poverty line)

Red for districts with a population of under 40% poor (using the USD 5.50 2011 PPP poverty line)

During location selection, PRISMA sector teams will treat green and yellow areas as priority areas. These will then be discussed with the intervention partners to find out the locations PRISMA and the partner have in common. Based on negotiation and other practical considerations, a few Red category districts might also be added. This conscious targeting of poverty-prone districts is a new method, added from mid-2019.

more farmers, and (3) qualitative gender assessment to find out more about the dynamics of the household (e.g. gender-based decision-making, agency) due to our interventions.

The Project Management Tool (PMT) system was utilised to conduct various tasks during Y19S2, such as ICN and IP presentations and documentation, pipeline projection, and QMT scoring. The new PMT has been created to make the processes smoother and faster. It also connects with different functions in PRISMA (such as procurement and contracting) to better avoid discrepancies between them. Next semester, the ISD and aggregation function will be finalised in the PMT, making the process fully supported by the system.

4.2 Management Information System (MIS)

This semester, the MIS team focused on the finalisation and introduction of two key tools. The first was the new Portfolio Management Tool (PMT), a cloud database web platform which provides better user accessibility and allows seamless access from remote areas and handheld devices. The key modules (ICN and IP Management, Pipeline, QMT SSR, ISD Management and ESC) were introduced this semester; others (e.g. GSD, BTOR, and Actor Detail) are being finalised. PMT will be updated regularly with new features and modules based on the input and needs of the team.

SHIELD, a combination of a corporate function system and contract management system tool was also launched this semester. The tool is designed to better streamline PRISMA's operation and finance process and to accelerate the data gathering and analysing processes. SHIELD also facilitates information-sharing across functions for better management in the program.

The MIS team is preparing a data bank to support PRISMA to make data-driven strategies and decisions. The team will collect secondary sources (e.g. internal surveys and research, Survey Pertanian 2013, Susenas 2018), store them in the data bank for staff's ease of access, analyse the data as requested, and visualise it on the dashboard.

The upcoming semester priority for the MIS unit includes the integration of data from PMT, SHIELD, the data bank and other sources to combine them into more meaningful and valuable information in order to support decision-making in PRISMA.

4.3 Communications

In the second semester of 2019, PRISMA continued to broaden the production, re-branding and distribution of communications materials to help us engage and interact with key audiences. A new program video profile is currently under development to better fit with the program updates. We will further enhance our presence and continue to improve the way it communicates through various forms of communication platforms, channels and activities.

The Communications unit worked closely with the Policy unit in developing communications materials targeting policy-related audience such as info-cards of maize and seaweed. Going forward, the unit will continue to support PRISMA's policy work by contributing in the development of various communications materials (e.g. policy briefs and policy stories). Among potential topics for next semester are FAW and ASF.

The IP for the new intervention, Integrated Marketing Communications was approved. This initiative aims to address the needs of qualified and agriculture-focused information services providers by nurturing marketing communications firms, building up their expertise in rural agriculture, and establishing marketing communications expertise as a tradeable commodity accessible to agriculture stakeholders. This will allow the fulfillment of three larger mandates expected of the communications unit at the beginning of the phase: the communications unit to provide marketing communications consultancies to the sector teams and partners; the communications unit to contribute to the development of systemic change by initiating incentivised information-sharing to wider targeted agriculture audiences; and the communications unit to establish knowledge management tools to contribute to the preservation of knowledge learned throughout PRISMA's implementation. Next semester, the intervention will focus on approaching potential partners, finalising contracts and strategies, and implementing a few of the key activities.

Further development of key relationships and trust with PRISMA's key audiences as well as enhancement of awareness and feasibility were strong areas of focus in this semester and will continue to be throughout the upcoming year. PRISMA will continue to take advantage of strategic workshops, seminars and conferences hosted by DFAT, DCED-BEAM, SEEP and other international development forum and by private sector partners, GOI or other relevant national organisations. PRISMA is also working with global Palladium communication team to make results and achievements more visible to a wider audience.

The media gathering in Central Java completed PRISMA's media gathering series, held in all six working provinces. Through the development of positive relationships with relevant media actors, PRISMA aims to pave the way for positive branding and gain support for its work. These relationships will be nurtured continuously, as set out in the media engagement strategy within the Communications Strategy. Two media field visits are scheduled in 2020.

The cancellation of PRISMA's launch event and pending approval of social media accounts caused a setback for PRISMA's communications and engagement efforts. To address this, the communications unit restrategised its approach to keep on track with PRISMA's communications strategy. The Communications unit developed a cancellation notification letter to be distributed by the sector teams to those invited to the launch, and based on SRP recommendations, the unit will conduct more opportunistic events to support the program. In the use of social media, PRISMA is now working to utilise stakeholders' social media accounts to deliver program information and will continue to explore other potential channels

The Stakeholders Engagement Perception Survey (SEPS) will be a major key activity in 2020. Aiming to re-enact success from 2017, the output of the survey will be an overarching strategy to serve as guidelines and indicators for the program's communications and engagement efforts.

In the next six months, the Communications and Government Relations unit will finalise its integrated annual working plan for March 2020 – March 2021 based on the results of the strategic meeting in February 2020. Efforts will be made towards ensure better support from both functions to the program.

4.4 Risk management

PRISMA will determine countermeasures to the spread of FAW considering the risk of failure to both crops in various sectors and PRISMA's interventions. In response, we will work with a number of stakeholders, including pest management association and PisAGRO to find the solutions as well as GOI to build a FAW Roadmap. Corteva will also be involved in determining effective pest control measures.

Livestock diseases such as ASF, bird flu, hog cholera, and foot and mouth disease also demand that we continue our efforts in countermeasures. The existing challenges are the ineffective disease protective measures by GOI, delay in ASF disease confirmation or case investigation, incorrect implementation of bio-security measures, and the inability of GOI/private sector to determine countermeasures in time. The program will work with PSPs to determine effective bio-security measures, and with GOI at both national and sub-national level to prevent the widespread of ASF in Indonesia.

The changes to visa regulations require PRISMA to investigate new ways in recruiting and retaining international LTA and STA. The changes to Social Security Administrative Agency (BPJS) regulations and tightening of immigration policing of visas in Surabaya may result in the ineffective use of STA inputs, reduction of the skill set available to assist the program, and increasing costs to MC/DFAT. We will continue the ongoing dialogue and relationship-building with the relevant governing agencies and seek good legal advice regarding visa application.

PRISMA will employ preventive approach on the matter of complying with Australian and Indonesian Data Protection Law. The poor understanding of the Australian and Indonesian Data Protection Law amongst staff members and sub-contractors collecting data need to be addressed to prevent the potential loss of data value and program and corporate reputation. Seeking legal advice on the Data Protection Laws and developing and socialising data protection guideline will be conducted as a way forward.

PRISMA will develop multiple strategic options for all interventions that engage government as one of the partners. PRISMA's dependence on one strategic option, which assumed the continuation of the subsidy program for a few more years, was a key risk in achieving the target in maize Madura in 2018. The assumption that the subsidy was inevitable and hence, companies should have strategies to deal with the subsidy proved to be short-sighted. As a result, companies could not harness the full benefit of a 'zero subsidy' regime in 2018. Going forward, PRISMA will ponder all possible policy options and develop strategic options for all possible scenarios.

PRISMA will develop and adopt a more proactive risk management process in order to reduce the risks of losing momentum and ultimately failing to achieve our goal. The current risk management inherently follows the treatment and control approach. Going forward, we will adopt more preventive way of managing risks, which would include among others, collecting enough data and information to analyse the risk sources, diversifying risk management by relevant senior managers and integrating risk analysis to the core management process.

Annex 2 presents a detailed risk matrix.

5 Stakeholder relationship management

5.1 Government of Indonesia national and subnational agencies

Bappenas roadshows were held in **Central Java, West Nusa Tenggara and East Nusa Tenggara during which Bappenas and DFAT visited Bappeda of the provinces.** The activities aimed to gain further support from Bappenas and its coordinating and relevant units in provinces towards the implementation of the program. The roadshow also showed base credentials from Bappenas to PRISMA which has been helping us to strengthen the discussion and partnership with local government.

A focus group discussion was conducted for Central Java, a new PRISMA Phase 2 working area. Facilitated by PRISMA and Bappeda of Central Java, the discussion (between PRISMA sector teams and their relevant government offices in Central Java) was initiated to map out PRISMA's workplan in the province and to orchestrate synergy with provincial government programs. The findings of the discussion were presented internally to the wider PRISMA staff, DFAT and the Head of Bappeda, and have helped shape the working strategies of a number of interventions in Central Java, for example in the Rice, Maize, Peanut and Beef sectors. Key follow-up is to present the findings to the Governor of Central Java, scheduled for the first semester of 2020.

Aquaculture which includes seaweed, remains a priority sector for the GOI as expressed in the RPJMN. The Ministry of Marine and Fisheries involves PRISMA to help the execution of the seaweed development program in RPJMN 2020-2024. Going forward, PRISMA will continue to ensure that activities are in-line with GOI programs. In addition, as DFAT is currently renewing its Aid Investment Plan, PRISMA will closely monitor this, and contribute if opportunities arise.

Going forward, we will continue to improve our partnerships with Government of Indonesia counterparts in order to stay abreast of those development priorities which are similar and/or extended to those of the program. Further efforts will also be made to increase local government understanding of the MSD system and public-private partnerships, thereby enlarging its support to PRISMA and market systems in general. Differing from the efforts made in Phase 1, the new initiative will be carried out on sector-needs basis to provide a comprehensive forum of discussion for better intervention collaboration with government counterparts. An annual workplan of PRISMA's Government Relations team will be finalised in May 2020.

5.2 Development partners (DFAT programs) and civil society organisations

Following a meeting between the Deputy Head of Mission and the Bupati (or regent) of Bener Meriah, PRISMA and KOMPAK jointly conducted two field visits in Aceh to explore the Beef sector in Bener Meriah and its surrounding districts. KOMPAK is currently supporting the Bener Meriah government to design a cattle intervention called the 'KOPIAH program', based on inputs from PRISMA. See Text Box 2 on page 18 for more information.

Together with Australia Awards Indonesia and Bappenas, we designed a Short-Term Award program on promoting competitiveness in agriculture policy. The course focused on creating an environment that encourages private sector engagement and improves competitiveness in selected agriculture sectors. Furthermore, the course introduced the Market Systems Development (MSD) approach and its application for achieving economic growth. In addition to the course design, we supported the selection of the course service provider, presented at the pre- and post-course workshops, and facilitated an industrial visit to EWINDO. Representatives from two PRISMA private sector partners – Pupuk Kaltim and Crowde – joined as course participants.

PRISMA and MDF has been working closely in issues regarding African swine fever, as this is a risk for both Indonesia and Timor Leste. PRISMA initiated a WhatsApp group with MDF and DFAT to share knowledge on each other's lessons learned, current situation, plans, and results. In January 2020, we will send a senior member of the pig team to help the implementation of MDF's pig strategy in Timor Leste for a four-week duration. Based on further requirement, other visits will be determined.

PRISMA also continued to engage with other DFAT programs, meeting with PROSPERA, TNP2K and Investing in Women (IW) to explore collaboration potential. These were just initial meetings and follow-up is required. PRISMA's first meeting with PROSPERA and TNP2K was cordial, but both programs still have to chart a way for potential collaboration. Information exchange has started; for example, we provided PROSPERA with information on the fertiliser subsidy. However, each program has its own priorities, and in the case of PROSPERA it is very much driven by the government. PRISMA will continue engaging other DFAT programs to find alignment.

Results with IW were more positive. Two meetings were held this semester with the impact investing team and the team working on gender norms, to better understand IW's strategy. PRISMA will continue to meet IW on a quarterly basis and explore potential networks which might qualify for impact investing. The two programs will also share their learnings on WEE measurement and addressing social norms.

6 Operations

6.1 Human resource management

LOCALLY ENGAGED STAFF

This semester, twelve implementation staff resigned, and 34 new implementation staff members were hired (including 28 from Cohort 6). Reasons for the resignations included:

- to undertake higher study, including accepting an Australian Awards scholarship;
- new work opportunities;
- family reasons (moving with spouse), and
- health issues.

This brought the total number of locally engaged staff in PRISMA to 122.

All departing staff members completed an exit interview questionnaire and participated in a face-to-face interview with HR, to identify any underlying issues for their departure which we could learn from and adjust

our practices accordingly. To date, this feedback has resulted in a change to the way we target staff during the recruitment process. Table 4 presents the positions resigned.

TABLE 4: PRISMA RESIGNED STAFF Y19S2

1	M	SBC	Portfolio	Health issue
2	F	Admin Officer	Administration	Poor performance
3	F	MIS Officer	MIS	Personal issue
4	M	Procurement Assistant	Contracts	New job opportunity
5	M	SBC RM	RML	Continue studying
6	M	SBC	Portfolio	Continue studying
7	M	PBC	Portfolio	Health issue
8	F	SBC	Portfolio	Continue studying
9	F	SBC	Portfolio	Continue studying
10	F	SBC	Portfolio	Continue studying
11	M	SBC	Portfolio	New job opportunity
12	F	Field Researcher	Portfolio	Personal issue

During this reporting period, there was recruitment for a further cohort of staff (Cohort 7) and 20 candidates were offered contracts to commence in January 2020. This will bring total staff numbers to full capacity (142 total).

LONG-TERM ADVISORS

There was a revision to PRISMA's capacity building strategy based on the SRP recommendations in August 2019 relating to staff capacity. This was due to the loss of experienced local staff during inception and as a result of the scholarship program. Eight expatriate program staff shifted their focus to direct management and implementation, rather than solely mentorship. These changes were reflected in the Deed of Amendment to the Head Contract (expected to be signed Q1 2020) but implemented immediately.

Following the issues in the previous reporting period related to obtaining the relevant visas for LTAs, Palladium has developed an Operational Visa Guideline for its Indonesia-based projects. PRISMA is working closely with Palladium and DFAT in the lead-up to the extension of current visas to ensure a smooth process.

As a result of a change in the manpower regulations related to Social Security Administrative Agency (BPJS), DFAT held a meeting with all managing contractors in November 2019 to discuss possible options to ensure compliance. We worked with Palladium to develop an Options Paper for discussion with DFAT. Unless resolved, this issue could cause a delay in obtaining the relevant working notifications, which in turn could lead to potential delays in the program. Similarly, delays by the Ministry of State Secretariat and/or Bappenas in the re-accreditation process could lead to delays with visas and necessitate the need for LTAs to leave the country for up to a month. PRISMA and Palladium will continue to work closely with DFAT to ensure the chance of delay is minimised.

TEAM CULTURE

During this semester, the Management team undertook a review of the management culture within the program with the aim of developing improved management collaboration, joint decision-making and communication. Work will continue in the next reporting period to address a number of key issues identified, including the need for:

- enhancing soft skills and principles to ensure effective working relationships;
- gender awareness;
- a dedicated platform for decision-making;

- protocols to facilitate collective decision-making;
- clarity on management roles and responsibilities, and
- developing trust between team members.

6.2 Operations

During this semester, work continued on documenting processes and procedures from Phase 1. Spot checks and mini audits were undertaken by the Procurement and Finance teams related to the self-implementation of MOUs, impact assessments undertaken by PRISMA, and internal procurement processes.

The internal audits identified areas where staff were not always following due process, and other areas (such as large staff advances) that represented high-risk practices. It was determined that these poor practices had become entrenched since Phase 1 because of these following reasons:

- new staff learned from old staff members without reference to the policies and procedures, and poor practice thus became the norm;
- regular spot checks were not undertaken routinely;
- Procurement Practice Notes from Phase 1 were theoretical and not user-friendly, and
- standard operating procedures (SOPs) were not documented.

As a result, we undertook the following remedial actions:

- the previous Procurement Practice Note from Phase 1 was turned into clear Procurement Guidelines and SOPs;
- these Procurement Guidelines and SOPs were translated into Indonesian;
- refresher training sessions were held with those portfolios identified as not following procedures;
- townhall refresher sessions on procurement procedures were held for all staff;
- the Standard Cost List for enumerators was revised to minimise the need for cash payments for communication costs;
- the advance process and thresholds were revised to reduce the size of advances and therefore the risk to staff (and the program) in managing the advance;
- changes were implemented to the Activity Requisitions form;
- a new tracking system was incorporated into the MIS to track advances, and
- new contracts were developed for enumerators to ensure compliance with Indonesian Manpower regulations.

During the reporting period, seven Requests for Tender were undertaken as part of implementation (to enable research, a research firm panel refresh, hiring of a GAP trainer and technical experts) and 17 for operation procurement.

A further 15 Partnership Agreements were signed with the private sector, bringing the total to 21. A further three MOUs were signed with the private sector during the reporting period, bringing the total number to seven (see Figure 4 for more detailed information).

The next semester will focus on reviewing the Partnership Agreement and MOU templates to make them compliant with standard Palladium contracts. Work is being undertaken with the COO and Palladium Contracts and Compliance to devise a more partnership-focused template.

Work will also be undertaken with the Capacity Building and HR units to complete and institutionalise changes to the staff Performance Management system, particularly in the development of suitable KPIs and to make the salary system more transparent.

Annex 1 – Subsector Profiles

1. BEEF

Beef Sector Summary

Beef industry is important globally, with world production and consumption steadily increasing over time. From 2014-2018, world beef consumption increased by 0.94% annually and strong global demand is expected to continue, driven by demand from the US and Chinese market. Indonesia, as the largest beef producer in Southeast Asia, experiences a shortfall in production as domestic consumption outstrips supply; hence national demand is fulfilled by imports. The majority of beef cattle farmers in Indonesia are suffering from low productivity and low production caused by poor quality input and inferior rearing management. In general, farmers rear the cattle for 11-12 months whereas good quality input and proper rearing management can shorten the period to 3-6 months. With shorter rearing period, farmers can rear more cattle in a year, resulting in higher income.

Quick facts:



Total production
486,320 ton



Total population
16,429,102 head



Consumption
0.445 kg/capita



Demand
6.37%

Facts Source: Statistik Pertanian 2018

East Java

- Total Provincial Population : 4,511,613
- Total Provincial Production : 96,917
- Total farm households in the sector : 1,908,037

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	11,004
Cumulative Outreach Projected to Dec 2023 (HHs)	18,420
Total NAIC up to Y19S2 (IDR)	171,707,645,530
Total NAIC to Y19S2 (%)	132%
Total projected NAIC to Dec 2023 (IDR)	205,673,841,530

Central Java

- Total Provincial Population : 1,710,769
- Total Provincial Production : 59,903
- Total farm households in the sector : 817,623

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	13,749
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	62,970,012,889

NTT

- Total Provincial Population : 1,007,608
- Total Provincial Production : 12,285
- Total farm households in the sector : 207,539

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	65
Cumulative Outreach Projected to Dec 2023 (HHs)	65
Total NAIC up to Y19S2 (IDR)	212,240,015
Total NAIC to Y19S2 (%)	144.76%
Total projected NAIC to Dec 2023 (IDR)	212,240,015

NTB

- Total Provincial Population : 1,149,539
- Total Provincial Production : 9,472
- Total farm households in the sector : 192,000

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	657
Cumulative Outreach Projected to Dec 2023 (HHs)	657
Total NAIC up to Y19S2 (IDR)	4,678,089,946
Total NAIC to Y19S2 (%)	99.37%
Total projected NAIC to Dec 2023 (IDR)	4,678,089,946

Beef Overall

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	11,726
Cumulative Outreach Projected to Dec 2023 (HHs)	32,891
Total NAIC up to Y19S2 (IDR)	176,597,975,491
Total NAIC to Y19S2 (%)	131.25%
Total projected NAIC to Dec 2023	273,534,184,380

Value For Money (VFM)	Beef Overall
Investment Leverage:	0.56
Investment Per HH:	AUD 359.62
Social Return:	4.19

1.1 Beef Central Java

Central Java accounts for 10.1% of Indonesia's cattle population and contributes to 12.3% of total national beef production. The growing national demand for beef, and the government target of national self-sufficiency by 2025, drives the growth of the sector in this province. However, Central Java – despite being one of the largest contributors of beef nationally – suffers from suboptimal beef production. Most farmers in Central Java do not see cattle rearing as a business or means of livelihood. Many of them are reluctant to make the investment needed in taking the opportunity provided by Indonesia's beef cattle deficit.

Challenges and constraints

Farmers key challenges in increasing their beef production and productivity includes:

- **Long calving interval of breeding farmers' cows** (on average 12-18 months) due to the low conception rate of artificial insemination (AI). The underlying causes for this problem are poor nutrition of female breeder cattle and limited information providers on nutritious feed and oestrous period detection to ensure higher success of AI.
- **Smallholder farmers have limited capacity to rear cattle** (on average 1-3 cattle per household) and they sell cattle at irregular timing which result in low selling price. The underlying cause is the perception of cattle rearing as saving instead of business among farmers; only 14.7% of cattle farmers in Central Java see cattle farming as main source of household's income.
- **Farmers who focus on fattening cattle still face problem of low weight gain** with the average average daily gain of <0.4 kg and average fattening period of 12 months due to limited access to better input.
- **Smallholder farmers still perform poor animal health management**; only 15.2% of cattle farmers in Central Java give their cattle medicine. Most pharmaceutical companies are yet to prioritise large livestock business due to their limited knowledge on its potential.

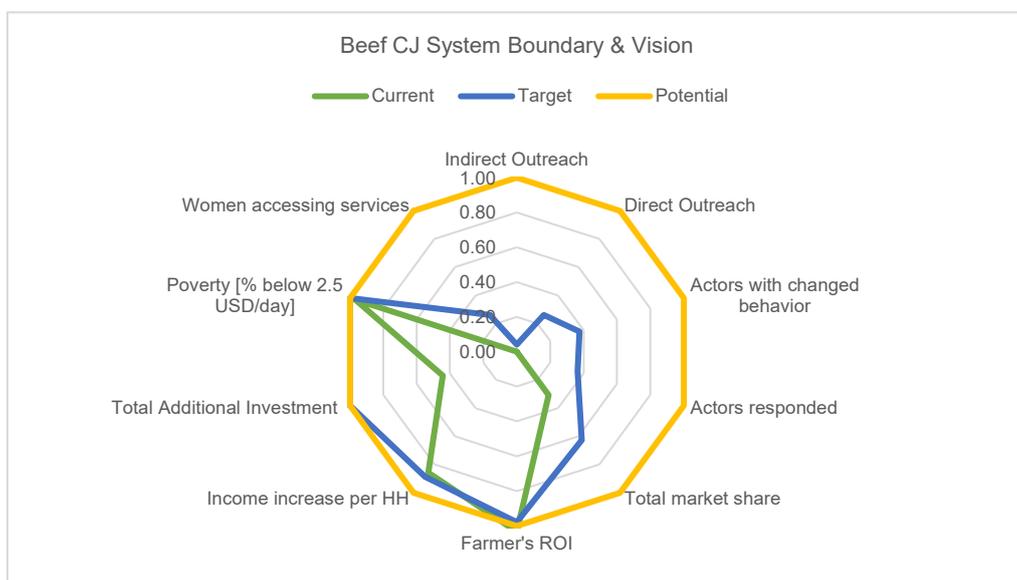
Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

- promote cattle-specific concentrate feed and better feeding practices to cattle breeding and fattening farmers in Central Java, and
- promote cattle-specific pharmaceutical products and better cattle health management practices to cattle farmers in Central Java.

Subsector vision for systemic change

By 2023, the beef sector in Central Java expects to benefit 43,530 smallholder farming households directly by producing more and better quality cattle and beef due to the higher adoption of good farm level cattle management practices. Feed companies will provide more concentrate feed options, forage suppliers will produce better quality forage, and both will provide up-to-date knowledge on good feeding practices to farmers in Central Java. Animal pharmaceutical companies will start



seeing beef livestock market as a viable source of business, resulting in their investing more in promoting their products and equipping farmers with better animal health management knowledge. At the off-farm level, meat distributors will adopt grading practices for local beef to cater to a higher value market.

Progress toward subsector vision for systemic change

The following are key signs of systemic change in the Beef sector in Central Java, as per December 2019:

Adopt

- KJUB Puspetasari conducted a market-sizing study in collaboration with a research firm to better understand smallholder farmer segmentation. This study will serve as a guideline to be used to improve its marketing strategy;
- It is also engaged in an ongoing new product development study with Gadjah Mada University (UGM) to develop concentrate feed specifically for cows and calves;
- It expanded its distribution network in Central Java by adding 10 new agents and engaging three agents for a one-day event of promotional activities;
- It conducted training for its marketing staff to facilitate improvements to their marketing skills and knowledge, and
- CV Fermen Hipro started the tendering process for a new product development study with UGM, and a potential agent assessment with a research firm.

Adapt

- KJUB Puspetasari invested in warehouse expansion, a vehicle, and new machinery, and hired two new marketing staff members for its Klaten factory, representing a total investment of IDR 2 bn;
- It is also in discussion with UGM to conduct another product development study for supplements with concentrate feed as the main ingredient;
- It expanded its marketing and sales to West Java, and
- CV Fermen Hipro invested in new machines to increase its production capacity and plans to expand its warehouse to accommodate increasing production volume.

Expand

- Sumber Rejeki Feedmills Group in Salatiga is adopting KJUB Puspetasari's business model and transitioning its focus from one of dominant government tendering to targeting smallholder farming households on the open market, and
- Several companies in Aceh showed positive interest in entering the cattle feed market after learning about PRISMA's intervention in Central Java with KJUB Puspetasari.

Respond

- Provincial and district level government in Central Java engaged KJUB Puspetasari to organise events related to livestock, such as cattle contests and eight events for farmers socialisation, and
- The Aceh Provincial Livestock Department showed an interest in the PRISMA intervention with KJUB Puspetasari and aims to replicate the business model of partnering with the private sector to promote concentrate cattle feed to farmers. The government is exploring opportunities to collaborate with KJUB Puspetasari in establishing a feed mill in Aceh.

1.2 Beef East Java

East Java is Indonesia's biggest cattle producing province, accounting for 20% of national beef production and 27.4% of the national beef cattle population. Development of the beef sector is driven by inter-regional cattle exports and local consumption of beef. Despite being the country's largest cattle and beef production province, the province cattle production system is still relatively low. Most farmers raise cattle as a family asset and a source of ready cash in times of need. They do not see cattle rearing as a business or livelihood and are rarely

making a conscious decision to benefit from Indonesia’s beef cattle deficit. This mindset coupled with a lack of supplementary feedstock, poor know-how on feeding practices, and limited awareness of the commercial benefit of using improved feed, result in the low productivity of East Java’s cattle.

Challenges and constraints

Some key challenges to beef farming production and productivity in East Java are:

- **Cows owned by breeding farmers currently have long calving interval** (on average 12-18 months, as 55% of the breeding farmers need more than one AI trial for the cows to get pregnant). The underlying causes of this problem are poor nutrition of female breeder cattle and limited information available from providers on nutritious feed and oestrous period detection to ensure higher AI success rates.
- **Smallholder farmers have limited capacity to rear cattle** (on average 1-3 cattle per smallholder farming household) and sell cattle at irregular times, resulting in a low selling price. The underlying cause is the perception of cattle-rearing among farmers as a household saving instead of a business venture; only 14.7% of smallholder cattle farming households in Central Java see cattle farming as main source of household’s income.
- **Farmers who focus on fattening cattle still face the problem of low weight gain** with an average daily gain of <0.4 kg and average fattening period of 12 months due to limited access to better inputs.
- **Smallholder farming households still perform poor animal health management, and adoption of traditional medicine practices is prevalent.** Most pharmaceutical companies are yet to prioritise large livestock business due to their limited knowledge of its potential.

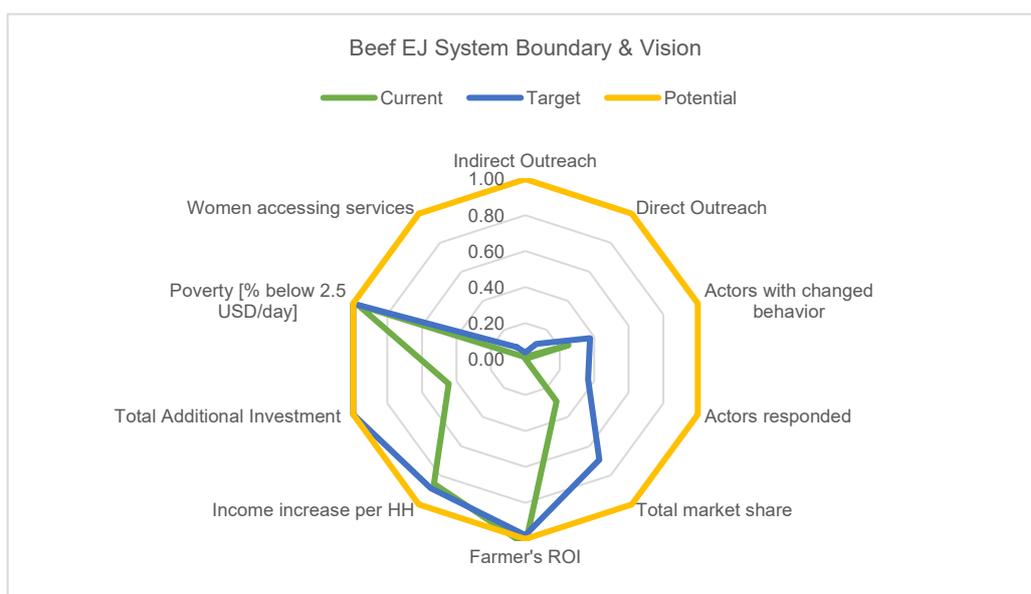
Intervention areas

To address these challenges and constraints, PRISMA is collaborating with partners to:

- promote cattle-specific concentrate feed and better feeding practices to cattle farmers, and
- promote cattle-specific pharmaceutical products and better cattle health management practices to cattle farmers in East Java.

Subsector vision for systemic change

By 2023, the beef sector in East Java is expected to benefit 37,680 smallholder farming households directly, by producing more and better quality cattle and beef due to the higher adoption of good farm level cattle management practices. Feed companies will



provide more concentrate feed options, forage suppliers will produce better quality forage, and both will provide knowledge on good, up-to-date feeding practices to farmers in East Java. Animal pharmaceutical companies will start seeing the beef livestock market as viable business, and as a result invest more in promoting their

products and equipping farmers with better animal health management knowledge. At the off-farm level, meat distributors will adopt grading practices for local beef in order to cater to a higher value market.

Progress towards subsector vision

Signs of systemic change in the Beef sector in East Java, as per December 2019 include:

Adopt

- KJUB Puspetasari expanded its distribution network in East Java by adding 15 new agents;
- It also implemented the marketing strategies that PRISMA recommended, including a market storm, cattle contest, and one day promotions, and
- CV Fermen Hipro started the tendering process of a market segmentation study and potential agent assessment to research firms.

Adapt

- KJUB Puspetasari invested in new machines and cars, and hired a new member of its marketing staff for its East Java factory, with total investment of IDR 580 million, and
- It also expanded its marketing and sales to South Sulawesi.

Expand

- A few big feed companies now appear to have a strong intention of entering the cattle feed market. Sierad Produce is in the process of developing new cattle feed and is collaborating with PRISMA to conduct a feed trial. Menara Feed mills is also interested in utilising its idle production lines to encompass cattle feed.
- Bimafeed and Agrofauna entered the cattle feed market in Tuban using a similar business model to PKM Wahyu Utama (PRISMA's partner in Phase 1).

1.3 Beef NTB

The Indonesian province of Nusa Tenggara Barat (NTB) has the fourth largest cattle population, is thirteenth largest for beef production, and ninth largest for inter-provincial cattle trade. Local consumption of beef and the inter-regional live cattle trade are the main drivers of its cattle sector development. Cattle play an important role in the provincial economy with 208,500 households involved in the sector, which is strongly supported by both national and local governments. However, both cattle and beef sectors still suffer from suboptimal productivity, mainly due to poor knowledge among cattle farmers of good animal rearing practices.

Challenges and constraints

The main reason for the low income of cattle farmers in NTB is the low weight of their cattle, which results in a low selling price. There are two main reasons for this:

- **Limited availability of good quality calves**, particularly among ranch beef cattle in Sumbawa Island. This is largely a result of poor inbreeding due to the limited knowledge of farmers of animal breeding management. Even in the enclosed system prevalent in Sumbawa Island, calf production has not been optimal because the farmers have inadequate knowledge of proper AI timing and limited access to effective and quality AI services.
- **Poor nutritional intake of the cattle**. Lack of good quality fodder and lack of water resources affect cow feed intake, especially during the dry season. There is low use of supplementary feed as farmers are unaware of its commercial benefits.

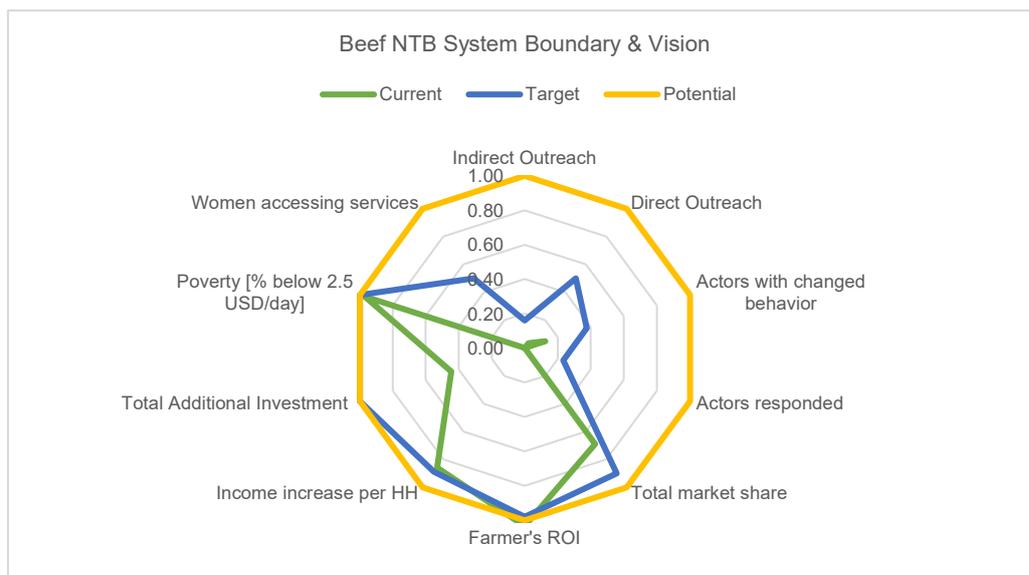
Intervention areas

To address these challenges and constraints, PRISMA collaborates with the private sector to:

- promote commercially available, appropriate and affordable feed and animal pharmaceuticals for cattle fattening, to boost weight gain of the cattle, and
- promote animal pharmaceutical products for improved cattle health management.

Subsector vision for systemic change

By 2023, the beef sector in NTB expects to benefit 12,520 smallholder households by producing more and better-quality cattle due to the higher adoption of good, farm level cattle management practices of balanced feed efficiency and health management



practices. Cattle feed producers will expand their business by establishing distribution networks and conducting effective market promotions across the province. Animal pharmaceutical companies will increase their market share through penetrating the untapped market, by expanding and developing the capacity of their distribution network and conducting marketing which targets vets and farmers.

Progress towards subsector vision

Signs of systemic change resulting from PRISMA's intervention in NTB per December 2019 are:

Adopt

- After a workshop with PRISMA, CV Emas Sejahtera collaborated with a feed formulator to (1) improve feed quality, and (2) optimise production costs before developing appropriate marketing strategies.

Adapt

- KJUB Puspetasari continued to maintain its agents after the partnership with PRISMA in NTB ended.

2. COCONUT

Coconut Sector Summary

Indonesia is the largest coconut producer in the world, accounting for 30% of global share (2016). While coconut has many derivative products, demand for coconut sugar in both international market and local market is increasing at a high rate. Philippines, Indonesia and Thailand account for 80% of global coconut sugar production; but 90% of coconut sugar in Indonesia is consumed locally. Market value of coconut sugar production in Indonesia is USD 2 billion and growing; estimated coconut sugar production in 2016 was 300,000 MT, while local demand was around 350,000 MT. North and central Sulawesi, North Maluku, East Java, Central Java and West Java are among the largest coconut sugar producing regions in Indonesia. Major reasons for low coconut sugar productivity in Indonesia, especially in Central and East Java, are due to low productivity of ageing trees, low rejuvenation rate of old trees and poor post-production practices at farmer level. Opportunities exist to partner with crystal sugar exporters and block sugar producers who are trying to expand their business and engage with more farmers for sugar collection.

Quick facts:



Total production
2,870,739 Ton



Total harvested area
3,653,167 Ha



Productivity
1,100 kg/Ha

Facts Source: Statistik Pertanian 2018



East Java

- Total Provincial Production (Ton) : 260,906
- Total provincial harvested area (Ha) : 286,278

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	431
Cumulative Outreach Projected to Dec 2023 (HHs)	431
Total NAIC up to Y19S2 (IDR)	302,292,000
Total NAIC to Y19S2 (%)	10.26%
Total projected NAIC to Dec 2023 (IDR)	302,292,000



NTT

- Total Provincial Production (Ton) : 69,308
- Total provincial harvested area (Ha) : 141,566

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	91
Cumulative Outreach Projected to Dec 2023 (HHs)	91
Total NAIC up to Y19S2 (IDR)	121,169,922
Total NAIC to Y19S2 (%)	55.87%
Total projected NAIC to Dec 2023 (IDR)	121,169,922

Coconut OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	522
Cumulative Outreach Projected to Dec 2023	522
Total NAIC up to Y19S2 (IDR)	423,461,922
Total NAIC to Y19S2 (%)	17.26%
Total projected NAIC to Dec 2023	423,461,922

Value For Money (VFM)	Coconut Overall
Investment Leverage:	0.46
Investment Per HH:	AUD 3,722.88
Social Return:	0.02

2.1 Coconut Central Java

Central Java province is the sixth largest producer of coconut in Indonesia, accounting for around 6% of national production. Coconut is also one of the province's primary cash crops, engaging around 1.1 Mio smallholder farming households. However, growth in production is declining by an average of 2.73% per year (2013-2017). In 2016, productivity was 0.81 MT per ha, slightly lower than the national average (0.82 MT per ha) and significantly lower than a number of provinces outside Java, including Sumatera Utara and Sulawesi Utara (1.02 MTs per ha), and countries such as the Philippines (2 MTs per ha). Limited information on and technology for the application of GAP, along with the limited rejuvenation of and access to high quality dwarf seedlings are among the main reasons for the low income of the smallholder coconut sugar farm.

Challenges and constraints

Farmers struggle to increase their income from the cultivation of coconut for four main reasons:

- **Low productivity of old trees and limited rejuvenation activities.** As many as 72% of coconut trees in Indonesia are old or unproductive. Farmers do not usually replant unproductive trees due to (1) their low understanding of the cost/benefit of doing so, and (2) the availability and high quality of dwarf varieties.
- **Farmers have difficulty in harvesting coconut sap,** which is time-consuming, especially without the proper tools and equipment; the current cohort of tree climbers, whose average age is 45 years, find it particularly difficult. Farmers use neither the climber services (which reduce their revenue by up to 30%) or the climbing tools and equipment provided by government (which are perceived to be impractical and time-consuming to use).
- **Farmers do not know how to produce better quality sugar.** During post-harvest processing, most smallholder coconut sugar farming households use more than the permitted amount of chemical preservatives, resulting in a low selling price. Farmers also have limited access to information on how to make a higher value product (such as crystal sugar) which potentially could increase their income by 30%.
- **Limited adoption of efficient processing technology and good processing practices (GPP).** Farmers continue to use suboptimal processing practices, tools and equipment which incur high energy costs and increase the time needed to produce coconut sugar. At the same time, they are unaware of the benefits and costs of GPP for sugar production.

Progress of key activities

During this semester, PRISMA has continued its discussions with different market actors including GOI, off-takers for block sugar and organic sugar, farmers, seedling nurseries and traders. The following section captures some of the key findings:

Area of engagement	Market actor	Key findings
Block sugar	Indofood	Central Java is one of Indofood's key sourcing areas for block sugar; however, the company is currently happy with the quality and is not looking for any external support for expansion or improvement of its sugar procurement business.
	Unilever	Plans to expand its procurement of sugar. It is concerned with varying quality and quantity; interested to collaborate with PRISMA to conduct a joint study to develop a proper business plan.
Crystal organic sugar	CV P3R; PT Haldin; PT Integral Mulia Cipta	Small- to medium-sized exporters willing to collaborate to expand their source base; however, scale potential is limited and integration of new batches of farmers within the organic certification process takes 1-2 years.
Government, NGOs/projects, Universities	Central Java Government; BUN500 Jakarta; University of Jendral Sudirman	Government has a national program – BUN500 – for rejuvenation of ageing coconut trees; however, there is a challenge in sourcing quality seedlings, as many nurseries lack proper registration or skills needed to

	Purwokerto; GIZ; SETARA	develop these seedlings. GIZ and other NGOs mainly provide advisory services and capacity development for organic sugar farmers.
Nurseries, traders and coconut sugar farmers	Bapak Karim, a group of farmers in Banyumas	Traders have limited finance to source from additional farmers. Farmers are mainly concerned with the low price/low quality of sap, especially during the rainy season.

Lessons learned

1. Opportunities exist for long-term engagement in the coconut sector, with a significant emphasis on working with GOI, including supporting Balitpalma to (1) increase its seed production, and (2) develop the capacity of nurseries to produce quality seedlings;
2. The local block sugar market is price-driven rather than quality-driven. Block sugar traders have low opportunity cost to switch to new off-takers, a prohibiting factor for large off-takers like Indofood to invest in development of specific farmer groups or clusters;
3. The crystal sugar market is quality driven. However, all the off-takers, who are mostly exporters, are small scale, sourcing from 500 to 2,000 farmers each. Bringing additional farmers into the organic certification process requires extensive investment and time;
4. Coconut sugar farmers and tree owners are often different people, which limits the incentives of the farmers to rejuvenate coconut trees and implement GAP, and
5. Like any other tree crops, farmer-benefit from interventions in this sector would take three to five years. From a VfM perspective, this often makes it difficult to justify investment.

QMT decision and reasoning

The team has developed potential interventions which are able to address some of these core constraints. However, taking into consideration the three key issues of (1) lack of potential block sugar market actors with strong willingness to partner with PRISMA, (2) difficulty in scaling-up interventions in the organic sugar market, and (3) time needed for impact at the farmer level (three to five years), PRISMA has decided to drop our Coconut sector intervention.

3. COFFEE

Coffee Sector Summary

Indonesia's coffee production is declining amidst growing global and local consumption. Indonesia contributed to around 7% of the global coffee production (Dec 2017/2018), of which 12% constitutes of Arabica and the remaining 88% is Robusta. At the global level, Indonesia ranks 4th in global coffee production behind Brazil, Vietnam, and Colombia. However, according to USDA, Indonesia's coffee production declined by 1.7% (2013-2017) and has led to a 4.4% decline in Indonesia's coffee export in the same years. Given the situation, it is projected that coffee will experience a demand – supply gap where global coffee production cannot fulfill the growing demand in the global market. On the national level, the demand for coffee in the domestic consumption has been also increasing. Based on previous trend on production, Indonesia's coffee consumption is projected to surpass its production by 2035, meaning that improving Indonesia's coffee productivity will be a necessity, not only to strengthen Indonesia's position in the coffee global market but also to improve farmers livelihood through higher coffee yields that are currently still far below its potential.

Quick facts:



Total production
663,871 Ton



Total harvested area
1,246,657



Productivity
714 Kg/Ha



Demand
Export: 3.8% CAGR
Domestic: 6.15% CAGR

Statistik Pertanian 2018, Indonesia's Tree Crop Estate Statistic 2014-2017



NTT

- ✓ Total Provincial Production (Ton) : 22,335
- ✓ Total provincial harvested area (Ha) : 66,572
- ✓ Total farm households in the sector : 110,858

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	11,033
Cumulative Outreach Projected to Dec 2023 (HHs)	11,033
Total NAIC up to Y19S2 (IDR)	17,303,031,264
Total NAIC to Y19S2 (%)	32.36%
Total projected NAIC to Dec 2023 (IDR)	17,303,031,264



Coffee OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	11,033
Cumulative Outreach Projected to Dec 2023	11,033
Total NAIC up to Y19S2 (IDR)	17,303,031,264
Total NAIC to Y19S2 (%)	32.36%
Total projected NAIC to Dec 2023	17,303,031,264

Value For Money (VFM)	Coffee Overall
Investment Leverage:	0.27
Investment Per HH:	AUD 175.21
Social Return:	0.90

3.1 Coffee NTT

Nusa Tenggara Timur (NTT) ranks as the tenth highest coffee producing province in Indonesia, accounting for 6% of national production in 2015. According to the Tree Crop Estate Statistics of Indonesia (2017), NTT produced around 21,000 MTs of coffee, 65% of which was the Robusta variety and 35% Arabica. It constitutes a harvested area of 40,000 ha over 19 producing districts; the top five districts with the highest harvested area are Manggarai Timur (12,952 ha), Ende (5,145 ha), Manggarai (4,421 ha), Manggarai Barat (4,291 ha) and Ngada (4,291 ha). However, Manggarai Timur, Ende and Ngada combined were the only districts that produce both coffee varieties in substantial amounts, accounting for more than 1,000 MTs each of Robusta and Arabica (2015).

Challenges and constraints

Coffee farmers in NTT are experiencing low income from coffee due to the following reasons:

- **Absence of an aggregating function for specialty coffee.** Most specialty coffee buyers (roasters and coffee shops) are located outside of NTT (mostly in the big cities in Java) and require a relatively small supply (approximately 300 kg each month per roaster/coffee shop). This increases the shipping and logistic costs for both processors and roasters.
- **Limited market information.** Distribution of information about the growing demand of specialty coffee is hampered by the low networking capacity of processors, who are mostly SME owners with low levels of educational attainment and limited options about information distribution channels.
- **Limited GPP assistance specifically for specialty coffee.** Despite the many NGOs and government programs in the region, changes to farmers and processors practices are hardly observable. This is mainly due to the low conversion of coffee quality into the price received by farmers. Processors have no incentive to provide GPP assistance to farmers because existing coffee buyers also do not require adherence to any quality standard (other than maximum defect percentage and moisture content).
- **Low productivity due to low adoption of GAPs, old trees and limited rejuvenation activities.** Many coffee farmers have ageing and relatively less productive coffee trees which require rejuvenation, replanting and GAP application to boost their productivity. However, they are reluctant to carry out these activities, as this would result in the reduction of their source of income for three to four years. This is mainly due to farmers' low understanding of high-quality inputs and GAP caused by limited market actors actively promoting the knowledge.
- **Limited adoption of high-quality seedling varieties.** Many farmers cultivate coffee seedlings that are informally sourced from their own coffee farms. They are not aware of other coffee seedling varieties that have faster maturity period and better quality. This is mainly because farmers have low understanding of high-quality seedlings due to limited market actors actively promoting product and information on high-quality seedling varieties.

Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

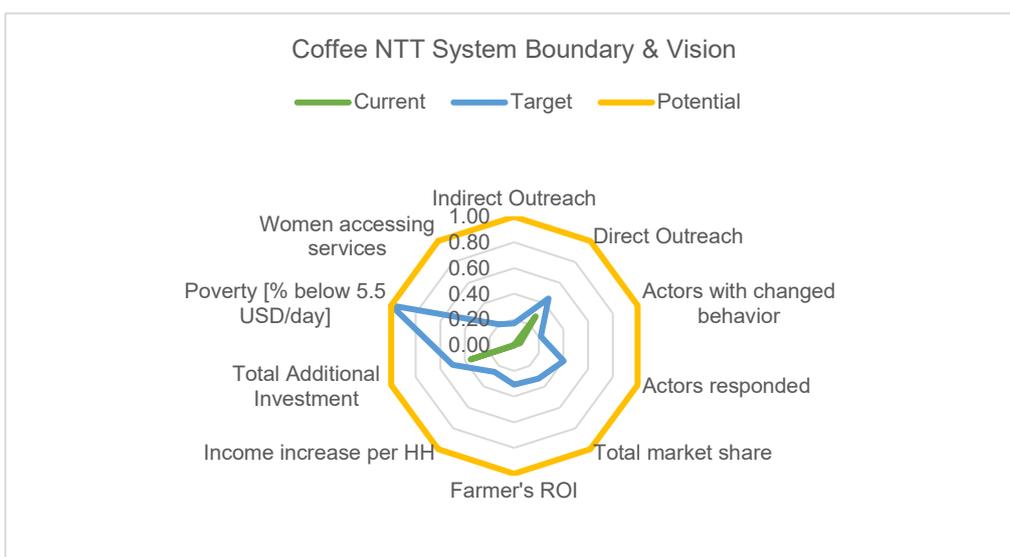
- promote high quality seed to increase coffee productivity with embedded GAP assistance.

Subsector vision for systemic change

By 2023, coffee farmers in NTT increase their coffee production by planting high quality and faster maturity coffee seedlings and adopting coffee good agricultural practices.

Progress towards subsector vision

In our previous intervention, PRISMA worked to (1) promote GAP in order to increase the productivity of coffee in NTT, and (2) link the sector to market and financial institutions in order to improve coffee quality and price. While efforts to create such linkages led to



increased competition among buyers (thus triggering higher prices), attempts to boost productivity did not come to fruition, partly due to the limited willingness of farmers to apply GAP (e.g. the rejuvenation/replanting of old coffee trees) which requires them to invest three to four years of the income they make from coffee. In response, PRISMA has shifted its strategy to promoting high quality seedlings which have a faster maturity period (just 16-24 months until first harvest) and is currently looking for potential private sector partners. For this reason, **progress towards achieving the Coffee NTT subsector vision is yet to be seen.**

3.2 Coffee East Java and Central Java

East Java is the third highest coffee producing province in Indonesia, accounting for around 66,000 MTs or 10% of the total national production (2015 figures). Productivity is slightly higher than the national average at 836 kg/Ha (average national productivity is 734 kg/Ha), although it remains far behind other coffee producing countries such as Vietnam (2,681 kg/Ha), Brazil (1,687 kg/Ha) and Colombia (1,012 kg/Ha).

Central Java (CJ) ranks as the ninth highest coffee producing province in Indonesia, accounting for 3% of national production in 2015. According to the Tree Crop Estate Statistics of Indonesia (2017), Central Java produced around 20,690 MTs of coffee, nearly 90% of which was the Robusta variety and 10% Arabica. It constitutes a harvested area of 28,795 ha and more than 200,00 smallholder farmer households. Its productivity is slightly lower than the national average at 656 Kg/Ha (average national productivity: 734 kg/Ha) and falls much behind other coffee producing countries such as Vietnam (2,681 Kg/Ha), Brazil (1,687 kg/Ha), and Colombia (1,012 kg/Ha).

Challenges and constraints

Coffee farmers in East Java and Central Java are experiencing low income from coffee due to the following reasons:

- **Improper use of fertiliser products.** A substantial portion of coffee farmers in East Java and Central Java have yet to apply the recommended frequency and dosage of fertiliser.
- **Low application of good agricultural practices in some areas.** Where farmers have limited land size, they tend to neglect their coffee plantation and focus on other crops with shorter cultivation cycle which lead to lower productivity.
- **Limited adoption of high-quality seedling varieties.** Many farmers cultivate coffee seedlings that are informally sourced from their own coffee farms. They are not aware of other coffee seedling varieties that have faster maturity period and better quality. This is mainly because farmers' low understanding of high-quality seedlings due to limited market actors actively promoting product and information on high-quality seedling varieties.
- **Rainfall and other weather conditions.** The degree of intensity of rainfall and other weather conditions highly affect coffee production – too much rain is as bad for the coffee crop as too little rain. In the past two years, the Coffee sector in EJ and CJ have experienced lower levels of production due to a prolonged dry season.

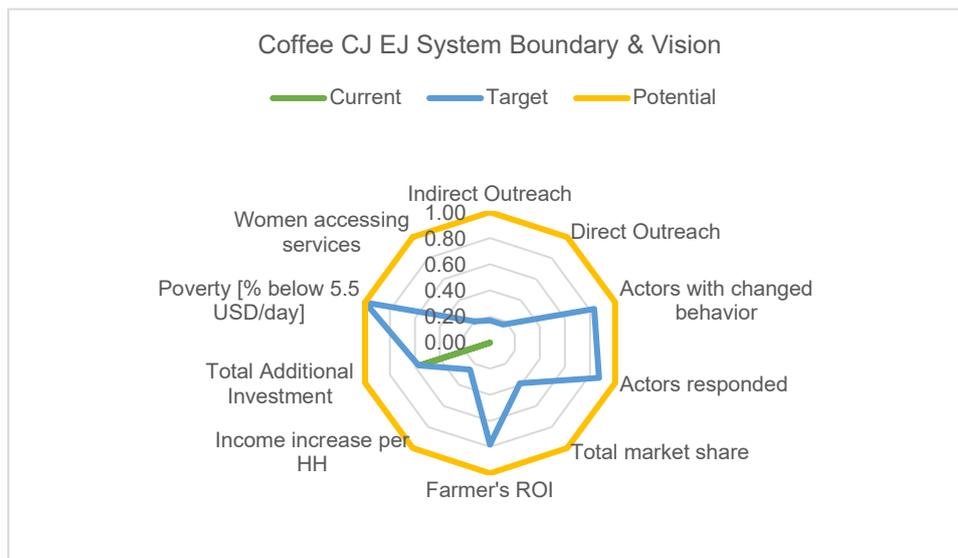
Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

- promote high quality seed to increase coffee productivity with embedded GAP assistance.

Subsector vision for systemic change

By 2023, coffee farmers in East Java and Central Java increase their coffee production by planting high quality and faster maturity coffee seedlings and adopting coffee good agricultural practices.



Progress towards subsector vision

In our previous intervention, PRISMA worked to promote fertiliser to coffee farmers in East Java; in Phase 2, all interventions related to fertiliser come under the PRISMA fertiliser team. The Coffee sector team is now focusing on promoting high quality seedlings with a faster maturity period (just 16-24 months until first harvest) and is currently looking for potential private sector partners. For this reason, **progress towards the coffee CJ and EJ subsector vision is yet to be seen.**

4. CROP PROTECTION

Crop Protection Sector Summary

Farmers across Indonesia rely heavily on chemical control for its perceived effectiveness and efficiency. Chemical pesticide market was estimated at USD 576.9 million in 2018 and is expected to grow at a CAGR 5.4% in terms of value. Main drivers for demand growth of this market are growing population, government's self-sufficient initiative and expansion of arable land. Farmers have widely practice crop protection but many of them still experience yield loss due to pest and disease attack. Farmers select pesticide depends on their perceived potency (regardless of pest resistance implication), improperly mix and overdose that cause pest resistance, health and environment issues. Farmers face major problem on limited access to Good Crop Protection Practices (GCP) knowledge. Smallholder farmers in rural areas commonly rely on narrow information circle from peers, relatives and small kiosks to gain the knowledge. Dissemination of GCP knowledge is generally limited due to the lack of extension services from public and private.

Quick facts:



Total potential farmers
3.33 million farmers



Total market value of chemical pesticides in Indonesia
USD 576.9 million in 2018

Quick Facts Sources: SOUT 2017, Grandview 2019

East Java

- Total potential farmers (rice & maize) : 1.51 million farmers
- Total market value of chemical pesticides : USD 126.7 million (2018)

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	47,232
Cumulative Outreach Projected to Dec 2023 (HHs)	47,232
Total NAIC up to Y19S2 (IDR)	282,132,909,082
Total NAIC to Y19S2 (%)	47.35%
Total projected NAIC to Dec 2023 (IDR)	282,132,909,082

Central Java

- Total potential farmers (rice & maize) : 1.47 million farmers
- Total market value of chemical pesticides : USD 194.7 million (2018)

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	-

NTT

- Total potential farmers (rice & maize) : 125,067 farmers
- Total market value of chemical pesticides : USD 25.8 million (2018)

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	4,712
Cumulative Outreach Projected to Dec 2023 (HHs)	9,712
Total NAIC up to Y19S2 (IDR)	32,112,369,655
Total NAIC to Y19S2 (%)	37.97%
Total projected NAIC to Dec 2023 (IDR)	34,288,089,383

NTB

- Total potential farmers (rice & maize) : 226,372 farmers
- Total market value of chemical pesticides : USD 8.5 million (2018)

Indicator	Total
Cumulative Outreach Actual to Y19S21 (HHs)	10,435
Cumulative Outreach Projected to Dec 2023 (HHs)	15,435
Total NAIC up to Y19S12 (IDR)	103,132,730,642
Total NAIC to Y19S2 (%)	33.77%
Total projected NAIC to Dec 2023 (IDR)	105,308,450,370

Crop Protection OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	62,379
Cumulative Outreach Projected to Dec 2023	72,379
Total NAIC up to Y19S2 (IDR)	417,378,009,379
Total NAIC to Y19S2 (%)	44.14%
Total projected NAIC to Dec 2023	421,729,448,835

Value For Money (VFM)	Crop Protection Overall
Investment Leverage:	4.76
Investment Per HH:	AUD 27.20
Social Return:	24.60

4.1 Crop protection East Java and Central Java

Crop protection encompasses chemical, physical, mechanical, genetic and biological practices designed to prevent losses in plant cultivation caused by pest and disease which can damage, disturb or cause the death of the plant. In 2018, the Indonesian crop protection chemical market was estimated at USD 846.7 Mio with an expected compound annual growth rate (CAGR) of 5.6%. The global market for biopesticides is still low (around USD 16.36 Mio in 2015) but expected to grow at a much higher rate (CAGR of 19.88%) during the next five years².

The GOI is leaning towards promoting the IPDM approach, which balances the use of all pest and disease control methods and suggests chemical control only as a last resort or in emergencies. However, farmers across Indonesia currently rely heavily on chemical control for crop protection, due to its being perceived as the most effective, efficient and available practice.

Smallholder farming households across both provinces practice crop protection widely; even so, 29% of them continue to experience significant loss of more than 25%³. They generally face a major challenge in terms of inadequate pest and disease management knowledge, and a lack of knowledge regarding pest and disease identification and the accurate, effective pesticide dose. In general also, farmers suffer from a lack of timely and reliable information, an injudicious use of pesticide, and threats of new pest and disease, all of which result in production loss.

In Indonesia, six multinational pesticide companies dominate more than 60% of the market; the remaining share is divided among 300 smaller companies. The major players are Syngenta, Bayer, BASF, Nufarm, Corteva and FMC, which spearhead the market. A saturated pesticides market in EJ and CJ has led to intense market competition, with many companies implementing heavy promotional campaigns through purchase bonuses; only a few provide embedded services to farmers.

Challenges and constraints

The main constraints to farmers in the crop protection sector include:

- **Lack of availability of natural predators, mainly caused by harm caused to them by widely-used broad-spectrum chemical pesticides.** Farmers generally have limited knowledge of pest and disease identification, preferring to use broad-spectrum chemical pesticides to kill multiple types of pest. Only a few market actors educate farmers about the negative implications of using these pesticides inappropriately. At the same time, the commercial availability of natural pest enemies (e.g. *telenomus remus* for FAW, tomcats for leafhoppers, civets for rats) is very rare.
- **Inappropriate use of chemical pesticides due to lack of timely and reliable crop protection knowledge.** Farmers generally have limited knowledge of pest and disease identification, proper pesticide techniques and dosage, or good crop protection practices (GCP). GCP education provided by public extension services tends to be rare due to an internal lack of capacity and limited coverage area. At the same time, private agronomists have limited skill in providing effective communication approaches to promoting GCP and safer pesticides.
- **Farmers have limited access to alternative crop protection methods** (e.g. biopesticide, water treatment, soil treatment), perceiving these to be less cost-effective than chemical methods, and preferring chemical pesticides because of their quickly-visible impact in combating pest and disease, regardless of the potentially negative long-term implications. This is augmented by a lack of farmer awareness of the availability of alternative crop protection methods. Furthermore, government extension services have limited incentive to educate farmers effectively on alternative crop protection methods, and a very limited number of private companies produce and promote them. The business

² Grandviews Research. 2019. Indonesia Crop Protection Chemicals Market.

³ BPS. 2017. Struktur Ongkos Usaha Tani.

is further hampered by excessively complicated administrative procedures for product registration and licence renewal.

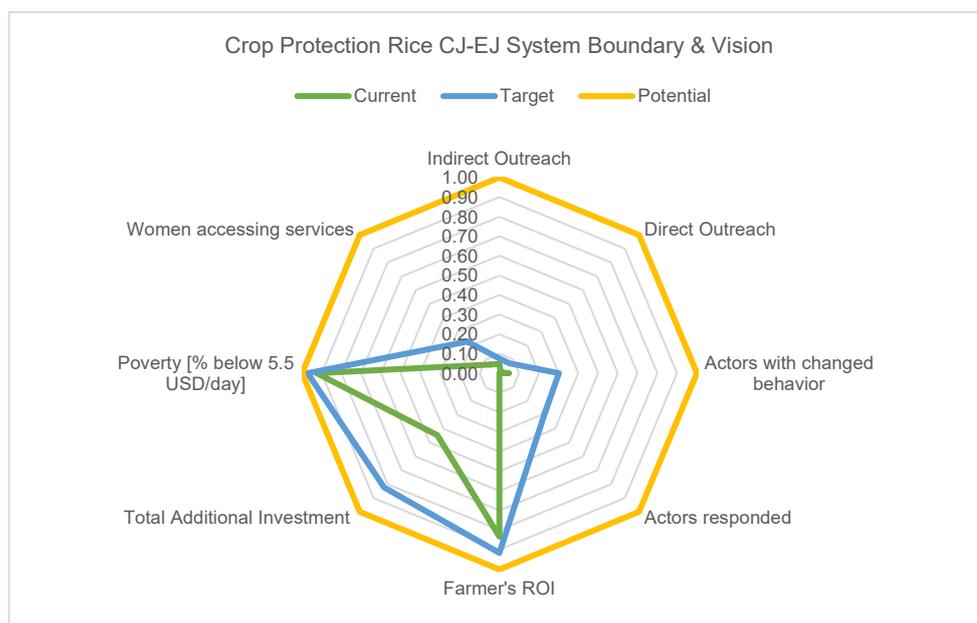
Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

- improve the marketing strategy of crop protection producers to embed alternative crop protection methods in farmers' education and training;
- increase safer and appropriate use of pesticides, including the promotion of (1) safer label pesticides, and (2) GCP knowledge, and
- increase the use of alternative crop protection methods such as bio-pesticides, water and soil treatment, biological control, physical control and refugia plant.

Subsector vision for systemic change

PRISMA aims to increase the production and productivity of maize and rice farmers in East Java and Central Java by adopting safer, high efficacy, and cost-effective crop protection methods and practices, promoted by private market actors. By 2023, at least 218,639 rice farmers in East Java and Central Java will have adopted these and thereby increased their income by at least 30%.



Progress towards subsector vision

The following signs of systemic change were observed this semester:

Adopt

- Agricon showed a commitment to changing the KPIs of its field staff, acknowledging the need to improve its marketing strategy by putting increased emphasis on training and educating farmers.

Adapt

- The first contract was signed in November 2019. Progress will be observed throughout the next semester and on an ongoing basis.

Expand

- The first contract was signed in November 2019. Progress will be observed throughout the next semester and on an ongoing basis.

Respond

- The first contract was signed in November 2019. Progress will be observed throughout the next semester and on an ongoing basis.

5. DAIRY

Dairy Sector Summary

Annual demand of milk at the national level is 4.4 mill ton. Local milk production is only 0.93 mill ton (21% of demand) and the rest (3.5 mill ton or 79% of demand) is fulfilled via import in form of skim milk powder, anhydrous milk fat, and butter milk powder from several countries. During the period of 2016-17, local demand for milk has increased at around 4% while local production increased at only 3%. Three provinces in Indonesia - East Java, West Java and Central Java supply around 95% of local milk production. Both on farm and off farm factors contribute to low productivity and quality of dairy milk in Indonesia; some of these factors include traditional feeding practice, poor on-farm animal health management, long calving interval and poor post-harvest management. Presence of large market actors including milk processing companies like Nestle, Indolacto, Frisian Flag; animal pharmaceutical companies like Medion; and dairy farmer cooperatives provide significant opportunities for collaboration and contribute to the development of dairy sector.

Quick facts:



Total National Population
540,441



Milk Production
928,108 ton



Milk Productivity (L/day)
11 L/day



Demand (% increase or decrease)
4.1 %



East Java

- ✓ Total Provincial Population : 273,890
- ✓ Milk Production (Ton) : 498,900
- ✓ Total farm households in the sector (HHs) : 64,504

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	-



Central Java

- ✓ Total Provincial Population : 138,500
- ✓ Milk Production (Ton) : 99,600
- ✓ Total farm households in the sector (HHs) : 30,922

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	-



Dairy OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	-
Cumulative Outreach Projected to Dec 2023	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023	-

Value For Money (VFM)	Dairy Overall
Investment Leverage:	-
Investment Per HH:	-
Social Return:	-

5.1 Dairy Central Java

Central Java province has the second largest population of dairy cattle in Indonesia with 138,500 head of dairy cattle, but it is only the country's third largest milk producer with 99,600 MTs of milk production per year. This is primarily due to three factors: (1) low productivity of milk, (2) fewer lactating cows than other classes of cattle, and (3) low quality of milk. In Central Java, the ratio between male/young cows and the lactating cow population is comparatively larger than in other areas (cattle in CJ comprises of 38% male and young cows, and 43% lactating cows). Dairy cattle productivity in Central Java is around 9.4 litres per day, significantly lower than in West Java (13.5 litres/day) and East Java (11.3 litres/day). Most dairy farming households are located in Boyolali, Semarang, Salatiga and Klaten districts.

Challenges and constraints

Both on-farm and off-farm factors contribute to the low productivity of dairy milk in Central Java:

On-farm factors contributing to low productivity:

- **Low milk production due to traditional feeding practices.** Most dairy farmers rear their cattle following traditional methods using makeshift feed. Only 50% of farmers use concentrate feed; the rest are using agriculture by-products. Forage feed is also of poor quality and in limited supply, resulting in fewer nutrients for the cows and less milk production.
- **Long calving intervals.** Low nutrient intake also affects cattle fertility, which in turn lengthens calving intervals. Farmers have to wait until 17 months for the next birth, which reduces milk production.
- **Genetic breeding of cattle** over several generations and inbreeding result in low cow immunity. This causes the emergence of disease and adversely affects milk production and productivity.
- **Inefficient economic scale.** Average cow ownership is just three cattle head per household, often insufficient to provide main income. This disincentivises farmers from investing in improved on-farm practices.
- **Poor health and breeding management.** 49% farmers rely heavily on government veterinarians to treat cattle health problems and to carry out AI services. However, very few farmers practice preventive measures to tackle cattle health issues. There is also no system in place to monitor the growing stages of dairy cows in order to apply AI and other services at appropriate time.

Off-farm factors contributing to low income:

- **Poor post-harvest handling of milk** results in substandard quality. Milk is highly susceptible to bacteria and temperature. However, frequent lack of standardised post-harvest handling practices by dairy farmers and cooperatives/private milk collectors, means it often does not meet the requirements of the milk processing companies. In CJ, 42% farmers sell milk to private milk collectors, with varying standards of both handling practices and equipment, which make it difficult to maintain consistent and standard milk quality. This is also reflected in the milk price at the farmer level (IDR 4,600 per litre), which is lower than EJ.

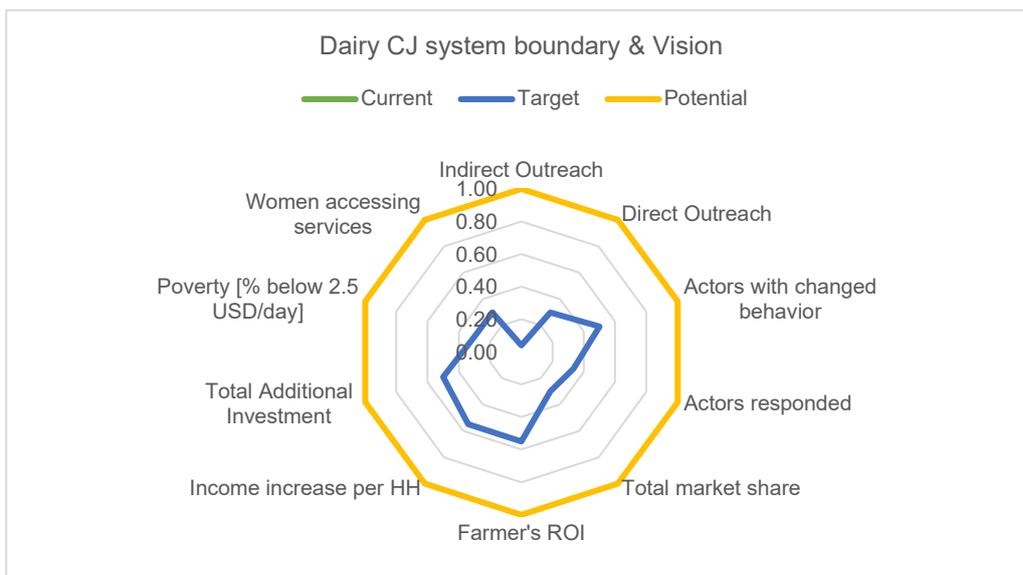
Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

- promote good quality feed, specially concentrate feed;
- promote better/alternative forage by partnering with seed companies and large traders;
- promote animal health management in collaboration with pharmaceutical companies and veterinarians, and
- improve access to quality and affordable farm equipment for increasing quality of milk.

Subsector vision for systemic change

PRISMA aims to achieve a greater systemic change in the dairy sector in Central Java by strengthening relationships between market actors. Initially, PRISMA plans to focus on addressing the on-farm constraints of feed quality and animal health management. Input



companies (feed and animal medicine) and forage traders will provide increased options of good quality input, Off-takers (milk processing companies) will collaborate with these input companies to promote good dairy cattle management practices and leverage dairy cooperatives to disseminate information on good post-harvest practices. By 2023, it is expected that the dairy sector will benefit 6,000 farmers in CJ, and will produce more and better quality milk due to the higher adoption of good farming practices of balanced feed management, proper health management and improved collaboration between cooperatives, input providers and milk processing companies, driven by high demand-local supply gap.

Progress towards subsector vision

This semester, the Dairy sector team focused on strategy development and intervention preparation (including a market assessment in four districts and an intervention plan). For this reason, **progress in the Dairy Central Java subsector vision is yet to be seen.**

5.2 Dairy East Java

East Java province is the largest dairy milk producer in Indonesia, accounting for around 50% (273,890 head) of the country's dairy cattle and 53% (498,900 MTs of milk per year) of its national milk production. However, growth in East Java's milk production is slower than the increase in its dairy cattle population: the CAGR for milk production is 4.62% and for dairy cattle population is 5.28% (2013-17). Dairy cattle productivity in East Java is around 10.3 litres per day, higher than Central Java but lower than West Java (13.5 litres/day). Dairy farming is centralised in selected districts in East Java, such as Malang, Pasuruan, Probolinggo, Kediri and Tulungagung. These are mainly located on high land and account for 85% of the total cattle population in this province.

Challenges and constraints

Both on-farm and off-farm factors contribute to the low productivity of dairy milk in East Java:

On-farm factors contributing to low productivity

- **Low milk production due to traditional feeding practices.** Most dairy farmers rear their cattle following traditional methods using makeshift feed. Some do use concentrate feed, but this is of insufficient quality and quantity to meet the needs of the cows. Forage feed is also of poor quality, resulting in fewer nutrients for the cows and less milk production.
- **Long calving intervals.** Low nutrient intake also affects cattle fertility, which in turn lengthens calving intervals.
- **Genetic breeding of cattle** over several generations and improper inbreeding result in low cow immunity. This causes the emergence of disease and adversely affects milk production.

- **Inefficient economic scale.** Average cow ownership is just three cattle head per household, insufficient to provide a main income. This disincentivises farmers from investing in improved on-farm practices.
- **Poor health and breeding management.** Farmers rely heavily on veterinarians to maintain health and carry out AI services. However, there is no system in place to monitor the growing stages of dairy cows in order to apply AI and other services at the appropriate time.

Off-farm factors contributing to low productivity

- **Poor post-harvest handling of milk** results in substandard quality. Milk is highly susceptible to bacteria and temperature; however, the frequent lack of standardised post-harvest handling practices by dairy farmers and cooperatives, essential to maintaining milk quality, means it often does not meet the requirements of the milk processing companies.

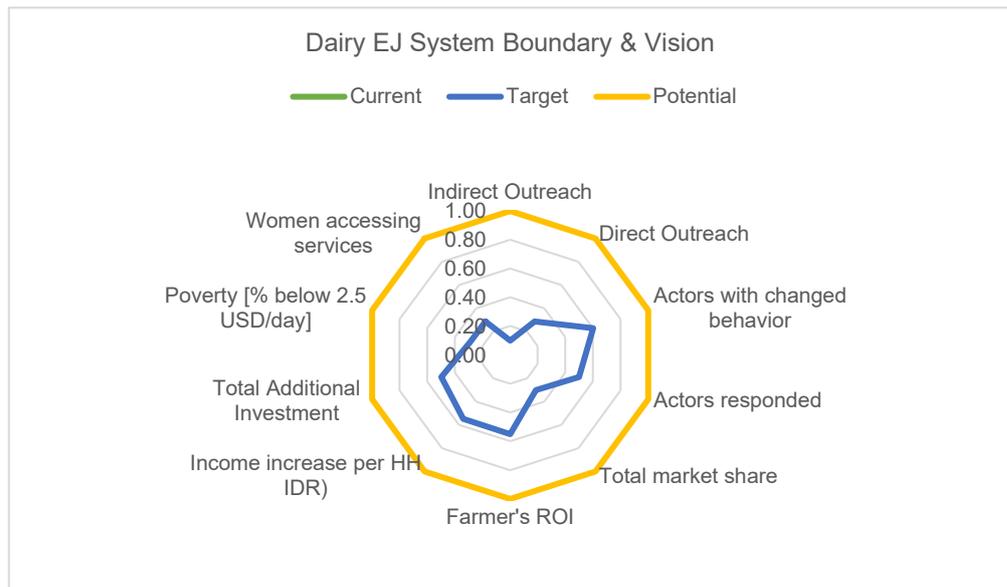
Intervention areas

To address these challenges and constraints, PRISMA works with partners to:

- promote good quality feed,
- promote animal health management,
- utilise digitalisation recording for better management and shortening calving interval,
- water provision for better sanitation and water drinking, and
- improve access farm equipment for increase quality of milk.

Subsector vision for systemic change

PRISMA aims to achieve greater systemic change in the dairy sector in East Java province by strengthening relationships between market actors. Initially, PRISMA aims to focus on addressing the on-farm constraints of feed quality and animal health management. Input companies (feed and animal Medicine) and



forage traders will provide increased options of good quality input, Off-takers (milk processing companies) will collaborate with these input companies to promote good dairy cattle management practices and leverage dairy cooperatives to disseminate information on good post-harvest practices. By 2023, it is expected that the dairy sector in East Java will benefit 13,000 farmers, and produce more and better quality milk due to the higher adoption of good farming practices of balanced feed management, proper health management and improved collaboration between cooperatives, input providers and milk processing companies, driven by high demand-local supply gap.

Progress towards subsector vision

This semester, the Dairy sector team focused on strategy development and intervention preparation (e.g. conducting market assessments in four districts, signing a tripartite letter of agreement with Nestle and Medion). Consequently, **progress towards the dairy East Java subsector vision is yet to be seen.**

6. INNOVATIVE FINANCE



Innovative Finance

Sector Summary

A World Bank study estimates that around 62% of the adult population worldwide have formal financial access where 27% of the total world population is farmers. This percentage of population who have formal financial access is even lower in Indonesia at 49%. Insufficient fund become the main reason for not having formal financial access for the population. In Indonesia, agriculture sector only contributed of 6.9% of bank credit portfolio where majority of this credit goes to agriculture companies or big value chain actors in agriculture and not to smallholder farmers. Unwillingness and scepticism around servicing the micro-segment of the MSME market, difficulty and cost associated with accessing historic credit data on smallholder farmers, unawareness of suitable financial products and services are some of the reason for low access to finance for farmers.

Quick facts:



Total Farming HH Population
27,682,117



Farming HH have Borrow:
60 % of total farming HH population



Farming HH Don't Borrow:
40 % of total farming HH population



Potential Farming HH Want to Borrow but Don't Borrow: 32% of total farming HH population

Quick facts are processed from Survey Pertanian Antar Sensus 2019 and World Bank Study 2017



East Java

- Total Farming HH Population : 5,163,979
- Agricultural financing formal supply by banks (in Billion IDR) : 16,535

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	4,957
Cumulative Outreach Projected to Dec 2023 (HHs)	27,637
Total NAIC up to Y19S2 (IDR)	37,884,966,085
Total NAIC to Y19S2 (%)	142.33%
Total projected NAIC to Dec 2023 (IDR)	219,324,966,085



Central Java

- Total Farming HH Population : 4,469,728
- Agricultural financing formal supply by banks (in Billion IDR) : 9,650

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	22,890
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	36,792,000,000



NTB

- Total Farming HH Population : 666,375
- Agricultural financing formal supply by banks (in Billion IDR) : 1,439

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	2,646
Cumulative Outreach Projected to Dec 2023 (HHs)	11,063
Total NAIC up to Y19S2 (IDR)	10,425,646,380
Total NAIC to Y19S2 (%)	69.39%
Total projected NAIC to Dec 2023 (IDR)	18,433,646,380



NTT

- Total Farming HH Population : 818,853
- Agricultural financing formal supply by banks (in Billion IDR) : 573

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	2,177
Cumulative Outreach Projected to Dec 2023 (HHs)	3,009
Total NAIC up to Y19S2 (IDR)	634,406,101
Total NAIC to Y19S2 (%)	9.96%
Total projected NAIC to Dec 2023 (IDR)	1,426,106,101

Innovative Finance OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	9,780
Cumulative Outreach Projected to Dec 2023 (HHs)	64,599
Total NAIC up to Y19S2 (IDR)	48,945,018,566
Total NAIC to Y19S2 (%)	89.64%
Total projected NAIC to Dec 2023	275,976,718,566

Value For Money (VFM)	Innovative Finance Overall
Investment Leverage:	0.33
Investment Per HH:	AUD 211.7
Social Return:	2.36

6.1 Finance

A World Bank study (2017) estimated that only around 62% of the global adult population has formal access to finance. In Indonesia, this percentage is even lower, at 49%, the country's agriculture sector contributes only 7% to the bank credit portfolio, only around 10% of which goes to MSME borrowers⁴. Reasons for the low access of the agriculture sector to finance include associating agriculture solely with micro-finance, scepticism around servicing the micro-segment of the MSME market, the difficulties and cost associated with accessing historic credit data of potential borrowers, and lack of suitable financial products and services. Within PRISMA, the sector team is looking at ways to address some of these constraints in order to inject finance into the agricultural sector.

Challenges and constraints

The major challenges and constraints faced by the agricultural finance sector are:

- **On the supply side**, potential market actors do not see the commercial value of reaching out to farmers in rural areas due to high transaction costs and complicated logistics. They also perceive there to be a higher risk within the agricultural sector as a whole. Financial products are regulated centrally in Indonesia and based around low-risk, high-reward principles, creating little room for adjustment to the products themselves to meet the needs of more risky customer segments.
- **On the demand side**, many market actors in the agricultural sector have concluded that existing products are not right for them, necessitating intensive administrative processes and procedures, as well as requiring documentation that they often do not have, and wait times for processing that they cannot afford. They also tend to have minimal interaction with financial institutions, and as a result do not know how to access the products or services.

Intervention areas

To address these challenges and constraints, in the second phase PRISMA will work with partners in several areas (not limited to the following), to:

- bridge the formal and informal in financing. This includes using tools such as VCF and trader credit, credit scoring, finance for kiosks, and money transfers and domestic remittances, to bring existing financial products to agriculture and to reduce the cash flow burden on market actors who are already supplementing farmers, and
- facilitate partners to see the value in strengthening agent networks. Through more efficient, fair, technologically equipped, and legitimate agent networks, which would include kiosks, appropriate forms of finance would be able to reach more farmers in more remote areas.

Subsector vision for systemic change

In this phase, PRISMA aims to achieve a greater systemic change in the agricultural finance sector by improving the offering of a broad range of accessible and appropriate financial services. This will be done through facilitating the product development of financial institutions, fintech companies and agribusinesses, using technological innovation to support disbursement, tracking and recovery at scale, better sourcing and service provision from consulting companies, improved promotion and marketing of products, as well as incorporation and linkages with and through input providers, kiosks, insurance providers and off-takers. The aim is to provide 50,000 smallholder farming households with access to a broad range of affordable and appropriate financial services.

Progress towards subsector vision

In the second semester of 2019, we observed the following activities and progress towards systemic change:

⁴ Otoritas Jasa Keuangan: Statistika Perbankan Indonesia, Desember 2018 (processed internally).

Adopt

- PT Crowde Membangun Bangsa (CROWDE) conducted three kiosk socialisations. These involved more than 50 agriculture input kiosks in two locations in Central Java (Cilacap, Sragen) and one location in East Java (Banyuwangi) as part of PRISMA's kiosk acquisition strategy for extending the agent model;
- CROWDE provided a trader financing product for its borrowers in Central Java and West Java;
- PT Tanijoy Group Indonesia (Tanijoy) recruited one new field manager as replacement senior field manager; the latter will assume the role of acquiring more agents to facilitate business expansion;
- PT Tanijoy is implementing an ongoing process to improve its credit rating. Its aim is to increase its compatibility with the agriculture sector and improve its loan acquisition;
- PT Bisi International Tbk (BISI) conducted 11 agent socialisation activities in different locations, resulting in 96 potential agents, 22 of whom are women. Based on the evaluation emerging from the pilot, rather than conducting a few big socialisation events, BISI has chosen to conduct smaller events with more frequent activities. This is due to more scattered targeted locations and strong competition with existing free market distribution channels;
- 18 new YARO agents (four of whom are women) have ordered BISI seeds. These new agents helped BISI to increase their YARO sales in NTB area by 24% (against its 2018 sales), and
- BISI conducted joint promotional activities with BNI and Pegadaian⁵(a pawn shop company) in Sumbawa and started discussion regarding potential collaboration for a future input financing scheme.

Adapt

- CROWDE hired new dedicated staff for kiosk acquisition as part of its plan to extend its agents model;
- CROWDE invested in the Kiosk App to facilitate improvement for kiosks. This aims to help kiosks to achieve better inventory management and to keep digital transaction records, to help them improve their credit profile, and
- A BISI agronomist informally supported a female BNI agent in West Sumbawa to increase her revenue as part of loan disbursement to farmers (although any formal partnership between BISI and BNI has not yet developed, this is a positive sign of potential future collaboration between the two).

Expand

- Some financial technology (fintech) companies showed interest in copying the partner business model for agriculture financing (although this is recent and no solid evidence of the results has yet emerged), and
- The BISI area manager in another province (Central Java) showed interest in obtaining the learnings and implementing the improved YARO process from the NTB pilot.

Respond

- Several banks (Bank Mandiri, BJB, BPR Supra) and a multifinance agency (BCA Finance) started a partnership with CROWDE to implement loan channelling;
- Insurance company Jasindo started a partnership with CROWDE to provide agriculture insurance for the latter's borrowers, and
- Some banks showed an interest in collaborating with BISI to provide input financing for farmers. For example, BNI in Sumbawa is willing to work with BISI to acquire more agents in 2020. In NTT, BISI already building communication with CU Swastisari to explore a potential partnership in Timor Island (in Kupang and TTS districts).

⁵ Indonesia's state-owned pawnbroker

7. INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)



Information and Communication Technology Sector Summary

ICT as a sector in the second phase of PRISMA can largely be thought of as a cross-cutting sector and therefore a delivery mechanism for other products and services be it information (including extension services, marketplace information, etc) or finance and financial products. In contrary with the situation in urban area, ICT sectors in agriculture industry faces some major challenges such limited infrastructures, lack of technology knowledge of the farmers and poor understanding of agriculture of ICT players who are willing to tap in to the sector. Despite it grows fast along with time, PRISMA's latest farmers information source survey (2015) in East Java, NTB, and NTT shows smartphone ownership and internet usage in farmers level are still low; at 15% and 5% respectively.

Quick facts:



Number of Farmer Groups
143,251



Number of R2 Kiosk
9,122



Kiosk and Farmers Group Covered by Signal
76%



Kiosk and Farmers Group Accessing Internet
41%



Kiosk and Farmers Group Using Smartphone
36%

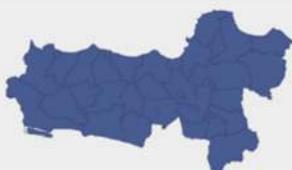
Facts Source are processed data from Statistik Telekomunikasi Indonesia 2018



East Java

- ✓ Village areas covered by signal (2018) : 84.90%
- ✓ Smartphone ownership in rural area (2017) : 50.72%
- ✓ Internet user in rural area (2017) : 45.33%
- ✓ Number of R2 Kiosk (2018) : 4,615
- ✓ Number of Farmers Group (2018) : 52,426

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	6,721
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	6,079,793,750



CENTRAL JAVA

- ✓ Village areas covered by signal (2018) : 84.41%
- ✓ Smartphone ownership in rural area (2017) : 41.37%
- ✓ Internet user in rural area (2017) : 49.23%
- ✓ Number of R2 Kiosk (2018) : 4,392
- ✓ Number of Farmers Group (2018) : 45,748

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	-



NTT

- ✓ Village areas covered by signal (2018) : 51.45%
- ✓ Smartphone ownership in rural area (2017) : 23.75%
- ✓ Internet user in rural area (2017) : 25.87%
- ✓ Number of R2 Kiosk (2018) : 115
- ✓ Number of Farmers Group (2018) : 27,165

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	-
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	-



ICT OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	-
Cumulative Outreach Projected to Dec 2023	6,721
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023	6,079,793,750

Value For Money (VFM)	ICT Overall
Investment Leverage:	-
Investment Per HH:	-
Social Return:	-

7.1 ICT

In PRISMA's second phase, ICT will operate as a cross-cutting sector to provide a delivery mechanism for other products and services, including information (e.g. extension services, marketplace information) and finance and financial products. In contrast to the situation in urban areas, ICT sectors in the agriculture industry face major challenges, including limited infrastructure, farmers' lack of technology knowledge, and a poor understanding of agriculture among ICT actors who have demonstrated a willingness to tap into the sector. Despite its rapid growth over time, PRISMA's most recent farmer information source survey (2015) in East Java, NTB and NTT shows smartphone ownership and internet usage at the farmer level to be low, at 15% and 5% respectively. The ICT sector will therefore target the ISP level (including kiosks and off-takers) and farmer groups to improve the flow of information using technology provided by tech companies, in order to achieve an efficient flow of inputs, finance and off-taking.

Challenges and constraints

The major challenges and constraints faced by the ICT services sector are:

- **Gradual uptake in technology adoption.** Due to their geographical remoteness, most rural areas of Indonesia have limited connectivity with only a basic telecom infrastructure available; technology adoption is rather slow in these areas. This remoteness, combined with the prevalent farmer behaviour of 'seeing-then-believing' makes technology adoption even more challenging.
- **Reliable market-based data (both historical and current) and aggregation is limited.** This is due to the high cost of collecting primary data, as farmers are scattered and widespread. Ineffective and inefficient data collection processes and no cost-sharing between stakeholders also contribute to this high cost.
- **Poor understanding of the agriculture sector at the ICT provider level.** Most agriculture start-ups have minimal business experience and little or no agriculture knowledge. At the same time, most ICT actors are currently focusing on urban areas, as they perceive there to be a higher barrier to entry to rural areas.

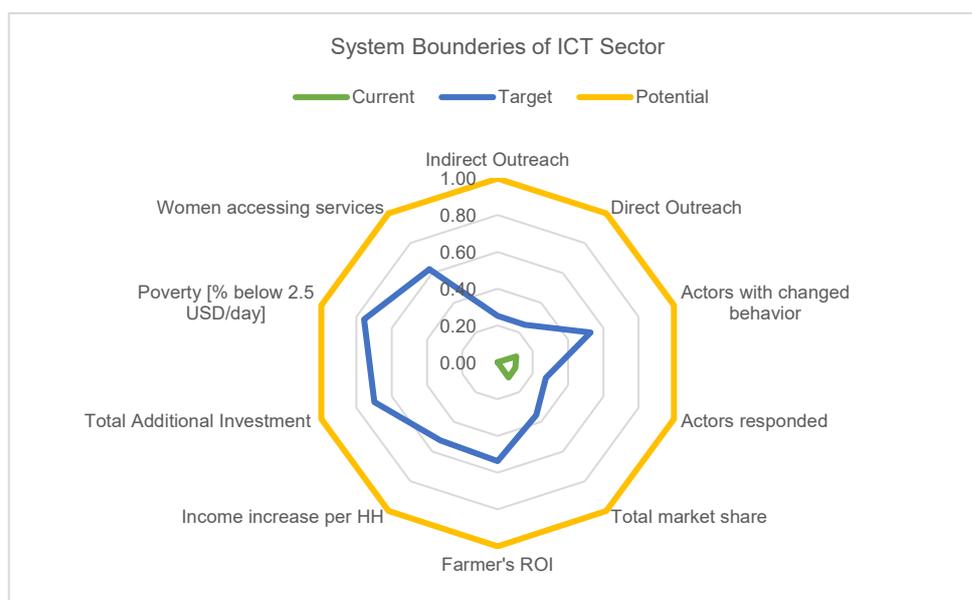
Intervention areas

To address these challenges and constraints, PRISMA will work with partners in several areas (not limited to the following), to:

- digitise business activities among ISPs, including kiosks, farmer groups, traders and off-takers, in order to enhance the collection and flow of information to all related stakeholders,
- facilitate market actors to send and receive agriculture-specific data through digital technology, for extension services, GAP advice, input distribution, finance and off-taking, and
- connect market actors through ICT, including financial service providers, off-takers and input companies.

Subsector vision for systemic change

In the second phase of program implementation, PRISMA aims to achieve a greater impact in agriculture through ICT utilisation by improving the access and availability of information and finance to the agricultural sector. This will be done through technology development for financial institutions and agri-input



companies, as well as providing agricultural-relevant support to technology companies. We will also work to build up the depth, breath and supply of supporting functions tailored to agricultural ICT, including consulting, marketing and agent networks, as well as incorporation and linkages with and through input providers, kiosks, government, insurance providers and off-takers.

Progress towards subsector vision

Adopt

- In Phase 1, HARA took up the business model developed together with PRISMA and established the pilot. In Phase 2 it has agreed to implement a new business model (developed with facilitation from PRISMA) which utilises kiosks as part of credit disbursement improvement.
- All the partners of the multi-stakeholder Ditant-BISI-SwastiSari partnership agreed to implement the business model developed by PRISMA, and then established some workplan activities for pilot implementation, including establishing an input distribution channel, acquiring as members those farmers who are ready to access finance, and sending field staff to monitor and conduct activities on the ground.

Adapt

- Utilising the financing business case, HARA expanded its business into new regions and evolved the incentive scheme for data collection. The partners progressively grew the number of farmers registered on the HARA platform, broadening the scale while at the same time improving the business process.

Expand

- HARA established collaboration with other financial institutions (BTPNS and DANAMAS) independently of PRISMA's support. It also piloted a collaboration with an off-taker (PT Seger) in Tuban and explored a potential collaboration with an input supplier.

Response

- Local government in some areas (e.g. Situbondo, Trenggalek) has expressed willingness to use the HARA service in order to put reliable agriculture data to good use. However, the partner still considers this a low priority due to the issue of sustainability.

8. IRRIGATION

Irrigation Sector Summary

The use of irrigation in the agricultural sector, has been key to increasing the productivity of agricultural production around the world. However, the pace of expansion in irrigation schemes has slowed in recent years and there is growing interest in finding ways for the private sector to play role in irrigation. In Indonesia, irrigated agricultural land produces 85% of national rice production and 95% of Indonesian people consume rice as a staple. However, 45% of irrigation infrastructure are damaged because of limited budget, low maintenance, incomplete irrigation network system, and Water User Association (WUA or HIPPA) performance in tertiary irrigation management are not yet optimal. And existing water storage capacity only cover 13% of agriculture land which is very low compare to neighboring country like Thailand.

Total agriculture land in East Java is 2,1 million ha and based on PRISMA calculation around 1,8 million ha or 84% of total agriculture land has limited or even no access to water for cultivation during dry season because of no irrigation infrastructure, damage existing irrigation infrastructure, very limited water supply from existing dam, and farmers limited capacity (financial and technical) to provide small irrigation for their land.

Quick facts:



Total wetland
8,186,470 Ha



Total irrigated wetland
4,781,495 Ha

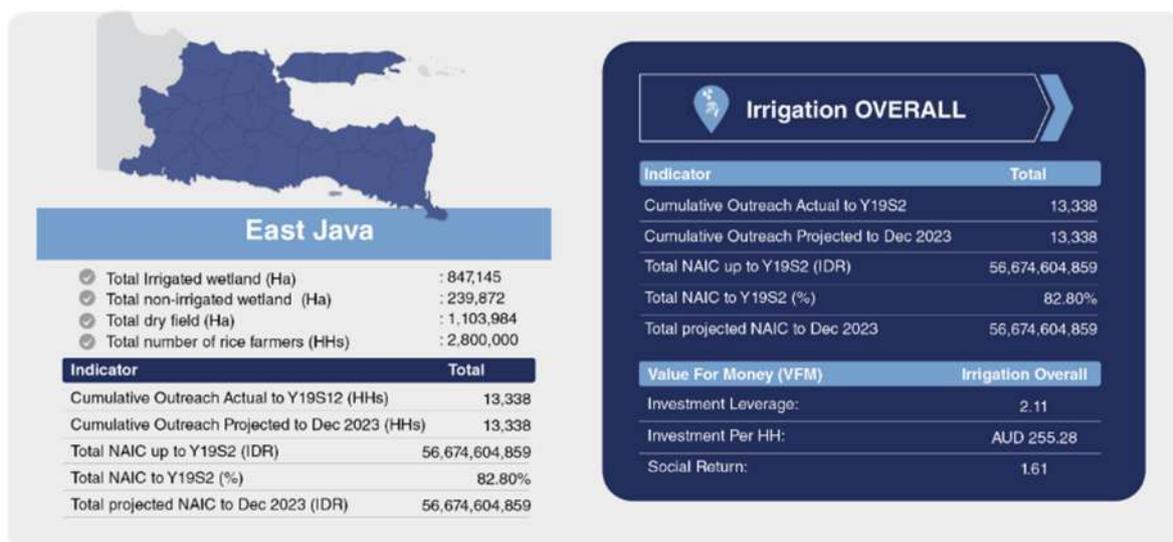


Total non irrigated wetland
3,404,975 Ha



Dry land
11,5 mio Ha

Facts Source: Statistik Pertanian 2017



8.1 Irrigation

Irrigation has three times more impact on farming productivity than other agricultural inputs, such as seed variety and fertiliser (TIRTA Program Design Document, 2014). Irrigation also offers the potential to (1) increase production and profitability per hectare per crop, (2) increase cropping intensity, and (3) reduce the risk of crop failure, which can be catastrophic for smallholder farming households with very limited resources and reserves. Eighty-five per cent of Indonesia's total agriculture land has limited access to water for irrigation during the dry season (Ministry of Agriculture, 2017).

Challenges and constraints

The key constraints to the pro-poor growth of the irrigation sector in Indonesia are the decline of investment in irrigation infrastructure in the past, the existing model which relies on public funding for capital investment, and poor management of water resources at highly subsidised rates.

Farmers are unable to access water for irrigation due to:

- **Highly limited number of technical and managerial irrigation consulting firms** serving the rural irrigation market, due to their lack of awareness of market potential, and inadequate capacity to provide solutions adapted to village need and affordability.
- **Well drillers having limited technical capacity and supporting tools** needed to identify water points which have capacity matches with the planting need. They also have limited access to finance.
- **Major pump producers targeting government projects and industry markets.** Pump producers are aware of the sales potential at the village level, but face challenges entering the rural market due to their limited number of staff and financial capacity.
- **Absence of financial products dedicated to the irrigation service business** due to the limited knowledge of financial institutions regarding the business.
- **Contractors (civil and electrical) for village irrigation are available in the rural market,** but have limited knowledge of how to design a proper irrigation system.
- **Water-user associations/HIPPAs are non-functional and/or operating non-efficiently** due to lack of managerial and financial capacity, despite technical support and financial aid from the government. Water-user associations operate more as farmer groups than as for-profit business entities.
- **Private sector irrigation service providers are obliged to adopt informal rules at the village level to acquire an “informal permit to operate”** which causes uncertainty in terms of business sustainability and poses greater risks to investment. Central government does not set the “rules of the game” for private sector irrigation service providers, making their position even more vulnerable.
- **Absence of government regulations** to accommodate private sector involvement in the provision of village level tertiary irrigation.

Intervention areas

PRISMA's irrigation sector focuses on working with scale agents interested in investing in irrigation in a rural setting, to:

- promote new and improved irrigation service providers for seed production and seed market farmers among off-taker companies (seed producers, feed millers and food processing companies) and related associations;
- promote irrigation contractor services providing both technical and non-technical advice to irrigation service providers among pump producers, pump sellers, irrigation providers, irrigation equipment importers and related associations, and
- promote new technology related with irrigation (better water detection, solar pump and drip irrigation) to improve efficiency in irrigation services and protect the environment.

Subsector vision for systemic change

In the second phase of program implementation, PRISMA will focus on stimulating and increasing private sector participation and investment across different stages of the irrigation value chain to promote more

efficient water use in agriculture, boosting farmers' production and productivity. Technical irrigation consultants will provide sound design and advice to irrigation providers, who in turn will invest in and provide a more efficient irrigation service, able to serve increasing numbers of smallholder farming households. Seed producers will promote the availability of irrigation services to their seed growers.

Progress towards subsector vision

Adopt

- Syngenta and Ewindo signed agreements with PRISMA to promote new irrigation services to seed growers in East Java, and
- Grundfos adopted the PRISMA irrigation contractor business model and is currently piloting the model in Lamongan and Jombang.

Adapt

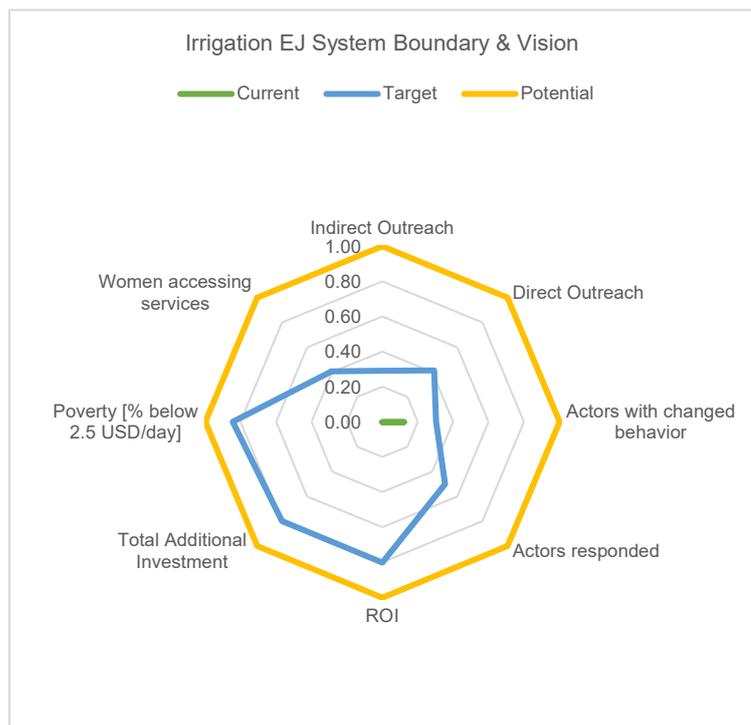
- Mesindo expanded its business to Blora in Central Java, which is now benefiting 458 farmers;
- Eight irrigation service providers in Bojonegoro and Tuban expanded their services to nearby villages and are benefiting 906 farmers, and
- The Ministry of Villages, Development of Disadvantaged Regions, and the Transmigration (MoV) Training Centre in Yogyakarta (Balai Besar Latihan Masyarakat) provided training on tertiary irrigation management to seven BUMDes and 10 HIPAs in Tuban, and promoted Mesindo's services.

Expand

- Corteva applied the assessment model developed by PRISMA for an irrigation survey in 14 of its production districts, covering 594 irrigation service providers and 1,300 farmers. It will use the results of the survey to develop a model of private sector investment in irrigation for seed grower farmers.

Respond

- The GOI Ministry of Public Works and Housing used the TIRTA MoV module to develop an Entrepreneurship in Village Irrigation training module, to be used to develop the capacity of water user associations (HIPAs) as part of the implementation of single irrigation management.



9. MAIZE

Maize Sector Summary

Maize is the second most important crop in Indonesia after rice. More than 20 million MTs of maize are grown each year on four to five million hectares of farmland. More than half is used to cater the ever-increasing demand for animal feed. It is a seasonal crop, with a surplus during peak harvest months and severe undersupply the rest of the year. The Government of Indonesia, under 'self-sufficiency' agenda, highly subsidized the sector. In 2017 around 80% of total harvested area is covered by the free seeds and subsidized fertilizers. It continued in 2018 and 2019 since The GoI still allocated free seeds to the farmers although using different program. The maize price has been increasing steadily over the year. The zero-import quota has further contributed to the higher corn price started in 2017. The national average productivity is 5.23 MT per hectare. However, the field observation and USDA data shows lower productivity around 3-4 MT per hectare, especially in Eastern Indonesia. PRISMA has identified a clear opportunity to increase maize production, productivity and quality as part of Indonesia's drive towards import substitution.

Quick facts:



Total Production
28,924,015 MT



Total Harvested Area
5,533,169 Ha



National Productivity
5,230 kg/Ha



Demand
3.4%

Facts Source: Statistik Pertanian 2018, Sensus Pertanian 2013

East Java

- ✓ Total Provincial Production (Ton) : 6,335,252
- ✓ Total provincial harvested area (Ha) : 1,257,111
- ✓ Total farm households in the sector : 1,692,530

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	45,603
Cumulative Outreach Projected to Dec 2023 (HHs)	51,187
Total NAIC up to Y19S2 (IDR)	105,115,642,675
Total NAIC to Y19S2 (%)	157.83%
Total projected NAIC to Dec 2023 (IDR)	111,398,650,675

NTB

- ✓ Total Provincial Production (Ton) : 2,059,222
- ✓ Total provincial harvested area (Ha) : 310,990
- ✓ Total farm households in the sector : 306,899

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	6,995
Cumulative Outreach Projected to Dec 2023 (HHs)	7,443
Total NAIC up to Y19S2 (IDR)	20,924,328,813
Total NAIC to Y19S2 (%)	47.54%
Total projected NAIC to Dec 2023 (IDR)	23,356,320,109

NTT

- ✓ Total Provincial Production (Ton) : 859,230
- ✓ Total provincial harvested area (Ha) : 341,264
- ✓ Total farm households in the sector : 464,066

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	29,932
Cumulative Outreach Projected to Dec 2023 (HHs)	40,844
Total NAIC up to Y19S2 (IDR)	47,750,343,801
Total NAIC to Y19S2 (%)	142.96%
Total projected NAIC to Dec 2023 (IDR)	65,548,939,062

CENTRAL JAVA

- ✓ Total Provincial Production (Ton) : 3,414,906
- ✓ Total provincial harvested area (Ha) : 568,631
- ✓ Total farm households in the sector : 843,486

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	12,000
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	3,030,000,000

Maize OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	82,530
Cumulative Outreach Projected to Dec 2023 (HHs)	111,474
Total NAIC up to Y19S2 (IDR)	173,790,315,289
Total NAIC to Y19S2 (%)	149.96%
Total projected NAIC to Dec 2023	203,333,909,846

Value For Money (VFM)	Maize Overall
Investment Leverage:	2.59
Investment Per HH:	AUD 77.33
Social Return:	2.72

9.1 Maize Central Java

Central Java is the second largest producer of maize in Indonesia, accounting for around 16% of national production. Maize is a primary cash crop, engaging around 1.1 Mio farmers, with an average cultivated land size of 0.56 ha per household⁶. However, growth in production is very low, at only 2.28% per year (2014 – 2018). Over 87% of the farmers here already plant hybrid seed, obtaining average productivity of around 6.01 MTs per ha. Less than 2% of maize produced in the province is for human consumption; the remaining 98% is for the feed industry (the expansion of which in Central Java has led to a tremendous economic boost for farmers). Despite these opportunities, farmers still experience low profits from maize cultivation, especially in the peak harvest period during the rainy season. Improper application of inputs such as fertiliser, and lack of pest and disease control hinder farmers from obtaining optimum productivity, which can be up to 10 MTs per ha. Some farmers have also difficulty cultivating maize in the dry season which limit them to get more income.

Challenges and constraints

Maize farmers in Central Java find it difficult to increase their income for the following reasons:

- **Low production in some areas of Central Java** because of its geography and its soil composition. Fertiliser has a significant contribution to make to maize productivity. However, despite government claims to have met more than 95% of the maize sector's fertiliser need, some farmers continue to apply it incorrectly. They also experience pest and disease attack, particularly downy mildew (*Bulai*).
- **Limited knowledge and access both to post-harvest facilities** and off-taking services. Many farmers in the province still experience a lack of access to appropriate technology, and facilities for storage and drying. When the harvest period occurs during the rainy season, farmers tend to sell all their yield as soon as possible to avoid damage to grain and the resultant loss. This over-supply leads to off-takers bargaining aggressively to obtain lower prices. At the same time, the supply chain to reach the end user is also quite long.
- **Lack of access to water in some areas.** The absence of irrigation systems hinders maize production and reduces productivity, especially during the dry season. Establishing an irrigation service is considered costly, especially in hilly areas; in low-lying lands, farmers prefer to plant rice as it delivers a higher income when water is available. During periods of extreme drought, some farmers are unable to engage in cultivation of either maize or other maturity crops (such as peanut or mung bean). They also encounter difficulties in obtaining suitable seed, up-to-date knowledge, and tools for maize cultivation on drought-stricken land.

Intervention areas

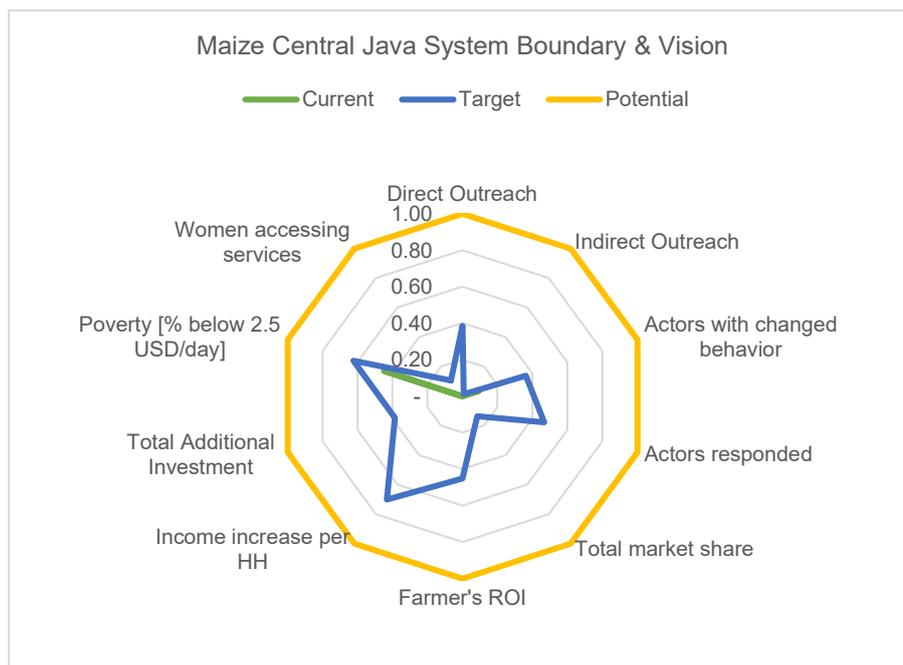
To address these challenges and constraints, PRISMA will work with partners to:

- improve GAP and IPDM services;
- promote the use of hybrid seed suitable for farming in identified pocket areas;
- promote farming techniques suitable for the dry season, and
- promote appropriate post-harvest services, as well as better linkages in the off-taking system.

⁶ Field assessment in eight districts; PRISMA, 2019

Subsector vision for systemic change

In the second phase of program implementation, PRISMA aims to achieve a greater systemic change in the Central Java maize sector (a new province of intervention) by improving the capacity of key market actors. Input companies will continue reaching farmers in Central Java with GAP services and start to promote farming techniques suitable for the dry season. Off-takers will engage with farmers through partnerships and provide inputs and farming assistance in a timely manner to increase



productivity. By 2023, the pocket areas of maize in the province will be producing more maize due to the use of improved hybrid seed, better using of fertiliser, and improved supply chain effectiveness.

Progress towards subsector vision

Adopt

- PT DuPont Indonesia agreed to expand its hybrid market in marginal areas where farmers continue to experience low productivity. It developed and conducted new promotional activities and expressed a willingness to invest in these further.

9.2 Maize East Java

East Java is the country's province with the highest level of maize production, accounting for around 22% of national production. It produced 6.3 Mio MTs of maize in 2017, nearly twice that of Indonesia's second leading producer. There are 1,922,318 smallholder farming households involved in cultivating maize with a Poverty Probability Index (PPI) score of 65% in mainland areas and 75% in Madura Island.

As a result of the importance of maize production in the province, there is a ubiquitous presence of commercial actors (traders, feed millers and seed companies) along the maize value chain in East Java. Despite being the leading producer of maize and having the largest total harvested area in Indonesia, in 2017 average yields were only 5.04 MTs per ha, and were significantly below hybrid seed productivity, which can reach 10 MTs per ha with moderate use of GAP. Average maize yields for districts on Madura Island were as low as 1.89 MTs per ha (2017), attributable to the limited adoption of hybrid seed and the subsistence nature of maize farming in Madura.

Challenges and constraints – East Java, Madura

Low productivity maize farming in Madura are mainly caused by:

- Low quality seed, inputs and GAP application.** In 2019, over 75% of smallholder maize farming households were using local varieties of seed, despite its low productivity, and are often reluctant to invest in better seed, inputs and GAP. Some perceive maize as a staple rather than a cash crop⁷ and that hybrid maize requires a high switching cost. In January 2020, the potential damage to crops by FAW is likely to be exacerbated by this minimum use of high quality inputs and GAP application.

⁷ Maize Madura Farmers Behaviour Study; PRISMA, 2018.

- **Economic, cultural and social contexts are strong barriers to seed companies promoting hybrid seed in Madura.** Smallholder farming households prefer to use local seed and do not see maize as cash crop. Slow adoption of hybrid seed in Madura limits seed company investment in product marketing and GAP assistance to farmers.
- **Access to hybrid seed is concentrated in South Madura, leaving around 46% of the maize farming population with limited access to hybrid seed.** Transportation costs and the strenuous efforts needed to obtain inputs are compromising farmers' intention to use hybrid seed.
- **Rainfed water system and marginal soil.** About 76% of maize farming in Madura depends on rain as its irrigation source. With a lack of access to irrigation services, farmers risk harvest failure and lower yields in the second quarter of the rainy season (February – April).

Challenges and constraints – East Java, Mainland

Although the productivity rate of maize farmers is higher on the mainland is higher than on Madura Island, a number of constraints in the market prevent them attaining a higher income. These are:

- **Farmers experience difficulties in increasing maize production during the dry and second planting season.** 55% maize farmers plant maize for second time following main season when rainfed or irrigation are considered adequate. However, due to uncertain irrigation during second planting season, farmers will reduce input quality as a risk aversion strategy. Currently there is no specific drought-resistance seeds which can improve seed agility during dry seasons.
- **Maize downy mildew disease is common and destructive.** With intensive maize farming and sugarcane farming areas located next to each other, downy mildew outbreak is very common, likely to happen and become serious regular threat in mainland areas.
- **Apparent illegal seed distribution in upland areas.** Upland farmers are less advanced at maize farming and less concerned than lowland farmers about the brand of maize seed. They prefer to use retained hybrid or illegal seed to reduce the sunk cost, especially for dry season cultivation of maize. They prefer to use retained hybrid or illegal seed to reduce the sunk cost if they face harvest failure.
- **Poor application of fertiliser.** The average usage of fertiliser in EJ Mainland is 382 kg of NPK per ha and 496 kg of urea per ha (for both, this is above the level recommended by the GOI of 300 kg per ha). In addition, most smallholder farming households opt to sow fertiliser on the surface of the soil instead of under it. This takes less time and reduces labour costs, but also minimises fertiliser absorption and induces leaf-rust disease.
- **Low penetration of mechanisation or utilisation of access to finance.** Despite the intensive nature of maize farming in the region, most farmers do not use simple mechanisation (such as land tractors or seed planters) to reduce labour costs (which constitute 51% of farming costs), mainly because of the limited availability and high cost of machinery (the mechanisation penetration rate is a mere 4% across 12 districts and mainly in the form of land tractors).

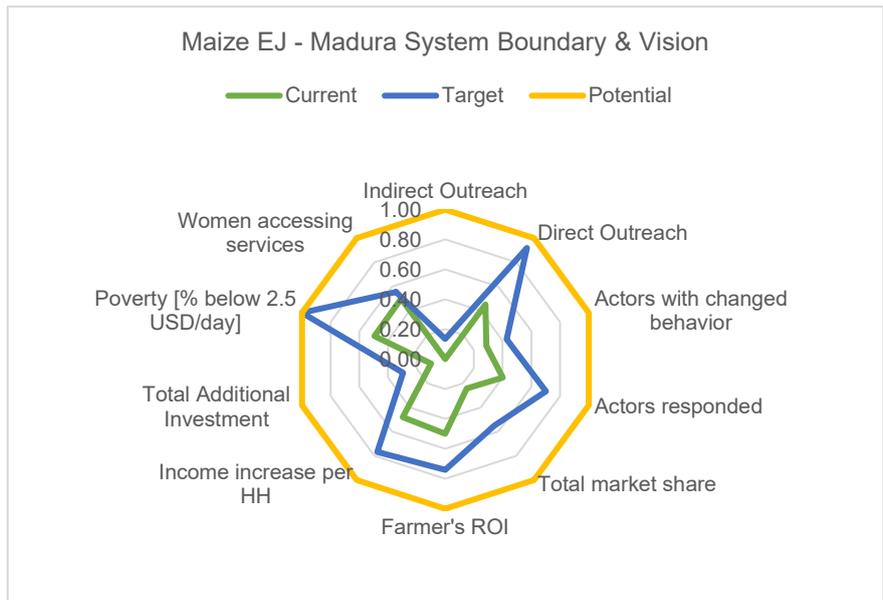
Intervention areas

To address these challenges and constraints, PRISMA will work with partners to:

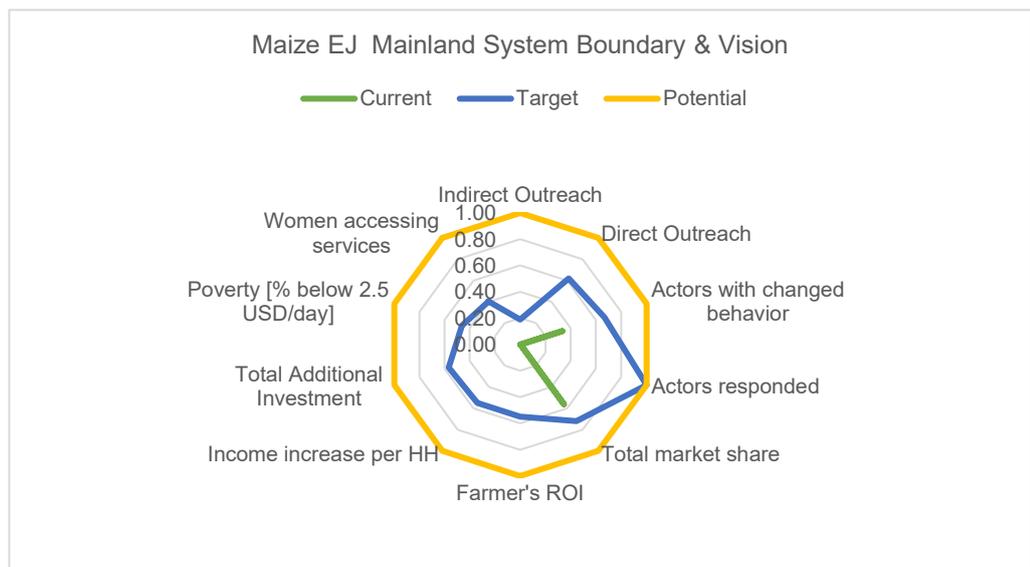
- promote hybrid seed and the relevant GAP;
- optimise inputs (fertiliser, crop protection) and the relevant GAP;
- improve subsidy program policy;
- increase access to irrigation and its services (for grain farmers and seed growers);
- promote appropriate financial products for maize farmers, and
- promote affordable mechanisation (planting machinery, drying and threshing services).

Subsector vision for systemic change

In the second phase of program implementation, PRISMA aims to achieve a greater systemic change in our East Java Maize sector by advocating to more market actors that they revisit the Madura market. Here, the hybrid seed market has reached an estimated 25% of total market and is currently a captive baseline market for other input companies to expand their business on the island. Two seed companies, PT BCA and PT GARS, have started to sell their products in south Madura. The government subsidy will



shift to underdeveloped areas, allowing private companies to expand their business further by developing the initial demand for hybrid seed; at the same time, the relationship between GOI and seed companies will be stronger to sustain production. In mainland East Java, seed companies will produce improved, drought-tolerant varieties, and the market for mechanisation will start to develop rapidly. East Java will produce more maize grain, contributing to supplying the national maize demand gap, currently worsened by the threat of an FAW outbreak in early 2020. By 2023, farmers will be benefiting from



improved farmer access to hybrid seed and the better application of fertiliser, improved pest and disease management, and lower maize farming costs due to mechanisation.

improved farmer access to hybrid seed and the better application of fertiliser, improved pest and disease management, and lower maize farming costs due to mechanisation.

Progress towards subsector vision

East Java, Madura

Adopt

- Syngenta adopted a “Women Front-liner” strategy and expanded its business in Sumenep and Pamekasan;
- It also conducted training for the government extension services to ensure their products are maintained and endorsed as part of the government scheme of work, and
- Corteva expanded its relationship with the Sampang government for subsidy program partnership by building a strong brand presence and distribution channel.

Adapt

- Corteva also acknowledged Sumenep district as a commercial area and expanded its business through the public and private sectors to the mid-north area;
- It adapted PRISMA's gender strategy to the national level;
- It also incorporated a hybridisation strategy used in Madura to develop a new area in Sulawesi, and
- BISI maintained private sector sales in Madura and expanded its extension services to Sampang and Pamekasan.

Expand

- New actors have been crowding into the seed market in Madura since 2017. They continued operations in Madura as the seed business expands and are more ready for smaller scale companies to tap into the market. Seeds promoted by PT Gars (2017), Pertiwi (2018), PT BCA and Dhanaya Seeds (2019) have a growing presence across Madura;
- Eighteen input retailers were established in 2016-17 and have prioritised their stock of maize seeds in response to demand, and
- 67% of canvassers who join the Corteva canvassing program continue to sell inputs actively after the program ended, increasing the availability of hybrid seed.

Response

- District Agriculture Offices of Sumenep and Pamekasan continued minimising the subsidy-free market overlapping area, and are prioritising underdeveloped areas as subsidy areas to increase overall production;
- GAP information from PRISMA seed partners is now continuously applied by government extension services beyond the lifetime of their partnership with the program;
- Government changes the type of seed covered by its subsidy from OPV to dominated hybrid varieties and is confident about allocating the hybrid seed subsidy to more underdeveloped areas, and
- DGW, BASF, FMC and Petro Kimia Kayaku (crop protection companies), and Pupuk Tawon and NPK Mutiara (fertiliser) started conducting joint promotion activities, targeting maize farmers with Corteva and Syngenta seed.

East Java, Mainland

Adopt

- Corteva committed to conducting a market baseline study designed to analyse maize market constraints and opportunities, as well as maize seed performance across the brand.

Adapt

- Based on previous research, Corteva developed a new communication strategy, re-targeting consumer segments by market mapping and developing new seeds which have increased performance to fulfil market demand during the dry season.

■

9.3 Maize NTB

NTB is among Indonesia's top ten maize-producing provinces, in 2018 accounting for 6.8% (2 Mio MTs) of the country's maize production (this compares to the contribution of East Java, the country's leading maize producer, of more than 21% of national production). Although its contribution is small, maize cultivation in NTB has increased rapidly, by more than 200% since 2013. This corresponds to a CAGR of 27.23% between 2014 and 2018. In comparison, the national CAGR was 12.14% during the same period.

Rapid growth in NTB's maize sector was driven by significant increases in the harvested area for maize, and it is estimated that there is an increase in the number of 66,000 new maize farming households. Between

2015-17, there was a 167,000 ha increase in maize farming area and slightly decreased in 2018. Trends in food crop cultivation in NTB indicate that this increase was realised from switching 63,000 ha from other crops (such as soybean, mung bean, cassava and sweet potato) and possibly 104,000 ha from the expansion of the planting area.

The average productivity of maize in NTB is 5.7 MTs/ha – higher than the national figure (5.2 MTs/ha). In some areas, however, productivity remains low; here, new farmers have an average experience of growing maize of less than three years. In West Sumbawa, administratively a new subdistrict separated from Sumbawa Besar, productivity remains the lowest at only 3.9 MTs/ha. Furthermore, in other subdistricts like Lombok Timur, the trend of tobacco farming experienced a significant decrease between 2012 and 2018, with 60% of farmers leaving the industry and switching to planting secondary crops, mainly maize. Both subdistricts share similar challenges, mostly in regard to accessing GAP information and a limited market actor presence in the region.

Challenges and constraints

Although maize productivity in NTB is high, farmers continue to face challenges in their efforts to maximize productivity and reduce cost. These include:

- **Limited affordable options to access bank loans.** The use of hybrid seed requires sufficient supply of other inputs such as fertiliser, agri-chemicals (including herbicide and pesticide) and labour. Poor farmers have little money to support these and limited access to external financial resources. Some farmers rely on moneylenders who provide loans at exorbitant rates of interest.
- **Mechanisation to support agricultural activities has not been widely introduced.** Maize prices vary depending on the physical form in which it is sold: for example, grain is much more expensive than cobs. Particularly in Lombok, farmers do not have access to affordable maize threshing machines or service providers. In addition, the cost of labour is increasing, making the need to use agricultural machinery increasingly important.
- **Maize productivity does not reach its optimum level due to improper application of GAP.** Current yields in West Sumbawa are constrained by farmers' limited access to information on proper input application to maximise productivity. Input suppliers do provide information services; however, their delivery has not been effectively received by farmers.

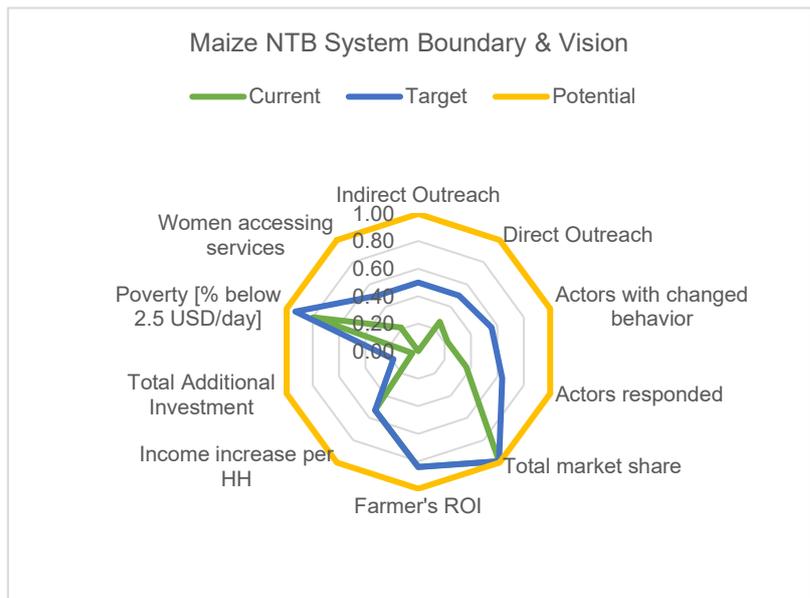
Intervention areas

To address these challenges and constraints, PRISMA will work with partners to:

- promote good quality hybrid seed and GAP in pocket areas;
- optimising fertiliser inputs in more advance sub-districts;
- promote financial products appropriate for maize farmers;
- promote access to affordable on-farm and off-farm machinery and services, and
- facilitate access to irrigation and its services for second planting season.

Subsector vision for systemic change

In the second phase of program implementation, PRISMA aims to achieve a greater systemic change in the NTB maize sector by improving the capacity of seed producers and other input companies to reach out to farmers with GAP training. The government subsidy will transfer to underdeveloped areas, allowing private companies to expand their business further in the market. Off-takers will actively engage with farmers and provide better inputs and farming assistance. By 2023, the maize sector in NTB will be producing more maize due to the use of improved hybrid seed, increased fertiliser use, and better access to mechanisation and ICT, which will reduce costs and improve supply chain effectiveness.



Progress towards subsector vision

The following progress was achieved last semester:

Adopt

- As part of PRISMA's intervention, Corteva is promoting hybrid maize cultivation, particularly in less developed areas, such as among former tobacco farmers in Lombok Timur and some parts of Sumbawa Besar, West Sumbawa.

Adapt

- PT BISI has started to invest more in promoting hybrid seed and other agro chemical products in West Sumbawa.

9.4 Maize NTT

NTT is largely characterised by its drylands and a dry climate; it is Indonesia's twelfth largest producer of maize, contributing 809,830 MTs (2.9%) to national production in 2017⁸. With a greater harvest area than paddy, maize is the most widely grown crop in NTT, engaging 522,612 (62.5%) of all of the province's smallholder farming households⁹. However, growth production is very low, at only 0.9% per year (2010-16)¹⁰. Productivity is just 2.5 MTs per ha, less than half the current national average of 5.23 MTs per ha¹¹. Unlike East Java and NTB, where most of the grain goes to supply milling operations, maize produced in NTT is used mainly for human consumption and for feeding household livestock. Local maize, which is the main variety grown, is popular because of its taste, cooking characteristics, and resistance to pests during storage.

In NTT, PRISMA has focused mainly on the island of Timor, whose five districts are all among NTT's top seven maize producing districts. Limited application of GAP and good handling practices (GHP), use of retained local seed varieties, and limited access to irrigation services are the main reasons for lower productivity here.

At the beginning of 2019, the NTT provincial government began to give special attention to the development of maize in NTT, in response to the feasibility study plan for animal feed mills. In preparation for development of the new crop, the NTT government agriculture office developed a number of programs such as "Plant corn, harvest cows' (Tanam Jagung Panen Sapi, or TJPS). In addition, the national government launched a new program, "Corn Agribusiness Community Movement" (Gema Agung).

⁸ Statistik Pertanian 2017.

⁹ Survei Pertanian antar Sensus (SUTAS) 2018.

¹⁰ Statistik Pertanian Nusa Tenggara Timur 2016.

¹¹ Statistik Pertanian 2017.

Challenges and constraints

Farmers are unable to increase their maize production and productivity for three main reasons:

- **Use of local seed varieties, with very limited GAP and GHP.** Many maize farmers are unaware of the benefits of using improved seed and continue to rely on local seed varieties which provide lower yields. Others are often reluctant to invest in better seed as their limited financial capacity prompts them to wait to obtain government subsidised seed. Moreover, they have the perception that local seed varieties are part of the local heritage and should be kept, erroneously believing that they are more suited for human consumption and more resistant to drought and weevil attack.
- **Lacklustre government subsidies which provide no incentives.** Farmers get free hybrid and open pollinated varieties (OPVs) of seed and subsidised fertiliser from the government. With no training in GAP, many farmers sell the free/subsidised seed and fertiliser, or put it to alternative use. Not only this is unsustainable, it also provides disincentives for the private sector to get involved in supplying these inputs.
- **Farmers experience difficulties in increasing maize production during the dry season in non-irrigated dryland areas.** In NTT, the dry season maize planting area is just 7% of the rainy season planting area, a much smaller percentage than in East Java (58%)¹². Drilling wells to access groundwater is feasible and a good investment, considering that the NTT maize price doubles during the off-season. However, lack of irrigation service providers and the relatively high investment cost act as deterrents to farmers.

Intervention areas

To address these challenges and constraints, PRISMA will work with private sector partners to:

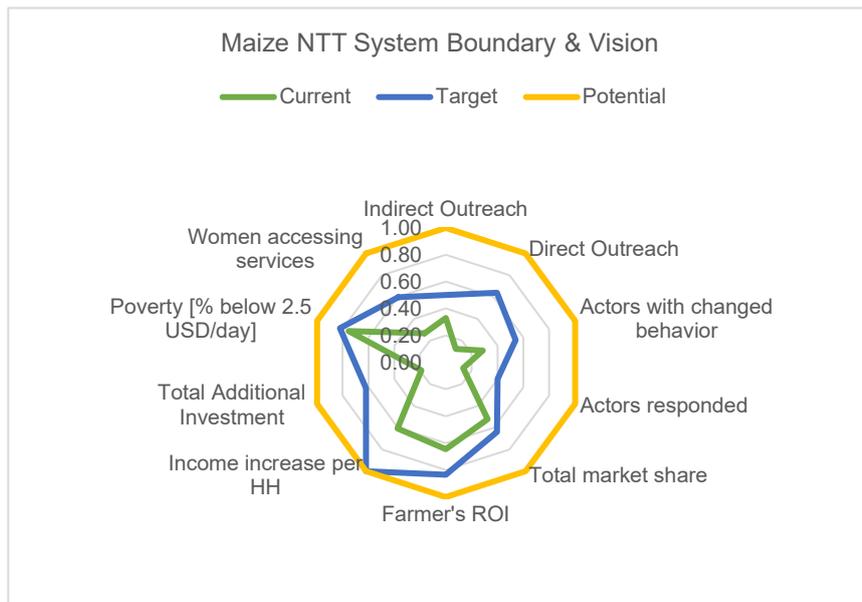
- improve OPV seed production and promotion;
- develop a five-year roadmap for maize NTT;
- promote affordable fertiliser and pesticide;
- promote the use of storage tools;
- promote the use of hybrid seed;
- promote irrigation services, and
- promote the use of machineries.

Subsector vision for systemic change

In its second phase of program implementation, PRISMA aims to achieve a greater systemic change in the NTT maize sector by improving the capacity of key market actors. Seed producers and other input companies will continue reaching NTT farmers with GAP training. The government subsidy will shift to underdeveloped areas, allowing private companies to further expand their business, irrigation service providers will actively promote their services to farmers, and off-taking services will be increasing and creating demand for

¹² Ibid.

commercial maize grain. By 2023, NTT's maize farmers will have increased their production due to improved cultivation techniques and better access to improved seed, fertiliser, tools, irrigation, and grain market.



Progress towards subsector vision

The following progress was achieved last semester:

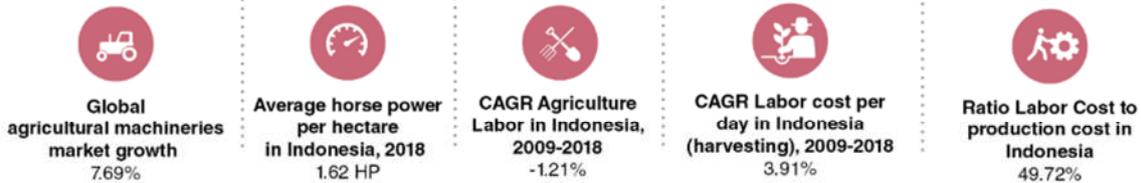
Adopt

- As part of PRISMA's intervention, Corteva continued its promotional activities targeting more advanced farmers to introduce hybrid seed and will focus on developing its market in Timor Island by hiring an additional member of field staff;
- OPV seed producers continue promoting seed in the market, adding a new subdistrict in East Flores, and
- Dinas Pertanian NTT has agreed to focus on 10-20 large nurseries to increase the quality of its monitoring and capacity development. It is currently developing criteria for professional nurseries which will be orientated to the market systems development approach.

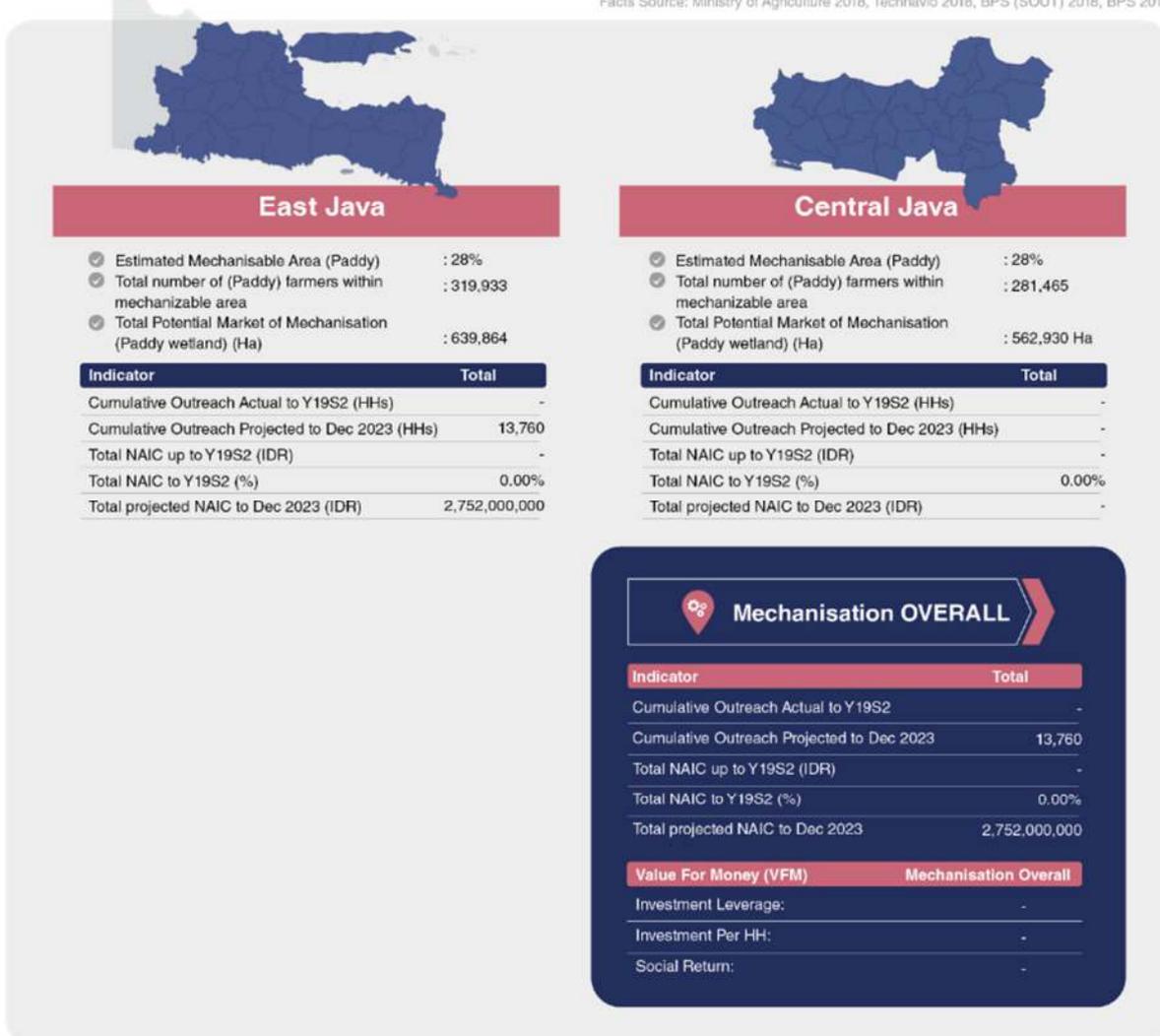
Mechanisation Sector Summary

APAC (Asia and Pacific) region projected as the market leader in the mechanisations that globally expected to grow at 7.69% in 2020. The market driver of mechanisation market are tractors and harvester machineries that accounted for 45% and 17% respectively and are expected to grow at 7.86% and 7.52% in 2020 (Technavio). Indonesia ranks amongst the top country on agriculture land area (Rank 5 based on FAO) that leads to top destination of mechanisation market in Asia. However, the slower adoption in mechanisation is occurred due to constant growth of agricultural labor in the top agricultural producer area (Java Island). Thus, the earlier adoption on mechanisation occurred in the area where labor are scarce i.e. Sumatra Island and Sulawesi Island. The decreasing of labor and increasing the cost of production in Java create opportunity to boost the level of adoption by creating a renting system that enables farmers to use mechanisation within affordable price.

Quick facts:



Facts Source: Ministry of Agriculture 2018, Technavio 2018, BPS (SOUT) 2018, BPS 2019



10.1 Mechanisation – combine harvester Central Java and East Java

Labour costs accounts for up to 51% of total production costs for smallholder farming households. With staple crops such as paddy and maize, planting and harvesting are the highest labour cost categories, together accounting for up to 50% of overall labour costs. In the vegetable sector, the main category of labour cost is at the land preparation stage. High and increasing labour costs are perpetuated by an ageing rural labour market as many of the youth migrate to urban areas in search of job opportunities. In East Java and Central Java, total labour in agriculture CAGR has decreased by 3.49% and 2.92% in 2014 to 2018 respectively, making it difficult for farmers to find labour for their land.

The issue of labour cost and availability can be addressed by agriculture mechanisation, which falls into two categories, (1) large machineries, and (2) small machineries and tools. In East Java and Central Java, approximately 30% of farming areas can be accessed easily by large machineries; about 70% of farming areas are not easily accessible, which presents an opportunity for intermediary technology, such as small agricultural machineries and tools.

The commercial market for large machineries grew 16% in 2016 and is projected to grow at a CAGR of 16% by the end of 2020 (based on internal private sector data). On the other hand, small agricultural machineries and tools have not experienced widespread adoption due to low awareness at the farmer level and limited knowledge customer and local knowledge at the importer level.

Challenges and constraints

Five factors can impede combine harvester adoption:

- **Limited private machine service providers.** Low understanding of the business opportunity and the risk associated with managing an agricultural machinery service business impede the growth of private machine service businesses. This leads to limited access to machinery services at the farmer level. Many manufacturers focus on government procurement instead of the open market.
- **Social norms.** Farmers frequently face a “social sanction” by manual labourers, especially in newly penetrated areas. This can mean that when a farmer starts to use a combine harvester, manual labourers threatened with loss of income protest by showing reluctance to work for the farmer in the future.
- **Low awareness of tools/machineries which are suitable to their context.** Small agricultural machineries and tools are rarely adopted by smallholder farmers, due to a lack of promotion and demonstration by manufacturers and retailers. At the same time, machinery vendors do not demonstrate or supply products suitable for farmers’ needs, due to having limited information about the market and the varying characteristics of smallholder farming households.
- **The absence of an aggregation function to address various characteristics of smallholder farming households.** Small land size, different crops planted in the same planting season, and different planting times are challenges for large machinery penetration. The need for a market aggregation function is therefore crucial for the growth of the mechanisation sector.
- **Market actors’ limited knowledge of tools suitable for farmers.** Machinery must be promoted according to the local context; however, the majority of private sector companies import tools based on their availability in the foreign market. Some of these tools do not match with the local context, making adoption levels of small machineries somewhat slow. It is also difficult to promote small machineries in areas where farmers have varying land characteristics and farming behaviour.

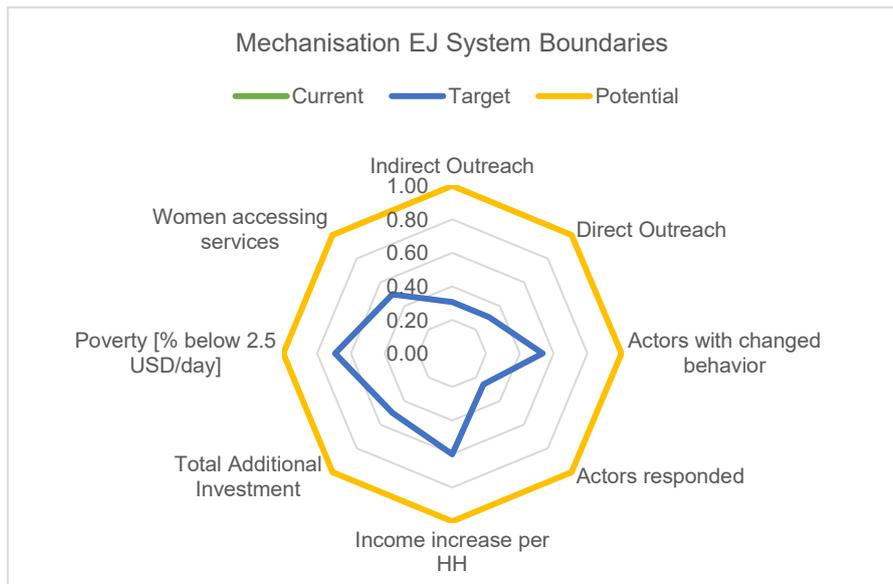
Intervention areas

To address these challenges and constraints, PRISMA will work with private sector partners to:

- innovate marketing activities for relevant large and small machineries to help private sector actors acquire more customers in the open market, and
- introduce business management services for existing machine service providers who encounter challenges in penetrating the market.

Subsector vision for systemic change

PRISMA aims to improve farmer access to small and large machinery services in East and Central Java, leading to a more efficient farming process and reduced production costs. To achieve this, PRISMA will support manufacturers to develop a better customer segmentation and targeting strategy, distribution model/network, service user demand activation, and aftersales services, which will lead to overall increased sales.



PRISMA also aims to assist in the development of supporting functions in the mechanisation market system, namely a one-stop service for machinery business management. This will allow for machines' higher utilisation and economies of scale, reducing the overall risk of investment for machine owners. These market improvements are expected to lead to a new segment of machinery service providers (MSPs) entering the market, due to the creation of a better understanding of machine service business potential and better access to machines. This will be alongside the current MSPs continuing to provide services and expanding their service area (and potentially adopting more advanced technology).

Progress towards subsector vision

In the second semester of 2019, we observed following activities and progress towards systemic change:

Adopt

- PT Rutan integrated market research into its marketing strategy in its target area in East Java, and developed more customer-centric marketing strategy.

11. MUNG BEAN

Mung Bean Sector Summary

Mung bean is an important crop in Indonesia, having high nutrients and ability to endure dry soil. Domestic consumption in 2018 is projected around 277 thousand MT (experiencing 2% decline annually). Mung bean production in Indonesia has been declining almost 3% annually (projected 235 thousand MT in 2018) with relatively low in productivity (1.1 MT/Ha in average) compared to high yield varieties (1.7 up to 2 MT/Ha), making Indonesia the 6th largest mung bean importer in the world. The national production has yet to fulfil the demand for mung bean consumption, especially for food processing industries who dominates the domestic consumption. PRISMA has identified a clear opportunity to increase mung bean production, productivity, and quality through commercializing high yield/certified mung bean seed varieties and promoting the use of GAP.

Quick facts:



Total production
235,000 MT



Total harvested area
198,000 Ha



Total Productivity
1,188 Kg/Ha



Demand
-2%*

Facts Source: Statistik Pertanian 2018, Sensus Pertanian 2013
*) Projected from BPS data of mung bean consumption by CAGR



East Java

- ✓ Total Provincial Production (MT) : 46,925
- ✓ Total provincial harvested area (Ha) : 39,247
- ✓ Total farm households in the sector : 233,996

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	8,059
Cumulative Outreach Projected to Dec 2023 (HHs)	11,464
Total NAIC up to Y19S2 (IDR)	3,975,648,736
Total NAIC to Y19S2 (%)	33.50%
Total projected NAIC to Dec 2023 (IDR)	4,741,971,103



Central Java

- ✓ Total Provincial Production (MT) : 112,162
- ✓ Total provincial harvested area (Ha) : 90,411
- ✓ Total farm households in the sector : 258,455

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	32,990
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	17,740,658,529



NTT

- ✓ Total Provincial Production (MT) : 6,157
- ✓ Total provincial harvested area (Ha) : 9,914
- ✓ Total farm households in the sector : 54,642

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	761
Cumulative Outreach Projected to Dec 2023 (HHs)	761
Total NAIC up to Y19S2 (IDR)	400,840,008
Total NAIC to Y19S2 (%)	41.23%
Total projected NAIC to Dec 2023 (IDR)	400,840,008



Mung Bean OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	8,820
Cumulative Outreach Projected to Dec 2023	45,215
Total NAIC up to Y19S2 (IDR)	4,376,488,744
Total NAIC to Y19S2 (%)	30.98%
Total projected NAIC to Dec 2023	22,883,469,639

Value For Money (VFM) Mung Bean Overall

Investment Leverage:	0.30
Investment Per HH:	AUD 148.13
Social Return:	0.33

11.1 Mung bean – Central Java

Central Java is the largest mung bean producer in Indonesia, accounting for around 40% of national production. After paddy, it is one of the main crops for most farmers in Central Java, accounting for around 258,000 farming households in this province, even though domestic production is experiencing a decline of around 3% annually (Setjen Pertanian, 2014-19). Productivity in Central Java alone is 1.18 MTs per ha, slightly higher than national productivity (1.15 MTs per ha) but still lower than other provinces (South Sumatera, West Sulawesi and Gorontalo). This can be increased by the application of high yield varieties, which have the potential to increase production up to 2MT/ha.

In Indonesia, mung bean consumption is increasing by 6.45% annually (2014-18) according to Setjen Pertanian data; national production has yet to fulfil demand, resulting in high annual imports (104,000 MTs in 2018). Considering the high number of poor smallholder farming households working in the mung bean sector and the availability of input market actors, Central Java has a very high potential to increase both its production and productivity to meet national demand.

Starting in 2019, PRISMA has been working with seed companies in Central Java to (1) promote the use of certified mung bean seed, and (2) increase farmer awareness of the benefits of applying GAP in their cultivation process, to increase both production and productivity, with a potential decrease in mung bean imports.

Challenges and constraints

There are several reasons why the mung bean sector in Central Java is unable to increase its productivity and production:

- Mung bean farmers in Central Java do not use high yield and uniform harvest mung bean seed varieties. Most smallholder farming households use retained/uncertified seed, considering it more accessible and affordable. However, local seed varieties usually produce a lower yield needing multiple harvests, with a potential higher investment in labour costs. Farmers lack awareness of good quality varieties due to the limited number of seed producers in Central Java.
- **Mung bean farmers in Central Java do not apply proper GAP** due to their very limited access to GAP information, exacerbated by the traditional perception of most farmers that mung bean will grow without GAP. Mung bean is currently not a government priority program, and public extension service providers focus only on staple crops. Moreover, there is only a limited government budget allocated to incentivising extension services to disseminate GAP information for farmers.

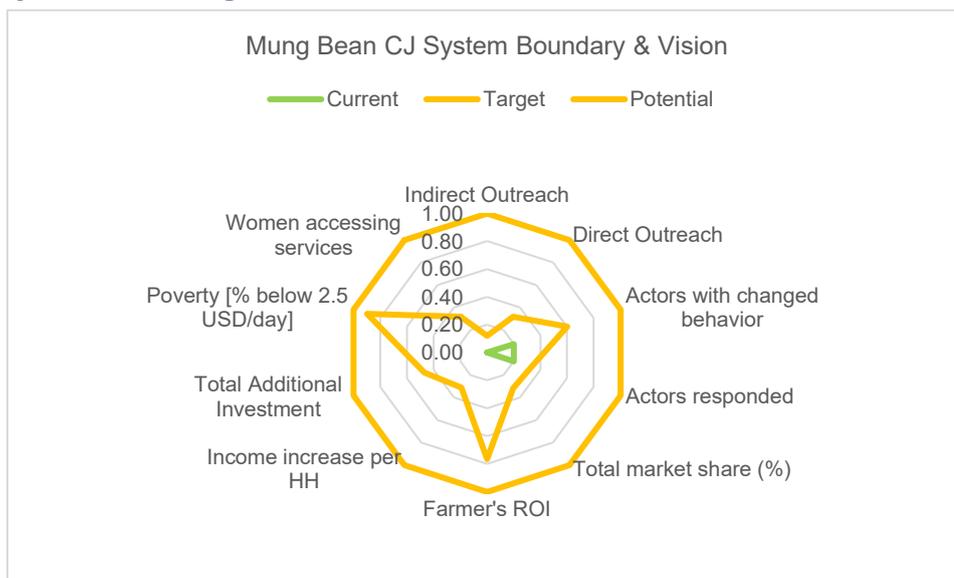
Intervention areas

To address these challenges and constraints, PRISMA is working to:

- collaborate with private sector seed nurseries to produce a higher quality of mung bean seed and to increase farmer awareness of the correct application of GAP;
- facilitate partnerships between seed research institutions (such as Balitkabi) and the private sector to provide capacity building to seed producers (farmers) to produce better quality mung bean seed, as well as to ensure the timely availability of foundation seed, and
- initiate multi-stakeholder discussion to explore potential collaboration with other market players (both private and public sector) to increase market player awareness of the mung bean industry.

Subsector vision for systemic change

PRISMA aims to establish a better mung bean seed market and GAP awareness by improving the capacity of key market actors. Seed producers and agri-input kiosks will actively promote certified/good quality varieties of mung bean seed and the importance of GAP. By 2023, up to 50,000 smallholder mung bean farming households in Central Java will experience income



increase due to higher productivity, as well as better access to and knowledge of certified mung bean seed and GAP. This intervention has the potential to substitute imports for mung bean.

Progress towards subsector vision (Central Java and East Java)

Adopt

- EWINDO and CV Semi are producing a certified, high quality variety of mung bean seed (Vima 1); CV Semi also produces Vima 2 and Vima 3 varieties. Both continue to follow the business model that PRISMA promoted in its first intervention phase.
- EWINDO underwent the legal process needed to expand its business to food crop seed production.

Adapt

- CV Semi, independently of the program, has applied for a licence to produce the Vima 5 seed variety;
- Again independently of PRISMA, it is serving the untapped market in NTT through the government subsidy program;
- EWINDO has included mung bean in its Anoxia storage trial, and
- has also conducted a trial to propose an expiration date extension with LSSM/MOA.

Expand

- An additional mung bean seed nursery (PB Utama) entered the mung bean seed market by copying the business model from CV Luwes (a PRISMA first-phase intervention partner).

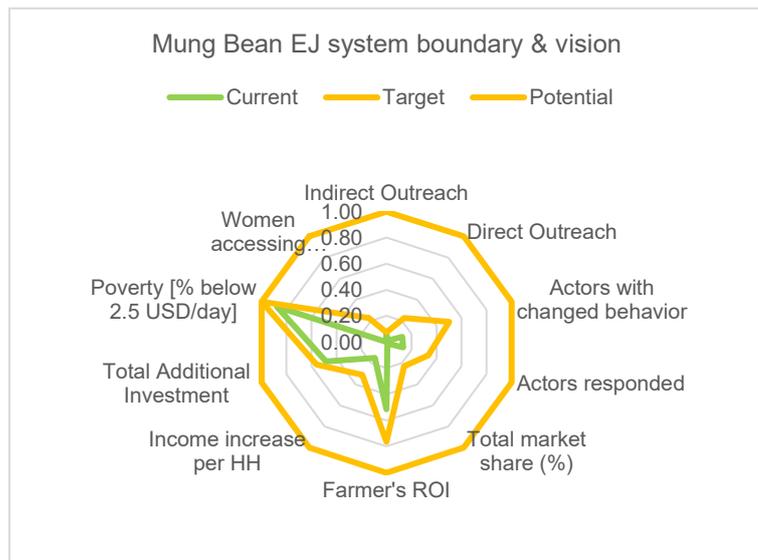
Respond

- BPATP assisted a private nursery (CV Semi) by providing it with a licence to produce high yield mung bean seed varieties.

11.2 Mung bean – East Java

East Java is Indonesia's second largest producer of mung bean; together with the largest producer, Central Java, the two provinces accounted for 68% of Indonesia's total production of mung bean in 2018. East Java has around 233,000 mung bean farmers, roughly half of whom are in Madura, while the rest are spread throughout 30 or more districts. Since 2008, mung bean production and its cultivation area has decreased in East Java, with only a slight increase in productivity, which is currently at 0.8 MT per ha.

Mung bean is rich in easily digestible protein and other nutrients. It adds nitrogen to the soil, requires less water and has a short crop duration, which results in wide usage for crop rotation, particularly among poorer farmers. It is cultivated as an attainable interval cash crop in the dry season due to its low maintenance and production costs. Farmers in East Java have the potential to increase mung bean productivity without significantly raising production costs. There is viable scope for import substitution, due to escalating domestic and international demand coupled with the rising sale prices witnessed over recent years.



Challenges and constraints

The major challenge to mung bean farmers in East Java is low productivity, and the main reasons for this are:

- **Lack of commercial production and distribution of quality mung bean seed.** Seed producers are reluctant to instigate production as they are not assured of demand and profit.
- **Lack of information about better cultivation practices,** improved seed and inputs, and the overall potential of mung bean as a more profitable cash crop. No information is actively supplied by any actor in the market.
- **Mung bean is not considered a nationally important crop** according to the government development strategy; as a result, extension services (which function with limited knowledge and resources) do not focus on it. Nevertheless, there is a growing interest in it from government, as witnessed by several local government mung bean seed subsidy programs; this is likely to have a positive impact upon the availability of information on mung bean market demand.
- **Mung bean requires a large amount of labour during the harvesting period,** which affects farmers' willingness to plant more mung bean because of the higher investment required.

Intervention areas

To address these challenges and constraints, PRISMA is working with partners to:

- promote high-yielding varieties of mung bean seed and GAP application through partnerships with seed companies. High-yielding varieties will allow farmers to produce mung bean that have higher yields and a uniform harvest;
- develop new and high-yielding varieties of mung bean seed which match end market demand, by linking seed companies with research institutions, and
- initiate multi stakeholder discussion to explore potential collaboration with other market players (both private and public sector) to increase market player awareness of the mung bean industry.

Subsector vision for systemic change

By 2023, PRISMA aims for up to 20,000 male and female mung bean farmers in East Java to have increased their productivity and quality by having access to quality mung bean seed. It will achieve this through assisting seed producers in developing their business portfolio and increasing their turnover by applying an effective marketing strategy to sell certified quality mung bean seed and educatee farmers in GAP. Mung bean seed producers will be collaborating with research institutions and off-takers to create mung bean seed varieties which best meet end market requirements. This will result in mung bean farmers producing and selling a higher quantity of mung bean at a higher end-price, and off-takers increasing their supply from local sources.

12. PEANUT

Peanut Sector Summary

Indonesia is the 14th largest peanut producer which contributes to 1.0% of global production share. Its production has been falling in 2014-2018 period, with 5.4% CAGR, due to declining in harvested area. Indonesia's peanut productivity is 1.3 ton/ha, which is relatively low compared to global level average. Despite its relatively low production, Indonesia is ranked as the 5th largest peanut consumer, which indicates its heavy reliance on import, putting Indonesia in the second top importer in the world. The top producers of peanut in Indonesia are mostly located in Java island, with East Java leading the production with 29% share in 2018, followed by Yogyakarta. Local producers are still unable to fulfill the growing demand from industrial food processors, therefore, there's a clear business opportunity to increase domestic peanut production volume and quality.

Quick facts:



Total production
512.198 MT



Total harvested area
372.915 Ha



National productivity
1.373 MT/ha



Demand
-1.6%

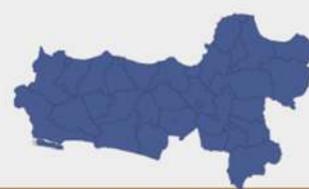
Facts Source: Statistik Pertanian 2018, Sensus Pertanian 2013



East Java

- Total Provincial Production (Ton) : 150.180
- Total provincial harvested area (Ha) : 116.087
- Total farm households in the sector : 476,725

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	1,209
Cumulative Outreach Projected to Dec 2023 (HHs)	3,392
Total NAIC up to Y19S2 (IDR)	2,363,117,160
Total NAIC to Y19S2 (%)	56.30%
Total projected NAIC to Dec 2023 (IDR)	6,105,583,858



Central Java

- Total Provincial Production (Ton) : 94.291
- Total provincial harvested area (Ha) : 65.164
- Total farm households in the sector : 268,858

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	-
Cumulative Outreach Projected to Dec 2023 (HHs)	2,830
Total NAIC up to Y19S2 (IDR)	-
Total NAIC to Y19S2 (%)	0.00%
Total projected NAIC to Dec 2023 (IDR)	4,995,610,567



NTT

- Total Provincial Production (MT) : 10,082
- Total provincial harvested area (Ha) : 11,581
- Total farm households in the sector : 48,793 HHs

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	1,340
Cumulative Outreach Projected to Dec 2023 (HHs)	1,340
Total NAIC up to Y19S2 (IDR)	1,637,253,720
Total NAIC to Y19S2 (%)	52.72%
Total projected NAIC to Dec 2023 (IDR)	1,637,253,720



Peanut OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	2,549
Cumulative Outreach Projected to Dec 2023	7,562
Total NAIC up to Y19S2 (IDR)	4,000,370,880
Total NAIC to Y19S2 (%)	54.11%
Total projected NAIC to Dec 2023	12,738,448,144

Value For Money (VFM)	Peanut Overall
Investment Leverage:	0.07
Investment Per HH:	AUD 847.63
Social Return:	0.19

12.1 Peanut – Central Java and East Java

From 2014-18, Indonesian peanut production declined at the rate of 5.4% CAGR, before experiencing a slight increase in 2018. The decrease was due mainly to the increased maize subsidy in recent years, making it a more profitable crop alternative. Nationally, the top peanut producers are mostly located in Java Island, whose provinces makes up the top four producers' combined production share of 76%. East Java leads national peanut production, with a 29% share in 2018, followed by Yogyakarta and Central Java.

In Central Java, productivity levels have remained relatively stagnant over the past five years, at between 1.3 and 1.4 MTs per ha for its 268,858 farmers. East Java, which is home to 476,725 farming households, has consistently surpassed average national yields since 2011. Its productivity remains low compared to other top producers such as West Java (1.85 MTs/ha in 2015; an average of 1.63 MTs/ha from 2012-16) and Central Sulawesi (an average of 1.60 MTs/ha). There is a market opportunity to expand peanut production in these provinces to meet the growing demand from industrial food processors, who are looking to expand their procurement of local peanut.

Challenges and constraints

Despite its market potential, peanut farmers are unable to obtain substantial profits due to the following constraints:

- **Most farmers sell peanuts at the wet pod stage and sell direct from the farm gate, preventing them achieving profit from value addition.** This practice originated decades ago, making GPP uncommon among farmers. In addition, peanuts are always absorbed by the market, and at the trader's end, as any form and quality of peanut is marketable, there is no incentive for them to provide embedded services to farmers.
- **Farmers typically obtain peanut seed through three main channels:** (1) retaining seed from the previous harvest; (2) purchasing seed from collectors, traders or neighbours, and (3) planting a small quantity of peanut alongside their primary crop during the rainy season as a source of seed, **instead of using certified seed.**
- **Large processors now pay more attention to taste and are therefore starting to look for local kernel sources from previously imported peanuts.** However, most do not have GAP, GHP or GPP capability, and have limited staff, as their core competences are in trading or manufacturing. This is particularly so with large processors, who only interact with district suppliers when sourcing peanut.
- **Peanut is not a government priority crop; as a result, allocation of public extension services is limited.** In addition, no specialty input product for peanut exists, meaning that private input companies also provide no extended services to peanut farmers.

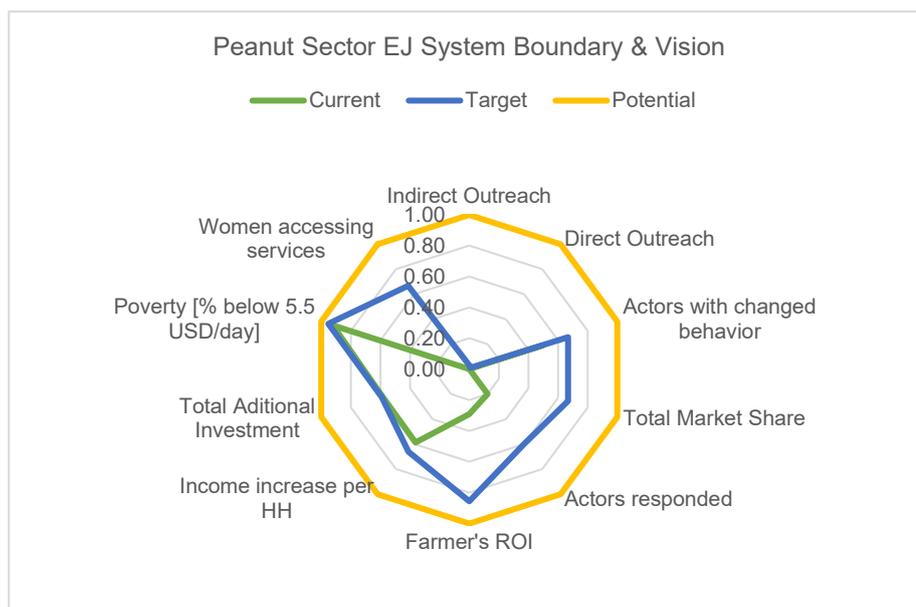
Intervention areas

To address these challenges and constraints, PRISMA is working with partners to:

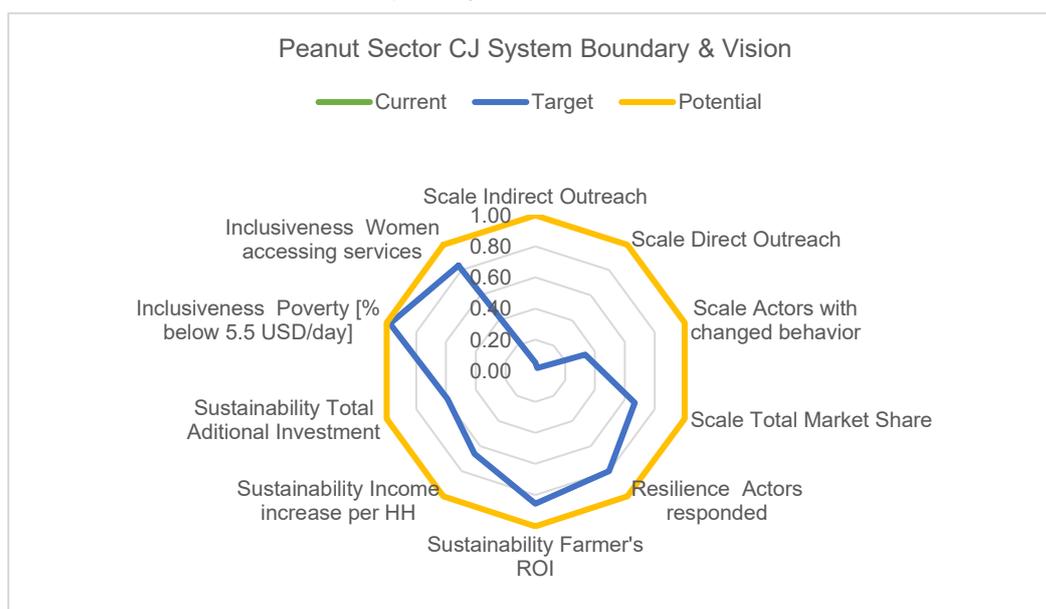
- promote peanut off-taking partnerships, and
- promote good quality seed for peanut production.

Subsector vision for systemic change

Building on learning from the experience of the last phase, PRISMA Phase 2 is focusing on providing strategic advisory services for peanut processors to enable them to expand their business and source locally to slowly substitute imports. We will also introduce farmers to advanced processing methods to add more value to their selling price. By 2023, men and women farmers in both provinces will benefit from a more profitable price. Food



processors will also be better-informed on sourcing locations and factors affecting supply quality. Their technical capacity in terms of peanut GAP and GPP will also have improved by partnering with external partners. By the program's end, seed nurseries will be operating profitably in the market, with better location targeting; they will be informed of the commercial opportunity of the seed market, and well-connected with the existing network established in PRISMA's primary intervention.



Progress towards subsector vision

In the first phase, PRISMA conducted interventions in the East Java peanut sector to promote good quality seed for peanut production and GAP, particularly in crop protection. However, neither intervention yielded significant impact, due to the high initial cost of capital required to be made by nurseries and farmers (peanut cultivation requires 100-110kg seeds per hectare, the highest out of all food crops), and partner Balitkabi's lack of commercial objectives. The second intervention partnered with private sector companies, PT BASF and Syngenta to introduced seed treatment, selective herbicides and other agro-chemical products. Since June 2019, PRISMA has been working together with GarudaFood to promote peanut off-taking partnerships in East Java and Central Java, where farmers can sell their harvest to GarudaFood and obtain a fairer and more certain price. As this is a comparatively new intervention, **progress towards achieving the Peanut CJ and EJ subsector vision is yet to be seen.**

13. PIGS

Pigs Sector Summary

The recent African Swine Fever outbreak in China decreased the pig population in the country by over 10%. With the largest pig population in the world, this sudden drastic decrease is affecting the global market as more countries are affected creating a gap in the market to be fulfilled. In Indonesia, pork production has increased by 4.5% annually since 2000 and is mostly influenced by feed prices and disease management. NTT with the largest pig population in Indonesia, has the opportunity to improve the overall pig production. Based on an assessment of the pig market system in NTT revealed that farmers were using traditional methods, including local breeds, traditional feed, and minimal pharmaceutical inputs which results to long rearing period - up to 2 years. Furthermore, the sector has the potential to improve the livelihood of farmers in NTT since pigs are considered valuable assets within local communities and an estimated 85% of the pig population in NTT is managed at smallholder farmers level.

Quick facts:



Facts Source: Statistik Pertanian 2018, PRISMA Observation and Impact Assessment



13.1 Pig – NTT

NTT has the largest pig population of any of Indonesia's provinces; its 1.8 Mio pigs account for 23% of the national pig population. An estimated 85% are managed by around 900,000 smallholder farmers, rearing an annual average of two pigs per household. The development of the pig sector is driven by its cultural and religious significance; about 92% of NTT's 5.4 Mio inhabitants are non-Muslim and generally considered to be pork eaters. Despite having the country's largest pig population, the overall production and market is underdeveloped. A pig is normally slaughtered at around 100 kg, a weight which can be achieved at eight months if farmers use a good breed with good rearing practices. However, a PRISMA assessment of the pig market system in NTT revealed that farmers were using traditional methods, including local breeds, traditional feed, and minimal pharmaceutical inputs, resulting in a rearing period of up to two years.

Challenges and constraints

Farmers are unable to increase their pig productivity for these following main reasons:

- Use of low-quality local breeds instead of high-quality breeds.** The high prevalence of low quality breeds in NTT is due to interbreeding (which leads to the low productivity of sows), high mortality rates, low weight gain, and the overall poor health of piglets. Furthermore, sourcing from good quality

suppliers is hindered by policy, as it is imported from other provinces and the AI process is at the initial stage of using warm fresh boar semen and fresh semen production, and processing is not yet developed in Indonesia. Both the public and private sectors lack capacity to produce semen from good boar, and knowledge regarding processes, dilution, labelling, storage and cold chain maintenance in semen transportation, and multiplication to cover a wider scale. As a result, there is a very limited availability of services, and only warm fresh boar semen AI available.

- **Use of traditional feeding practices.** Many farmers use traditional feeding practices which are time-consuming and are of low nutritional content, leading to low daily weight gain and increased risk of disease. They also apply minimum animal health products (vitamins, supplements, vaccines) and poor rearing practices (breeding, and pen and waste management), which increase health risks and lower pig survival rate.
- **High incidence of epidemic diseases causing slow weight gain and even death.** Lack of farmer access and willingness to apply health products, and information on how to use them, as well as poor application of biosecurity, can hamper pig growth due to sickness or death. The incidence of classical swine fever (hog cholera) in recent years and the looming threat of ASF need to be addressed if farmers are to avoid the circumstances that create these. Moreover, in the field of animal health, pharmaceutical companies have yet to prioritise pig health products, resulting in a limited product range available in the market, poor distribution networks, and only available in large pack if it is available at all. Moreover, a majority (>90%) of pig rearing is **backyard system with low biosecurity level, poor hygienic and feeding practice**, posing clear disease challenges.
- **Unhygienic and underdeveloped live pig and pork end markets, causing a limited market for pig meat.** When pigs are ready to sell, there are only a few markets where they can sell their products as the processing business is very limited. While smoked pork (*seri*) is widely available in Kupang and Timor Island, this is not apparent in other NTT islands. In NTT, the demand for continuity of pork supply is still very low, and live pig demand is highly dependent on religious and cultural ceremonies (95% in Flores, 98% in Sumba, 68% in Timor). Live pig trading also exists, but there is no certainty of when to sell, and negotiating terms is often challenging.

Intervention areas

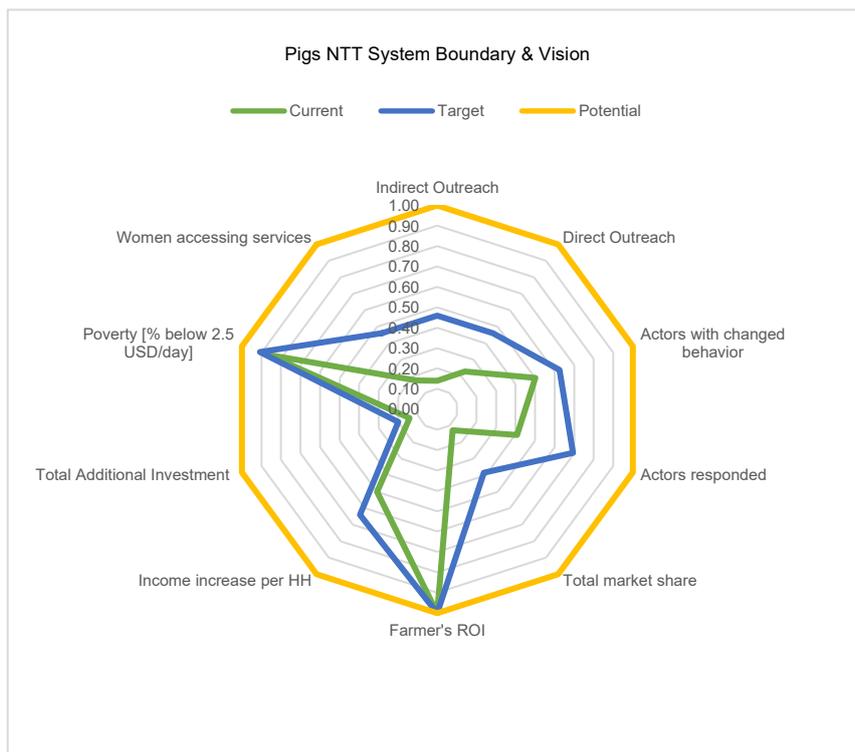
To address these challenges and constraints, PRISMA is working with public and private partners to:

- develop a NTT breeding strategy to include improved breeds and an efficient breeding system by replenishing breeding stock, breed management and establishment of selection mechanism to produce superior sires of different promising breeds for both natural insemination, and for semen extraction to facilitate fresh semen AI at a wider scale;
- improve good husbandry and health management (to ensure GHP) by building the capacity of farmers and ISPs in pig animal husbandry (breeding, rearing, feeding) and health management practices to reduce the risk of disease and the pig mortality rate;
- develop and disseminate strategy on ASF preparedness, prevention and response in collaboration with provincial and district governments;
- improve traditional feed and feeding practices by using complete feed, concentrate, additives and/or supplements to help boost pig productivity;
- promote linkages between farmers and higher end markets, increase pig absorption from the commercial pork market by linking farmers/pig producers with buyers, and facilitate capacity building for butchers, processors and the end market, including promotional activities/services, and
- promote an enabling environment by organising public-private dialogue, breeding/pig and pork development strategy development and its implementation, humane and hygienic breeding, rearing, transportation and slaughter, for the overall development of pig and pork industry in NTT.

Subsector vision for systemic change

In this second phase of program implementation, PRISMA is aiming to achieve an income increase for a minimum of 250,000 smallholder pig farming households (26.7% of NTT's total of 935,000) by 2023. This will be achieved by providing farmers with access to and information about improved pig breeds and breeding system, quality feed and balanced feeding practices, use of biosecurity measures, animal health and pharmaceutical products, good pig husbandry practices, linkages to downstream markets, and a favourable regulatory environment.

In addition, key upstream actors (including feed producers, pharmaceutical producers, breeders) and downstream market actors (including micro slaughter houses, butchers, restaurants) will continue activity in existing markets, achieving profits and actively expanding their business to reach smallholder farming households in new areas. Pig breeding centres will continuously provide quality breeds as well as AI services to farmers to establish a sustainable breeding system in the market. The increase in better production of piglets at the farm level will stimulate the growth of downstream market actors (including traders, abattoirs, processors) and improve their skills and capacity. In addition, policymakers will continue to create a conducive business regulatory environment to support sector growth.



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Progress towards subsector vision

Adopt

- Partners produced feed and develop distribution channels to remote areas, and conducted promotional activities around commercial feed and good rearing practices;
- Partners developed capacity building for agents, sub-agents and lead farmers, assigned their extension staff to support agents in their marketing efforts, and provided technical and animal health advice to farmers;
- Partners imported better quality breeds, and provided AI services and better information and knowledge about good breeding practices;
- Partners bundled better breeds of pig/piglets and feed;
- Partners implemented activities in other areas;
- Government launched ASF emergency and preparedness strategy,
- Provincial and districts husbandry agency led ASF socialisation and conducted training for farmers, veterinary staff, quarantine staff, and country border officers.
- Partners developed biosecurity SOPs.

Adapt

- Feed companies established feed warehouses in NTT to store their buffer stock feed and to smooth out irregularities in the supply of feed from Java;
- Partners produced different types of feed to suit farmer preference, repacking it in smaller (10 kg) packages, making it more affordable for smallholder farming households and easy to transport to farmers in remote areas.
- Partners sourced high quality pig stock from Java Island and provided better quality seed stock to farmers.

Expand

- Other feed companies (that is, competitors) entered the market;
- Number of feed retailers increased;
- Veterinary services were bundled with AI services;
- New breed companies entered the market, and
- Breeding farms in other areas (e.g. Bali, North Sumatera, North Sulawesi) developed biosecurity SOPs.

Response

- Feed was bundled with better breed and animal pharmaceutical products;
- Partnerships were built between breeding farms and smallholder pig fatteners with restaurants to secure a supply of pork;
- Partners promoted the use of animal pharmaceuticals;
- Government created and promoted a conducive regulatory environment for the importation of semen or live pigs from other islands, and
- Private or government pharmaceutical research centre explored the development of an ASF vaccine.

14. POULTRY

Poultry (Local Chicken Focused) Sector Summary

Poultry meat is the largest growth contributor in the animal protein market globally and nationally. The number of poultry farmers is also the highest which accounts for 39% of total livestock farmers. Majority of chicken farmers rear local chicken, which has low productivity due to lack of knowledge and skill in good poultry husbandry practice. Ayam Kampung Asli is the real native chicken breed in Indonesia. Farmers still rear them traditionally in their backyard using local sourced feed, which results in long rearing period and high harvest price. Furthermore, there is still unfulfilled demand for real local chicken that is hard to fulfil due to long rearing period and low supply.

Quick facts:



Total production
310,959,951



Total National Production
313,800 Ton

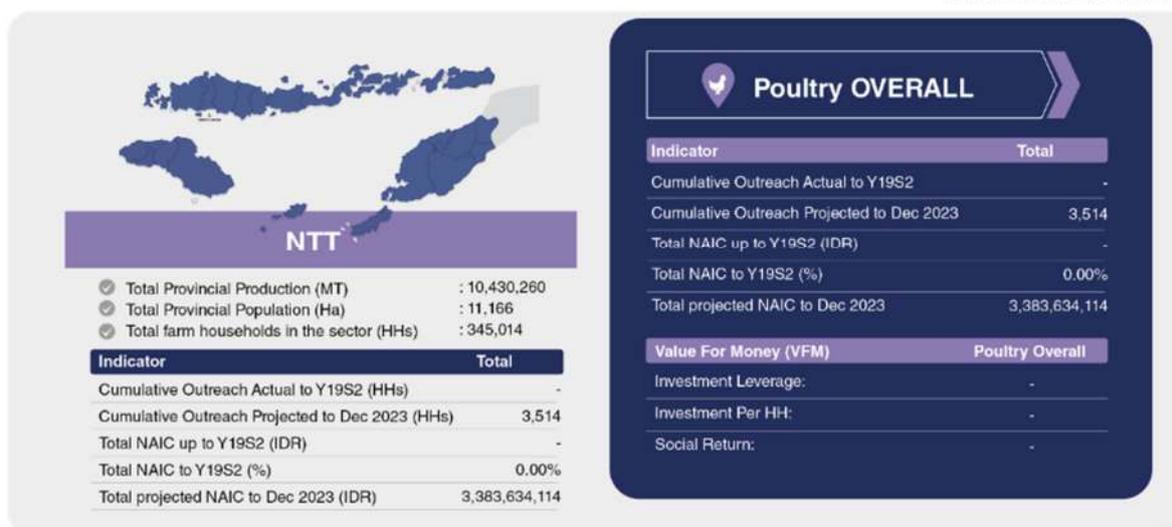


National Consumption
0.78 kg/head or kg/capita



Demand increasing
25%

Facts Source: Statistik Pertanian 2018



14.1 Poultry NTT

There is a demand gap for chicken meat and eggs in NTT, with around 70% being imported from Java and Bali. There is just one broiler hatchery in NTT, owned by Charoen Pokphand in Kupang; another is planned for Nagekeo, Flores. The number of broiler farmers in NTT remains small compared to Java, with around 120 in Timor Island producing less than 250,000 chickens each month. The price of chicken meat and live birds is also considered high in NTT, at times being double that of Java.

Given the high price and lack of local supply of broiler chickens, farmers of local chicken continue to rear poultry only for household consumption. A few local poultry farmers also target bulk buyers, such as restaurants. These farmers tend to buy adult chickens to breed with their own birds, and there is no supplier for high quality local chicken in NTT, unlike in Java. BPTP Kupang is the sole research centre breeding KUB chicken¹³; however, its capacity is too low to provide a constant supply of KUB DOC.

Currently, chicken production is one of the government's main priorities to address health and nutritional issues, such as stunting among infants and children under five in NTT. Chicken meat and

¹³ Kampung Unggul Balitnak (or 'Balitnak's superior kampung' chicken), bred and so-named by BPTP, the Indonesian Animal Research Centre.

eggs are widely considered by a source of affordable animal protein for the eradication of stunting in infants and children under five, providing a potential opportunity for the growth of local chicken farmers.

Challenges and constraints

The major challenges and constraints faced by the poultry sector in NTT are:

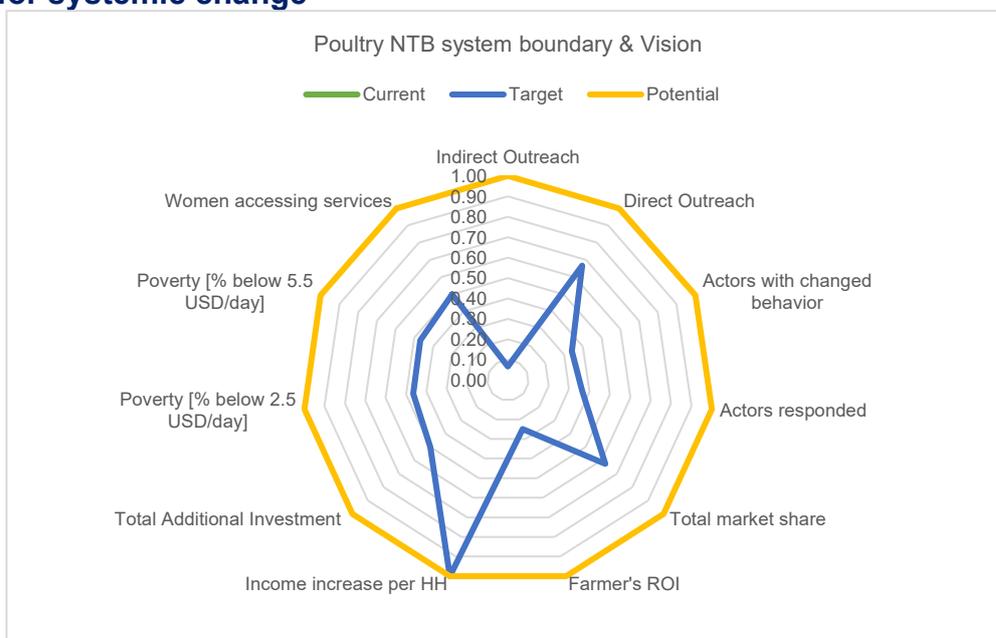
- **Chicken carcasses and egg supply, especially of broiler, in NTT are still limited.** Opportunities therefore exist to improve the supply.
- **High production risk at the farmer level** due to the exposure of transmitted disease, poultry cannibalism, and the chickens' vulnerability to stress. Farmers need to start at a large scale due to the small profit margin per chick and high initial investment and, as part of the production process, need to master advanced rearing practices in order to minimise loss.
- **Ineffective rearing practices leading to increased loss or lower income** unless the farmer is involved in contract farming.
- **Lack of DOC and feed supply**, as there is only one broiler hatchery in NTT and no accessible high-quality feed miller. DOC are imported from Java, doubling costs because of high transportation costs, and the feed supply is unstable because of resellers' reliance on stock from Java.
- **High prices of DOC and feed caused by high transportation costs.** The capacity of local hatcheries currently cannot cope with DOC demand, so they continue to rely on imports from Java. This creates a domino effect, as the feed price is impacted by maize imports, currency fluctuations, and the global maize price, while the input price (that is, of DOC) is highly affected by feed price.

Intervention areas

To address these challenges and constraints, PRISMA will facilitate market promotion of high-quality local chicken (KUB chicken) from Java to NTT, embedded with promotion of green feeding and market linkage with feed and pharmaceutical suppliers. Better quality local chicken breeds can trigger efficiency in local chicken rearing and reduce carcass price in the market.

Subsector vision for systemic change

PRISMA aims to improve the income of at least 10,000 poultry farming households (6.7% of 150,000 potential poultry farmers in NTT) by facilitating their improved access to high quality input, GRP, and market information. It will achieve this through an increase input supply from hatcheries, feed producers, pharmaceutical



companies and effective downstream markets, enabling farmers to rear and sell more chickens in a supportive regulated environment and with the relevant government permits.

Progress towards subsector vision

Adopt

- PT Sumber Unggas Indonesia (SUI) has been selling DOC in NTT through established agents and training events.

Adapt

- PT SUI has been exploring the development of a marketing strategy through online channels such as Facebook, WhatsApp groups and e-commerce.

Expand

- There have been no signs of systemic change, as the partner is still in the process of implementing the business model effectively.

Respond

- DOC agents have started to sell single DOC (that is, not boxed) aged one week to one month to accommodate farmers who have expressed concerns about the DOC's vulnerability and price.

15. RICE

Rice Sector Summary

Indonesia is the 3rd largest rice producer as well as consumer in the world, only behind India and China. This is hardly surprising, looking at the population size and the percentage of people who see rice as staple food. Indonesia was ranked at 27th in global productivity level, 5.41 MT/HA in 2016, slightly higher than the world average productivity 3.90 MT/HA. Indonesia productivity level is still behind China (6.93MT/HA) and Vietnam (5.58MT/HA) in Asia, and far behind non-producing countries such as Australia (10.23MT/HA), Egypt (9.3 MT/HA), Uruguay (8.5 MT/HA) and US (8.1MT/HA). Indonesia growth population is increasing and affecting demand growth of rice as well as residency. However, demand fulfillment (production) is coming from extensification area instead of increasing productivity. Java Island, including East Java and Central Java is the main source of Indonesian rice supply. Yet, Java island remains the highest population density in Indonesia. Therefore, PRISMA has the vision to maintain current production by increasing the yield in the developed area as well as expanding to new areas.

Quick facts:



Total production
56,537,774 MT
Un-milled Dried Paddy



Total harvested area:
10,903,835 Ha



Productivity:
5.41MT/Ha



Demand increasing
1.89%

Facts Source: BPS KSA 2018



15.1 Rice East Java

Indonesian rice production is concentrated in Java Island, where three provinces (East Java, West Java and Central Java) account for 52.34% of total national production. Overall, East Java is the number one rice producer in Indonesia. It contributes 19% of the country's total rice production, with approximately 6.7 MTs milled rice from a 1.8 Mio hectares of harvested area. Rice is the province's main staple crop, with nearly 98% of inhabitants use it as main source of food; most households spend around 20% of their income on rice. Rice farming is also a major source of employment, especially for the poor (four-fifths of Indonesia's rice production is grown by small-scale, low income farming households).

Although current supply has been able to satisfy (and even exceed) for provincial consumption, around 1.7 Mio MTs of rice is distributed to other provinces which produce less than they need. Making rice production and availability resilient in East Java is therefore very important, to avoid high risk in terms of securing future food availability. Increasing industrialisation in Java Island, especially East Java province, has affected cultivated land (particularly that given over to rice), making it necessary to improve production using improved seed and cultivation practices, and efficient farming methods.

Challenges and constraints

PRISMA will focus on addressing the following constraints:

- **Use of low quality (retained) seed.** Many rice farmers are unaware of the benefits of using improved certified seed and rely on retaining current varieties, which produces lower yields with a higher rate of crop failure because of pest and disease (common when the same variety is used for more than ten years). In addition, many smallholder farming households are dependent on subsidised government seed, another reason for their unwillingness to invest more in improved seed.
- **Unavailability of hybrid seed.** Although awareness of the benefits of hybrid seed has been increasing in some areas, the seed itself is often unavailable in the market. The main reasons are the high investment cost of seed production affecting seed producers and the domestic market, and restrictive government policy affecting the import of commercial hybrid seed.

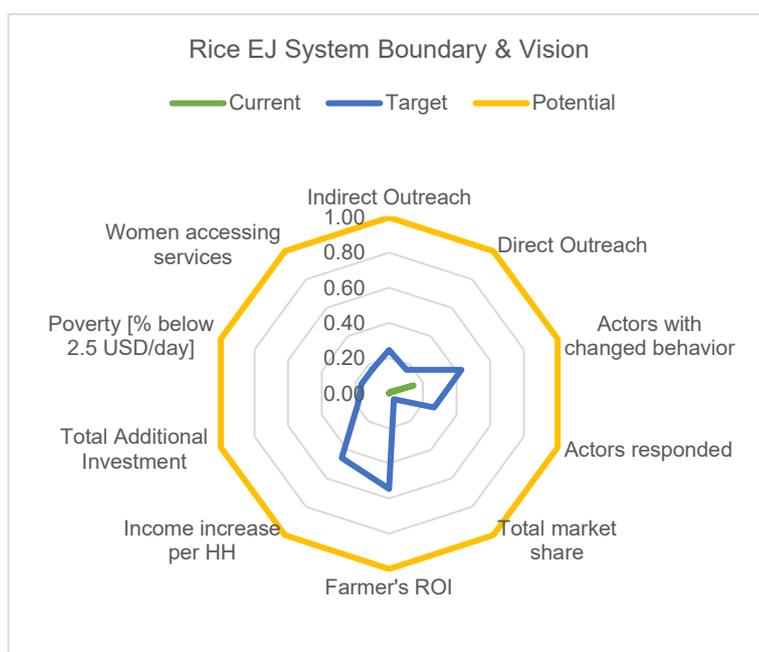
Intervention areas

To address these challenges and constraints, PRISMA is working with partners to:

- promote and support production of hybrid and inbred seed;
- link off-taking services, and
- optimise other inputs and GAP;

Subsector vision for systemic change

PRISMA aims to achieve a greater systemic change in the East Java rice sector by using improved seed, smart crop management, and good post-harvest practices. By 2023, farmers will be resilient to environmental changes (soil, water and climate changes), pest and disease, and dependency on the government seed subsidy by using improved seed (i.e. certified inbred and hybrid seed) with the appropriate GAP.



Progress towards subsector vision

Adopt

- Agrosid/Primasid have signed partnerships and implemented the business model, and
- Agrosid hired more field staff and extended its coverage area to promote rice hybrid seed in Madura EJ and Timor NTT.

Adapt

- Agrosid now collaborates with PT OMYA Indonesia (a chemical company) to produce and promote calcium fertiliser (calcipril) aimed at agriculture soil improvement.

Respond

- BB Padi is interested in disseminating new improved varieties of seed in PRISMA's working areas.

16. SEAWEED

Seaweed Sector Summary

As the world's largest producer of red seaweeds, Indonesia's seaweed cultivation is one of the main income-generating opportunities for its coastal communities, particularly in the east. The rise of both local and global seaweed demand in the past 2 years has pushed prices to triple in 2017, and has remained stable at high ranges ever since. This growing demand has not been met by our local production – with a steady decline of 8.6% annually since 2015 – attributable to simultaneous factors such as increasingly unpredictable weather, poor cultivation techniques, as well as the deteriorating quality of seedlings. Responses to this concerning condition have been largely made by the public sector, local and national governments alike; aid for seedlings and processing units that aimed to spur production and value addition – but has now become inefficient and entrenched. Furthermore, the specific issue of poor-quality seedlings has been addressed by various quasi-public research institutions through the creation of improved seedlings – which, in the years of trial to date, have shown poor performance.

Quick facts:



Total production
11,050,301 MT



Total harvested area
267,814 Ha



Productivity
41.26 MT/Ha



Demand
-

Facts Source: DJPB 2016, PRISMA internal survey



NATIONAL

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	1,510
Cumulative Outreach Projected to Dec 2023 (HHs)	1,510
Total NAIC up to Y19S2 (IDR)	540,011,780
Total NAIC to Y19S2 (%)	10.98%
Total projected NAIC to Dec 2023 (IDR)	540,011,780



Seaweed OVERALL

Indicator	Total
Cumulative Outreach Actual to Y19S2	1,510
Cumulative Outreach Projected to Dec 2023	1,510
Total NAIC up to Y19S2 (IDR)	540,011,780
Total NAIC to Y19S2 (%)	10.98%
Total projected NAIC to Dec 2023	540,011,780

Value For Money (VFM)

	Seaweed Overall
Investment Leverage:	0.67
Investment Per HH:	AUD 1,679.85
Social Return:	0.02

16.1 Seaweed National

As the world's largest producer of red seaweeds, seaweed culture provides one of the major income-generating opportunities for the country's main coastal communities, particularly in eastern Indonesia. From 2016-18, the increase in demand for local and global seaweed has tripled raw dried seaweed prices (from IDR 7,200 to IDR 22,000 between July and December 2017), which have since remained fairly stable, at around IDR 17,000-23,000. This growing demand has not been met by local production; numbers have declined steadily by 8.6% annually since 2015, attributable to factors including increasingly unpredictable weather, poor cultivation techniques, and the deteriorating quality of seaweed seedlings.

Challenges and constraints

Farmers are unable to increase seaweed production and productivity because of these main reasons:

- **Meagre production and productivity due to lack of knowledge and information** on seedling-specific and general cultivation practices. Many seaweed farmers treat seedlings and production seaweed in the same way, decreasing productivity by using poorly treated retained seedlings.
- **Subpar access to improved seedlings due to the non-existence of permanent, localised nurseries.** With high market distortion in the seaweed seedling market, private ISPs are disincentivised to establish nurseries; they also lack knowledge of the seaweed seedling business and technicalities, especially how to deal with the new breed of tissue culture seedlings which needs special care and attention in its initial stages.
- **Suboptimal access to improved seedlings due to market distortion caused by poor and unsustainable subsidy system planning.** Tissue culture seedlings are currently only available for farmers through direct subsidies. The lack of private nurseries is due to the high distortion rates caused by subsidies in the seaweed seedling market, disincentivising seedling businesses and affecting farmers' behaviour, encouraging them to become subsidy dependent. In addition, subsidies have targeted the wrong areas using inappropriate media.
- **Substandard quality of improved seedlings due to lack of research, constraining budget and infrastructure, and poor management of development centres.** Current tissue culture seedlings have not been able to support market needs, in terms of both quality and quantity.

Intervention areas

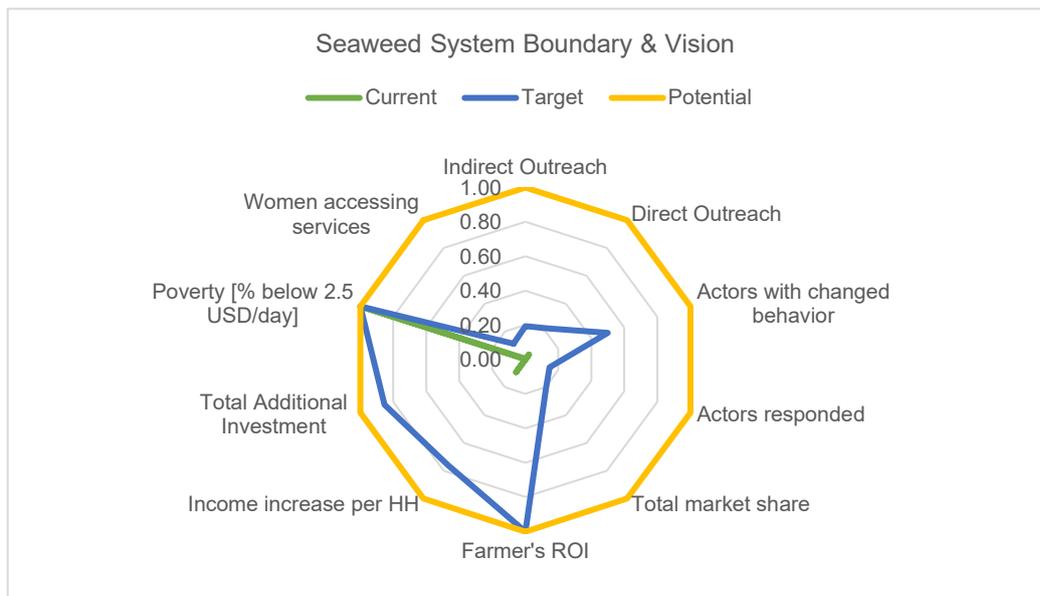
Given the steady growth in demand in the seaweed sector and the enormous untapped potential of improved seaweed seedlings to increase productivity, PRISMA aims to revamp and expand seaweed interventions to achieve nationwide coverage through engaging with the Ministry of Marine Affairs and Fisheries (MoMF), to:

- induce partnerships for improving improved seedling research and production;
- improve the MoMF strategy of improved seedling (and cultivation knowledge) provision and distribution system, and
- establish and engage with private local seaweed nurseries for sustainable seedling sources.

Subsector vision for systemic change

By 2023, the seaweed sector will increase its productivity due to the use of and better access to quality improved seedlings, as well as the use of better seaweed seedling cultivation techniques, supported by the Ministry of Marine and Fisheries who will have induced partnerships for improving seedling research and

production, and improving strategy of improved seedling provision and distribution system through local private nurseries. This vision of change will be achievable when:



- MoMF have sufficient real-time data and local insights into seaweed sector to ensure better policymaking, improved grant aiming and system planning, have mainstreamed GOI collaboration, as well as integration of the private sector in their activities, and provides resources for development centres.
- MoMF's provincial and district agencies compile accurate field data, transfer local insight into the seaweed sector to the ministry, and collaborate with the private sector in their activities.
- Logistic services and vendors increase their knowledge of catering to the market for seaweed seedling delivery, and are aware of and adhere to seedling-specific standard procedures.
- Development centres increase their capacity and knowledge, and are given an extensive budget for the research, development and production of improved seedlings. They also distribute seedlings through and provide technical assistance to local government and nurseries, expanding their scope to new cultivation areas and, as a result, increase their achievement targets for producing improved seedlings.
- Local private sector players gain knowledge about establishing seaweed nurseries and managing seaweed businesses, and gaining the relevant business information and opportunities through the open access of government seaweed sector development plans.
- Local private nurseries are established, with knowledge of the seedling business and growing techniques, and gain income through the sales of improved seedlings to farmers and through supplying government grant quotas.
- Public and private research institutions (BPPT and BIOTROP) support the continuous development of the seaweed sector, improving seedling quality and expanding research to different stages in the supply chain (cultivation practices, post-harvest technology).

Progress towards subsector vision

Adopt

- Revision of the General Guideline in Seaweed Cultivation to include local strains (such as Sacol) as an option for areas such as NTT, to be eligible for government grants and subsidies;
- RPJMN policy change, National Level: Business Model (use of intermediaries) has been instilled in the 2020-2024 RPJMN document for seaweed, and
- A few shifts in budget allocation (for Papua, West Papua, and NTT) for seaweed grants by province, in accordance to feedback given to MoMF by PRISMA.

Adapt

- DGoA of the MoMF to support six development centres in conducting a strain mapping study. This will identify different local varieties and adaptations of seaweed strains, and the best strains to be used in developing improved seedlings.

Respond

- Bappenas will hold a multi-ministerial workshop for all ministries which have active roles in the seaweed national roadmap (2017–2021) to realign strategies and discuss further improvement of the new seaweed roadmap (2020–2025);
- The provincial MoMF in NTT will mainstream the national level seaweed seedlings business model on a local level, working with district agencies. Provincial seaweed road map to be reviewed, and
- Biak District Agency of Marine and Fisheries, Papua will mainstream the national level seedlings business model on a local level, taking the lead to establish a cluster zone including Biak Numfor, Supiori, Yapen, Waropen, Nabire and Sarmi as part of a seaweed development strategy.

17. SOIL TREATMENT

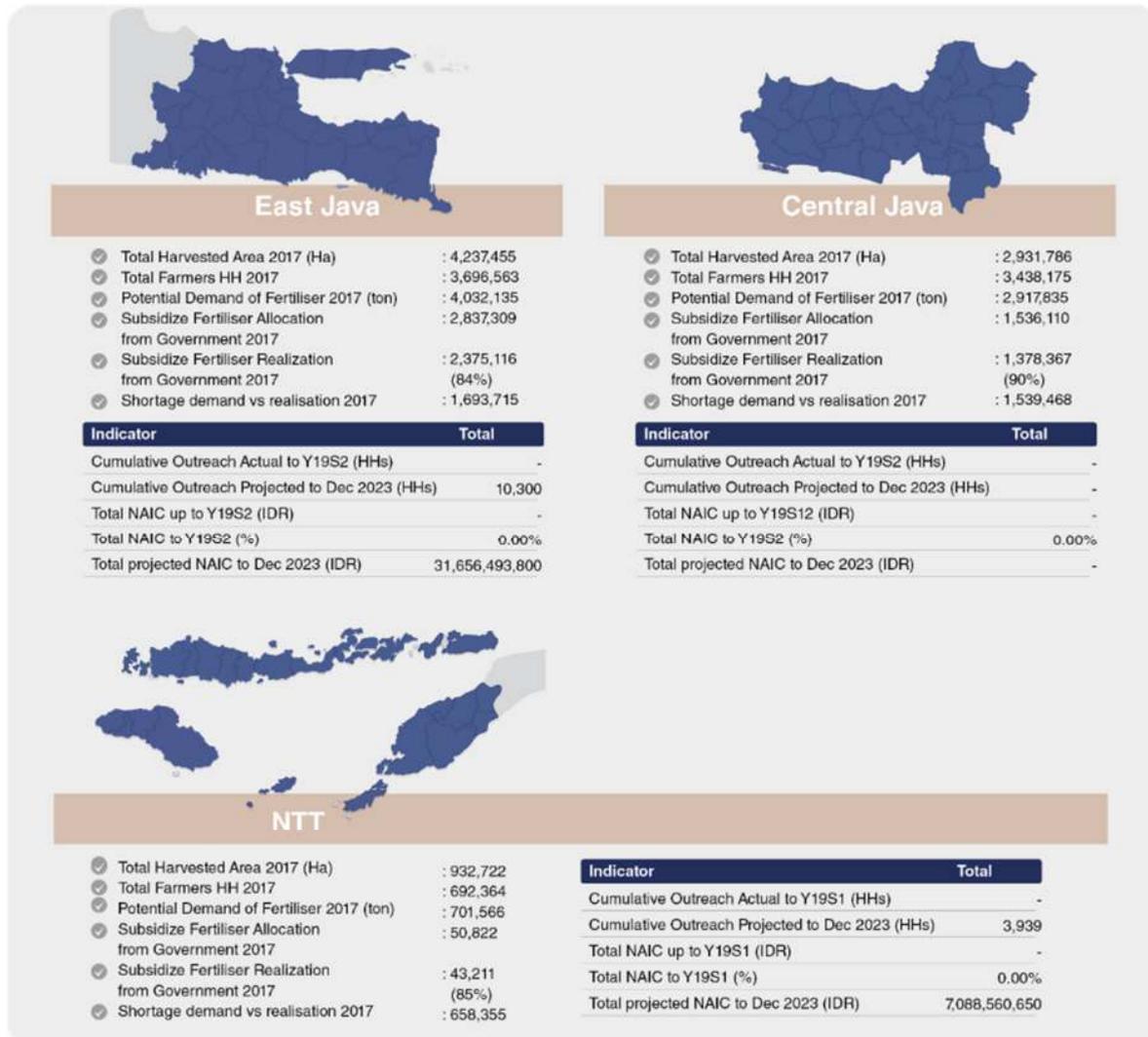
Soil Treatment Sector Summary

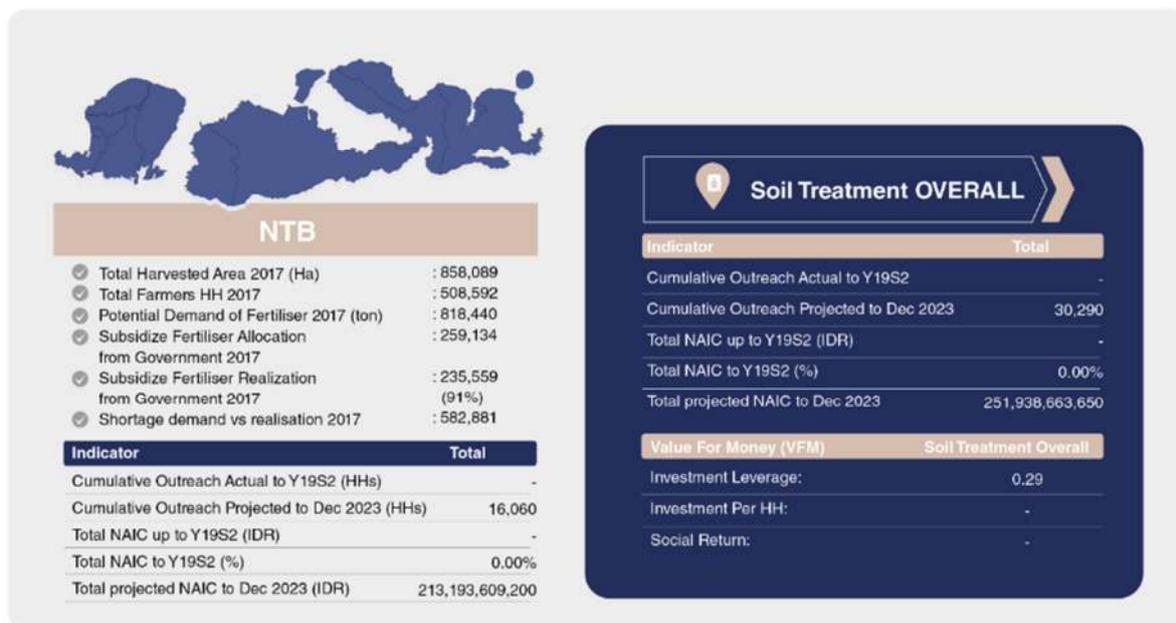
Soil treatment includes 4 key pillars (1) organic fertilizer, (2) inorganic fertilizer, (3) soil amendment and (4) speciality fertilizer. Fertilizer is one of the most important factors in the process of crop cultivation, approximately 50% of crop yield depends on fertilizing practice (IPNI, Agronomy Journal, FAO). The fertilizer market is heavily subsidized as part of the government's efforts on agriculture sector development and ensuring food security. However, there is a wide gap between the need of fertilizer and allocation of subsidized fertilizer by the government. Furthermore, both the budget allocation for subsidies and volume of subsidies show a decreasing trend and thereby providing more opportunities for the commercial fertilizer market. The public and private sector fertilizer producers can tap into the commercial fertilizer business by expanding or improving their distribution network; promoting by highlighting cost-benefit analysis and features of quality; commercial fertilizer and providing knowledge on good fertilizer practice.

Quick facts:

					
Total Harvested Area (Ha) 47,425,449	Total Farmers HH 27,682,117	Potential Demand of Fertilizer (Ton) 36,110,657	Subsidize Fertilizer Allocation from Government (Ton) 8,874,000	Subsidize Fertilizer Realization from Government (Ton) 7,786,040 (88%)	Shortage Demand vs Realization (Ton) 28,324,617

Fact Source: Statistik Perikanan 2018





17.1 Soil treatment East Java

The East Java fertiliser market is very dynamic, with large numbers of market actors and farmers who are far more informed and have better access to market information than provinces such as NTT and NTB. High consumption of fertiliser in this province is due to increased agricultural activity and its large harvest area driving overall demand; potential fertiliser demand here is 4.032 Mio MTs. However, actual demand is less than the potential demand, as farmers are largely unaware about availability of quality fertiliser (which contains macro and micro nutrients) and appropriate dosages (with the exception of urea fertiliser which is often overapplied), and consequently tend to buy or demand less.

Challenges and constraints

To address these market conditions, PRISMA is prioritising the following constraints:

- Farmers lack access to fertiliser (both subsidised and commercial).** Subsidy from the government is declining over the last few years. Furthermore, the RDKK process through which subsidy is allocated and distributed is also less efficient resulting in a large number of farmers remaining outside the purview of subsidy. Furthermore, many commercial fertiliser producers do not invest in expanding and developing the capacity of their distribution network due to (1) prevalence of high subsidies in fertiliser and (2) broader focus on plantation crops through their business-to-business portfolio. The companies also lack market intelligence on the opportunity of supply-demand gap even with the prevalence of subsidized fertiliser.
- Farmers lack awareness on proper application of fertiliser.** Commercial fertiliser companies do not invest in extension services due to the competition from subsidized fertiliser and focus on more matured plantation sectors. They also lack skill on targeting small holder farmers with right marketing and communication strategies such as cost-benefit analysis of proper fertiliser application.

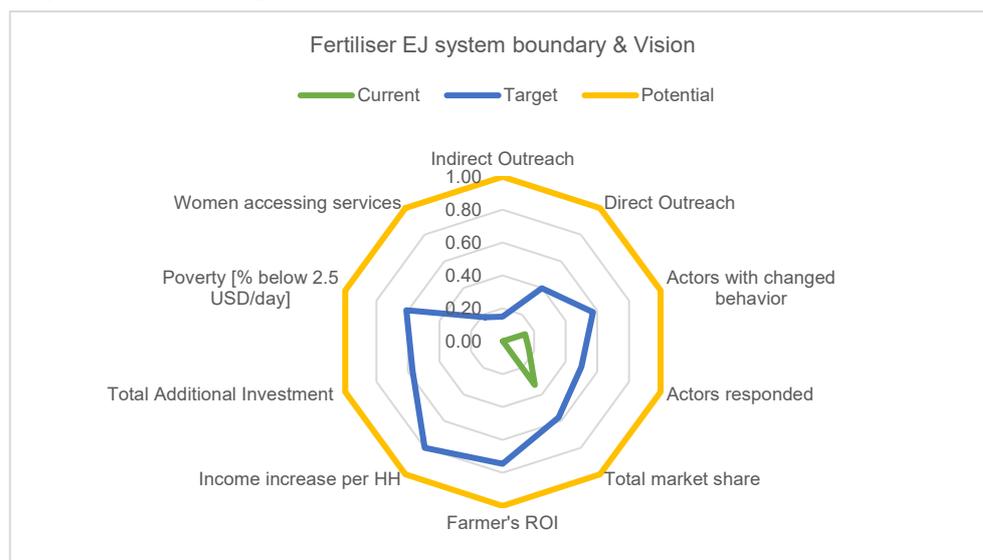
Intervention areas

To address these challenges and constraints, PRISMA is collaborating with PT Pupuk Kalimantan Timur (PKT) to:

- promote quality commercial fertiliser, and
- introduce good fertiliser practice at farmer level.

Subsector vision for systemic change

In the second phase of program implementation, PRISMA aims to achieve a greater systemic change in our EJ Soil Treatment sector. It is envisioned that by 2023, the EJ commercial fertiliser sector will have increased its market size (that is, its overall market size and percentage of



commercial fertiliser market share) and will be more competitive through an increased product offering. This will have been achieved through on-time availability, an expanded distribution network, provision of embedded extension information, and collaboration with other market players including non-fertiliser input companies and off-takers. This will be driven by a growing unmet demand for fertiliser.

Progress towards subsector vision

Adopt

- PKT established 32 demo plots in five districts (Banyuwangi, Malang, Jember, Ngawi and Magetan) in East Java. The aim was to demonstrate GAP, including proper fertiliser application for maize, chilli and shallot products.
- PKT conducted 11 farmers' meetings, with a total of over 300 participants.
- PKT conducted one retailer gathering workshop in Madiun to inform kiosk owners and key farmers about PKT commercial fertiliser.
- PKT has started to reach out to all its retail agents with commercial fertiliser.
- PKT and its distributor have provided training to kiosk owners and farmers on good farming practices, product knowledge, and technical cultivation skills.
- PKT's distributor has hired sales agents to monitor and boost fertiliser sales in those areas with an improved marketing strategy due to partnership with PRISMA.
- PKT has initiated collaboration with other market actors for the promotion of quality inputs and GAP at the farmer level. During 2019, PKT successfully piloted such partnerships with Corteva (maize seed producer), Indofood (a shallot off-taker), BNI and Crowde (financial institutions) and PT Seger Agro Nusantara (a maize off-taker) for East Java activities.

Adapt

- PKT initiated activities to trial a specific fertiliser formulation for maize, paddy and coffee which, if successful, will result in more cost-effective and efficient fertiliser application.
- As a form of multi-partnership collaboration, PKT has piloted the setting-up of one aggregator who takes up the role as an agent for input producers, financial institutions and off-takers.

Respond

- GOI has 'responded' to the initiative of PKT to trial and produce specialty fertiliser for the cocoa sector, by bringing it under the government's subsidised fertiliser scheme (forecast to produce 17,000 MTs of cocoa-specific fertiliser in the year 2020).

- MOA has engaged PKT in two pilot projects in East Java to ensure that farmers in the project areas have timely access to fertiliser (both subsidised and commercial).
- Following the advice of the Bupati of Madiun, PKT has engaged five BUMDes and two women farmer groups in their retail network to promote and sell commercial fertiliser.

17.2 Soil treatment NTB

The government has made significant strides in the push for domestic maize cultivation in NTB, especially in the previously under-utilised dryland areas of the province. This has resulted in farmers who have traditionally planted coffee and coconut now either expanding cultivation into dryland areas or reducing cultivation of other crops (such as maize, a large consumer of fertiliser). However, this push has not impacted the government allocation of subsidies, which has remained flat for some time and is persistently in short supply. This has created an opportunity for the use and supply of commercial fertiliser, despite awareness and acceptance among farmers being low. There is an estimated total demand for 0.82 Mio MTs of fertiliser, only 32% of which is covered by subsidised fertiliser, meaning that 62% of demand (equivalent to 0.56 Mio MTs) is yet to be realised.

Challenges and constraints

PRISMA has decided to prioritise the following constraints:

- **Farmers lack access to fertiliser (both subsidised and commercial).** Subsidy from the government is declining over the last few years. Furthermore, the RDKK process through which subsidy is allocated and distributed is also less efficient resulting in a large number of farmers remaining outside the purview of subsidy. Furthermore, many commercial fertiliser producers do not invest in expanding and developing the capacity of their distribution network due to (1) prevalence of high subsidies in fertiliser, and (2) a broader focus on plantation crops through their business-to-business portfolio. The companies also lack market intelligence on the opportunity of a supply-demand gap even with the prevalence of subsidised fertiliser.
- **Farmers lack awareness on proper application of fertiliser:** Commercial fertiliser companies do not invest in extension services due to the competition from subsidised fertiliser and focus on more matured plantation sectors. They also lack skill in targeting smallholder farmers with appropriate marketing and communication strategies, such as cost-benefit analysis of proper fertiliser application.

Intervention areas

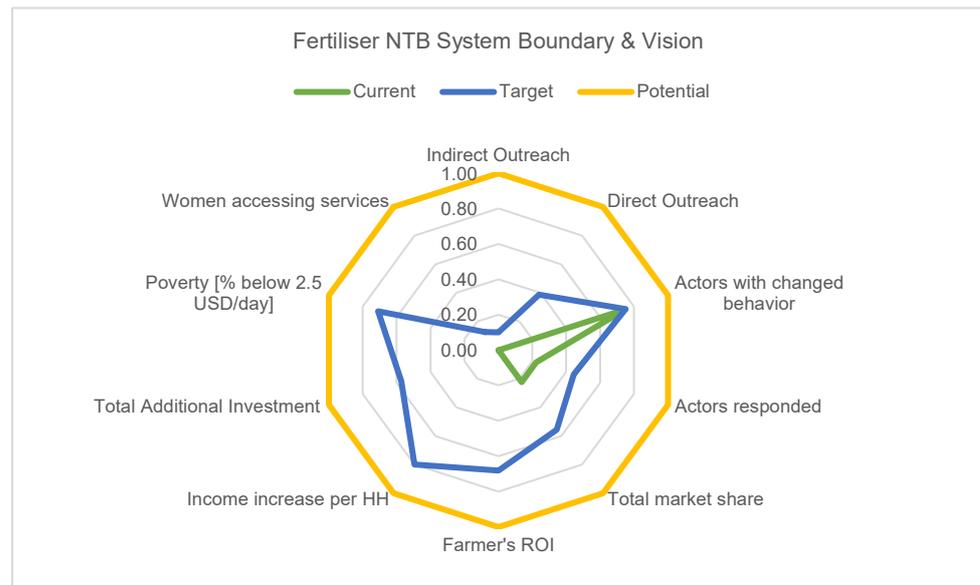
To address these challenges and constraints, PRISMA is collaborating with PKT to:

- promote quality commercial fertiliser, and
- introduce good fertiliser practice at farmer level.

Subsector vision for systemic change

In its second phase of program implementation, PRISMA aims to achieve a greater systemic change in the NTB fertiliser sector. It is envisioned that by 2023, NTB's commercial fertiliser sector will have increased its market size (in terms both of overall market size and percentage of commercial fertiliser market share), and will be more competitive through an increased product offering, on-time availability, expanded distribution

network, provision of embedded extension information, and collaboration with other market players including non-fertiliser input companies and off-takers. This will be driven by a growing unmet demand for fertiliser.



Progress towards subsector vision

Adopt

- PKT established 88 demo plots in NTB to demonstrate GAP for maize, paddy and shallot.
- PKT conducted 3 retailer gathering workshops (in Lombok, Bima and Sumbawa), where over 250 distributors, retailers and key farmers participated to learn about PKT commercial fertiliser.
- PKT distributors have started providing information to retailers/kiosk owners and farmers about GFP and product knowledge.
- PKT piloted a partnership with BISI (maize seed) and Tanindo (crop protection).

Adapt

- PKT has engaged 8 new distribution agents to promote and sell its commercial fertiliser.
- It has also engaged 1 women farmer group and two BUMDes to sell commercial fertiliser to align with the government priority.
- As a form of multi-partnership collaboration, PKT has successfully set up 10 aggregators who take the roles of input producers, financial institutions and off-takers.

17.3 Soil treatment NTT

The three main islands of NTT are Flores, Timor and Sumba. Flores Island leads in term of NTT's production (especially in the vegetable sector), supplying 28% of the province's total. It is characterised by deep, rich volcanic soils and high rainfall, which is more conducive to agriculture than other districts. Timor Island has shallow soils, a long dry season and variable rainfall, poor physical and social infrastructure, isolation and low literacy levels. It is one of Indonesia's driest regions, with an average of eight rain-free months each year. Annual rainfall can be as low as 350 mm, and many districts experience high evaporation, poor soil filtration, and a groundwater deficit, making farmers dependent on rainwater-fed irrigation and able to rely on crop growth for just 60-100 days each year. Sumba Island lies between Flores and Timor in term of climatic conditions.

Challenges and constraints

PRISMA is focusing on the following two key constraints:

- **Farmers lack access to fertiliser (both subsidised and commercial).** Subsidy from the government is declining over the last few years. Furthermore, the RDCK process through which subsidy is allocated and distributed is also less efficient resulting in a large number of farmers remaining outside the purview of subsidy. Furthermore, many commercial fertiliser producers do not invest in expanding and

developing the capacity of their distribution network due to (1) prevalence of high subsidies in fertiliser and (2) broader focus on plantation crops through their business-to-business portfolio. The companies also lack market intelligence on the opportunity of supply-demand gap even with the prevalence of subsidised fertiliser.

- **Farmers lack awareness on proper application of fertiliser**, Commercial fertiliser companies do not invest in extension services due to the competition from subsidised fertiliser and focus on more matured plantation sectors. They also lack skill in targeting smallholder farming households with appropriate marketing and communication strategies, such as cost-benefit analysis of proper fertiliser application.

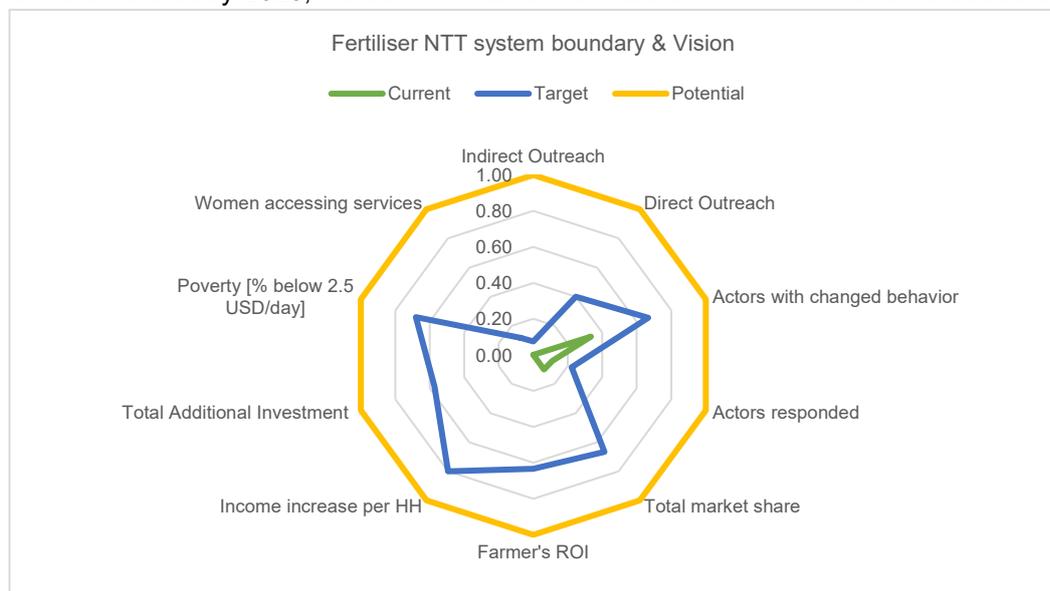
Intervention areas

To address these challenges and constraints, PRISMA is collaborating with PT Pupuk Kalimantan Timur to:

- promote quality commercial fertiliser, and
- introduce good fertiliser practice at the farmer level.

Subsector vision for systemic change

In its second phase of program implementation, PRISMA aims to achieve greater systemic change in the NTT fertiliser sector. It is envisioned that by 2023, the commercial fertiliser sector in NTT will have increased its market size (that is, its overall market size and percentage of commercial fertiliser market share) and will be more competitive through an increased product offering, on-time availability, an expanded distribution network, the provision of



embedded extension information, and collaboration with other market players including non-fertiliser input companies and off-takers, all driven by a growing unmet demand for fertiliser.

Progress towards subsector vision

Adopt

- PKT has established 22 demo plots in NTT focusing on maize, paddy and shallot.
- PKT conducted 2 farmer meetings to disseminate information to farmers about good fertilising practices.
- PKT has conducted 1 retailer gathering workshop attended by over 100 participants, including distributors, retailers and key farmers, to provide product knowledge on PKT commercial fertiliser.

Adapt

- PKT has assigned three new distributors to sell commercial products.
- As a form of multi-partnership collaboration, PKT has successfully set up one aggregator.

18. VEGETABLE

Vegetable Sector Summary

Global vegetable production between 2004 and 2014 has increased by 25%, on average, and there is no sign of change in this trend. These production volumes are driven predominately by China and India, with high population numbers and large land sizes allocated to vegetable farmers. Despite these encouraging statistics, the yield (tonnes per hectare) or productivity figures do not quite paint the same picture. Indonesia vegetable production has increased by 1.38 percent per year since 2012 to 7.6 million tonnes in 2016. Despite being the largest vegetable producer in Southeast Asia, Indonesia is a net importer of vegetables although the quantity is below 5% of domestic production. The imports are typically for specialty vegetables such as paprika and the trend fluctuates. Within Indonesia, four provinces dominate vegetable production, with 65% of the market and West Java leading the pack.

Quick facts:



Total production
12,481,893MT



Total harvested area
971,100



National Productivity
10,700

Facts Source: Statistik Pertanian 2016, Sensus Pertanian 2013, Outlook TPHORTI 2017



East Java

- ✓ Total provincial production (Ton) : 1,647,028
- ✓ Total provincial harvested area (Ha) : 181,895
- ✓ Total farm households in the sector : 625,950

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	10,240
Cumulative Outreach Projected to Dec 2023 (HHs)	10,240
Total NAIC up to Y19S2 (IDR)	114,655,689,440
Total NAIC to Y19S2 (%)	57.10%
Total projected NAIC to Dec 2023 (IDR)	114,655,689,440



NTB

- ✓ Total provincial production (Ton) : 251,128
- ✓ Total provincial harvested area (Ha) : 8,286
- ✓ Total farm households in the sector : 58,398

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	6,163
Cumulative Outreach Projected to Dec 2023 (HHs)	6,163
Total NAIC up to Y19S2 (IDR)	69,484,900,000
Total NAIC to Y19S2 (%)	43.75%
Total projected NAIC to Dec 2023 (IDR)	69,484,900,000



NTT

- ✓ Total provincial production (Ton) : 60,032
- ✓ Total provincial harvested area (Ha) : 2,926
- ✓ Total farm households in the sector : 92,633

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	2,424
Cumulative Outreach Projected to Dec 2023 (HHs)	2,424
Total NAIC up to Y19S2 (IDR)	34,268,197,568
Total NAIC to Y19S2 (%)	79.07%
Total projected NAIC to Dec 2023 (IDR)	34,268,197,568



PAPUA

- ✓ Total provincial production (Ton) : 62,804
- ✓ Total provincial harvested area (Ha) : 10,318
- ✓ Total farm households in the sector : 199,702

Indicator	Total
Cumulative Outreach Actual to Y19S2 (HHs)	3,660
Cumulative Outreach Projected to Dec 2023 (HHs)	3,660
Total NAIC up to Y19S2 (IDR)	10,777,251,300
Total NAIC to Y19S2 (%)	10.89%
Total projected NAIC to Dec 2023 (IDR)	10,777,251,300



18.1 Vegetable Papua and West Papua

The quantity of vegetables produced in Papua and West Papua is insufficient to meet local market demand, obliging the import of large quantities of vegetables from Sulawesi and Java. As a result, there is strong potential to increase productivity in the vegetable sector in these provinces. In Phase 1, PRISMA worked with PT EWINDO to promote good quality vegetable seeds and GAP, an intervention which has benefitted 5,968 smallholder farming households, of both migrant and indigenous farmers. Local vegetable production has increased, confirmed by farmers in Sulawesi (Palu) who state that the demand for vegetables from Papua and West Papua has decreased over the past two years. In Phase 2, PRISMA is focusing on ensuring that these changes will sustain, and that more private sector organisations enter the Papua and West Papua markets to promote good products and services to smallholder farming households.

Challenges and constraints

The major challenges faced by the vegetable sector in Papua and West Papua are:

- **Farmers experience low productivity due to low quality inputs and lack of GAP information.** Certified seed options in the market are limited and supply inconsistent, and product sales are not accompanied by up-to-date GAP information. Lack of GAP application hinders farmers from seeing the benefits of using certified seed, and as a result, some continue with the traditional practice of using low quality retained seed, which reduces productivity. Some informal GAP learning exists among transmigrant farmers as they have access to information from relatives back home; however, this is not regularly updated.
- **An inefficient supply chain system, contributing to high vegetable distribution costs.** The aggregating role in the value chain is not yet functioning. Instead, the majority of farmers take their harvest directly to the market place and sell it to big collectors.
- **For highland farmers, transportation can be a barrier.** Some highland areas can only be reached via air transport while bad road conditions mean that others need four-wheeled vehicles. This results in high transportation costs, rendering farmers' vegetable prices uncompetitive in comparison to vegetables traded from other islands.

All of the above challenges are more prevalent among indigenous farmers who at the same time comprise at least 38% of the total vegetable farmers in Papua and West Papua.

- Indigenous farmers are scattered between locations, making operational costs higher for private extension services to reach them. Providers of these services also experience a cultural barrier, which

provides a challenge to developing an effective marketing strategy targeting indigenous farmers. The livelihood and social structure of indigenous communities is unique, and a lack of understanding in these aspects hinders the private sector in communicating effectively about product benefit as well as providing technical assistance.

- For up-to-date information on GAP, indigenous farmers currently rely heavily on public extension services. However, the number of government officers providing these services is low compared to the population served, impeding regular and timely assistance to farmers. In addition, the assistance they do provide can be ineffective due to their limited capacity.
- As they live farther away from demand centres, indigenous farmers also have less access to market information. They usually sell their produce directly to consumers in the market place, which can take up to three days.

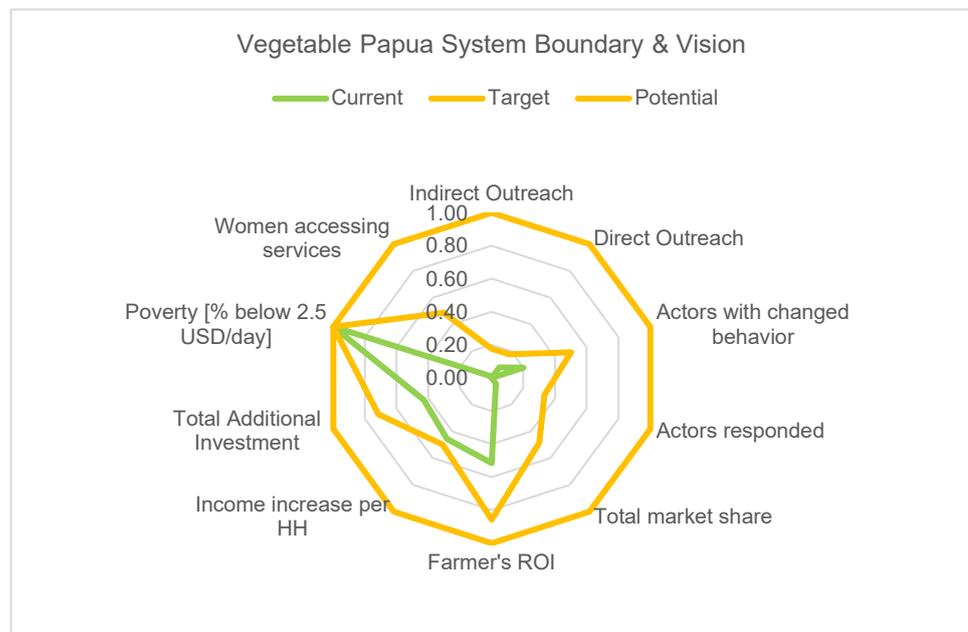
Intervention areas

PRISMA is focusing on two intervention areas:

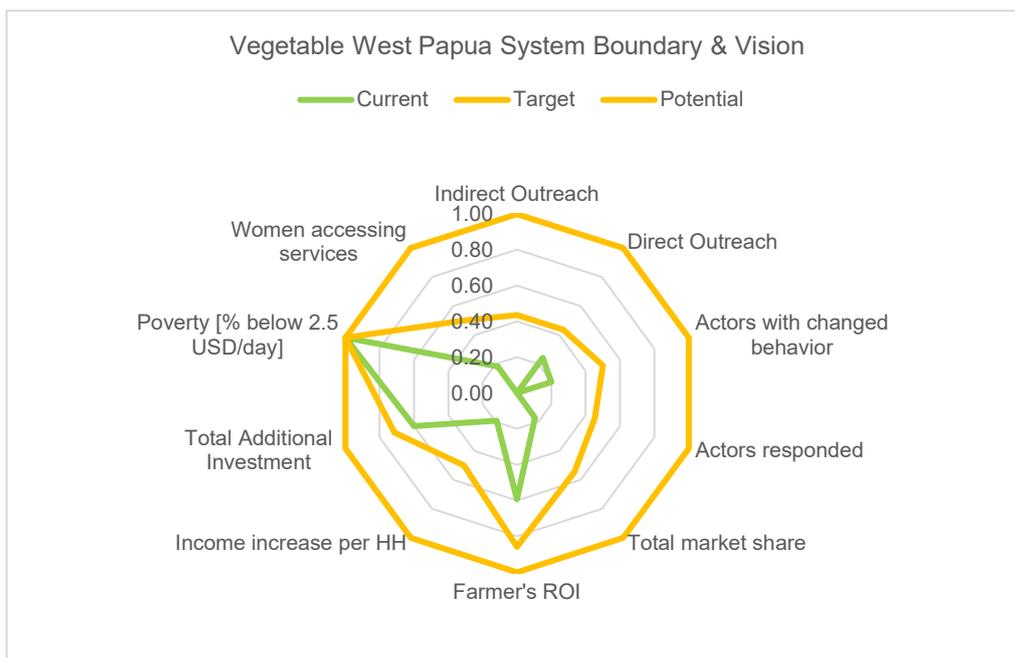
- **Promoting good quality inputs and GAP.** Building on our Phase 1 interventions, in Phase 2 PRISMA will scale up the intervention by working with other seed producers, facilitating them to identify areas with the best market potential and feasibility, allowing them to allocate resources to capacity building and demand creation more effectively, not only to transmigrant farmers but also to indigenous farmers.
- **Improving access to and quality of public extension services.** As indigenous farmers rely heavily on government public extension services, PRISMA aims to identify the knowledge gap of the public extension officers to develop a capacity building curriculum and effective incentive system to increase the access of smallholder farmers to public extension service assistance. We will also facilitate the formation of multi-stakeholder engagement with government and input companies to provide capacity building for public extension service officers.

Subsector vision for systemic change

By 2023, the Vegetable Papua and West Papua sector will continue to improve farmers' access to high quality vegetable seeds and GAP knowledge. This will be achieved through co-investing with seed producers in developing a territorial management strategy for Papua and West Papua which will help them identify those areas with the highest sales potential and feasibility of market



entrance. The sector will also work with GOI to improve the government extension service capacity building curriculum and incentive system, facilitating the provision of more farmers with better GAP knowledge.



Progress towards subsector vision

Adopt

- EWINDO adopted the PRISMA business model to promote quality seed and GAP in Papua and West Papua between 2016 and 2018.

Adapt

- EWINDO continued to promote quality seed and GAP in Papua and West Papua after its contract with PRISMA ended.

Expand and Respond

- Crowding-in and responses from other market actors are yet to be seen. This falls into the 'Innovate' category intervention, and with the introduction of new intervention ideas PRISMA aims to facilitate this to ensure sustainable changes.

Annex 2 – PRISMA risk matrix

In a separate sheet.

Annex 3 – PRISMA QMT results December 2019

Change & Improve (4)	Let Flow (23)	Push (11)
<p>Dropped (1)</p> <p>Coconut</p>	<p>Ended (0)</p>	<p>Innovate (3)</p> <p>Vegetable Papua (1) Vegetable West Papua (1) Policy (1) Coffee (1)</p>
<p>Mung Bean EJ (1) Mung Bean CJ (2) Maize EJ (1)</p>	<p>Beef EJ (2) Peanut EJ (1) Peanut CJ (1) Crop Protection EJ (2) Innovative Finance EJ (2) Innovative Finance CJ (2) Irrigation EJ (1) Mechanisation EJ (1) Innovative Finance NTB (1) Innovative Finance NTT (1) Marketing Communications (1)</p> <p>ICT NTT (1) Pig NTT (4) Poultry NTT (1) Maize CJ (1) Dairy CJ (1)</p>	<p>Fertiliser EJ (1) Fertiliser NTB (1) Fertiliser NTT (1) Maize EJ (1) Beef CJ (1) Maize NTT (2) ICT EJ (1) Rice EJ (1) Maize NTB (1) Seaweed Papua (1) Rice</p> <p>Mung Bean CJ & EJ Beef Feed EJ Maize Madura Seaweed</p>

Annex 4 – PRISMA portfolio development plan

Subsector	Actual Cumulative			Actual 2019S1			Plan 2019S2			Actual 2019S2			Plan 2020S1			Plan 2020S2		
	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract
Beef-CJ	-	3	2		1	1		1			2	1	1	2	2		1	2
Beef-EJ	-	2	2		1	1		1			1	1	1	3	2		2	2
Beef-NTB	-	-	-					1	1				1	3	1		1	2
Beef-NTT	-	-	-															
Coconut-CJ	-	-	-				1	1	1									
Coffee-CJ	1	-	-							1			1					1
Coffee-EJ	1	-	-							1								
Coffee-NTT	1	-	-							1								
Crop Protection-CJ	2	2	2					1	1	2	2	2	2	2	2	2	3	3
Crop Protection-EJ	1	2	2				1	3	2	1	2	2	2	2	2	2	3	3
Crop Protection-NTB	-	-	1					2	2			1		1	1			
Crop Protection-NTT	-	-	-					1	1									
Dairy-CJ	1	1	-				1	1	1	1	1		1	2	3	1	2	1
Dairy-EJ	1	-	-				1	1	1	1			1	2	3	1	2	1
ICT-CJ	1	1	-							1	1		1	1	1		1	1
ICT-EJ	1	2	1		1	1				1	1		1				1	1
ICT-NTB	1	1	-							1	1							
ICT-NTT	1	1	1					1	1	1	1	1						
ICT-Papua	1	1	-							1	1							
ICT-West Papua	1	1	-							1	1							
Innovative Finance-CJ	1	1	2	1		1				1		1				1	1	1
Innovative Finance-EJ	-	2	2		1			1	1		1	2		1	1	1		
Innovative Finance-NTB	-	1	1		1	1							1	1		1	1	
Innovative Finance-NTT	-	-	1			1												
Irrigation-CJ	1	-	-							1					2			
Irrigation-EJ	3	3	1		2					3	1	1		2	5			3
Irrigation-NTB	1	-	-							1					1			
Irrigation-NTT	1	-	-							1					2			
Maize-CJ	-	-	1									1	1	1				2
Maize-EJ	1	1	2		1	1				1		1	1	2				2
Maize-NTT	-	1	2		1	2							1	1	1	1	1	2
Maize-NTB	-	-	1			1												
Mechanisation-CJ	-	1	-								1							1
Mechanisation-EJ	1	1	1	1			1	2	1		1	1		1	1			1
Mechanisation-NTB	-	1	-								1							1
Mung bean-CJ	-	2	2		1	1					1	1		1	1			1
Mung bean-EJ	-	1	1		1	1												
Peanut-CJ			1									1						
Peanut-EJ	-	2	1		2	1												
Pig-NTT	1	1	4				2	2	2	1	1	4			5			1
Pig-Papua	-	-	-										1				1	
Poultry-CJ	-	-	-				1	1	1									
Poultry-EJ	-	-	-				1	1	1									
Poultry-Papua	-	-	-														1	
Poultry-NTB	1	-	-							1								
Poultry-NTT	1	1	1				1	1	1	1	1	1	1					
Rice-CJ	-	2	-								2							

Subsector	Actual Cumulative			Actual 2019S1			Plan 2019S2			Actual 2019S2			Plan 2020S1			Plan 2020S2		
	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract	ICN	IP	Intervention with Contract
Rice-EJ	1	2	1	1				2	2		2	1			2			
Rice-NTT	-	-	-										1	1				1
Seaweed-NTT	-	1	-		1													
Seaweed-Papua	-	-	-												1			
Soil Treatment-CJ	-	2	-		1			1	1		1		1	1	1	1	1	1
Soil Treatment-EJ	-	2	1		1	1		1	1		1		1	1	1	1	1	1
Soil Treatment-NTB	-	1	1		1	1		1	1							1	1	1
Soil Treatment-NTT	-	-	1			1		1	1							1	1	1
Vegetable-EJ	-	-	-				1						1				1	
Vegetable-Papua	1	-	-				1	1	1	1			1	1	1			1
Vegetable-West Papua	1	-	-				1	1	1	1				1	1			1
Marketing Communication-CJ	1	1	-							1	1				1			
Marketing Communication-EJ	1	1	-							1	1				1			
Marketing Communication-NTB	1	1	-							1	1				1			
Marketing Communication-NTT	1	1	-							1	1				1			
Marketing Communication-Papua	1	1	-							1	1				1			
Marketing Communication-West Papua	1	1	-							1	1				1			
	35	52	39	3	17	16	13	30	26	32	35	23	21	34	50	14	25	40

Annex 5 – PRISMA projections up to Y20S2

Sub-Sector	Y20S1								Y20S2							
	Semester access (all farmer)	Semester use (all farmer)	Semester outreach (all farmer)	Semester income (all farmer)	Semester outreach (< \$2.50 PPP)	Semester income (< \$2.50 PPP)	Semester outreach (< \$5.50 PPP)	Semester income (< \$5.50 PPP)	Semester access (all farmer)	Semester use (all farmer)	Semester outreach (all farmer)	Semester income (all farmer)	Semester outreach (< \$2.50 PPP)	Semester income (< \$2.50 PPP)	Semester outreach (< \$5.50 PPP)	Semester income (< \$5.50 PPP)
Anggur Merah-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ARISA-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ARISA-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beef-CJ	-	-	-	-	-	-	-	-	4,133	2,779	1,707	8,709,938,667	819	4,180,770,560	1,127	5,748,559,520
Beef-EJ	-	-	-	-	-	-	-	-	1,866	1,390	771	3,932,388,000	343	1,751,092,376	519	2,647,676,840
Beef-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beef-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashew-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashew-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cassava-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cassava-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cocoa-PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coconut-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coconut-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coconut-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coffee-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coffee-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop-Protection-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop-Protection-NTB	-	-	4,488	2,175,719,728	1,885	913,802,286	2,783	1,348,946,231	-	-	-	-	-	-	-	-
Crop-Protection-NTT	-	-	4,488	2,175,719,728	1,885	913,802,286	2,783	1,348,946,231	-	-	-	-	-	-	-	-
Extension Services-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Extension Services-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feed-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fertilizer-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fertilizer-NTB	3,803	2,265	2,244	33,187,050,000	982	14,529,290,490	1,384	20,466,453,735	-	-	-	-	-	-	-	-
Fertilizer-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Finance-CJ	4,199	1,359	943	1,916,250,000	-	-	-	-	-	-	-	-	-	-	-	-
Finance-EJ	-	-	-	-	-	-	-	-	10,351	5,138	5,090	45,360,000,000	1,641	14,628,600,000	2,683	23,909,256,000
Finance-NTB	8,141	6,042	2,993	4,334,200,000	1,310	1,897,512,760	1,846	2,672,901,140	-	-	-	-	-	-	-	-
Finance-NTT	805	597	296	429,000,000	-	-	-	-	-	-	-	-	-	-	-	-
Fish-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOI-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOI-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOI-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOI-PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOI-WP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICT-EJ	12,643	3,183	1,892	803,675,000	628	266,659,365	1,025	435,511,483	-	-	-	-	-	-	-	-
Irrigation-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maize-CJ	13,692	-	-	-	-	-	-	-	-	3,021	2,394	808,000,000	862	290,880,000	1,317	444,400,000
Maize-EJ	420	-	-	-	-	-	-	-	10,333	7,358	5,584	6,283,008,000	2,210	2,486,814,566	3,695	4,157,466,394
Maize-NTB	3,265	362	251	1,519,994,560	25	151,999,456	151	911,996,736	2,743	217	151	911,996,736	15	91,199,674	90	547,198,042
Maize-NTT	2,209	544	469	430,824,870	33	30,157,741	234	215,412,435	6,191	4,936	3,557	12,062,542,966	-	-	-	-
Mango-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mango-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mechanisation-EJ	5,258	3,480	-	-	-	-	-	-	-	-	1,723	384,000,000	689	153,600,000	776	172,800,000
Mung Bean-CJ	1,845	725	646	379,244,160	252	147,905,222	375	219,961,613	7,942	3,806	3,048	1,788,768,288	1,189	697,619,632	1,768	1,037,485,607
Mung Bean-EJ	-	-	-	-	-	-	-	-	1,072	1,064	633	343,251,498	221	120,138,024	348	188,788,324
Mung Bean-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mung Bean-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sub-Sector	Y20S1								Y20S2							
	Semester access (all farmer)	Semester use (all farmer)	Semester outreach (all farmer)	Semester income (all farmer)	Semester outreach (< \$2.50 PPP)	Semester income (< \$2.50 PPP)	Semester outreach (< \$5.50 PPP)	Semester income (< \$5.50 PPP)	Semester access (all farmer)	Semester use (all farmer)	Semester outreach (all farmer)	Semester income (all farmer)	Semester outreach (< \$2.50 PPP)	Semester income (< \$2.50 PPP)	Semester outreach (< \$5.50 PPP)	Semester income (< \$5.50 PPP)
Peanut-CJ	-	-	-	-	-	-	-	-	2,022	1,044	517	988,382,016	188	359,771,054	284	543,807,785
Peanut-EJ	-	-	-	-	-	-	-	-	2,863	1,444	715	1,364,172,868	231	439,945,750	377	719,055,519
Peanut-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pig-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poultry-NTT	-	-	-	-	-	-	-	-	5,568	4,549	3,154	3,383,634,114	1,861	1,996,344,127	2,019	2,165,525,833
Rice-EJ	2,282	2,265	1,496	3,334,000,000	599	1,333,600,000	673	1,500,300,000	1,232	906	599	1,334,000,000	239	533,600,000	269	600,300,000
Rice-P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rice-WP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAFIRA-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAFIRA-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAFIRA-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAFIRA-P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seaweed-NTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seaweed-P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seaweed-WP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shallots-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shallots-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soybean-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soybean-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TIRTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vegetable-EJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vegetable-NTB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vegetable-NTT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetable-P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetable-WP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	58,562	20,824	20,206	50,685,678,046	7,599	20,184,729,606	11,253	29,120,429,604	56,316	37,652	29,642	87,654,083,152	10,510	27,730,375,764	15,271	42,882,319,863

Annex 6 – PRISMA semester outreach breakdown (December 2019)

Program	Code	Sub-Sector	Province	Sector	Name	Cumulative Actual Outreach Adjusted up to 2019S2 (HH)	Actual Outreach 2019S2 (HH)	Actual Cumulative NAIC up to 2019S2 (IDR)	Actual NAIC 2019S2 (IDR)
ARISA	2BZA	ARISA-NTB	NTB	ARISA	Cattle Arisa	2667	0	28,967,404,029	-
PRISMA	1MEA	Maize-EJ	East Java	Maize	Maize AHSTI	14517	0	26,548,268,875	-
PRISMA	1CAA	Cassava-EJ	East Java	Cassava	Access to GAP and Fertilizer	643	0	700,662,655	-
PRISMA	1SNB	Soybean-EJ	East Java	Soybean	Certification and Nurseries	4035	0	4,772,864,964	-
PRISMA	1SNA	Soybean-EJ	East Java	Soybean	Developing Commercial Market	9639	0	6,966,467,242	-
PRISMA	2CWA	Cashew-NTB	NTB	Cashew	Pest Control and GAP Services	1387	0	2,979,158,865	-
PRISMA	1CTA	Coconut-EJ	East Java	Coconut	Organic Certif - Coconut Sugar	431	0	302,292,000	-
PRISMA	1FHA	Fish-EJ	East Java	Fish	Fish Cage Farming	6	0	11,850,863	-
PRISMA	1MOA	Mango-EJ	East Java	Mango	Mango EJ Syngenta	5580	0	16,842,090,592	-
PRISMA	2MOA	Mango-NTB	NTB	Mango	Mango NTB Syngenta	1372	0	6,018,445,126	-
PRISMA	3PGA	Pig-NTT	NTT	Pig	Pig Rearing	1118	0	16,984,152,468	-
PRISMA	1PTA	Peanut-EJ	East Java	Peanut	Good Quality Seed	101	0	111,555,563	-
PRISMA	3SDA	Seaweed-NTT	NTT	Seaweed	Seaweed UD Alga	630	0	159,906,600	-
PRISMA	3CEA	Coffee-NTT	NTT	Coffee	Coffee GAP	4598	0	9,292,704,699	-
PRISMA	3CEB	Coffee-NTT	NTT	Coffee	Decentralized Processing	2212	0	6,939,565,320	-
PRISMA	2STA	Shallots-NTB	NTB	Shallots	Shallots EWINDO	8028	0	30,450,552,840	-
PRISMA	2BFA	Beef-NTB	NTB	Beef	Commercial Feed	645	0	4,678,089,946	-
PRISMA	3CWA	Cashew-NTT	NTT	Cashew	Cashew Peduli Kasih	423	0	1,630,802,052	-
PRISMA	1BFA	Beef-EJ	East Java	Beef	Beef Feed WU	834	0	4,965,548,700	-
PRISMA	1BFB	Beef-EJ	East Java	Beef	Beef Feed PKM	1212	0	15,728,907,644	-
PRISMA	3PTA	Peanut-NTT	NTT	Peanut	Good Quality Peanut Seeds	716	408	491,753,405	214,905,204
PRISMA	4COA	Cocoa-PA	Papua	Cocoa	Cocoa YPPWP	298	0	255,876,806	-
PRISMA	3MEC	Maize-NTT	NTT	Maize	Maize Storing	141	0	5,898,825	-
PRISMA	3MEB	Maize-NTT	NTT	Maize	Maize Nurseries	10342	0	17,633,208,685	-
PRISMA	3MEA	Maize-NTT	NTT	Maize	Maize YMTM	7298	0	9,488,606,923	-
PRISMA	1STA	Shallots-EJ	East Java	Shallots	Shallots SPILT	1540	0	4,928,000,000	-
PRISMA	2SNA	Soybean-NTB	NTB	Soybean	BASF Soy Doctor Program	1609	0	2,830,648,866	-
PRISMA	3MED	Maize-NTT	NTT	Maize	Stimulating market of OPV Seed	4081	0	3,917,760,000	-
PRISMA	3BFA	Beef-NTT	NTT	Beef	Beef Lamtoro	65	0	212,240,015	-
PRISMA	1MEB	Maize-EJ	East Java	Maize	Expansion of Hybrid Market	5106	0	38,505,556,857	-
PRISMA	3CWB	Cashew-NTT	NTT	Cashew	Quality Inputs and Tools	5412	0	7,087,533,396	-
TIRTA	1P1A	TIRTA	East Java	TIRTA	Pilanggede	703	0	11,536,413,012	-
ARISA	2MZA	ARISA-NTB	NTB	ARISA	Maize NTB	2735	0	26,545,385,326	-
ARISA	1CZA	ARISA-EJ	East Java	ARISA	Cassava East Java	483	0	2,794,702,891	-
ARISA	1KZA	ARISA-EJ	East Java	ARISA	Sheep East Java	6	0	11,920,356	-
ARISA	1SZA	ARISA-EJ	East Java	ARISA	Sugarcane East Java	406	0	21,289,821,964	-
ARISA	1DZA	ARISA-EJ	East Java	ARISA	Dairy East Java	2571	0	71,427,301,464	-

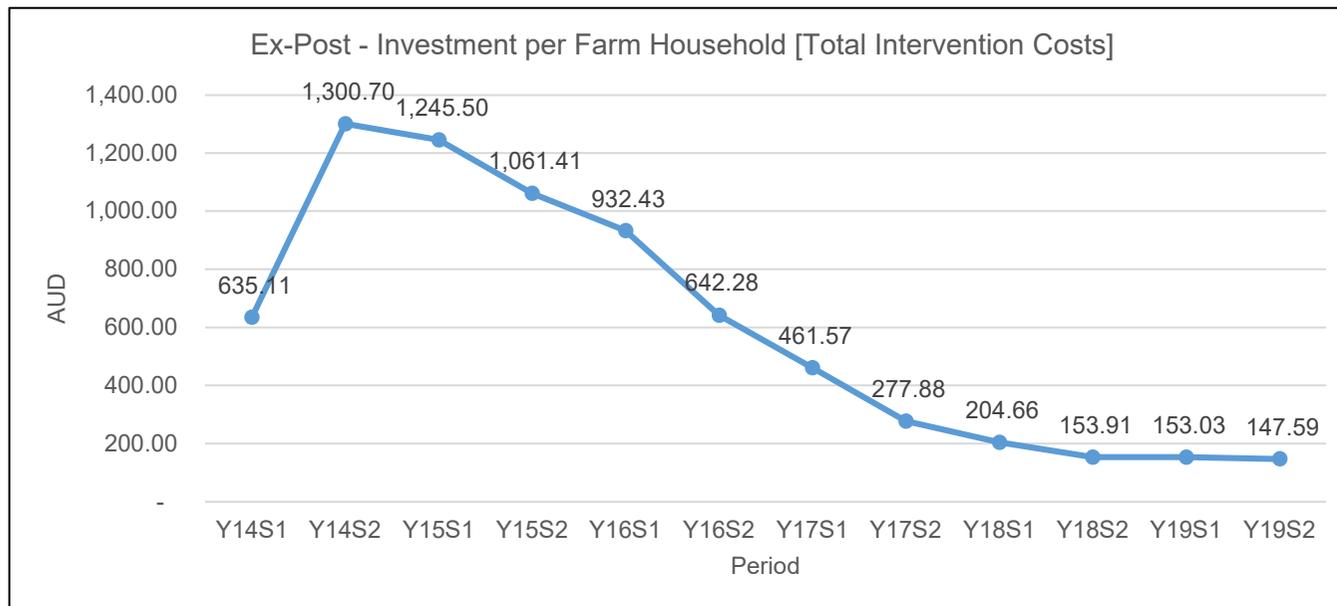
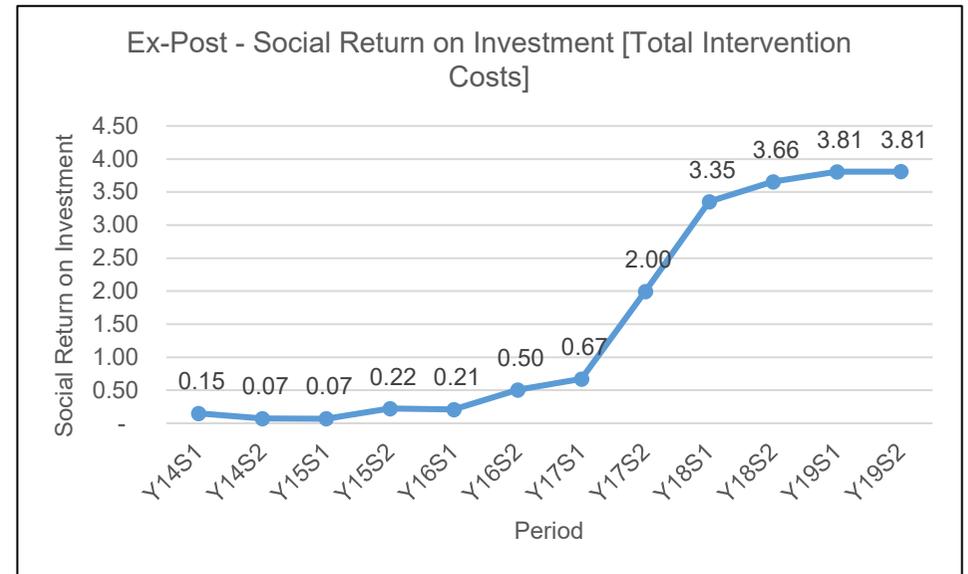
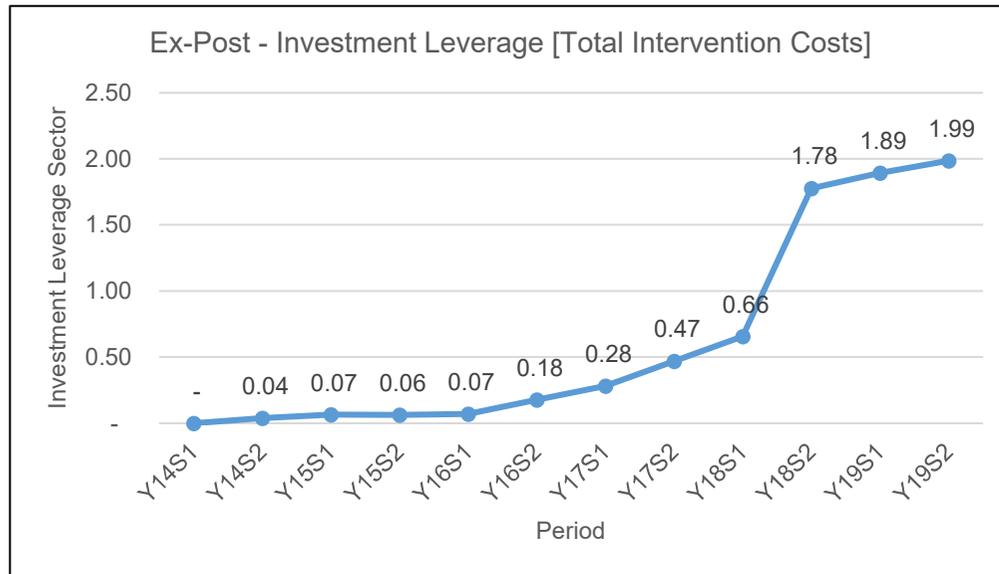
Program	Code	Sub-Sector	Province	Sector	Name	Cumulative Actual Outreach Adjusted up to 2019S2 (HH)	Actual Outreach 2019S2 (HH)	Actual Cumulative NAIC up to 2019S2 (IDR)	Actual NAIC 2019S2 (IDR)
ARISA	1ZA	ARISA-EJ	East Java	ARISA	IPM East Java	0	0	67,965,295,613	-
PRISMA	5VEB	Vegetable-WP	West Papua	Vegetable	Highland Vegetables	176	0	330,108,813	-
PRISMA	3PGB	Pig-NTT	NTT	Pig	Decentralized feed for pig	54555	0	367,624,518,904	-
PRISMA	3AHB	Anggur Merah-NTT	NTT	Anggur Merah	Anggur Merah for Pig Sector	0	0	196,990,886	-
TIRTA	1K1A	TIRTA	East Java	TIRTA	Kliteh Malo	184	0	951,761,253	-
PRISMA	2SNC	Soybean-NTB	NTB	Soybean	ACCESS	1492	0	1,996,632,650	-
PRISMA	4VEA	Vegetable-P	Papua	Vegetable	Promotion of Good Quality Seed and GAP Provision	2397	0	7,473,853,836	-
PRISMA	5VEC	Vegetable-WP	West Papua	Vegetable	Promotion of Good Quality Seed and GAP Provision	2839	0	4,725,141,349	-
PRISMA	1MEC	Maize-EJ	East Java	Maize	Maize Syngenta	2502	0	4,737,466,054	-
PRISMA	1BFC	Beef-EJ	East Java	Beef	Beef Nutrifeed	8534	0	149,882,015,225	-
PRISMA	1ITA	Vegetable-EJ	East Java	Vegetable	Vegetable ICT EWINDO (SIPINDO)	6461	0	90,972,600,000	-
PRISMA	2ITA	Vegetable-NTB	NTB	Vegetable	Vegetable ICT EWINDO (SIPINDO)	1566	0	22,056,400,000	-
PRISMA	3ITA	Vegetable-NTT	NTT	Vegetable	Vegetable ICT EWINDO (SIPINDO)	1759	0	31,096,400,000	-
PRISMA	2ITB	Crop-Protection-NTB	NTB	Crop-Protection	ICT NASA	7904	0	56,277,660,537	3,549,904,308
PRISMA	3ITB	Crop-Protection-NTT	NTT	Crop-Protection	ICT NASA	4571	0	32,112,369,655	2,050,398,272
PRISMA	1ITB	Crop-Protection-EJ	East Java	Crop-Protection	ICT NASA	38774.11715	12939.11715	181,305,539,083	17,266,562,739
PRISMA	1MED	Maize-EJ	East Java	Maize	Maize-DuPont	13474	0	22,001,846,933	-
TIRTA	1P2A	TIRTA	East Java	TIRTA	Irrigation Management Improvement to GHIPPA Kanor	112	0	46,467,792	-
TIRTA	1L2A	TIRTA	East Java	TIRTA	Irrigation Expansion-Leran 2	89	0	1,645,297,978	-
PRISMA	1MOB	Mango-EJ	East Java	Mango	Mango EJ Scale up Syngenta	1094	0	4,867,969,680	-
TIRTA	1K2A	TIRTA	East Java	TIRTA	Kemiri - Malo	286	0	6,282,714,992	-
SAFIRA	12BB	SAFIRA-EJ	East Java	SAFIRA	Institutional Strengthening (I.S.) - Bank Sinarmas	0	0	124,083,216	-
SAFIRA	21MD	SAFIRA-NTB	NTB	SAFIRA	Maize VCF in NTB	0	0	4,893,672,098	-
SAFIRA	11GC	SAFIRA-EJ	East Java	SAFIRA	Institutional Strengthening for BRI	3903	0	33,861,487,176	-
SAFIRA	13PE	SAFIRA-EJ	East Java	SAFIRA	Institutional Strengthening - CU Sawiran	3	0	55,440,500	-
SAFIRA	24MF	SAFIRA-NTB	NTB	SAFIRA	Maize NTB - BISI / YARO	0	0	5,531,974,282	-

Program	Code	Sub-Sector	Province	Sector	Name	Cumulative Actual Outreach Adjusted up to 2019S2 (HH)	Actual Outreach 2019S2 (HH)	Actual Cumulative NAIC up to 2019S2 (IDR)	Actual NAIC 2019S2 (IDR)
PRISMA	3PGC	Pig-NTT	NTT	Pig	Promoting Improved Feed and Good Rearing Practices in Timor	56863	7551	322,735,788,696	62,588,997,979
PRISMA	1MEE	Maize-EJ	East Java	Maize	Maize BISI	10004	0	13,322,503,955	-
PRISMA	1VEA	Vegetable-EJ	East Java	Vegetable	Rainbow - Vegetable EJ	878	0	9,765,000,000	-
PRISMA	2VEA	Vegetable-NTB	NTB	Vegetable	Rainbow - Vegetable NTB	4414	0	47,428,500,000	-
PRISMA	2MOB	Mango-NTB	NTB	Mango	Mango NTB Scale Up Syngenta	896	0	3,434,276,720	-
PRISMA	1MOD	Mango-EJ	East Java	Mango	Pazole EJ Rainbow	27	0	9,075,540,000	-
PRISMA	3VEA	Vegetable-NTT	NTT	Vegetable	Sumber Tani and Sahabat Tani - Vegetable NTT	516	0	3,171,797,568	-
PRISMA	2MEB	Maize-NTB	NTB	Maize	GAP and GHP with YARO	3367	0	11,156,772,078	-
SAFIRA	31CG	SAFIRA-NTT	NTT	SAFIRA	Institutional Strengthening (I.S.) Bank NTT	0	0	634,406,101	-
PRISMA	1STB	Shallots-EJ	East Java	Shallots	Social Marketing CropLife	490	0	20,184,308,886	-
PRISMA	2STB	Shallots-NTB	NTB	Shallots	Social Marketing CropLife	385	0	4,631,065,463	-
PRISMA	1STC	Shallots-EJ	East Java	Shallots	IPDM Nufarm	771	0	40,664,134,640	-
PRISMA	2STC	Shallots-NTB	NTB	Shallots	IPDM Nufarm	1532	0	42,224,004,642	-
PRISMA	1MND	Mung Bean-EJ	East Java	Mung Bean	Promoting certified Mung Bean seeds	4920	4417	2,545,355,814	2,326,557,576
PRISMA	3CEC	Coffee-NTT	NTT	Coffee	Improving Market Access and Increasing the Productivity of Arabica Coffee in Filmores	3126	0	1,070,761,245	-
TIRTA	1L3A	TIRTA	East Java	TIRTA	Irrigation Expansion and Productivity - Leran 3	363	0	1,417,520,882	-
TIRTA	1B2A	TIRTA	East Java	TIRTA	Irrigation provision through the promotion of irrigation consulting in Besah	320	0	3,473,535,551	-
PRISMA	3PTB	Peanut-NTT	NTT	Peanut	Promoting High Quality Peanut Seeds	271	0	1,145,500,315	-
PRISMA	3SDB	Seaweed-NTT	NTT	Seaweed	Seaweed RKN	30	0	209,570,877	-
PRISMA	3MEE	Maize-NTT	NTT	Maize	Maize OPV Nurseries	6668	0	16,124,782,567	-
PRISMA	1VEB	Vegetable-EJ	East Java	Vegetable	Agrosid Soil Treatment GAP	2447	0	13,918,089,440	-
PRISMA	1GIA	GOI-EJ	East Java	GOI	M4P Maize Pamekasan	1950	0	6,406,408,244	-
TIRTA	1B1A	TIRTA	East Java	TIRTA	Irrigation Provision Through Intervillage Agreement	162	0	752,615,482	-
PRISMA	3MEF	Maize-NTT	NTT	Maize	Promoting Hybrid Maize Cultivation	1071	0	580,086,801	-
PRISMA	1BFD	Beef-EJ	East Java	Beef	Beef Japfa	328	0	1,131,173,962	-
TIRTA	1T1A	TIRTA	East Java	TIRTA	Testing the Role of Village Owned Enterprise in the development of Irrigation Provision in Tejo	181	0	1,142,979,467	-

Program	Code	Sub-Sector	Province	Sector	Name	Cumulative Actual Outreach Adjusted up to 2019S2 (HH)	Actual Outreach 2019S2 (HH)	Actual Cumulative NAIC up to 2019S2 (IDR)	Actual NAIC 2019S2 (IDR)
PRISMA	1GIC	GOI-EJ	East Java	GOI	PPC Promoting Small Veg Seed Package to Rural Area of Pamekasan	499	0	401,530,059	-
PRISMA	2GIB	GOI-NTB	NTB	GOI	Promoting small package quality vegetable seed for rural home garden in Sumbawa	1077	0	151,857,000	-
PRISMA	3GIA	GOI-NTT	NTT	GOI	Promoting small package quality vegetable seed for rural Home Garden in Kupang	62	0	41,958,000	-
PRISMA	3GIB	GOI-NTT	NTT	GOI	Promoting small package quality vegetable seed for rural Home Garden in TTS	22	0	58,671,000	-
PRISMA	1REA	Crop-Protection-EJ	East Java	Crop-Protection	Rice EJ FMC	3560	0	34,115,472,021	-
SAFIRA	11ML	SAFIRA-EJ	East Java	SAFIRA	Institutional Strengthening for BNI	0	0	3,767,770,660	-
TIRTA	1K8A	TIRTA	East Java	TIRTA	Expansion Irrigation through Efficiency Irrigations and Co-Funding Infrastructures	799	0	2,804,990,504	-
TIRTA	1C1A	TIRTA	East Java	TIRTA	Expansion of Irrigation Though Efficiency Irrigations and Integrated Irrigation business sectors	563	0	3,943,401,699	-
PRISMA	3MNB	Mung Bean-NTT	NTT	Mung Bean	Provision of Foundation Seeds	761	761	400,840,008	400,840,008
TIRTA	1R1A	TIRTA	East Java	TIRTA	Development of Irrigation Consulting Service	1531	1364	8,897,954,932	7,602,098,678
PRISMA	1VED	Crop-Protection-EJ	East Java	Crop-Protection	Danken-Pest and Disease Management	1016	0	844,425,855	-
PRISMA	4VEB	Vegetable-P	Papua	Vegetable	Vegetable YBTS	111	0	128,548,878	-
PRISMA	1VEE	Crop-Protection-EJ	East Java	Crop-Protection	Vegetable Agricon EJ	709	189	5,019,028,597	2,142,399,279
PRISMA	2MEC	Maize-NTB	NTB	Maize	Promoting Quality Maize Hybrid Seed and Good Cultivation Practices	3231	0	9,767,556,735	-
SAFIRA	13IM	SAFIRA-EJ	East Java	SAFIRA	Puskopdit Institutional Strengthening	16	16	76,184,533	76,184,533
PRISMA	5VED	Vegetable-WP	West Papua	Vegetable	Ewindo Scale up West Papua	124	0	357,521,762	-
PRISMA	4VEC	Vegetable-P	Papua	Vegetable	Ewindo Scale up Papua	1146	0	3,174,848,586	-
PRISMA	1PTC	Peanut-EJ	East Java	Peanut	Peanut EJ Syngenta	790	0	1,791,451,304	-
PRISMA	3CTB	Coconut-NTT	NTT	Coconut	Better Value Market for CCO Farmers	91	0	121,169,922	-

Program	Code	Sub-Sector	Province	Sector	Name	Cumulative Actual Outreach Adjusted up to 2019S2 (HH)	Actual Outreach 2019S2 (HH)	Actual Cumulative NAIC up to 2019S2 (IDR)	Actual NAIC 2019S2 (IDR)
TIRTA	1R1B	TIRTA	East Java	TIRTA	Integrating Productivity Enhancement with Irrigation business	5844	0	6,356,223,787	-
TIRTA	1G1A	TIRTA	East Java	TIRTA	Irrigation Expansion Going Extra Mile	36	0	261,569,492	-
PRISMA	1PTD	Peanut-EJ	East Java	Peanut	Promoting Quality Input to Peanut Farmers	173	0	460,110,293	-
PRISMA	3CWC	Cashew-NTT	NTT	Cashew	Cashew GAP-Government ES	443	0	278,468,078	-
PRISMA	5VEE	Vegetable-WP	West Papua	Vegetable	YBTS Fak-Fak	84	0	92,767,500	-
TIRTA	1P5A	TIRTA	East Java	TIRTA	Irrigation Provision in Padangan District Through Intervillage Agreement	346	0	2,266,442,691	-
TIRTA	1K1B	TIRTA	East Java	TIRTA	Upgrading Irrigation System for Expansion in Tinawun	81	0	714,113,901	-
TIRTA	1G2A	TIRTA	East Java	TIRTA	Technical Improvement for better irrigation access in Gayam 2	914	0	1,649,556,781	-
TIRTA	1L1A	TIRTA	East Java	TIRTA	Surface Irrigation to Remote Area in Leran 1	244	0	531,044,665	-
PRISMA	3SDD	Seaweed-NTT	NTT	Seaweed	Seaweed Mazu	850	0	170,534,303	-
PRISMA	1MNE	Mung Bean-EJ	East Java	Mung Bean	Mung Bean Ewindo Commercialization of Mung Bean Seed	2608	2608	1,430,292,922	1,430,292,922
Total						385,976	30,253	2,171,452,414,202	99,649,141,498

Annex 7 – PRISMA value for money ex-post Y19S2



Annex 8 – PRISMA Capacity Building Plan 2020

No. of staff stated in the cell	CB activities	Provider and location	2020											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Technical skills													
	Cohort: Induction training	PRISMA staff, Surabaya	20											
	Cohort: Basics of Results Measurement	PRISMA staff, Surabaya				21								
MSD	Springfield Center – Bangkok				6								6	
	Advanced workshop in MRM – Bangkok												2	
	Peer learning/exchange visit, MSD program (for implementation & operation staff)									20				
	Gender Bias Training	STA, Surabaya								all staff				
	Partnership Brokering Training	Julie Mundy, Surabaya								40				
	Partnership Brokering Accreditation	Partnership Brokers Association, Surabaya			1	1	1	1						
	Political Economy Analysis (PEA) Training	Training PRISMA Policy Team, Surabaya				3				all staff				
	Contextual Leadership Training	DDI, Jakarta			7									
	Workflow Audit workshop	PRISMA staff, STA, TBD									33			
	Refresher Training													
	RM Refresher	Refresher training PRISMA RM Team, Surabaya									all staff			
	GESI (all staff)	Refresher training – HoP/STA, Surabaya				all staff					all staff			
	Business Viability and Planning	Refresher training – PRISMA staff, Surabaya		25							25			
	Deal-making and Negotiation	Refresher training – HoP, Surabaya										all staff		
	Operational management	Refresher training COO/Consultant, Surabaya		all staff			all staff				all staff		all staff	
	Soft skills													
	English training	IALF, Surabaya		37	2	1								
	Writing policy brief training	Tempo Institute, Jakarta		2										
	Seminars/workshop													
	2020 Australian AID Conference	Crawford School of Public Policy, Australian National University, Canberra		1										

Annex 9 – PRISMA partner details

PRIVATE SECTOR PARTNER



Name of partner	: PT Agri Tekno Karya (HARA)		
Core business	: HARA is a blockchain-based data exchange for the food and agriculture sector		
Sector	: ICT	Location	: East Java
Intervention	: Improvement of credit disbursement process and proof of concept of input and off-taking business case through digital data exchange		
Partner objectives:	<ul style="list-style-type: none"> Connect farmers with other players (financial institutions, off-takers and input producers) in the agriculture sector through digital data exchange using HARA agriculture application 		PRISMA facilitation : <ul style="list-style-type: none"> Develop and improve the business model Prove the business case (piloting, connect with relevant stakeholders and socialisation)



Name of partner	: PT Agricon Indonesia		
Core business	: Agrochemical production, formulation and distribution. Greenhouse manufacture		
Sector	: Crop Protection	Location	: CJ, EJ
Intervention	: Improving marketing strategy for soil treatment product and good crop protection practices (GCP) through farmers education		
Partner objectives:	<ul style="list-style-type: none"> National level sales strategy restructuring. Agricon is using a customer-centric strategy that focuses on increasing its service in order to gain loyalty Provide farmers with newly launched soil treatment/catalyst products 		PRISMA facilitation: <ul style="list-style-type: none"> Provide consultancy for managerial issues related to KPI and incentives in order to successfully adopt the new business model Facilitate promotion of new technologies by enhancing promotion targeting



PRIMASID

Name of partner	: PT Agrosid Manunggal Sentosa/PT Primasid Andalan Utama		
Core business	: Agrosid and Primasid are sister companies of seed importer and producer in Indonesia. They produce, import, and sell seeds (horticulture and food crop), bio fertilizers, and bio pesticides in Indonesia.		
Sector	: Rice	Location	: EJ, CJ, NTT, NTB
Intervention	: Agrosid-Primasid hybrid rice seed		
Partner objectives:	<ul style="list-style-type: none"> Increase market penetration and brand image for hybrid rice seeds (MAPAN brand) Increase productivity and cost effectiveness of seed production 		PRISMA facilitation: <ul style="list-style-type: none"> Improve management system for better data decision-making Devise market penetration strategy for new market segment Soil analysis for scientific recommendation Facilitate the partners with agri-mechanisation company



Name of partner	: PT Bina Guna Kimia		
Core business	: Agrochemical manufacturing company focuses on pesticides and soil treatment products		
Sector	: Crop Protection	Location	: CJ, EJ, NTB
Intervention	: Innovative marketing strategies to increase adoption of selective safer pesticides and good crop protection practices		
Partner objectives:	<ul style="list-style-type: none"> Follow FMC global initiatives to move away from broad spectrum (high toxic) pesticides Market expansion of selective safer pesticides Improve farmers' adoption of Good Crop Protection Practices (as part of product stewardship) 		PRISMA facilitation: <ul style="list-style-type: none"> Support partner to replace broad spectrum pesticides with the safer one Support market research and rural communication experts to understand farmers' rationale for use of broad spectrum pesticides and improper crop protection practices

- Support partner to tailor effective communication approaches for selective pesticides and Good Crop Protection Practices



PT BISI International Tbk

Name of partner	: PT BISI International Tbk		
Core business	: BISI is Indonesia's largest producer of hybrid seeds for maize, rice, and fruits and vegetables		
Sector	: 1. Finance 2. ICT	Location	: 1. NTB, NTT 2. NTT
Intervention	: 1. Expanding access to agri-input financing for farmers through BISI-YARO 2. Improving the flow of information of maize farming through multi-stakeholder partnership		
Partner objectives 1:	<ul style="list-style-type: none"> • Grow market sales by utilising agri-input financing as one of its promotional tools • Expand maize seed market to NTT • Improve effectiveness of current market database management and analysis 		
Partner objectives 2 :	<ul style="list-style-type: none"> • Increase its target sales by expanding its business to wider region and create more product distribution channel 		
	PRISMA facilitation 1 : <ul style="list-style-type: none"> • Improve partner's capacity in managing agri-input financing through YARO and developing credit history for their farmers • Facilitate more engagement with other financing providers to offer more agri-input financing products to farmers • Support promotional activities through YARO distribution channel • Support improvement of market database management and analysis 		
	PRISMA facilitation 2 : <ul style="list-style-type: none"> • Connect all the stakeholders (Ditant, PT BISI, and Swasti Sari) and improve the business model • Provide consultation and support to PT Ditant, PT BISI, and Swasti Sari as needed • Oversee and monitor project implementation 		



Name of partner	: Corteva Agriscience (PT DuPont Indonesia)		
Core business	: Balanced and diverse seed, crop protection, and digital service solutions		
Sector	: 1. Maize 2. Rice (in process)	Location	: 1. CJ, EJ, NTB, NTT 2. CJ, EJ
Intervention	: 1. Promoting better farming practices and technology for increasing the yield 2. Increasing production and promoting rice hybrid seed		
Partner objectives intervention 1:	<ul style="list-style-type: none"> • Improve Corteva's strategies and inclusive business models • Expand hybrid maize seed market 		
Partner objectives intervention 2:	<ul style="list-style-type: none"> • Increase hybrid rice seed • Expand hybrid rice seed market 		
	PRISMA facilitation intervention 1: <ul style="list-style-type: none"> • Conduct research (market research, gender study related to business case) • Develop partner's promotional program • Support sales force capacity building • Support business strategy development 		
	PRISMA facilitation intervention 2: <ul style="list-style-type: none"> • Conduct research (market research for grower's selection and agent database) • Support partner's production and promotional strategy 		



Name of partner	: PT Crowde Membangun Bangsa		
Core business	: An agri-tech financing platform working through crowdfunding scheme to provide financial services in agricultural sector		
Sector	: Finance	Location	: Central Java
Intervention	: Expanding innovative agri-financing		
Partner objectives:	<ul style="list-style-type: none"> • Increase portfolio by expanding to other areas/commodities • Leverage other business opportunities/financing (e.g. AR financing) • Confirm partner's position as market leader in the agri-tech financing industry 		
	PRISMA facilitation : <ul style="list-style-type: none"> • Improve marketing strategy (including setting-up Kiosk agent system) • Improve credit scoring system and collection system • Conduct stakeholders gathering for supporting market actors (insurance companies, banks) • Speed up technical development of farmers' marketplace • Speed up IOT support for monitoring • Support TONI app (a kiosk app) improvement and promotion 		



PT. DITANT BRINANTA JAYA

Name of partner	: PT Ditant Brinanta Jaya	
Core business	: An agri-product off-taking company which currently focuses its business in maize off-taking	
Sector	: ICT	Location : NTT
Intervention	: Improving the flow of information of maize farming through multi-stakeholder partnership	
Partner objectives :	<ul style="list-style-type: none"> Expand their business to other areas, especially in East Nusa Tenggara Need to be connected to complementary product and service such as agri-input and access to loan to ensure the yields quality and support the business process 	
	PRISMA facilitation : <ul style="list-style-type: none"> Connect all stakeholders (Ditant, PT BISI and Swasti Sari) and develop the business model Provide consultation and support to PT Ditant, PT BISI and Swasti Sari as needed Oversee and monitor project implementation 	



Name of partner	: PT East West Indonesia (EWINDO)	
Core business	: Headquartered in the Netherlands, East West Indonesia focuses its business in horticulture seed with its brand Panah Merah.	
Sector	: 1. Mung bean 2. Irrigation	Location : 1. CJ, EJ 2. EJ
Intervention	: 1. Commercialisation of mung bean seed 2. Promotion of new improved irrigation provision for seed nursery farmers	
Partner objectives intervention 1:	<ul style="list-style-type: none"> Develop its business portfolio to include staple crop (mung bean) in addition to horticulture 	
	PRISMA facilitation intervention 1: Phase 1: business plan and consumer research Phase 2: marketing activities and mung bean consumption mapping through research and mung bean industry FGD	
Partner objectives intervention 2:	<ul style="list-style-type: none"> To secure partner's seed supply which came from its seed nursery farmers in EJ 	
	PRISMA facilitation intervention 2: <ul style="list-style-type: none"> Support in irrigation market research within production area to identify farmers behaviour and profile of irrigation service providers Linkage with competent irrigation contractors to execute the project on the ground Support in quality control of irrigation design through technical expert. 	



Name of partner	: CV Fermen Hipro Feed	
Core business	: An agrobusiness company producing organic concentrate feed for ruminants formulated from agricultural and agroindustry wastes.	
Sector	: Beef	Location : CJ, EJ
Intervention	: Promoting cattle specific concentrate feed for improving cattle productivity	
Partner objectives:	<ul style="list-style-type: none"> Increase production and sales of concentrate feed through expansion of distribution network to new areas Target untapped market of concentrate feed for post-partum cows through product diversification 	
	PRISMA facilitation: <ul style="list-style-type: none"> Conduct research on market segmentation for new areas, potential agent assessment for distribution network expansion, and new product development study to facilitate product diversification Provide support in promotional activities and capacity building for staff as well as agents Facilitate multi-stakeholder partnership especially establishing relationships with government 	



Name of Partner	: PT GarudaFood Putra Putri Jaya, Tbk	
Core business	: GarudaFood is the largest peanut snack manufacturers in Indonesia with three business divisions: food, beverage and distribution. It is also a pe	
Sector	: Peanut	Location : CJ, EJ
Intervention	: Promoting peanut off-taker	

Partner objectives: <ul style="list-style-type: none"> Promote off-takers for wet pod and local kernel peanut through direct partnership scheme with farmers groups/entities 	PRISMA facilitation: <ul style="list-style-type: none"> Provide research on potential partnership mapping, facilitation with stakeholders, and pilot partnership event
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Name of partner :	PT Panca Patriot Prima		
Core business :	Animal feed producer (for pigs, cattle, fish and poultry) and day-old chickens (DOC) based in Surabaya		
Sector :	Pig	Location :	NTT
Intervention :	Expanding Patriot feed in NTT to promote quality feed and good feeding practices		
Partner objectives: <ul style="list-style-type: none"> Improve feed distribution network to secure supply of feed in NTT Increase feed sales in NTT by implementing effective marketing strategies, recruitment of technical staff, and introducing feed for other livestock (poultry). Establish feed depot to support marketing and sales in NTT 	PRISMA facilitation: <ul style="list-style-type: none"> Link partner with potential distributors and market actors to strengthen and expand its distribution channel Provide market insights and develop marketing strategies (e.g. information on market potential of livestock (poultry) feed, smaller feed packaging) and more effective marketing materials (e.g. banners, leaflets, jingles) design Support marketing consultant to support partner in developing training module and training partner marketing and field staff, related to various topics (business management, agribusiness analysis, marketing technique, warehousing, inventory management and record keeping) 		



Name of partner :	KJUB (Koperasi Jasa Usaha Bersama) Puspetasari		
Core business :	Feed company specialising in producing cattle fattening and dairy concentrate feed		
Sector :	Beef	Location :	CJ, EJ
Intervention :	Promoting cattle specific concentrate feed for improving cattle productivity		
Partner objectives: <ul style="list-style-type: none"> Increase high quality feed selling through product diversification and expansion of distribution network to new areas using research-based marketing strategy. 	PRISMA facilitation : <ul style="list-style-type: none"> Expand and improve capacity of distribution channel or agents Conduct formula development study and market research for new product and area Develop improved offline and online marketing strategy based on market research Provide capacity building to female/male farmers, staff and agents 		



Name of partner :	PT Pupuk Kalimantan Timur		
Core business :	A state-owned corporation producing fertiliser and other agro-chemical products		
Sector :	Soil Treatment	Location :	EJ, NTB, NTT
Intervention :	Promoting high quality commercial fertiliser and best fertilising practice		
Partner objectives: <ul style="list-style-type: none"> Increase commercial fertiliser selling through expanding collaboration with other stakeholders (through multi-stakeholder partnership) Become a growing and sustainable world-class company in the fertiliser, chemical and agrobusiness industry" 	PRISMA facilitation: <ul style="list-style-type: none"> Strengthen retailers' marketing/ sales skills through TOT Facilitate multi-stakeholder partnerships to leverage farmers producing products for institutional buyers Market segmentation analysis Improve distribution channels and work with more retailers Develop new side business for retailers Develop an R&D station aimed at developing organic products which target women in NTB Improve the PKT field activity reporting system. 		



Name of partner :	PT Rekan Usaha Mikro Anda		
Core business :	PT RUMA (Gojek Group)'s flagship service, Arisan Mapan, provides innovative products for consumers in rural Indonesia through digitally-supported rotating savings group (Arisan).		
Sector :	Finance	Location :	East Java
Intervention :	Improving access to high-quality input through women led rotating savings groups		
Partner objectives: <ul style="list-style-type: none"> Reach more rural market segments by including agriculture products into partner's product catalogue 	PRISMA facilitation: <ul style="list-style-type: none"> Facilitate agriculture product marketing strategy, including support in promotional activities and market 		

research to identify customer segmentation, product types, and focus areas

PT RUTAN

Name of partner	: PT Rutan		
Core business	: Agricultural machinery Importer that provide pre to post harvest machinery		
Sector	: Mechanisation	Location	: EJ, CJ
Intervention	: PT Rutan market penetration in East Java		
Partner objectives:	<ul style="list-style-type: none"> • Shifting the focus from government market to commercial market. • Increasing its shares in open market for its new products. • Integrating market insights into their customer centric marketing strategy. 		
	PRISMA facilitation: <ul style="list-style-type: none"> • Integrating market research into their marketing strategy development. • Developing internal business development capacity building. 		



Name of partner	: CV Semi		
Core business	: Mung bean seed nursery, producing certified mung bean seed (Vima variety) which currently is serving both market and government programs. It is also a distributor of agriculture input products for some agri-input companies		
Sector	: Mung bean	Location	: Central Java
Intervention	: Promoting certified mung bean seed and GAP		
Partner objectives:	<ul style="list-style-type: none"> • Enlarge mung bean seed business by expanding its mung bean seed market nationwide through the market (retailers/distribution channels) and government subsidy program 		
	PRISMA facilitation: <ul style="list-style-type: none"> • Provide business analysis and solutions to facilitate partner's development of better strategy vis-à-vis the mung bean seed market (e.g. improve distribution channels, linkage with government, linkage with potential off-season contract farmers to produce more mung bean seed). 		



Name of partner	: PT Sierad Produce, Tbk		
Core business	: The company focuses on its core competencies of feeds production, production of day-old chicken (DOC), broiler commercial farm, contract growing, chicken slaughtering and production of processed (frozen food) and value-added chicken products. The company produces poultry feed, swine feed, duck feed and quail feed		
Sector	: Pig	Location	: NTT
Intervention	: Expanding Sierad Produce feed products in NTT		
Partner objective is to increase feed sales in NTT through strengthening and expanding feed channel distribution and promoting high quality pig feed	PRISMA facilitation: <ul style="list-style-type: none"> • Contributing cost of consultant for development of training materials, and conduct the capacity building for field staff, marketing and outsourcing staff • Support partner in strengthen and expanding their distribution channel through market survey in new areas, introduce media of group communication • Help partner in developing its marketing strategy through provision of inputs such as more effective design of marketing materials (calendar, billboard, videotron, banner, leaflet and social media content), create "jingle" with partner, branding, suggest a group communication platform, and contribute to marketing materials and media coverage • Link partner with the market actors, such as pig collector, input retailers and public sector actors (the government agencies of agriculture and livestock, agricultural extension services, men & women farmers groups, <i>PKK</i>, church communities) 		



Name of partner	: PT Sinar Indochem		
Core business	: PT Sinar Indochem is a feed producer of poultry feed and pig feed		
Sector	: Pig	Location	: NTT
Intervention	: Expanding Star feed products in NTT to promote quality feed and good feeding practices		
Partner objective is to make the best of the market opportunity and solve specific limitation in Promoting High Quality Pig Feed	PRISMA facilitation:		

that will be impactful for poor farmers in Nusa Tenggara Timur (NTT).

To achieve the objective, partner will:

- strengthen and expand their distribution channel (distributors and retailers) through business gathering and regular meetings
- develop and implement its market strategy (promotional materials, demo-plots, coaching clinic, market storm and pig farming competition.

- provision of consultant for development of marketing strategies, farm business analysis, Inventory Management, training and promotional materials.
- Facilitate partners with local market actors including government to promote their feed products and conduct training for potential agent, sub agents and farmer leaders



Name of partner	: CV Sinar Terang Madani		
Core business	: Animal feed producer for pig feed, poultry feed and produce day old chicken (DOC) in Indonesia		
Sector	: Pig	Location	: NTT
Intervention	: Expanding Perkasa feed in NTT to promote quality feed and good feeding practices		
Partner objectives:	<ul style="list-style-type: none"> • Improve its feed distribution network to secure supply of feed in NTT • Increase feed sales in NTT by implementing effective marketing strategies, recruitment of technical staff, and introduce feed for other livestock (poultry) 		
	PRISMA facilitation: <ul style="list-style-type: none"> • Link partner with potential distributors and market actors to strengthen and expand its distribution channel. Support recruitment of STM • Provide market insights and develop marketing strategies, such as information on market potential of livestock (poultry) feed, smaller feed packaging, and more effective marketing materials (banner, leaflet, jingle, etc) design • Support marketing consultant to support STM in developing module and train STM staff (marketing and field) related to topic: business management, agribusiness analysis, marketing technique, warehousing, inventory management, and record keeping 		



Name of partner	: PT Sumber Unggas Indonesia		
Core business	: Local chicken farm, hatchery, and fresh meat & egg production		
Sector	: Poultry	Location	: NTT
Intervention	: Promoting and producing KUB (kampung unggas Balitnak) chicken breed in NTT		
Partner objectives:	<ul style="list-style-type: none"> • Introduce and promote KUB chicken in NTT • Expand distribution channel by acquiring DOC agents in NTT to increase sales 		
	PRISMA facilitation: <ul style="list-style-type: none"> • Develop business model and provide market insights for better marketing strategy • Facilitate permit for partner to transport and sell its DOC in NTT • Connect partner to crucial stakeholders and existing market actors to promote KUB chicken from input to output market • Facilitate training for potential farmers and agents • Develop marketing campaign strategy for boosting chicken demand 		



Name of partner	: Credit Union Swasti Sari		
Core business	: A National Level Primary Credit Cooperative that is originated in NTT and considered one of the largest CU in NTT		
Sector	: ICT	Location	: NTT
Intervention	: Improving the flow of information of maize farming through multi-stakeholder partnership		
Partner objectives:	<ul style="list-style-type: none"> • In order to reduce the risk in providing credit to farmers, it needs to be connected to complementary products and services, such as good quality agri-inputs, and to ensure good quality products and avoid harvest failure and access to buyers to ensure farmers can sell their products at fair price. 		
	PRISMA facilitation : <ul style="list-style-type: none"> • Connect all the stakeholders (Ditant, PT BISI, and Swasti Sari) and develop the business model • Provide consultation and support to PT Ditant, PT BISI, and Swasti Sari as needed • Oversee and monitor project implementation 		



Name of partner	: PT Syngenta Indonesia		
Core business	: PT Syngenta Indonesia is a multi-national company focusing on improved seeds and crop protections		
Sector	: Maize	Location	: EJ
Intervention	: Hybrid maize seed market development		
Partner objectives:	<ul style="list-style-type: none"> Expand their hybrid maize seed market in developing areas 		
	PRISMA facilitation: <ul style="list-style-type: none"> Provide information about market condition and farmers' behaviours Support partner's promotional program Support the optimisation of subsidised seeds through training to government extension services and farmers about hybrid maize cultivation 		



Name of partner	: PT Tanijoy Agriteknologi Nusantara		
Core business	: Fintech P2P		
Sector	: Finance	Location	: CJ, EJ
Intervention	: Expanding innovative agri-financing		
Partner objectives :	<ul style="list-style-type: none"> Provide secure loan for crowdfunder (p2p funder) Help TTB on getting fund through p2p lending Scale up their business by reaching more farmers to be funded and gain more funder 		
	PRISMA facilitation: <ul style="list-style-type: none"> Increase more farmers to be reached by utilizing agent model 		

PUBLIC SECTOR PARTNER



BPTP NTT

Name of partner	: Dinas Pertanian NTT		
Core focus	: Agriculture Office of NTT Province		
Sector	: Maize	Location	: NTT
Intervention	: Maize development strategy and roadmap		
Partner objectives:	To support Dinas Pertanian NTT program in increasing maize production by: <ul style="list-style-type: none"> Sharpening the planning contained in the Grand Design of the Development of Dry Land Agriculture in the East Nusa Tenggara Islands, particularly in encouraging the production and use of high-quality maize seeds of open pollinated varieties (OPV) Increasing nursery capacity to become professional seed producers Strengthening maize GAP practice by increasing the capacity of TJPS staff (upstream-downstream program) Release second edition of GAP book with updated information on FAW and TJPS role 		
	PRISMA facilitation: <ul style="list-style-type: none"> Support in developing Maize Roadmap 2019 – 2023 Conduct nursery survey to identify potential nursery to be further developed as professional nurseries Conduct market survey to provide analysis for partner decision-making Support in capacity building for nurseries to enter open market Provide GAP tools (flipchart and brochure) for TJPS field staff 		



DINAS PERTANIAN NTT

Name of partner	: Dinas Pertanian NTT		
Core focus	: Agriculture Office of NTT Province		
Sector	: Maize	Location	: NTT
Intervention	: Maize development strategy and roadmap		
Partner objectives:	<ul style="list-style-type: none"> Sharpen the planning contained in the Grand Design of the Development of Dry Land Agriculture in the East Nusa Tenggara Islands, particularly in encouraging the production and use of high-quality maize seeds of open pollinated varieties (OPV), and to encourage the good application of 		
	PRISMA facilitation: <ul style="list-style-type: none"> Support in developing Maize Roadmap 2019 – 23 Conduct nursery survey to identify potential nursery to be further developed as professional nurseries Conduct market survey to provide analysis for partner decision-making 		

<ul style="list-style-type: none"> maize cultivation practices for both female and male farmers in East Nusa Tenggara Increase maize production in NTT in response to government's plan for self-sufficiency and feed mill development plan by encouraging the use of certified seed (OPV and Hybrid) and collaboration with off-takers 	<ul style="list-style-type: none"> Support in capacity building for nurseries to enter open market Provide GAP tools (flipchart and brochure) for TJPS field staff
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CO-FACILITATOR



Name of partner	: Yayasan Kalimajari		
Core focus	: The foundation focuses on seaweed and cacao commodities by implementing projects on capacity building, research and technical assistance, funded by various private and public institutions		
Sector	: Seaweed	Location	: Papua
Intervention	: Seaweed improved seedlings		
PRISMA objectives	:		Co-facilitator roles
<ul style="list-style-type: none"> Induce partnerships for improving improved seedling research and production Improve MoMF strategy of improved seedling (and cultivation knowledge) provision and distribution system 			Substantial role in <ul style="list-style-type: none"> Mediating between/bridging seaweed seedling stakeholders Knowledge and information sharing Providing inputs and presenting findings on seedling development to all partners