



Progress Report  
and  
Implementation  
Plan

# Promoting Rural Incomes through Support to Markets in Agriculture

May 2016

# TABLE OF CONTENTS

<b>LIST OF FIGURES</b> .....	III
<b>LIST OF TABLES</b> .....	III
Executive Summary .....	1
1. Policy and Institutional Context .....	4
2. Portfolio Management .....	4
2.1 Portfolio Analysis (existing and new interventions) .....	4
2.2 Intervention Development Progress .....	6
2.3 Progress Key Performance Indicators .....	6
2.4 Challenges and Lessons learned .....	7
2.5 Management Response and Projections for the Next Twelve Months .....	8
3. Cross-Cutting Issues .....	9
3.1 Results Measurement .....	9
3.2 Gender and Social Inclusion .....	10
3.3 Environment .....	10
3.4 Communications .....	11
3.5 Risk Management .....	11
4. Stakeholder Relationship Management .....	12
4.1 GoI and Sub-National Agencies .....	12
4.2 Private Sector Partners .....	12
5. Operations and Finance .....	13
5.1 Operations .....	13
5.2 Finances .....	13
Annex 1: QMT Results December 2015 .....	15
Annex 2: Sub-Sector Briefs .....	16
Annex 3: Portfolio Development Plan .....	62
Annex 4: Projections Until December 2016 .....	63
Annex 5: Risk Matrix .....	64
Annex 6: Private Sector Partner Details .....	64
Annex 7: Quarterly budget breakdown .....	85

## **LIST OF FIGURES**

Figure 1: Intervention Development and Cumulative Outreach .....	1
Figure 2: Outreach projections .....	2
Figure 3: Outreach Projections.....	4
Figure 4: Portfolio Quality Matrix .....	5
Figure 5: Intervention Development .....	6
Figure 6: Cumulative Outreach.....	7

## **LIST OF TABLES**

Table 1: Key Performance Indicators .....	3
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## LIST OF ABBREVIATIONS

<b>AIP</b>	Australia-Indonesia Partnership
<b>AIP-RURAL</b>	Australian-Indonesia Partnership for Rural Economic Development
<b>AUD</b>	Australian Dollar
<b>BAPPENAS</b>	<i>Badan Perencanaan Pembangunan Nasional</i> – National Development Planning Agency
<b>BC</b>	Business consultant
<b>CMT</b>	Core management team
<b>CSR</b>	Corporate social responsibility
<b>DCED</b>	Donor Committee for Enterprise Development
<b>DFAT</b>	(Australian) Department of Foreign Affairs and Trade
<b>EJ</b>	East Java
<b>EWINDO</b>	East West Indonesia Ltd. (company)
<b>GAP</b>	Good agricultural practices
<b>GoI</b>	Government of Indonesia
<b>ha</b>	Hectare
<b>HoP</b>	Head of Portfolio
<b>ICCRI</b>	Indonesian Coffee and Cocoa Research Institute
<b>ICN</b>	Intervention concept note
<b>IDR</b>	Indonesian Rupiah
<b>IP</b>	Intervention plan
<b>ISD</b>	Intervention steering document
<b>ISP</b>	Intermediate service provider
<b>KPI</b>	Key performance indicator
<b>LSP</b>	Local service provider
<b>M4P</b>	Making markets work for the poor
<b>MIS</b>	Management information system
<b>MRM</b>	Monitoring and results measurement
<b>MT</b>	<i>Metric ton</i>
<b>MTR</b>	<i>Midterm review</i>
<b>NTB</b>	<i>Nusa Tenggara Barat</i> (West Nusa Tenggara province)
<b>NTT</b>	<i>Nusa Tenggara Timur</i> (East Nusa Tenggara province)

<b>P2B</b>	<i>Program Penghidupan Berkelanjutan</i> (Sustainable Livelihoods Program)
<b>PISAgro</b>	Partnership for Indonesia Sustainable Agriculture
<b>PMF</b>	Project management functions
<b>PPI</b>	Progress out of poverty index
<b>PPP</b>	<i>Purchasing power parity</i>
<b>PRISMA</b>	Promoting Rural Income through Support for Markets in Agriculture
<b>PT</b>	<i>Perseroan Terbatas</i> (a limited liability company)
<b>QMT</b>	Quality monitoring tool
<b>RM</b>	Results measurement
<b>SLPT</b>	Lapang School for Comprehensive Pest Management
<b>TNP2K</b>	<i>Tim Nasional Percepatan Penanggulangan Kemiskinan</i> (National Team for the Acceleration of Poverty Reduction)
<b>TTU</b>	<i>Timor Tengah Utara</i> (North Central Timor Regency)

# EXECUTIVE SUMMARY

## Background

PRISMA's objective is to increase the competitiveness of 300,000 poor female and male farmers in Eastern Indonesia, resulting in a net attributable income increase of at least thirty per cent by the end of 2018. PRISMA is the largest program under AIP-Rural, a partnership between the governments of Australia and Indonesia to address the most significant constraints to rural income growth and boost farmer incomes in five provinces in Eastern Indonesia.

**PRISMA has focused on active portfolio management, quality assurance of the program's interventions, and pre-auditing of its results measurement system.** The portfolio review conducted in November-December 2015 using the newly developed quality monitoring tool (QMT) increased the coherence and target orientation of the portfolio and its implementation. The results of the DCED pre-audit have prepared PRISMA for a positive outcome when the DCED audit is scheduled to take place in June 2016. The planned development of provincial scorecards for the Progress out of Poverty Index (PPI) was postponed and is now scheduled for the first semester of 2016, due to the time constraints of the lead consultant.

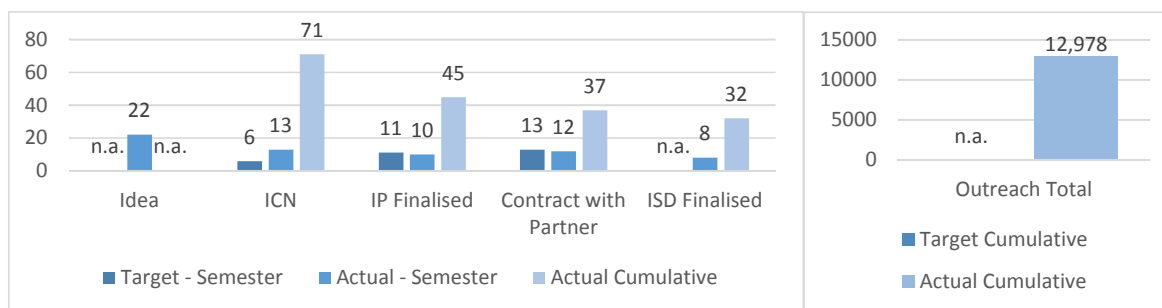
**PRISMA has continued to enhance staff capacity and numbers, increase management and mentoring, and further changed portfolio responsibilities:** We split PRISMA's portfolio from two into four parts, and conducted a challenging but overall smooth handover to the new Heads of Portfolio (HoPs), along with the transition of the co-facilitator portfolio from external (Promark) to internal (PRISMA) supervision. We also carried out the recruitment of 15 new staff (cohort 3) for the portfolio and results measurement teams.

**Three external factors that continue to present challenges for PRISMA are Indonesia's slower economic growth rate, El Niño and government subsidy programs.** The growth of the Indonesian economy was slower than expected and some partner companies continued to have a reduced appetite for co-investing in new technologies and innovations promoted by PRISMA. A strong El Niño effect has delayed planting and harvesting seasons in some sectors, the major impact of which we expect to feel 2016. The Government of Indonesia's subsidy policies continued to create both challenges and opportunities in some sub-sectors, particularly in PRISMA's peanut and soybean interventions in East Java but it likely to affect the maize sub-sectors in the future as well.

## Progress

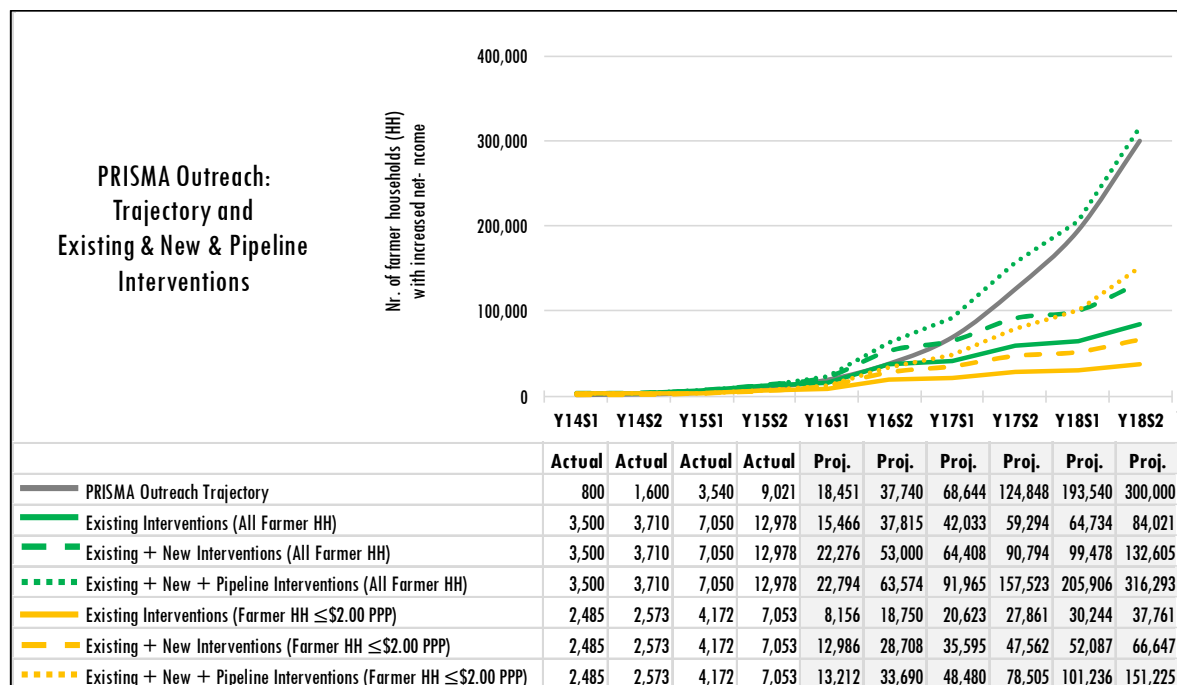
**1) PRISMA was just shy of achieving its planned targets for intervention development.** Intervention Concept Note (ICN) development was thirteen against a target of six, while finalised Intervention Plans (IP) and partner contracts fell short by one each. Overall, the new interventions strive to reach 15,185 farmers by end of 2016 (9,958 of which are below the \$2 purchasing power parity poverty line (\$2PPP line)), and 48,584 (28,886<\$2PPP) by the end of 2018. The high figure of twenty two new intervention ideas can be accredited to large extent to the availability of additional senior management capacity.

Figure 1: Intervention Development and Cumulative Outreach



2) Through its existing and new interventions, PRISMA benefited 5,928 farmers (2,881<\$2PPP), 4,062 (1,172 < \$2PPP) less than the semester target of 9,900 as defined in the July 2015 PRIP. 3,926 (1,953<\$2PPP) of the benefited farmers are measured results, while 2,002 (928<\$2PPP) are estimated results<sup>1</sup>. We hoped to overachieve targets but saw drawbacks due to delays in implementation (reducing the potential impact of an estimated 2,200 farmers (900<\$2PPP)), the influence of the government subsidy programs (impacting 1,000 (450<\$2PPP)), and postponed impact assessments (together impacting an estimated 1,500 farmers (700<\$2PPP)).

Figure 2: Outreach projections <sup>2,3</sup>



- 3) The expected outreach for existing and new interventions is 53,000 farmers (28,708<\$2PPP) by the end of 2016 and 132,605 (66,647<\$2PPP) farmers by end of 2018. This is lower than expected six months ago. There are three reasons for this: PRISMA has considered adverse external conditions and has therefore applied a much more conservative approach; the ability of our teams to make more realistic assumptions has improved they were for the first time able to observe a full crop cycle in most sub-sectors; and after local NGOs began implementation PRISMA had to recognise that NGO projections were clearly too optimistic.
- 4) However, the total projected outreach for existing, new and pipeline<sup>4</sup> interventions now lies above the trajectory, and the gap between the trajectory and the \$2PPP outreach curve has narrowed. The total projection for the end of 2016 is 63,574 farmers (33,690<\$2PPP) and 316,293 farmers (151,255<\$2PPP) by 2018 end.
- 5) Several key performance indicators (KPI) reflect significantly increasing levels of sustainability. The most significant areas of progress have been the turnover of the intermediate service providers (+190% compared to the total at the end of the first semester 2015), and the absolute net income of poor farmers (+328%).

<sup>1</sup> Measured results are based on impact assessments with full results analysis done, estimated results are based on impact assessment with data analysis is not yet finalized.

<sup>2</sup> The previous periods show actual outreach, the current period (Y15S2) shows a combination of measured and estimated actuals and future periods show projections.

<sup>3</sup> Compared to the last PRIP, the actuals shown for Y14S2 are slightly lower due to the revision of some assumptions which we adjusted based on newer assessments.

<sup>4</sup> For the first time, we were able to include ideas in the pipeline projections which include now all 22 interventions we plan to launch in 2016.

Table 1: Key Performance Indicators

Key Performance Indicator	Actual Cumulative 2015-2	Actual 2015-2
# Intervention partner public and private	47	11
Partner Co-Investment in IDR	8,501,545,109	2,790,919,428
# Innovations by private sector	34	12
# Initiatives by Government to improve BEE	3	-
# ISPs	360	209
Increased Turnover ISPs in IDR	1,995,337,653	1,335,100,153
# Outreach (\$2 PPP)	7,053	2,881
Net Income Impact (\$2 PPP) in IDR	15,872,132,639	12,061,941,495

- 6) **PRISMA disbursed AUD5,418,988 in the second semester of 2015, against a projection of AUD 6,862,490 (underspending by AUD 1,594,252).** There was lower expenditure than anticipated on personnel and operational costs. However, most of the underspend (85%) was against intervention-related costs.

#### Management response for the next twelve months

- 7) **Taking into account our conservative projections, we are confident in our ability to further narrow the gap between the \$2PPP outreach curve and the trajectory this year.** In order to achieve this, PRISMA will sign contracts with 22 partners in 21 sub-sectors by the end of 2016.
- 8) **PRISMA will continue active and focused portfolio management.** As with other market development programs, PRISMA will need to identify the 'star interventions' to prioritise. Although we have some indications of such interventions, it is too early to be sure. Towards the end of the year, we expect to be able to identify some interventions which could be said to qualify. To be able to allocate sufficient resources to the 'star interventions' we will close those with no prospect of contributing at all to systemic change in their sub-sectors.
- 9) **After successfully integrating the co-facilitators portfolio, the focus will be on increasing the capacity of Task Leaders<sup>5</sup> to manage co-facilitators.** This is necessary as co-facilitator management is new to PRISMA staff and recent observations indicate that the capacity of most co-facilitators is still relatively weak.
- 10) **The cohort 3 staff will be integrated into the portfolio teams as fast as possible to increase implementation capacity.** Before integration, they will partake in the PRISMA induction process, which lasts approximately one month, plus two four-day workshops complemented by training on the job.
- 11) **PRISMA will prepare for the upcoming DCED audit in June 2016 and the midterm review in September 2016.** The project is committed to devoting project staff and resources to assure the smooth operation of these two assessments in parallel to implementing our interventions.
- 12) **To test the appropriateness and robustness of the current Progress out of Poverty Index (PPI), PRISMA will develop in February the prerequisite provincial scorecards and triangulate the results with the TNP2K national poverty data.** We have hired an external consultant who was involved in the development of PPI to reach this goal.
- 13) **PRISMA will finalise and fully integrate the Management Information System (MIS), particularly in relation to program management functions.**

<sup>5</sup> All of PRISMA's Business Consultants are supposed to lead at least one intervention. Since interventions are not the only tasks staff can be involved in, we have generalized the term and do not differentiate between interventions and other tasks.



## 1. POLICY AND INSTITUTIONAL CONTEXT

**The slowing growth of the Indonesian economy continued** during this reporting period, with GDP growth falling well below the GoI forecast. A mixed outlook for 2016 is also projected, with Bank Indonesia forecasting 5.3% GDP growth. Several partner companies continued to have a reduced appetite for co-investment in PRISMA's innovations because of this, and many of them experienced declining sales reinforced by a strong El Niño effect. As a reaction lower GDP and El Niño, sales efforts were focused on their main products, despite the recognition of PRISMA's innovations as an opportunity. We expect this to continue in 2016, and strive to build up strong partnerships that can help convince more cautious companies to engage in a joint venture with PRISMA in the future.

**The WTO agreement signed last November in Kenya to abolish export subsidies on agricultural products is broadly considered to be positive for the Indonesian economy.** Potentially, it provides an incentive for farmers to invest more in agricultural products which historically have been imported cheaply (soybean, maize) as the price of the local variety is expected to become more competitive. However, it remains to be seen how the agreement will be implemented with some commentators viewing it with scepticism, and it will take a number of years before the effects are felt in Indonesia.

**In August 2015, the GoI restricted maize imports in an effort to encourage local farmers to produce more.** However, we so far have only observed a slight price increase, the cause of which is not yet clear.

**As reported, PRISMA had hoped that reduced subsidies in some sectors would benefit our interventions, but the contrary was true: local governments bought seed from several of our nurseries and distributed it without charge.** It is expected that this trend will increase which could undermine private sector initiatives. In NTT we expect the government to significantly increase maize subsidies, and plans to intervene in the agro input business by establishing retail shops might impede our efforts. PRISMA will therefore seek coordination with the relevant local government agencies and try to collaborate with government in order to ensure that subsidy programs are used as a promotion of quality inputs, rather than acting as a disincentive to local private sector development.

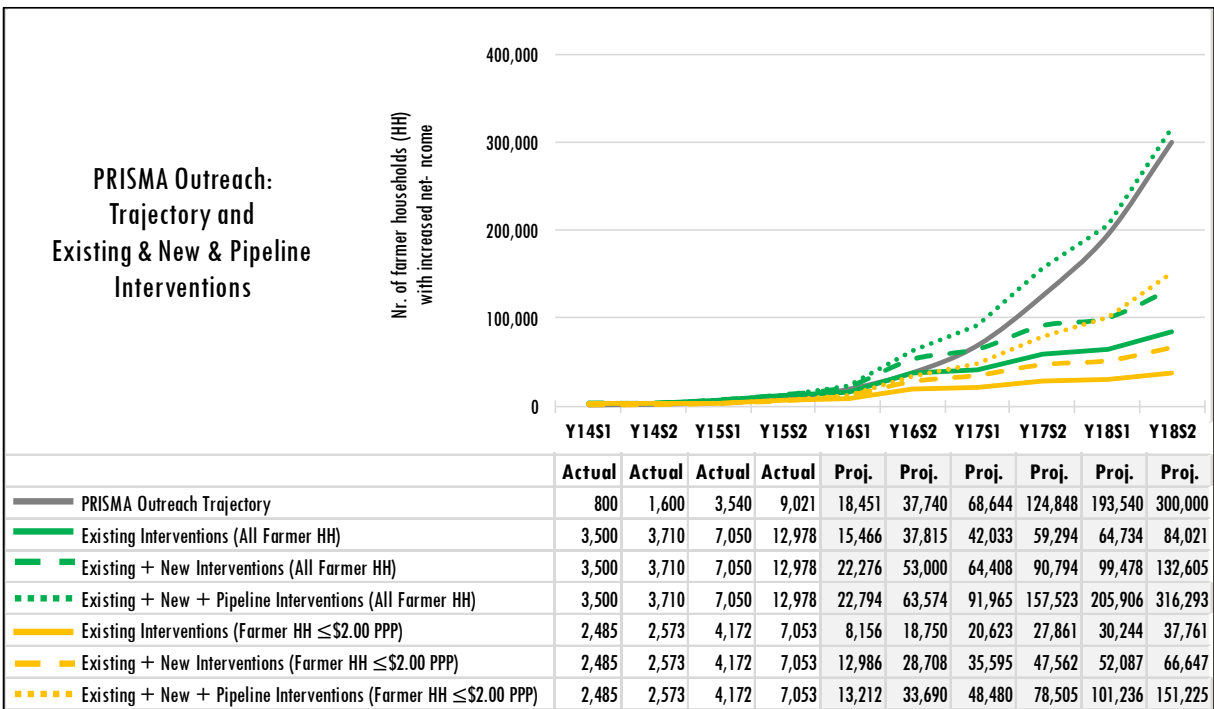
## 2. PORTFOLIO MANAGEMENT

### 2.1 PORTFOLIO ANALYSIS (EXISTING AND NEW INTERVENTIONS)

**The expected outreach for existing and new interventions is 53,000 farmers (28,708<\$2PPP) by the end of 2016 and 132,605 (66,647<\$2PPP) farmers by the end of 2018.** This is lower than expected six month ago. The main reason for this is that we applied a much more conservative (see below Chapter 2.5) approach towards projections in order to address the adverse external conditions mentioned in Chapter 1 and Chapter 2.3. Another reason is that it was the first time for the portfolio teams to observe a full crop cycle in most sub-sectors and staff recognised that implementation usually takes more time than expected, especially at the beginning of the intervention. Analysing the reasons for delays and for overestimations helped staff to now make more realistic and thus lower projections. The third important reason is that after the start of the co-facilitator interventions implemented by local NGOs, PRISMA recognised that their projections were clearly too optimistic. This is likely to have been caused by a lack of experience the NGOs have in market development, a challenge that will need further attention.

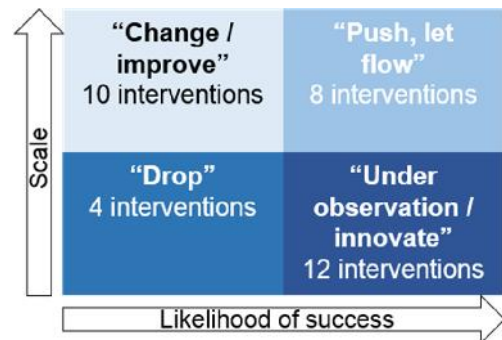
**Though the expected outreach of existing and new interventions alone does not yet provide a sufficient basis to reach the targeted projections for 2016, we were able to narrow the gap between the trajectory and the \$2PPP outreach curve;** projections increased from 22,131 to 28,707 compared to a target of 37,740 by end of 2016, and continue to stay above the trajectory in terms of total actual and projected outreach.

*Figure 3: Outreach Projections*



Qualitatively, an assessment is more difficult. To improve the ability to more transparently and systematically manage the quality of the portfolio interventions, PRISMA has developed a QMT which supports the decision-making process of the core management team (CMT). Based on a set of quantitative and qualitative criteria including outreach, systemic change potential, value for money and gender impact, this QMT divides the interventions into four categories: those which are to be pushed, improved, questioned or dropped. However, this rating is not a final assessment of an intervention but rather serves the CMT by providing a basis for decision-making. The CMT makes its final decisions by taking into consideration factors not reflected in the scoring criteria. Thus in the last semester seven out of 34 interventions were moved to a different category. The QMT was used throughout the intervention and the portfolio review of 34 existing and new interventions. A plausibility check, along with feedback from the HoPs and the portfolio teams, confirmed results and usefulness. The results of the assessment process are reflected in Figure 4 and in greater detail in Annex 1: QMT Results December 2015.

Figure 4: Portfolio Quality Matrix



In the QMT, the assessments of systemic change and the quality of the collaboration with partners have equal weighting with the number of beneficiaries. This ensures that PRISMA focuses on systemic change, not only on outreach.

As a result of the last review process, the program will drop four of its interventions which constitutes a current drop rate of 10%: fish cage farming and fish finance in East Java, one of the cassava interventions in East Java and one of the maize interventions in NTB. The main reasons are low outreach and low potential (in the case of fish), a weak business model (in the case of cassava), and a lack of impact (in the case of maize). More detailed information about the remaining interventions and sub-sectors is provided in

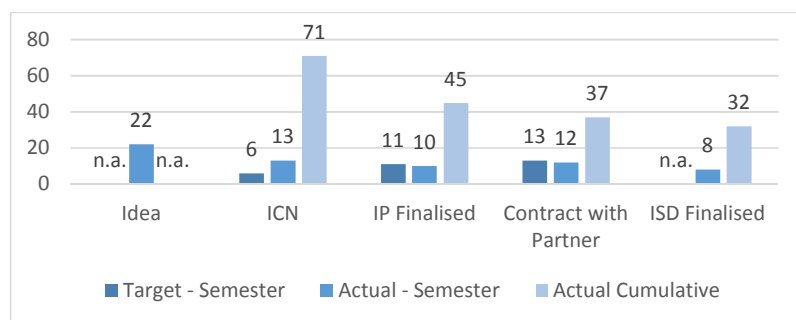
Annex 2: .

**The geographic distribution of the current portfolio is 17 (0.53 per 100,000 rural poor) in EJ, 8 (1.39) in NTB, 12 (1.35) in NTT, 1 (0.47) in Papua and none in West Papua.** Two of the interventions in East Java and one in NTT are implemented in collaboration with the government<sup>6</sup>.

## 2.2 INTERVENTION DEVELOPMENT PROGRESS

**PRISMA was just shy of achieving its targets for portfolio development.** Thirteen intervention concept notes (against a target of six) were presented by the portfolio teams to assessment panels consisting of at least two CMT members. Ten intervention plans were developed (against a target of eleven) and twelve contracts concluded (against the thirteen planned). Six out of the twelve interventions are being implemented by local NGOs as co-facilitators. The overachievement of intervention concept notes can probably be attributed to two changes. First, the teams have become more experienced and identified additional and improved ways to address constraints. Second, the new HoPs have brought in a high degree of experience and are able to allocate more time to portfolio development than in the past. Details of portfolio development are shown in Annex 1: QMT Results December 2015.

Figure 5: Intervention Development



## 2.3 PROGRESS KEY PERFORMANCE INDICATORS

**In the last semester, PRISMA through its existing and new interventions benefited an additional 5,928 farm households (2,881<\$2PPP) in six sub-sectors against a semester target of 9,990 farmers (4,054<\$2PPP) in 16 sub-sectors as defined in the last PRIP.** 3,926 (1,953<\$2PPP) of these are measured results, and 2,002 (928<\$2PPP) are estimated results<sup>7</sup>. This reflects several drawbacks that prevented us from overachieving the semester targets. First, in several interventions progress was slower than planned. Without this, we might have been able to reach out to 2,200 (900<\$2PPP) more farmers. In non-seasonal sub-sectors such as coconut and pigs, this impact is expected to happen in the first semester 2016.

Second, local government bought seeds from the nurseries PRISMA was working with in the soybean and the peanut sector for distribution at no charge. We cannot count the results in this PRIP for the soybean nursery intervention for two reasons: it will not lead to sustainable change and a large part of it benefitted the same farmers as earlier subsidy programs and did therefore not lead to higher but rather stabilised income. The peanut intervention introduced a new variety of seed, the impact of which PRISMA will include in the PRIP for the following semester. However, the intervention may not continue if government subsidies render it unsustainable. Due to this our outreach was 1,000 (450<\$2PPP) lower than we had hoped for.

Third, several impact assessments had to be postponed mainly due to late harvests and coconut EJ because the partner had delays in achieving organic certification. This accounts for 1,500 (700<\$2PPP) farmers. On a more positive note, in coffee and mango we exceeded the expected results.

<sup>6</sup> There are no hard geographic targets but the program aims to attain geographic balance.

<sup>7</sup> Measured results are based on impact assessments with full results analysis done, estimated results are based on impact assessment with data analysis is not yet finalized.

Despite these drawbacks which negatively influenced the achievement of the semester targets, the cumulative outreach since program inception of 12,978 (7,053<\$2PPP) lies above the benchmark of 9,021 as defined by the trajectory.

Figure 6: Cumulative Outreach

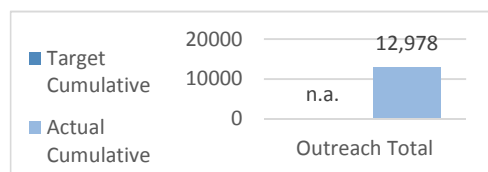


Table 2: Key Performance Indicators

Key Performance Indicator	Actual Cumulative 2015-2	Actual 2015-2
# Intervention partner public and private	47	11
Partner Co-Investment in IDR	8,501,545,109	2,790,919,428
# Innovations by private sector	34	12
# Initiatives by Government to improve BEE	3	-
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# Outreach (\$2 PPP)	7,053	2,881
Net Income Impact (\$2 PPP) in IDR	15,872,132,639	12,061,941,495

**Net attributable income impact increased by IDR12,061,941,495 (~AUD1.2m).** Average income increase calculated for the whole phase was thereby pushed from IDR857,330 (~AUD86) to IDR2,250,460 (~AUD225). For people living on or below the poverty line, this income change is significant. In 2014, the national poverty line was IDR278,429 (~AUD28) a month per person in rural East Java, IDR274,136 (~AUD27) in NTB and IDR248,606 (~AUD25) in NTT. With an average income increase of over IDR2 million per farmer, we regard the incentives as sufficient to ensure that the behavioural change at a household level is sustainable.

**This corresponds to an average relative income increase of 35% compared to the PRISMA program target of 30%.** The results for the different sub-sectors range from 8% in shallots to 1,172% in the pig intervention in NTT.

**Turnover of the intermediate service providers (ISP) registered an increase of IDR1,335,100,153 (~AUD130,000) or IDR 6,388,039 (~AUD640) per new intermediary.** This has pushed the average turnover calculated for the whole phase from IDR4,530,565 (~AUD450) to IDR5,542,605 (~AUD550). Whether this provides sufficient motivation to intermediaries yet is difficult to assess; there should be careful observation on the part of the portfolio teams, especially in the East Java maize intervention, a key intervention where the average turnover of 96 intermediaries is only IDR2,518,644 (~AUD250) per season.

Partner co-investments steadily grew by IDR2,790,919,428 (~AUD270,000) and reached IDR8,501,545,109 (~AUD830,000). 25% of this stems from the mango sector.

## 2.4 CHALLENGES AND LESSONS LEARNED

**One key challenge was the transition of portfolio activities from the former Head of Portfolio to the new HoPs.** This occurred between July when the first of the three new HoPs arrived and the departure of one of the two Heads of Portfolio at the end of December, affecting two-thirds of PRISMA's portfolio. However, the detailed preparation and the experience of the new HoPs ensured that the process was smooth and the results of intensified mentoring are already visible. We will ensure optimal use of additional mentoring capacity and focus on grooming potential successors for two of the HoPs in mid 2017. However, it must be expected that future local HoPs will need intensive coaching beyond mid-2017. Comparable promotions of local middle

manager occur in other M4P programs usually only after more than five years but our staff will only have between one and a half to three years' experience.

**Another important change was the transition of co-facilitator management from Promark to PRISMA.**

This followed the transition plan developed in May 2015 and turned out to be more challenging than expected, the main reason being the lack of experience of our business consultants in M4P, management and supervision. To support the process as well as the implementation of the interventions, we revised the co-facilitator manual and developed an internal guideline which supports PRISMA's task leaders.

**As part of a strategy workshop in December, the CMT identified a range of ongoing and future issues, and defined responsibilities to address these issues.** This includes stretched resources in results measurement<sup>8</sup>, and the re-distribution of roles and responsibilities between the results measurement and portfolio teams. One of the underlying causes for the latter is a lack of portfolio teams' ownership for the content of the Intervention Steering Document (ISD), the central management document of an intervention. Based on their technical know-how, Business Consultants Results Measurement staff (BC RM) take on too much responsibility in its development and the BCs of the portfolio teams take advantage of this support. This not only results in a lack of portfolio team ownership, but also an increase in the workload of the BC RM staff, thereby worsening the stretched personnel situation in RM. The response to this is outlined below.

## 2.5 MANAGEMENT RESPONSE AND PROJECTIONS FOR THE NEXT TWELVE MONTHS

**To narrow the gap between the trajectory and the \$2PPP outreach curve, in 2016 PRISMA plans to sign contracts with 22 partners in 21 sub-sectors.** Ten of these interventions will be in East Java, 1 in NTB, 8 in NTT, 1 in Papua and 2 in West Papua (see Annex 4: Projections Until December 2016).

**We expect that the related interventions will reach out to 183,688 farmers (84,578 of which below the \$2PPP line) by the end of the program, leading to a total program outreach of 316'293 (151,255<\$2PPP).**

For the first time, PRISMA has made detailed estimates not only for pipeline interventions in the ICN or IP stage but also for interventions that are concretely preparing ICNs. We are aware that this projection is only an estimate at this stage, but based on the improved sub-sector knowledge of the teams and against the background of the increasing staff experience working with projections, we believe that the numbers are sufficiently robust to use them as an indication for management purposes.

**This implies that we need to reach another 150,000 farmers below the \$2PPP line through the scale-up of these pipeline interventions or in sectors which are still at a pilot stage. We regard this as challenging but nevertheless as realistic:** To address the current relatively adverse externalities and to avoid inappropriate management decisions, our projections are conservative: no intervention is expected to reach more than 11,000 households below the \$2PPP line. However, experience shows that all large market development programs have been able to identify some 'star interventions', that is, those which triggered sufficient systemic change to achieve the overall target. Our projections do not yet reflect this. For instance, in the key sector maize we have not yet included expected results from interventions planned with at least two multinational seed producers. Similarly, in soybean we have projected a comparatively low figure of 2,300 poor farmers benefiting from the intervention with partners EWINDO and *Badan Tenaga Nuklir Nasional* (Batan), whereas in reality this sub-sector has one of the largest potentials, with an estimated 650,000 poor soybean farmers in East Java alone. In the pig sub-sector in Flores, we see great chances for success triggered by an impressive income increase potential and the large number of pig rearing households in NTT but we still need to observe whether the market is able to absorb additional supply. The beef sub-sectors in NTT, NTB and EJ are technically and strategically challenging, but impacting a large number of farmers, they certainly have great potential and after one year of intervening in East Java our partners show interest in expanding activities, an early sign of change.

**The large number of interventions we expect towards the end of the year requires consequent and active portfolio management.** In terms of the star interventions mentioned earlier, PRISMA will need to focus a significant part of its resources on the most likely "candidates". In 2016, the program will identify some interventions which could be said to qualify, and towards the end of the year close those with no prospect of

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<sup>8</sup> This was also identified as an area for improvement by the overall very positive DCED pre-audit.

contributing at all to systemic change in the other sub-sectors. In order to achieve this, the program aims to commit to its half-yearly intervention and portfolio review cycle (although this is becoming more challenging due to the increased number of interventions).

**After successfully integrating the co-facilitators portfolio, the focus will be on increasing the capacity of the task leaders to manage co-facilitators.** This is essential, as co-facilitator management is new for PRISMA staff and at the same time, recent observations indicate that the capacity of most co-facilitators is still relatively weak. We will conduct specific training sessions regarding this and mentors will commit a significant part of their time to this. In addition, the responsible BC will receive extended support for three months from Promark for the local NGO interventions that commenced implementation during the reporting semester.

**PRISMA will plan for the upcoming DCED audit and midterm review (MTR).** We regard both of these as opportunities to learn and improve. However, we are also aware that they will require the input of significant resources which will as a result be unavailable for intervention work. In order to reduce the burden of preparation, we will continue to use external resources to support the teams in their preparation of results measurement documentation, and the CMT in conducting the self-assessment required by the MTR team. With regard to the preparation of the DCED audit, support will be provided in the form of training on the job, mainly for the new, cohort 3 staff.

**PRISMA will increase the capacity of the program through the integration cohort 3.** PRISMA will focus on building their capacity in order to most effectively deliver impactful and successful interventions.

**We will address the lack of ownership of the portfolio teams and improve other aspects of the collaboration.** To improve the situation, we will clarify responsibilities in detail and assess the performance of task leaders in the annual performance review.

### 3. CROSS-CUTTING ISSUES

#### 3.1 RESULTS MEASUREMENT

**The findings of the November-December pre-audit reveal that PRISMA has institutionalised an effective results measurement system.** This system allows portfolio and results measurement teams to have a clear understanding of how interventions are expected to lead to results, and information on results is periodically fed into decision-making to adjust and improve interventions and strategies. The audit recommended making a range of changes to further improve the system, which will be implemented until the DCED audit in June, followed by an implementation plan developed with DCED consultants.

**One of the key findings of the pre-audit was that resources in the results measurement team were stretched.** PRISMA is on track in addressing this issue and has hired four new business consultants for the results measurement team. These new staff members will join in January 2016 and are expected to be fully in charge of three to four sub-sectors by the end of March. The program will in the meantime continue to use external support to help the team overcome the scarcity of resources and to train new staff.

**Over the last six months PRISMA has invested significant resources into the development of a management information system (MIS), able to automate the process of aggregating program-wide results. The MIS is being used for the first time for this PRIP.** PRISMA also developed a reporting protocol document for key performance indicators to comply with DFAT's Aggregate Development Results system. In addition, the program will make further improvements of the MIS Intervention Progress Tracking tool during the first semester of 2016 and explore additional ways of using MIS for results measurement.

**PRISMA contracted a consultant to develop provincial-level PPI questionnaires and test them as to whether they provide better estimates of poverty in various provinces** compared to the current national PPI questionnaires. PPI testing of two provinces will be completed during the first semester of 2016. If these alternative estimates are found to be more accurate, PRISMA will triangulate them with TNP2K national poverty data and aim to develop province-specific PPIs for five provinces by the end of 2016.



## 3.2 GENDER AND SOCIAL INCLUSION

**PRISMA has mainstreamed gender into its interventions and continuously monitors gender effects by studying the roles of men and women in each sub-sector.** This semester PRISMA has studied gender roles for 2 sub-sectors. PRISMA also assesses the number of individual men and women involved in program interventions and this has been done for 5 sub-sectors this semester. Two such assessments, most likely in the pig intervention in Flores and beef in East Java will be done in the next semester, the both of which will be supported by PRISMA's international gender consultant. The information derived from these assessments is regularly used in the intervention design, e.g. by adjusting the timing of trainings to the daily schedule of women, by ensuring the participation of women in capacity building measures or focusing marketing activities on women where women are the decision makers. The program also plans to conduct more detailed gender impact analyses in interventions where there is a significant impact on women, tracking how the interventions affect their daily lives.

**PRISMA will review its gender strategy and plans to organise gender reviews biannually,** which will be combined with capacity building for the portfolio teams. In this way, PRISMA strives to further improve the way it strategically uses a gender lens to inform our strategies. Success will clearly depend on the commitment of the HoPs and therefore be part of their annual targets.

**In addition to gender, PRISMA will also enhance its approach towards social inclusion specifically for people living with disabilities.** A related expert mission is planned by the secretariat as a joint activity for all AIP-Rural programs. Based on this, we will adjust our intervention strategies.

**Fieldwork is complete for two livelihood studies with a strong inclusion of gender aspects commissioned by PRISMA.** The studies are expected to give the portfolio team a better understanding of the context of problems faced by the farmers, of the decision making processes and in general, what poverty means in terms of behaviour and change processes. However, the program faced significant difficulties with data collection due to the low capacity of the service provider involved. The first of these studies consists of six sub-sector profiles providing detailed information focusing on behaviour patterns within sample households. The profiles will be used for the revision and improvement of the intervention strategies. One of these profiles will be finalised by March 2016, with the remaining completed by the end of July 2016. The second consists of baseline research for wider longitudinal studies of expenditure patterns of beneficiaries in three sub-sectors. The baseline report will be completed by the end of February 2016 and a second batch of data collection concluded by the end of the year.

**A new Gender and Social Inclusion specialist joined in October 2015 to replace the previous specialist who left the program in July 2015.** With this gap filled, the program will be better able to peruse and apply its gender strategy.

## 3.3 ENVIRONMENT

**PRISMA completed environmental assessments for 12 interventions in 11 sub-sectors, identifying the risk level of negative impact an intervention poses to the environment, and the environmental and climatic risks facing the intervention.** In total, 24 out of 37 interventions in 21 out of 28 sub-sectors have been assessed. Following PRISMA's Environmental Management System, the assessments rate each intervention for low, moderate or high environmental risk, based on the two risk aspects mentioned above. To date, 12 interventions are rated as posing a moderate risk to the environment, and 18 interventions face a moderate risk because of environmental conditions. The remaining interventions will be assessed during the first semester of 2016.

**The management response to the environment assessments is integrated into the intervention steering documents for further monitoring.** Interventions facing an increasing risk from the environment will be re-assessed for further action as per the environmental management system guideline.

**Interventions with moderate risk to the environment such as the use of pesticides are closely monitored and the risk reviewed in the semi-annual intervention reviews.** Any intervention which poses a high risk to the environment will be further evaluated with a full environment assessment. However, none of our

interventions falls in this category and it is unlikely to happen as we would in most cases not approve such intervention.

**El Niño was the main risk for all interventions creating potential negative environmental impact.** We collaborated with ARISA to address this risk, holding a workshop with CSIRO to understand the effects of this climate phenomenon. Its impact on interventions was assessed and also discussed with our partners. Despite the identification of mitigation strategies, there were not many options to mitigate drought in our interventions.

### 3.4 COMMUNICATIONS

**PRISMA produced a number of key communications products:**

- One new video on PRISMA's private sector engagement, with a focus on the East Java maize private sector partnership;
- Two press releases, twitter updates and photos of the mango expo in Lombok and PRISMA program launch in Papua and West Papua, resulting in coverage from several local media outlets (both print and broadcast) and coverage on the Australian Embassy's twitter account;
- New branding guidelines for AIP-Rural and its programs;
- Updated factsheets for AIP-Rural and its programs;
- One new AIP-Rural profile on partnering with the private sector for agricultural growth in Eastern Indonesia;
- AIP-Rural website, completed and ready to go live by mid-February 2016; and
- Five success stories on interventions in the coffee, cassava, seaweed and mango sectors.

**A communications protocol on how PRISMA should handle media inquiries and branding logo guidelines for PRISMA was completed** during the second semester of 2015, which will be followed by a series of internal training sessions for program-related staff during 2016.

**A video on PRISMA featured the success of our partnership with PT AHSTI.** The video provides an overview on the benefits to both PT AHSTI and farmers as a result of this partnership. As we expect that the maize interventions in Madura will become one of PRISMA's most successful sub-sectors, we plan to continue video documentation of this in the coming years and to utilise the material to produce a video case study, planned for 2018.

**PRISMA will update its communications strategy and plan during the first semester 2016.** This will include concrete plans to develop a minimum number of tools for each type of communication.

### 3.5 RISK MANAGEMENT

**PRISMA has made further progress in addressing three key risks related to: staff capacity, private sector engagement and farmer adoption of practices.** Low staff capacity in the implementation leads to reduced program performance; we have reduced this risk by recruiting cohort 3, and new HoPs and will further address it by finalising and implementing the capacity building strategy. In addition, these measures and increased staff capacity also reduced the risk likelihood that private sector partners will be slow to engage with and commit to PRISMA interventions. However, none of these risks can yet be deescalated.

**Two additional situational risks have emerged, which have the potential to impact PRISMA's results:** Key personnel changes in BAPPENAS occurred and might happen again; we have addressed this risk by supporting the Secretariat in engaging with BAPPENAS and by proactively informing them about our progress. Climate and natural disasters can negatively impact farm productivity and farmers' ability to invest in new technologies. To mitigate this impact, we discussed the current drought with partners and we are monitoring the impact closely, however, little can be done in the case of the current El Niño effect and the expected La Niña. More detailed analysis can be found in Annex 5: Risk Matrix.



## 4. STAKEHOLDER RELATIONSHIP MANAGEMENT

### 4.1 GOI AND SUB-NATIONAL AGENCIES

**PRISMA furthered earlier progress related to collaborative work opportunities with different government agencies; this resulted in an M4P training for P2B and a cross learning visit.** The program continued discussions with BAPPENAS and P2B related to how best to build synergies between the P2B livelihoods program and PRISMA interventions, and then began developing a work plan. With soybean and beef in East Java and NTB, two sectors were already identified as suitable for PRISMA to work with. However, personnel rotation within BAPPENAS and the shifting of the P2B program to the Ministry for Villages slightly delayed progress. BAPPENAS has expressed its desire for PRISMA to continue its support of P2B; the way in which this is provided however may differ from how it was planned last year.

**Following introductions made to provincial governments in Papua and West Papua last semester, PRISMA officially launched its work in both provinces in November.** The program finalised a sector selection study in consultation with each provincial government to ensure alignment with provincial development priorities. Cocoa and vegetable were identified as focus sectors for PRISMA in Papua; while the vegetable sector will be the focus in West Papua in 2016. Good progress was made towards including vanilla as a sector; however, a decision was made in late 2015 to drop this to avoid duplication of effort, after a USAID program decided to grant a significant sum of investment capital to the largest vanilla trader in Indonesia.

**As a follow-up to the inter-ministerial meeting in May 2015, BAPPENAS expects to see more regular, focused discussions between PRISMA and the relevant ministries.** The purpose is to identify issues which may be best addressed by the sectoral ministries and to explore the potential for synergies or collaboration.

In addition, PRISMA will continue its collaboration with local governments in four areas:

- After identifying locations included in the NTT government's *Anggur Merah* program, PRISMA will explore the potential in the pig and maize sub-sectors.
- The collaboration in Sampang and Trenggalek in the soybean sub-sector did not show the expected results; PRISMA will seek support from the local governments to achieve synergies rather than overlapping efforts.
- The results of the first tests of soybean seed developed by Batan and replicated by EWINDO will be available in January 2016. Based on these, the program will develop a detailed implementation strategy.
- In NTB, PRISMA will collaborate with the government's public extension services to develop a mobile phone application designed to help overcome personnel bottlenecks which currently hamper the provision of efficient support to farmers in their fight against pest attack and disease.

### 4.2 PRIVATE SECTOR PARTNERS

**Increasingly, PRISMA is able to attract larger companies.** These include Syngenta, EWINDO, BASF, Monsanto and Charon Pokphand. We are also in discussions with others such as DuPont and Sumitomo (through its Australian partner Nufarm) and hope to establish partnerships soon (for further information, see Annex 6: Private Sector Partner DetailsAnnex 6: Private Sector Partner Details.

**Together with the AIP-Rural Secretariat, the program started work on establishing a strategic collaboration between members of several focal sectors of PisAgro.** To achieve buy-in from the members of the maize working group, PRISMA will, through an external consultant, develop a maize sector country strategy to include pilot joint ventures in Madura to promote hybrid seed. Another potential sector for this approach is mango.

**To further develop its approach, PRISMA will test ways in which to develop intervention ideas more collaboratively with interested companies,** involving them much earlier in the process of intervention development. The idea is not to take the farmers' constraints as a starting point for the intervention development process, but rather the constraints faced by potential partners in reaching out to a larger numbers of potential clients.

## 5. OPERATIONS AND FINANCE

### 5.1 OPERATIONS

To achieve synergies between the three Palladium-managed AIP-Rural programs and to improve efficiency and effectiveness, in this semester PRISMA and the AIP-Rural Secretariat undertook a comprehensive operations systems review. In addition to creating greater flexibility in the procurement thresholds and fixing outstanding process issues, this review resulted in a cross-program agreement to share resources during periods of peak workload.

Collaboration processes with partners were reviewed resulting in improved efficiency and simplicity for our partners, e.g. through monthly invoicing and the option of output based payments reducing their administrative burden.

A key achievement for PRISMA was the successful recruitment of fifteen qualified candidates for the third cohort of PRISMA technical staff. With this, PRISMA managed to overcome a core challenge facing most M4P programs: attracting the right talent. New staff induction will start in January 2016 and consists of a combination of classroom and on-the-job training during the first semester of 2016. This brings the total number of locally engaged staff in PRISMA to 75.

The MIS progressed considerably, but the level of integration of program management functions (PMF) is not yet adequate. Corporate functions are currently used for all payroll, budgeting and most procurement processes as planned. Intervention progress tracking as part of the PMF function serves to register and update intervention information, provide standard document naming, version maintenance and better automated file management, and to show aggregated KPIs. Overall, the functionalities of this system were welcomed by users. However, the development of all MIS areas was slower than expected. This has been addressed by adding resources and improving oversight. The Contracts and Grants Management System is scheduled for completion in April 2016 and all other missing elements of the MIS by June 2016.

### 5.2 FINANCES

PRISMA disbursed AUD5,418,988 in the second semester of 2015, against a projection of AUD 6,862,490 (underspending by AUD 1,594,252). There was lower expenditure than anticipated on personnel and operational costs, however most of the underspend (85%) was against intervention-related costs. Accurately forecasting intervention activities and partner (co-facilitator and private sector partner) payments remains a key challenge, and progress has been made towards improving this by implementing a monthly forecasting process from October 2015. Improving budgeting and forecasting remains a priority for the next twelve months.

To date PRISMA has spent 32% of the total contract value, which reflects large investments in office set-up, recruitment and personnel, and grants to co-facilitator partners.

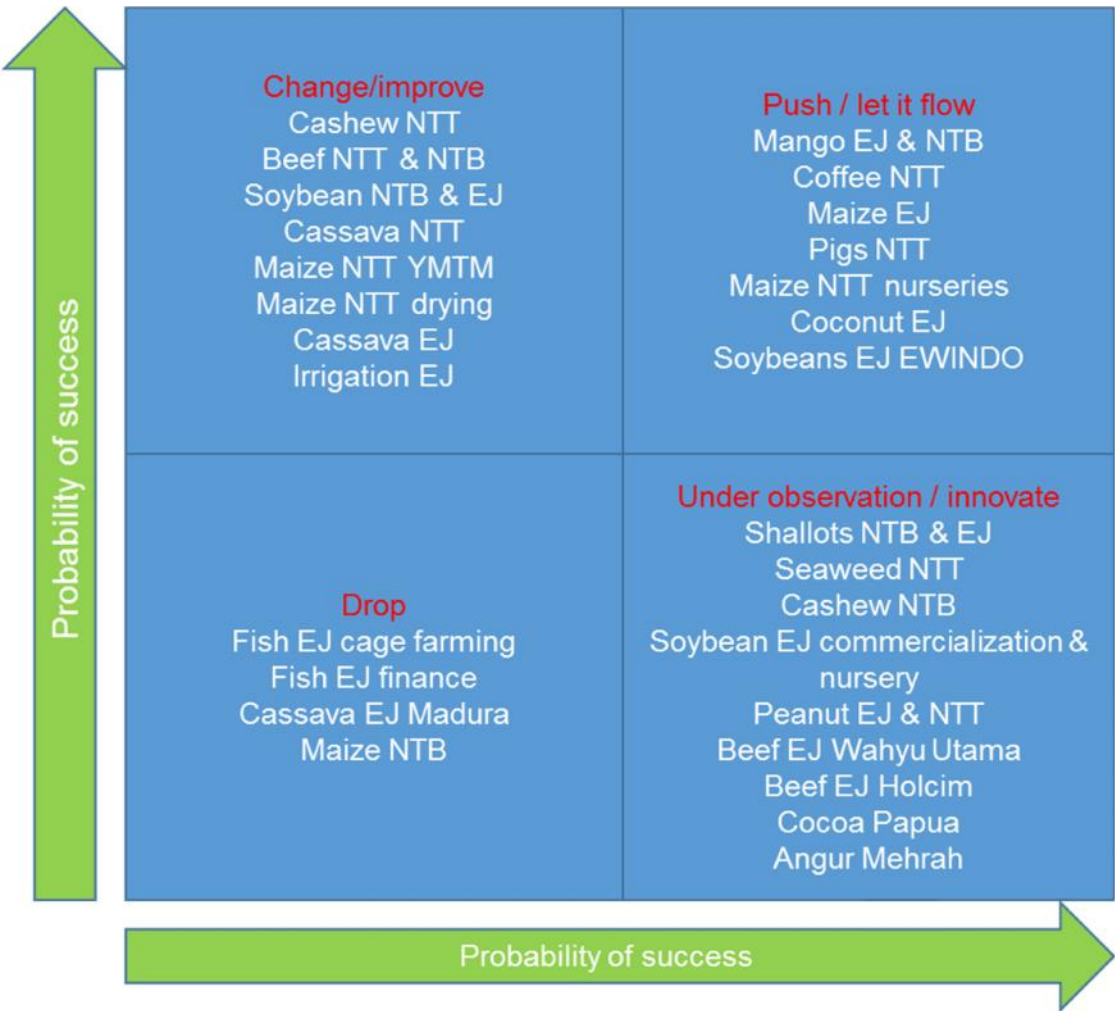
	Total Spent to Date to End Dec 2015	Total Contract Value	Percentage Spent
Management Fees	3,791,341.00	7,890,638.00	48%
Outcome Performance Payments	112,500.00	1,050,000.00	11%
Long-term Personnel	2,123,627.42	7,121,656.00	30%
Short-term Personnel	363,421.16	1,000,000.00	36%
Adviser Support Costs	2,272,174.42	7,000,000.00	32%
Operational Personnel Costs	1,100,790.76	3,400,000.00	32%
Office and Vehicle Costs	2,170,366.22	4,450,000.00	49%
Event and Communications Cost	117,732.63	550,000.00	21%
Operational Costs	3,388,889.61	8,400,000.00	40%
Implementation Personnel	2,353,626.15	9,000,000.00	26%

Capacity Building Costs	162,599.65	1,000,000.00	16%
GOI Costs	483,222.94	4,000,000.00	12%
Intervention Related Costs	9,821,125.05	30,237,706.00	32%
Secretariat Costs	749.28	300,000.00	0%
<b>Implementation Costs</b>	<b>12,821,323.07</b>	<b>44,537,706.00</b>	<b>29%</b>
<b>Total Program Spending</b>	<b>24,873,276.68</b>	<b>77,000,000.00</b>	<b>32%</b>

**Anticipated expenditure for the 2016 calendar year is AUD 13,251,012.** However, the first semester currently includes large payments to co-facilitators. It is very likely that we will move them to later quarters after a review of the progress in January and February.

Further details are provided in Annex 7: Quarterly budget breakdown.

# ANNEX 1: QMT RESULTS DECEMBER 2015



## ANNEX 2: SUB-SECTOR BRIEFS

### 6. CASSAVA EJ AND NTT<sup>9</sup>

#### Overview of the subsector

With an annual production of 25 million metric tons (MT), Indonesia is the third largest producer of cassava (after Brazil and Nigeria) and the fourth biggest exporter, with an export volume of around 145,000 MT annually, according to the FAO. Indonesian cassava production increased by about 17% between 2007 and 2011, and national and international demand for cassava is also increasing. World demand for cassava imports in the form of dried cassava, cassava starch and cassava chips is estimated at 220 million MT per year. China's demand alone for cassava chips is expected to double over the next five years. Cassava is used for many purposes including human consumption, animal feed, industrial starch etc. In terms of domestic consumption, national production is unable to meet the high demand – East Java, for example, needs an estimated 6.9 million MT of cassava, more than double its current production of just over three million MT, a gap which is currently being met by imported starch. Opportunities exist therefore to increase production, to meet domestic and global demand for cassava chips and to reduce imports of starch.

East Java is Indonesia's third largest cassava producer, with an estimated 770,000 farmers contributing 15% to national production. Cassava is the largest production crop in Trenggalek district, and the second largest (after rice) in Sampang district. Trenggalek has approximately 23,200 farmers growing cassava; an estimated 11,600 are from low-income households. Sampang district has an estimated 55,000 farmers growing cassava, most of whom are considered poor. Compared to the average national productivity rate of 22.4 MT/ha, the productivity of Trenggalek's cassava farmers is relatively high (at an average of 23.2 MT/ha), while that of farmers in Sampang is relatively low (averaging 13.2 MT/ha).

The province of East Nusa Tenggara (Nusa Tenggara Timor, or NTT) contributes 3.3% to the national production of cassava. In North Central Timor (Timor Tengah Utara, or TTU) regency, cassava is the second staple crop after maize, making it very important for food security. Cassava accounts for an estimated 54% of total food production in the district and is planted across 24 sub-districts. An estimated 75% (some 37,500) of farmers in TTU grow cassava, and most are considered poor. Compared to the average national productivity rate, that of TTU's cassava farmers is very low (averaging 9.8 MT/ha).

PRISMA has chosen East Java and NTT to start the pilot because (a) growth potential here is high, (b) farmers in the region have difficulty accessing extension services and appropriate agro inputs, and (c) farmers in the districts find it difficult to access the commercial markets which supply the large-scale cassava industries.

#### Challenges and constraints

The major challenges to the cassava sector in East Java and NTT are:

- **Low productivity.** Farmers have little knowledge of modern, appropriate and efficient farming techniques and practices, which results in cassava's low productivity compared to its potential. This is caused by a) limited access to appropriate agro inputs, and b) lack of access to extension services.
- **Substandard quality of cassava.** Inferior quality of input materials results directly in the substandard quality of the harvested crop. This is also caused by a) limited access to appropriate agro inputs, and b) lack of access to extension services.
- **Limited knowledge about the markets.** Farmers have little awareness of the potential economic value of cassava and this affects how they sell it, namely, in small quantities at the local market. The reason for this is the limited numbers of large or industrial-scale traders in the area.

#### Vision of change

PRISMA's vision of change is that by 2018, farmers in Trenggalek, Sampang, Sumenep and TTU will have improved their productivity, quality and consistent supply of cassava to meet the demands of processing companies. The market value of cassava will have increased, attracting more farmers to go into cassava

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<sup>9</sup> Interventions in this subsector are being co-managed by SNV (as PRISMA's co-facilitator).

production, which will increase national production to meet local and international demands. This vision can be achieved through:

- **Private sector partners/exporters** providing farmers with better access to extension services and appropriate agronomical inputs, and
- **Traders and businesses** providing better market access to farmers.

### **The PRISMA approach**

To achieve this vision, PRISMA will collaborate with the private sector to:

#### **1. Develop a consistent supply of cassava chips for animal feed**

- a. Develop a new animal feed production business in NTT that will use cassava chips as one of the key inputs, creating new market access for the crop.
- b. Develop extension services which focus on good agriculture practices (GAP) and good processing practices (GPP).
- c. Introduce slicer renting services for cassava. The partner will provide technical assistance to the ISP (who manages slicer renting services).

#### **2. Increase the quantity and regularity of fresh cassava supply for starch processing**

- a. Strengthen training in GAP and disseminate relevant knowledge.
- b. The private sector partner will provide experts to organise a) ToT for local collectors, and b) demonstration plots. The trained collectors will then deliver this technical advice to their farmers.

#### **3. Increase access to GAP and fertilizer provision**

- a. Promote the sale and use of biofertilizer.
- b. The private sector partner will provide ToT training and information on GAP (specifically on business development) for distributors, who will then become key trainers of farmers.
- c. Develop a marketing and promotion strategy and activity plan, to help ISPs educate, promote and sell their extension services to the farmers.

1.

### **Progress and signs of systemic change**

- PT NASA is a fertilizer input company currently working with PRISMA in Trenggalek to promote access to better quality inputs. Through its supply chain actors it has provided GAP training to cassava farmers in the district, and has also started promoting its products for use with other crops in the area, such as maize.
- The company has established 20 demo plots in the project location, as a result of which some farmers have started using NASA's products to implement GAP.
- A number of ISPs have started acting as agents for NASA's products. The harvest in Trenggalek was delayed due to the El Nino effect; however, sales of fertilizer have picked up and are expected to increase further after the harvest (December 2015 to February 2016).
- The project initially signed a contract with local traders to provide, through local collectors, market access to fresh cassava and embedded services (on GAP, and business development and administration) to farmers in Tulungagung, Sampang, and Sumenep. After the pilot activities, one partner from Tulungagung withdrew because of location-specific issues; the remaining partner decided to intensify and expand its work in Madura Island because of the promising pilot results. The harvest here was also delayed because of El Nino; it is estimated to take place between the end of November 2015 and January 2016.
- In NTT, partner Keuskupan Atambua (PSE) has set up a small factory producing animal feed on a trial basis, using cassava as source material. The pilot phase was completed in August 2015; the official product launch on 30 September 2015 in Atambua was attended by the *bupati* (district leader) and 90 potential buyers, including senior *paroki* (parish) members and lead farmers. Sales of feed are gradually increasing.
- PSE feed has a clear price advantage over other commercial feed available in the market, and various scale-up options are currently being evaluated. PSE has hired a business consultant to assist the company in its business forecasting and calculations.

- PSE increased its production of feed between September and October 2015; local demand is high and as a result this increase has continued. However, sourcing of certain raw materials may become an issue in the long run. PSE has taken the initiative to identify a new investor with a view to expanding its business.

### Contribution to public programs

- A government program aimed at distributing piglets to the poorest farmers is considering the option of working with private input company B2Feed to improve the quality of pigs in the Atambua area.
- A Plan Indonesia program, Youth Economic Empowerment (YEE) is in place in TTU and may start work in the cassava and pig subsectors.
- A district-level Planning and Development Agency program in Trenggalek might supply a slicer machine for cassava chips in 2016.

## 7. CASHEW NTB<sup>10</sup>

### Overview of the subsector

In 2011, world demand for cashew kernels (obtained from the raw cashew nut) was around 400,000 MT; since 2008-09, this has been growing at an average of 7% every year. However, Indonesia currently contributes only 4% to the global raw cashew nut market; in 2011 it produced 114,789 MT. Although national earnings from cashew exports increased substantially between 2001 and 2012, from USD44 million to USD97 million more than 80% of this was raw cashew with most value adding processes being carried out in India and Vietnam. Consumer awareness of healthy eating and concern for social issues in cashew-producing countries has fostered the growth of organic and fair trade cashew markets, which grew in Europe by around 14% between 2010 and 2011. The organic market has grown in single digit numbers in terms of volume, but at a higher level in terms of sales value. There are opportunities for key value chain actors to increase production to meet the rising demand for good quality cashew, both domestically and regionally, and internationally.

West Nusa Tenggara (Nusa Tenggara Barat, or NTB) contributes 11.29% to national cashew production; in Bima and Dompu districts, approximately 23,745 farmers grow the crop. Their productivity, at an average of 252 kg/ha, is relatively low compared to the national average of 367 kg per ha. PRISMA has chosen to start the pilot in these two districts because (a) of the high potential for growth in the region, and (b) the farmers in Bima and Dompu have difficulty accessing pest control and GAP services.

### Challenge and constraints

The major challenge to the cashew sector in NTB is that:

- **Farmers lack knowledge of GAP.** Local service providers (LSPs) are not incentivized to engage with smallholders to supply information, technical assistance, services or value added processing, which leads to a reduction in GAP. This lack of provision is caused by the absence of information and commercial opportunities, resulting in limited demand for the products and services the LSPs provide.

### Vision of change

PRISMA's vision of change is that by 2018, farmers in NTB will have improved the productivity and quality of their crop, resulting in the higher market value of their cashew harvest. This will attract more farmers to grow cashew, increasing production for the export market. This vision can be achieved through:

- **Either state-owned enterprises or the private sector** providing farmers with better access to information on and technical assistance to enable better farming practices.

### The PRISMA approach

To achieve its vision, PRISMA will collaborate with the private sector to:

#### 2. Develop pest control and GAP services for cashew farmers in Bima and Dompu

<sup>10</sup> The intervention in this subsector is being co-managed by Mercy Corps (as PRISMA's co-facilitator).



- a. Re-establish the state-owned enterprise's agro business unit, to provide technical assistance and mentoring to service providers at their own cost. The private sector partner will also develop a partnership with producer/s of an organic pathogen company and become their main distributor in NTB.
  - b. Promote the application of pest control and GAP to support cashew farmers to obtain higher yields.
- 3.

### **Progress and signs of systemic change**

- PRISMA has signed a contract with PT GnE, a state-owned enterprise located in NTB, to facilitate the exposure of cashew farmers to good farming practices (GFP), and their access to improved inputs and information relating to pest control. With the project's support, GnE has stated its intention to expand its business by providing pest control and GFP-related information and supplies, and by building the capacity of six service providers in the region who will supply cashew farmers with the its products along with embedded information on GFP.
- A total of 23 demo plots have been established and more than a thousand farmers have received information on GAP and GnE's pest control products. Over a thousand farmers have applied elements of GAP (e.g. land cleaning, rafting, pruning and cutting); a few hundred have already purchased GnE's package of products and used it, and a few hundred more have placed advance orders and are on the waiting list to purchase it. Evidence suggests that a combination of GAP and the use of pest control product can more than double productivity.
- A lack of liquidity on the part of ISPs (agents) resulted in late payment to GnE. As demand is high, it is important that the ISPs have sufficient access to capital and incentivise GnE to stock more of the product supplied by fertilizer input company, PT NASA. PRISMA is therefore facilitating a linkage between the financial institution BPR Pesisir and the partner/ISPs. Bank Pesisir is currently processing the documents submitted by the partner and the ISPs to assess their credit worthiness. GnE has invited NASA to discuss the prospect of promoting the latter's product among six additional ISPs from northern areas of Lombok for various agro crops, including cashew. This indicates that GnE has ownership of the model and is autonomously engaging NASA to expand its business.
- One key challenge has been the slow response time of GnE. PRSIMA is researching an alternative model and partners to complement its current work, which may entail working directly with NASA. To this end the co-facilitator has moved out their office in the GnE complex and is discussing with NASA the possibility of direct promotion of its products in NTB.

### **Contribution to public programs**

The government's extension program to introduce *Beuveria* (an SLPHT program) was discontinued in 2010-11. The government plans to rejuvenate cashew trees in 2015-16 and empower cashew processing among farmers and cooperatives. Dompu district government has designated cashew as the district priority commodity

## **8. CASHEW NTT<sup>11</sup>**

### **Overview of the subsector**

In 2013, global production of raw cashew nut (RCN) was 2.60 million MT, having grown from 0.29 million MT in 1961 at an annual growth rate (CAGR) of 4.13%. In the same year, India led production of RCN, with 29% of the global share; global annual demand for RCN was 1.5 million MT, with over 0.4 million MT of cashew kernel being traded in international markets. Demand for kernel is expected to continue to rise at an average rate of around 10% per year; USA is the largest importer of cashew kernel, followed by China and the Netherlands. Vietnam has been the largest global kernel exporter since 2006, well ahead of India, the second largest. Vietnam and India are also the two largest importers of RCN.

In 2013, with 13% of the global cashew plantation area, Indonesia produced 5% of the world RCN. On average, more than 40% of RCN produced in Indonesia is exported directly to Vietnam and India; another 40% is processed into kernel for the domestic market, and the remaining 20% is processed into kernel and exported to the USA, Australia and other countries. Indonesia's cashew kernel export constitutes just over 1% of the world export market. The average export price of Indonesian RCN remains stable while the kernel price experienced an approximate three-fold increase between 2009 and 2013. Since 2009, production of RCN in

<sup>11</sup> Interventions in this subsector are being co-managed by WVI (Wahana Visi Indonesia) (as PRISMA's co-facilitator).



Indonesia has been decreasing gradually – the cultivated area has declined from 572,870 ha in 2009 to 554,315 ha in 2013, while during the same period production decreased from 147 thousand MT to 108 thousand MT.

Despite this decline in the national yield, in NTT cashew production has remained relatively stable; the area under production has increased slightly over the years. The largest plantation and the highest production of cashew in Indonesia is in NTT. Around 99% of RCN produced in NTT is exported to other islands and countries, and the rest is processed locally to make kernel.

NTT is the third poorest province in Indonesia (20.24%) with a total population of around five million and 1.06 million households. Cashew is one of the province's major commodities. With comparatively sparse rainfall and a long dry season, NTT is one of Indonesia's most suitable cashew production zones. Around 273 thousand farming households, spread across all districts of NTT, produce RCN. There is potential for growing the subsector in NTT, through interventions which will introduce improved services and products for cashew farmers via input sellers, financial institutions, and cooperatives.

### Challenges and constraints

Productivity of cashew in NTT is low and in decline. The two major reasons for this are pest and disease (mainly in Sumba) and the relatively old age of the trees (especially in Flores). The specific problems and their underlying causes are summarised below:

- **Plantations typically use cashew trees that are almost 30 years old and thus less productive.** Farmers do not have access to rejuvenation and grafting techniques, and seedlings.
- **Lack of proper agriculture practices leading to infection by pest and disease.** Little or no fertilizer or pesticide are applied, and pruning and sanitation are rarely carried out. The main underlying cause for this is that no one appears to have an interest in offering this information services.
- **Farmers lack knowledge** of better farming practices, are not business and financially literate, and cannot access market information.
- **Cashew processing and value addition (kernel) is extremely limited.** Only a few women farmers produce kernel with heavy support from the government and few market linkages.
- **Farmers rely on the price set by the traders and have little bargaining power.** Traders appear to offer a slightly higher price when cashews are aggregated but generally farmers sell their harvest individually. Farmers' associations and cooperatives do not provide aggregation services for cashew farmers. Another reason for the relatively lower price is the high costs of transportation
- **Government extension services** have little interest in cashew and insufficient knowledge about cashew production practices. With limited resources, they prioritise other major crops; an exception is the occasional free distribution of seedlings to cashew farms.
- **Input suppliers and financial institutions (FI) do not target cashew farmers as their clients.** They lack awareness of the market's potential and have limited capacity to expand their business in the cashew sub-sector in NTT.

### Vision of change

PRISMA's vision of change is that by 2018, farmers in NTT will have increased their income from cashew by increasing a) the productivity of RCN, and b) kernel production. This vision can be achieved at the service level by farmers having:

- **Improved access** to grafting services and better farming practices;
- **Improved access** to inputs and financial services;
- **Better bargaining power and improved access** to market information, and
- **Improved access** to processing technology.

### The PRISMA approach

To achieve this vision, PRISMA has designed five interventions. Central to its approach is the convincing of the relevant market actors to expand their business by targeting cashew farmers and promoting better inputs and practices among them:

1. **Support the development of input supply services that provide embedded services (plant protection services, better farming practices) for cashew farmers in NTT.**
  - a. Educate input sellers on the value of extending services and products to cashew farmers and expanding their businesses.
  - b. Advocate the use of better inputs and practices, in partnership with the input sellers, to the farmers.
2. **Support the supply and promotion of grafting services that have embedded services (grafting technology, total plantation management) for cashew farmers in NTT.**
  - a. Commercialise grafting services (to produce seedlings).
  - b. In partnership with the service providers, PRISMA will advocate the use of better quality seedlings and strengthen the demand through promotion of services.
  - c. The project will also work on improving the quality of the seedlings and the marketing and distribution of the seedlings.
3. **Support FIs and cooperatives to design and promote loan products with embedded services (business analysis and financial literacy) for cashew farmers in NTT.**
  - a. Along the lines of intervention 1, PRISMA will educate the financial service providers on the value of extending services and products to cashew farmers and expanding their businesses.
  - b. The project will work to develop dedicated financial products tailored towards cashew farmers.
4. **Facilitate collective selling through cooperatives and associations that provide market information and provide embedded service in NTT.**
  - a. PRISMA will work with the cooperatives and associations to diversify their services for their members.
  - b. Assist cooperatives providing aggregation and bulk selling services to expand these to take in additional members.
  - c. Showcasing the learnings with those cooperatives, additional cooperatives will be encouraged and assisted to follow similar models.
5. **Assist traders, inter-island traders, national buyers and financial institutions in the development of local kernel processing units at the farm level in NTT.**
  - a. The intervention will commercialise and expand the existing production of kernel, specifically targeting women.
  - b. It will work with buyers and financial institutions to build on the existing skills of the small groups of women involved in processing kernel and engage additional female farmers as their suppliers by providing appropriate support and skills.

### **Progress and signs of systemic change**

PRISMA has started to implement intervention 1: 'Support the development of input supply services that provide embedded services (plant protection services, better farming practices) for cashew farmers in NTT'.

- An MoU with partner CV Peduli Kasih was signed on 15 September 2015, and the main highlights and achievements since then are:
  - Twenty-six potential ISPs have been identified.
  - Four external services (ES) facilitators have been selected. They will be part of the partner's resources and provide services to the ISPs.
  - Peduli Kasih and four ES facilitators took part in a learning visit to Pekat, Dompu, NTB (26-30 October 2015).
  - An input supplier (a pesticide company) has agreed to support the demo plot.
  - As of December 1, 2015, Peduli Kasih had allocated IDR1,312 million towards implementation of the intervention; most of this is earmarked to buy stock and for learning visit travel costs.
- The challenges encountered during the first few months of implementation are:
  - Farmers and the ISPs lack working capital to buy services and inputs.
  - Demand for crop protection inputs and services for cashew in the area are low.
- Early signs of progress towards systemic change are:
  - Peduli Kasih has shown initial buy-in and commitment in terms of being open to the idea of providing advice to cashew farmers regarding the active ingredients recommended by experts.

- The company is ready to reach out to more cashew farmers by working with any party as ISP as long as it has the ability and willingness to pay in cash for the input. It may also provide input on credit to a limited number of trusted ISPs at the beginning of the intervention in order to foster the process.

### Contribution of public programs

The local government crops office, southwestern Sumba, plans to improve the capacity of farmers in terms of pest control in the SBD area in 2016. Officials here have invited the project to work together with government to obtain as extensive coverage of the region as possible.

## 9. COCONUT EJ AND NTB<sup>12</sup>

Coconut can be processed into a wide range of products and is experiencing growing popularity in international markets. In 2013, Europe and the USA accounted for over half (49%) of global coconut imports of desiccated coconut (156,000 MT), with the Philippines being the dominant exporter (28% of the market share) of coconut worldwide. There is a booming international demand for coconut sugar, fuelled by the rising interest in alternative sweeteners; however, quality concerns mean that this demand centres almost exclusively on sugar which has achieved organic certification.

Indonesia is the world's largest coconut producer, growing approximately 15 billion in 2011. The major export sectors are a) coconut milk (creamed and powdered, with Indonesia having 8% and 29% shares respectively of world exports), b) coconut oil (over 500,000 MT exported annually, around 29 per cent of world trade), and c) coconut shell and copra meal for carbon production (Indonesia having 38% and 30% shares respectively of world exports). Nevertheless, Indonesia is behind its competitors in terms of exports, as the vast majority of the country's coconuts are sold in the traditional market for use in domestic cooking. This provides a clear potential for key value chain players to invest in value added coconut products for export markets.

Although East Java and NTB are major centres of production, coconut is seen as a low value supplementary crop and cultivation remains rudimentary. On the NTB island of Lombok, tree holdings are larger than in East Java but productivity is lower. Demand for the development of integrated processing facilities (which more than triple the value of coconut) is strong; however, the demand from the local food industry for coconut sugar (a preferred ingredient in sweet soy sauce) remains unmet. There are an estimated 16,000 coconut producers in the targeted East Java districts of Trenggalek and Pacitan, where farming households rank among Indonesia's poorest.

PRISMA has chosen East Java and Lombok as target locations because (1) there is a clear market opportunity to integrate farmers in the region into the growing market for value added coconut products, and (2) the production techniques and technology of these farmers are rudimentary and productivity is low.

### Challenges and constraints

The major challenges to the coconut sector in East Java and Lombok are:

- **Coconut sugar is not marketed as an 'organic' product and as a result fetches lower prices.** Farmers lack the knowledge and capacity to achieve organic certification, a basic requirement for most exporters. As coconut is almost always a secondary crop and not regarded as a major income source, farmers have limited interest in improving their agricultural practices.
- **Lack of linkages to export markets.** Small producers are not linked to exporters, meaning that the coconut sugar export market cannot be tapped. At the same time, establishing effective linkages is not currently viable, as the sugar is produced by home industries, which are numerous and mostly unorganised, meaning they have difficulty in aggregating supply.
- **The coconut sector in East Java and Lombok suffers from low productivity due to lack of GAP.** This is because a) there are no extension services to promote GAP among coconut farmers, and b) most stakeholders lack awareness of the economic potential of coconut processing.

<sup>12</sup> The intervention in this subsector is being co-managed by SNV (as PRISMA co-facilitator).

- **The existing trade in coconut adds little value among small producers.** Small farmers also have limited access to capital, needed to buy processing equipment.
- **Farmers are poorly linked to large-scale processors** who face difficulties securing stable supplies because producers are not organised.

### Vision of change

PRISMA's vision of change is that by 2018, farmers in Pacitan and Lombok will have increased productivity and have access to higher value markets. This will attract other farmers to enter the value added coconut product markets and increase production of organic coconut sugar for the export market. This vision can be achieved through:

- **Export companies** providing organic certification to coconut farmers, improving access for producers to the export market;
- **Farmer associations and/or traders** establishing coconut aggregation points which will support producers to respond better to market demand by aggregating produce for the benefit of traders. This will support producers and attract an increased number of traders to serve local areas, improving supply to local processing industries and export market, and
- **A chemical agriculture company** providing inputs and GAP information for suppliers and farmers.

### The PRISMA approach

To achieve this vision, PRISMA will support and collaborate with the private sector to:

#### 1. Promote the organic certification of coconut sugar

- a. Develop organic certification among coconut sugar producer groups. The private sector partner will be organizing and financing the certification processes. This includes building the capacity of the small holder coconut producers through trainings on how to achieve organic standards.

#### 2. Develop sugar collection points and a supply system to improve the supply of processed sugar

- a. The private sector partners will build the capacity of the collectors as the collection point contacts and will support the development of sugar collection points under the management of producer groups. The private partner will establish supply agreements with these groups.

#### 3. Establish coconut aggregation points

- a. Build up a business model by which private sector partners establish and develop commercially operated coconut aggregation points, who then organize the aggregation of coconut supplies. This aggregation will be under the management of local actors (e.g. collectors, traders and lead farmers) with whom private sector partners will establish a supply agreement.
- b. Strengthen the provision of extension services addressing GAP training and knowledge dissemination. The private sector partner will develop GAP training and information materials, manage demo plots, train collectors and suppliers in their use, and provide support for farmer training on GAP.

4.

### Progress status and signs of systemic change

- Big Tree Farms<sup>13</sup>, an organic, fair trade processing company organized additional socialization meetings with the prospective farmers and provided GAP-related information to the first batch. Big Tree Farms has recruited local people dedicated for identifying and registering the farmers.
- Big Tree Farms relocated the plan for producing coconut sugar in order to get closer to East Java because of this intervention.
- The company has initiated the study and socialization process for the second batch of farmers who will be inducted in the next certification process.
- It has conducted an organic audit; the resulting certificates will be issued in the first quarter of 2016.
- PT Kai Sun has started to implement the intervention business model in Lombok, focusing on the establishment of coconut aggregation points. It has installed a white copra machine, and in October 2015

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<sup>13</sup> <http://bigtreefarms.com/>.

initiated the purchase of lower grade coconut (that is, C and D categories). The company has also decided to establish an additional storage facility to accommodate the increased purchases of lower grade coconut. The farmers are likely to benefit from the price paid by Kai Sun for the lower grade produce, as it is higher than that offered by the traditional market; an impact assessment will be conducted in December 2015 to verify this claim.

- Large fertilizer company PT Arya Supra Nugraha has partnered with the project to promote its fertilizer. It is coordinating its activities with Kai Sun and has provided fertilizer and an expert to establish the demo plots, with the aim of promoting fertilizer use among the farmers and building their GAP capacity. Over 100 demo plots are already being set up to facilitate this promotion. The impact of an increase in GAP knowledge is expected to increase productivity and lead to increased sales of all grades of coconut. This will eventually provide greater income for the farmers.

### **Contribution to the public program**

The government runs a pilot program in Pacitan, promoting coconut sugar to the buyers. In 2011, PNPM (an AusAID-funded program) also worked in Pacitan, promoting cookstoves. PRISMA will follow an attribution strategy to ensure the contribution of each program is distinguished effectively.

## **10. COCONUT NTT<sup>14</sup>**

### **Overview of the subsector**

Coconut can be processed into a wide range of products. Global demand for fresh and desiccated coconut has increased consistently over the last decade. At the same time however, global demand for copra, copra cake, and crude coconut oil has declined.

Indonesia is one of the world's major exporters of fresh and desiccated coconut, copra and copra cake, and crude coconut oil. Despite the fall in global demand for copra, in Indonesia's demand has remained stable, primarily because of price competitiveness and due to its growing industrial use. Demand for VCO is also increasing in Indonesia. Production of fresh coconut remained stable (between 3.0 and 3.3 million MT) over the last decade.

NTT produces around 2% of the total domestic supply of fresh coconut, and there is the potential here to improve production and productivity further. The majority of the province's coconut plantations are concentrated in six districts; Malaka, Kupang, East Flores, Ende, Nagekeo and Sikka, which together account for 79% (71,000 ha) of NTT's coconut plantation area and accommodate more than 45% of the province's coconut farmers. Fresh coconut, copra and VCO are the dominant coconut products here. Of the 110,000 coconut farming households in these districts, around 32,000 households are involved in copra production and 3,300 households in VCO production. In Flores, copra farmers make on-farm copra as part of their business, while in Timor village collectors buy fresh coconut from farmers to make off-farm copra.

NTT is the third poorest province in Indonesia; here, the majority of farmers involved in coconut, copra and VCO production are poor. Copra and VCO are more profitable than fresh coconut. VCO, a home-based industry, is generally dominated by female entrepreneurs. Similarly, women play an important role in copra production, albeit a slightly less dominant one.

### **Challenges and constraints**

The overarching problems encountered by the coconut, copra and VCO farmers in NTT are i) the declining productivity of coconut, ii) the low quality of copra, and iii) the low quality and inadequate production of VCO. Together, these have resulted in reduced income from coconut and coconut products. The specific problems and their underlying causes are summarised below.

- **Decreasing productivity of coconut trees**, particularly in Sikka and Nagekeo due to poor management of aging senile trees (rejuvenation). High yield coconut seedlings are produced and supplied by specific nurseries via government rejuvenation projects. Farmers do not have regular access to best quality

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<sup>14</sup> Interventions in this subsector are being co-managed by Oxfam Indonesia (as PRISMA's co-facilitator).

seedlings; and often produce them independently. Rejuvenation of tree stock is not a common practice among farmers.

- **Low quality of copra in NTT** due to a) use of old technology, and b) low provision of information about better technologies. On-farm and off-farm copra producers operate at sub-optimal capacity as they do not have enough capital to finance expansion of production. Limited interest in and access to financial services exacerbates the problem.
- **Low production of VCO** is low and not significant enough to attract industrial buyers. The previous government program failed to attract buyers for the produced VCO which discouraged the trained women to continue the production with the expected standard. Now the quality produced in Flores is below standard. This vicious circle downwards continued and included factors such as low production, low quality, and farmers having a lack of linkage to buyers and no information about required standards.
- **Lack of incentives for public extension services** to provide information on coconut, copra and VCO. Government subsidies have deterred private sector actors from providing relevant information on rejuvenation of coconut and quality standards for copra. Provincial traders demonstrate weak knowledge and capacity for improving existing copra drying techniques at the producer level. Financial institutions (FIs) are not motivated to invest in developing this market segment. They do not understand the need of copra and VCO markets.

### Vision of change

PRISMA'S vision of change is that by 2018, coconut farmers in NTT will have increased their income by strengthening the diversified use of fresh coconut in better quality copra production and increased VCO production. To achieve this vision, two outcomes are needed, and can be achieved through changes in the service markets to ensure:

- **Improved availability of knowledge, tools and technology, market linkages and financial services** for VCO and copra producers, and
- **Improved availability of high-yield coconut seedlings** for farmers.

### The PRISMA approach

The vision of the coconut sub-sector in NTT is to increase the income of coconut farmers by strengthening the diversified use of fresh coconut in better quality copra production and increased VCO production. To achieve this vision, two outcomes need to take place through changes in the service markets - Improved availability of knowledge, tools and technology, market linkages and financial services for VCO and copra producers; and improved availability of high-yield coconut seedlings for farmers.

PRISMA is considering collaborating with private sector partners to implement the following interventions to realise the vision and unlock the potential of the coconut sub-sector in NTT to benefit the poor farmers.

1. **Support industrial consumers of VCO to develop a sourcing model from VCO producers in Flores**
  - a. Facilitate aggregation of VCO to achieve the minimum quantities required by industrial buyers to engage suppliers.
  - b. Industrial buyers develop and train those involved in VCO aggregation in quality standards that they can disseminate to VCO producers. Aggregation will generate the critical mass of quality VCO, benefiting industrial buyers, and at the same time VCO producers, who will have increased certainty that they can sell their product at a higher price
2. **Support tool producers to make appropriate tools and technology available to small-scale VCO producers in Flores.**
  - a. Industrial buyers train VCO aggregators in the use of the most appropriate tools to equip them to advise VCO producers on optimum tool use, thus ensuring the quality of VCO.
  - b. VCO producers need tools to meet demand for their product, which has become more certain as the quality increases. VCO aggregators and producers will generate higher income as the volume increases.
3. **Build capacity of inter-island traders**
  - a. Develop a model to provide information on quality standards and drying techniques to copra producers and farmers in Flores and Timor.



- b. Improve copra producers' knowledge of quality standards (in terms of moisture content), and techniques employed to achieve the standards, enabling copra producers to increase quality and income from copra.
- c. Inter-island traders will train copra collectors who then become advisors to copra producers. The incentive for the traders is that they will handle higher quality and higher value copra.
4. **Support financial institutions to develop an appropriate credit disbursement model targeting copra production in Timor and Flores.**
  - a. Assist copra producers to acquire more coconuts to increase their copra production and income.
  - b. Link the financial institutions to inter-island traders. The copra collectors will obtain funds from inter-island traders, to buy more coconuts for the copra producers. Inter-island traders will ensure a purchase order system is followed when purchasing copra and, as agreed with the financial institutions, inter-island traders will pay back instalments to the financial institutions.
5. **Support financial institutions to develop and offer appropriate financial products and business management knowledge to VCO producers for expanding production.**
  - a. Financial institutes will provide loans to the aggregators of VCO.
  - b. VCO aggregators will buy coconut from farmers to supply to VCO producers. The price of the fresh coconut will be deducted when they sell VCO to the aggregators.
  - c. VCO aggregators will pay back instalments to the financial institutions.
6. **Support capacity building of seedling producers to promote usage of certified seedlings and systematic management of rejuvenation plans among coconut farmers (women and men) in Sikka and Nagekeo districts.**
  - a. Commercialise the supply of seedlings to farmers and boost coconut production. Copra or VCO collectors will act as intermediaries between the nurseries and the farmers, incentivized by the additional income they obtain as seedling sellers.
  - b. Nurseries will be incentivised to expand their business as the demand for coconut trees expand.

#### **Progress status and signs of systemic change**

PRISMA has started implementing intervention 1: 'To support industrial consumers of VCO to develop a sourcing model from VCO producers in Flores (production and aggregated supply of high quality VCO)'.

- An MoU with the partner (CV Nusa Permai) was signed on December 7, 2015, and the main highlights and achievements since then are:
  - The ISP (Bumi Kencana) signed an MoU with Nusa Permai on December 9, 2015. Nusa has introduced the business model needed for organic VCO production including a work plan, information on VCO processing techniques, machinery and production standards to the ISP.
- Challenges encountered during the first few months of implementation are:
  - Most of the VCO exporters/buyers lack information about the potential of VCO supplies from Flores;
  - Trust has not yet been completely established between the partner, ISP and VCO farmers;
  - A large amount of investment is needed to produce and aggregate VCO to the buyer's required standards; Most producers and potential ISPs lack the financial capacity to expand VCO production and aggregation.

Early signs of progressing towards systemic change are:

- Nusa has shown initial buy-in by agreeing to procure the organic VCO supplied by the ISPs/aggregators at an agreed price. It is willing to pay the organic certification expenses in targeted areas.
- Bumi Kencana (the ISP) has agreed to cooperate with Nusa to produce and sell organic VCO from Flores, with a minimum supply of 15 MT per order, and has understood the business model.
- Bumi Kencana plans to build a production facility and install VCO processing machinery in Flores by June 2016.
- The level of trust between the partner and the ISP has been growing.

#### **Contribution of public programs**

N/A

## 11. COFFEE EJ AND NTT<sup>15</sup>

### Overview of the subsector

World coffee consumption has increased by 2.5% per year since 2010<sup>16</sup>; it is estimated that by 2020 this will be 165-173 million sacks per year. Globally, production is slower than the increase in consumption, creating an estimated annual deficit of 30-37 million sacks. Indonesia is the third largest coffee producer (after Brazil and Vietnam), producing around 680,000 MT (or 11.3 million sacks) of coffee beans annually. At the same time, domestic consumption is low in Indonesia, about 200,000 MT per year. A clear opportunity exists to increase production volume and quality to meet the international demand for coffee.

East Java has an estimated 54,300 coffee farmers, and its coffee production area is equivalent to 8.1% of the national total. It has an international reputation as the best quality producer of Robusta WIB coffee (in particular, Java Robusta AP from Dampit district, south of Malang). Coffee farmers in Malang experience relatively high productivity (an average 790 kg green bean equivalent (GBE) of coffee per ha, compared to the national average of 579 kg GBE per ha).

There is an estimated 51,752 coffee farmers in NTT province, and its coffee production area comprises 57% of the national total. Here, the island of Flores produces high quality Arabica coffee; its *kopi flores* has a successful international market reputation. Its main production areas are Ngada, and neighboring districts such as Manggarai, East Manggarai and Ende, which together produce about 32% of NTT's coffee. Productivity of Flores Island coffee farmers is relatively low (an average of 310 kg GBE per ha compared to the national productivity rate of 579 kg GBE per ha).

PRISMA has chosen East Java and NTT to start the pilot because (a) there is high growth potential here, (b) farmers in the region experience difficulty accessing training in and information on good farming and processing practices, and (c) these areas produce specialty coffee with a high market value.

### Challenges and constraints

The major challenges faced by the coffee sector in East Java and Flores Island, NTT are:

- **Inadequate farming extension services.** Low proficiency in coffee farming knowledge and technology (GAP) and post-harvest (GPP) handling are resulting in inability to achieve high productivity and premium quality of specialty green coffee. This is caused by farmers' limited access to training and information on GAP and GPP.
- **Low productivity of Flores Island coffee.** Farmers have no choice but to follow traditional methods of cultivation resulting in lower yield for their crops. This is caused by limited access to training and information on good farming practices.
- **No added value for Flores Island coffee.** Limited access to financial institutions gives farmers and cooperatives limited working capital to produce good quality coffee and a continuous supply to markets, resulting in loss of potential income from processed coffee.

### Vision of change

PRISMA's vision of change is that by 2018, coffee farmers in East Java and Flores Island will be able to improve their productivity and quality to supply the potential export market, resulting in higher market value for their harvest. This will attract more farmers to go into coffee production, which will increase domestic production of good quality coffee for export. This vision can be achieved through:

- **Local processing units (co-operatives/companies) providing farmers with access to information** on GAP, post-harvest skills and technology, and
- **Government expanding the agro-input retail market** to reach beyond its traditional customer, via **new distribution channels** which enable retailers to sell products and services directly to farmers.

### The PRISMA approach

To achieve its vision, PRISMA will support and collaborate with the private sector to:

1. **Develop the Indonesian Cocoa and Coffee Research Institute (ICCRI) franchise (in Ngada, Manggarai, Manggarai Timur, Ende, Malang, and Lumajang)**

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<sup>15</sup> The intervention in this subsector is being co-managed by VECO (as PRISMA's co-facilitator).

<sup>16</sup> ICO, 2012.



- a. Develop a franchising model to disseminate GAP. Local cooperatives, business units and civil society organizations will act as franchisees (under a contract system with ICCRI), disseminating GAP from ICCRI to small-holder coffee growers in the pilot area.
  - b. ICCRI as a private sector partner will deliver services in the form of ToT, mentoring and technical assistance to each franchisee. Technical assistance will comprise (1) GAP related to coffee bean quality issues, (2) development of learning centres for coffee growers and coffee clinics (addressing, for example, research, trialing, clone propagation), and (3) development of skills in establishing business partnerships.
- 2. Develop decentralized processing facilities for specialty coffee through cooperatives (in Ngada, Manggarai and Lumajang)**
- a. Facilities will be developed through cooperatives/coffee cooperative processing units (CCPUs). The buyer(s) as private sector partner will provide technical assistance to the cooperatives/CCPUs to enable them to operate the facilities.
  - b. Develop technical assistance to support CCPUs to achieve certification. The private sector partner will (a) provide technical assistance to obtain certification and the standard operating procedure for certification implementation, (b) training and mentoring to CCPUs to ensure coffee quality, and (b) will cover the cost of certification of all cooperatives.
  - c. Develop an appropriate credit scheme for coffee processing units. The private sector partner will provide loans to the processing units based on a buying contract with the coffee buyer. The cooperatives/CCPUs need working capital to grow the business more rapidly, and for this will take loans from local banks, using the buying contract as collateral. The buyers will facilitate the CCPUs' negotiation of the loans with selected local banks in Flores, Lumajang and Malang.

### **Progress and signs of systemic change**

- PRISMA has signed contracts with cooperatives as their partner.
- The project has facilitated the setting up of 192 demo plot units to promote ICCRI's product (biopesticide): 30 units in Ngada, and 162 units in Manggarai. Over one and half thousand farmers have visited these demo plots.
- A few thousand farmers have applied the grafting and pruning services provided by the partners.
- Six cooperatives in Ngada and Manggarai who manage CPUs have received loan approval from Bank NTT for IDR3 billion, IDR500.000 for each CPU. Four cooperatives have already used a total of IDR970 million to purchase coffee from farmers.
- Farmers have been socialized into good processing practices to enable them to produce the appropriate quality of coffee cherries.
- The intervention pilot phase shows signs of success resulting from focus and consolidation in NTT. Here, based on achievements in both input-based and the processing/market access business model, the co-facilitator has been encouraged to expand their work to Sumba Island and EJ. An assessment of potential opportunities is planned for in the first semester of 2016.

### **Contributions of publicly funded programs**

Local government is involved in the development of seedlings in areas where PRISMA, in partnership with VECO, is also working. In Manggarai, the government is involved in supporting the project by purchasing the input Hypotan, to help the coffee farmers increase their productivity.

## **12. COCOA PAPUA<sup>17</sup>**

### **Overview of the subsector**

Global demand for cocoa is rising, and traditional cocoa-producing countries are trailing behind in their ability to meet this. Indonesia is the third largest cocoa-producing country and can benefit from this unmet demand. Cocoa has been one of main sources of income and employment for Indonesians; it is also the country's third major export earning product. In 2013, approximately 1.5 million households produced 0.72 million MTs of

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<sup>17</sup> Interventions in this subsector are being co-managed by YPPWP (Yayasan Pengembangan Prakarsa Wirausaha Papua) (as PRISMA's co-facilitator)

cocoa on around 1.74 million ha of land. A recent change in regulations created an immense opportunity for value addition locally; fourteen new cocoa processing companies have been established in the last five years, with giving rise to demand for dry cocoa. South Sulawesi (70-80%) is Indonesia's major cocoa-producing region; here, production has almost reached saturation point.

In Papua, cocoa is an important cash crop, with around 26,000 households involved in cocoa farming on approximately 32,000 ha of land. However, the province contributes only 1.4% to total national production (BPS, 2012). Jayapura, Keerom and Sarmi are Papua's major cocoa producing districts with 85.4% of the province's total cocoa farmers. Most of the cocoa farmers in Papua are subsistence farmers, and women are involved in almost all of the tasks in the production cycle. There is currently very little reinvestment in the commercialisation of cocoa farming to use fertilizer and quality seedlings; productivity is thus less than 300 kg per ha compared to the national average of 500-600 kg per ha. A few large local traders dominate the market. In the recent past Mondelez in collaboration with Armajaro introduced a 'cocoa doctor' concept where interested parties (collectors or others) were trained to provide technical services to farmers. This input was however temporary and currently none of the big processors have a direct involvement in Papua.

### Challenges and constraints

The main challenges that the cocoa farmers in Papua face are low productivity and low production. The underlying causes of this are:

- **Farmers do not apply fertilizer.** Cocoa trees are starved of proper nutrients and frequently infested with pest and disease, caused mainly by inappropriate farm maintenance practices. Farmers tend to have little knowledge on how to grow cocoa better.
- **Input markets and information channel related to cultivation techniques** are largely dominated by public agencies; farmers' incentives are driven by subsidies.
- **Absence of strong traders and a direct procurement channel** of the large processing companies. This has further weakened incentives and ability to invest in more intense cocoa farming.

### Vision of change

The vision of change at the sector level is to increase the income of Papuan cocoa farmers and fulfil market demand by increasing production and quality of the crop. At the service level, it is envisaged that farmers will have a) sustainable access to knowledge and information on appropriate farm management and cultivation practices; they can apply that knowledge by using good quality inputs (fertilizer, seed and seedlings) with sustainable access to those inputs; and farmers have b) functional access to suitable financial products, and c) sustainable access to good quality inputs (fertilizer, seed and seedlings).

### The PRISMA approach

To achieve this is, PRISMA is considering collaborating with public and private sector partners to implement the following interventions:

#### 1. Support revitalisation of the existing and development of new ISPs (in this case, the cocoa collectors) by cocoa traders to increase productivity of cocoa farmers

- a. Leverage the resources and actors currently available in Papua. PRISMA will partner with at least two cocoa traders in Papua interested in expanding their business and taking up the task of revitalizing the capacity of ISPs (in this case, cocoa collectors) in the local cocoa trade.

One potential partner is cocoa trader PT Purni Jaya Papua (PJP); the other is CV Kakao Kita, a small company which trades mainly in speciality cocoa. PJP is the biggest cocoa trader in Papua with around 200 active collectors. Its trading volume is around 2,400 MT per year, supplied by 6,000-8,000 cocoa farmers, beside its own plantation of 600 ha. PJP's current trading practices are limited to buying and selling.

Kakao Kita is willing to increase its buying volume from 15 to 30 MT per year and to expand its area of operation. It is currently working with seven collectors and around 800 cocoa farmers in 13 villages. PRISMA will partner with both companies to revitalise and build the capacity of existing collectors, thereby increasing the production and productivity of the farmers.

- b. Promote two types of fertilizer alongside information on better cultivation practices. PRISMA and its partners will promote homemade compost for those farmers who have fewer resources. Impact will be limited but better than that currently obtained by farmers using traditional practices. Those farmers who can afford more will be encouraged to apply the optimal level of fertilizer, which provides all the required nutrients.  
Fertilizer is available through the regular input-distribution channels; farmers can buy it at agro input shops at sub-district level. To encourage farmers to use fertilizer, the intervention will develop a contract system or saving mobilisation scheme, whereby PJP and KK (as partners) will provide a guarantee to the fertilizer suppliers or financial institutions. ISPs and collectors interested in expanding their business can also supply fertilizer to the farmers.
- 2. Support the development and implementation of integrated cocoa development centre by big processor/trader in Jayapura, Keerom and Sarmi**
    - a. Support private businesses in partnership with a large processor or traders to set up seedling nurseries. The large processors will provide quality seedlings to the nursery owner and train them on the various aspects of cocoa farming.
    - b. Support the promotion of the use of quality seedlings. The nursery owner is expected to provide knowledge and information to the farmers to enable demand creation. The cocoa the farmers produce will be bought by the large processors. This intervention, in conjunction with intervention 1, will somewhat enhance organised farming to provide market linkage and access to quality input and information.
  - 3. Support the piloting of existing financing modalities into cocoa sectors in the district of Jayapura, Keerom and Sarmi**
    - a. The organization providing microcredit will train farmers in better cultivation techniques and provide market information, thereby aiming to reduce crop failure rates. This builds on the existing microfinance model of making collateral free credit available to cocoa farmers, and provides them with much needed credit and access to information.
  - 4. Support financial institutions and provincial government to develop appropriate risk sharing and financing products targeting cocoa farmers**
    - a. Support financial institutions to develop more inclusive financial products targeting the cocoa farmers, by linking them with the government initiated credit guarantee fund. This fund shares partial risk of failure with the financial institutions, creating an incentive for the banks to reach a risky and excluded segment of the population
  - 5. Facilitate modification of government seed certification process to include and promote locally suitable varieties among nursery owners.**
    - a. Link the local government laboratory in Besum, Jayapura regency, with the central laboratory in Jember, East Java, and create a protocol for testing seed varieties in Papua. This will allow the district laboratory to trial different seed varieties and identify which is most suitable for the local agro-climatic conditions. The laboratory will then multiply the identified variety and distribute it among farmers via private seedling companies.

### **Progress status and signs of systemic change**

PRISMA has started to implement a version of intervention 1

- An MoU was signed with partner CV Kakao Kita on November 18, 2015 and the main highlights and achievements since then are:
  - PRISMA developed ISP identification and selection criteria in collaboration with Kakao Kita
  - Three potential ISPs have been identified
- Challenges encountered during the first few months of implementation are:
  - Kakao Kita has a limited number of staff, and was thus unable to assign anyone to conduct joint identification of ISP during the cocoa's peak harvest period (November-December).
  - Another potential partner, PT Purni Papua Perkasa Jaya, postponed the signing of MoU due to the restructuring process at top management level.
- Early signs of progressing towards systemic change are as follows -
  - Kakao Kita is working with ISPs to collect cocoa and provide services to cocoa farmers, combined with their current model of using internal collectors.

- Kakao Kita is planning to expand to five new districts in Papua and Papua Barat (West Papua)

### Contribution of public programs

The Ford Foundation and ECOM are currently developing a program. This will establish 28 cocoa village centres and train 3,000 cocoa farmers.

Local Government of Papua could contribute seed, fertilizer, and pesticide procurement, also support in nurseries establishment.

## 13. MANGO NTB AND EJ

### Overview of the subsector

Mango is the third most widely grown fruit in the tropics and sub-tropics after watermelon and banana. Global production of mango has been increasing, with growth largely driven by favourable demand conditions in producing countries. Between 2003 and 2013, global production of mango, mangosteen, and guava increased from 29.7 to 43.3 million MT and grew at a compound annual growth rate (CAGR) of 4%. While data from the FAO does not disaggregate among these commodities, the latter two crops have residual importance in terms of production. Representing over 40% of global production, India is the world's leading mango producer, followed by China and Thailand.

Mexico has been the leading mango exporter for decades while the US is the leading importer of mangoes. The EU and Gulf States are potential markets for mangoes from Indonesia. In East and Southeast Asia, five countries – Malaysia, Hong Kong, Singapore, Laos, and Japan – account for the bulk of imports. Despite strong growth in the international mango trade, over 95% of the world's harvest is still consumed within the producing country itself.

Indonesia is the fourth largest mango producer globally, with approximately 2.4 million MT of mangoes in 2014; the country accounts for 3 to 5% of global production, depending on the year. Mango is Indonesia's largest fruit crop. In line with global trends, mango production in Indonesia has also been increasing at a CAGR of 4% over the past decade.

East Java province dominates the Indonesian mango sector. The province produces about 750,000 MT a year, around 33% of the national annual supply. At the other end of the spectrum, West Nusa Tenggara (Nusa Tenggara Barat, or NTB) is one of Indonesia's smaller mango producing areas, contributing only a fraction of the amount supplied by East Java. About 6,000 ha of NTB farmland is committed to mango cultivation, producing about 100,000 MT per year. Here, mango farmers are poorer, and have fewer crops and fewer income options than farmers in East Java. They typically sell their mangoes from the tree either at harvest time or prior to the harvest. In North Lombok district, mangoes are sold for cash, but on an ad hoc basis rather than being managed as a commercial crop.

A value chain study shows that in both East Java and NTB, the low peak-season price (IDR2,000-2,500/kg) is a major disincentive for smallholder mango farmers to consider investing in the new technology which would make their business more productive at other times of the year. Instead, they leave their mango trees to bear fruit naturally or rent them out to collectors to manage.

In the off-season however, the average on-farm price of mangoes can be more than 10 times higher than the price stated above. This means that if half their crop can be sold during the off-season months, the farmer's income from mango will increase by about 40-50%. The crop treatment technology, which is designed to help deliver an early harvest and thus obtain higher prices, is accessible by 700,000 farmers in East Java and around 40,000 farmers in NTB. There is clearly an opportunity for PRISMA to tap into the possibility of shifting about 50% of the total mango production to an earlier harvest time, enabling smallholder farmers to get a better price for their produce during the months which are currently off-season.

### Challenges and constraints

The three key problems currently constraining smallholder mango farmers in East Java and NTB from taking advantage of this market opportunity are:

- **Lack of access to early flowering technology and alternative end markets.** Chemical companies see mango farming as a market with low potential, and so do not actively promote the use of the right combination of chemicals for off-season mango production, or provide embedded services to assist farmers with successful application of such technologies. The export sector is largely underdeveloped; the processing industry is also in its early infancy.

- **Farmers are reluctant to invest in the mango crop** because of the low prices they currently get in the peak season; they are generally smallholders, their production is low, and they generally follow a low investment, low return model.
- **Farmers also experience low productivity when they manage their own trees** because they lack access to GAP, particularly in terms of pest and disease management. Losses from pest and disease attacks can be significant, making mango farming even less attractive.

### The PRISMA approach

To achieve its vision, PRISMA is collaborating with the private sector, PT Syngenta Indonesia (Syngenta) to:

1. **Promote early flowering technology.** PRISMA and Syngenta are working to identify collectors and lead farmers who would:
  - a. Promote early flowering agrochemicals (marketed by Syngenta as Cultar, Amistar Top and Actara);
  - b. Collaborate to promote Saung Learning Centres (or SLCs) for demonstration purposes and to provide information;
  - c. Demonstrate the application and impacts of the agrochemicals through key events (such as expos and farmers' field days or field trips), and
  - d. Learn more about early flowering technology in order to disseminate the knowledge and skill to the farmers within their network to ensure the use of the technology.
2. **Identify and invite mango farmers** to attend early flowering technology training and promotional activities. Since many mango farmers have never heard of the technology, or have prior misconceptions, attending a training will give them a clear idea of early flowering and its benefit.
3. **Identify locations suitable for demo plots** so that more farmers can understand the benefit of the technology. This is built upon the success of the pilot program which showed that demonstrations increased the sales of the chemicals.
4. **Prepare a database of category C collectors** to enable Syngenta to identify which collector to target for each demonstration. Mango collectors usually collect from around 15 farmers each, thus by increasing an outreach for collectors will help increase the outreach to farmers.
5. **Train Syngenta staff to enhance their capacity** to prepare and run the mango demonstration plots. The need for training will be assessed based on the experience of the pilot demonstrations.

### Progress and signs of systemic change

- Since beginning work with PRISMA, Syngenta has started to re-import Cultar and has steadily increased its import volume from two MT in 2014 to six MT in 2015.
- It has included Cultar in "must-win" project and endorsed the introduction of sales targets to its field teams in both provinces.
- Syngenta has also started to promote the application of early flowering technology for other fruit crops. In 2015 it organized an expo in Banyuwangi, East Java to promote the technology for dragon fruit. The company invited two hundred farmers, and managed and funded the event independently.
- In order to reach smallholder farmers, Syngenta is discussing the development of smaller packages of Cultar.
- Competitor producer Getwell has introduced the technology through provision of a product loan (with payment due after harvest) to mango collectors.
- In late November and early December 2015, NTB's government agriculture office held two training events for mango farmers in Lombok and Sumbawa, inviting a Syngenta representative to attend as the expert resource. On 16 January 2016, the district government of North Lombok held a similar activity, inviting around 50 participants.
- Government officials and related departments (such as the agriculture office) at the district and provincial levels (e.g. in Lamongan, Lombok, and Sumbawa) have expressed an interest in being involved in the promotion of the technology.
- SMKN 1 Kayangan, an agriculture vocational high school in North Lombok, is preparing a local-content subject on early flowering technology which it has started to teach and will embed in their curriculum.

### Contribution of public programs



There has been no significant contribution by public programs. Nonetheless, provincial and district level governments in East Java and NTB have been showing interest in being involved in promoting the early flowering technology.

## 14. MAIZE: EJ

### Overview of the subsector

Maize is one of Indonesia's primary food crops. Across the country, almost 20 million MT are grown each year on three to four million ha of farmland; more than half is used to cater to the ever-increasing demand for animal feed. It is a seasonal crop, with a surplus during peak harvest months and a severe undersupply the rest of the year. PRISMA has identified a clear opportunity to increase maize production, productivity and quality as part of Indonesia's drive towards import substitution.

East Java province is the largest producer of maize in Indonesia; however, its growth is slight growth, at only 0.49% per year (2014 figures). Productivity is in line with the national average (4.82 MT per ha) but this is below that of NTB. PRISMA is focusing on the island of Madura, where farmers cultivate maize as a subsistence crop and where productivity is less than a quarter (1.7 MT per ha) of that on mainland East Java. Traditional cultivation methods, used of local seed varieties and the lack of knowledge of and access to irrigation and post-harvest management services are the main reasons for this.

PRISMA has chosen to focus on the three Madura districts of Sampang, Sumenep and Pamekasan because (a) productivity here is low while the potential exists to significantly increase yields, (b) there is a substantial business opportunity for input suppliers to provide improved quality hybrid, as current usage is low, and (c) the intervention will support local government's plan to make Madura self-sufficient in maize by 2018.

### Challenges and constraints

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

- **Lack of understanding of GAP.** Many maize farmers are unaware of the benefits of using improved seed and continue to rely on local seed varieties which provide lower yields.
- **Availability of more lucrative commodities.** Many farmers here have chosen to plant tobacco. The pull towards this is increased by two local cigarette companies which have provided storage facilities for the crop.
- **Lacklustre government subsidies which provide no incentives.** Farmers get free or subsidised hybrid seed and fertilizer from the government. Not only is this unsustainable, it provides no incentives for the private sector to get involved in supplying these inputs.

### Vision of change

PRISMA's vision of change is that by 2018 maize farmers on Madura Island will have increased their production and productivity of maize. Their maize will be of a better quality and they will be getting better incomes as a result. This will attract more farmers in East Java to go into maize cultivation, increasing domestic production and helping Indonesia to fill the import gap. This can be achieved in the following ways:

- **Seed companies** starting to supply hybrid seed in the areas where farmers have limited or no access to hybrid seed;
- **Seed companies** providing information on GAP as an embedded service to Madura maize farmers through their distribution network, and
- **Feed millers and/or traders** promoting appropriate post-harvest practices and maize quality standards.

### The PRISMA approach

To achieve this, PRISMA will collaborate with the private sector to:

#### 1. Promote hybrid seed

- a. PT AHSTI as partner already applied business model, recruited staffs, and allocated seeds to be sold at Madura.
- b. Private seed company PT AHSTI is PRISMA's partner and has been promoting the use of hybrid seed in Madura (Sumenep and Pamekasan), despite progress being hindered by El Nino and government subsidised seed. In 2016, the focus is on incorporating more market actors (e.g. maize buyers, seed retailers) into the business model.

- c. AHSTI uses promotional activities to disseminate information about GAP and its application specifically in terms of hybrid maize cultivation. When put into practice, GAP contributes to higher yields.
  - d. Other interested hybrid seed companies are expected to participate in the initiative. DuPont, with its influential 'Pioneer' brand, has shown an active interest in the business model and plans to join in 2016. It had earlier decided to withdraw from Madura but now plans to collaborate with PRISMA.
2. **Promote appropriate post-harvest services**
    - a. PRISMA is identifying suitable partners to assist farmers to improve their post-harvest practices (e.g. more effective drying techniques) in order to standardise the quality of maize.
  3. **Promote the use of improved seed suitable for dry season farming in non-irrigated drylands**
    - a. PRISMA is identifying potential partners and plans to conduct further assessments in non-irrigated areas where maize is planted.

### **Contribution of other publicly funded programs**

The government is providing extension services and is involved in the distribution of OPV of composite seed and hybrid maize seed to farmers, which may affect the impact of PRISMA's intervention despite being on a very limited scale. Nevertheless, PRISMA's impact assessment will ensure that the actual impact of the intervention is calculated, and not overlapped with any impact attributable to the government initiative.

## **15. MAIZE, NTB**

Maize is one of Indonesia's primary food crops. Across the country almost 20 million MT are grown each year on three to four million ha of farmland; more than half is used to cater to the ever-increasing demand for animal feed. It is a seasonal crop, with a surplus during peak harvest months and a severe undersupply the rest of the year. PRISMA has identified a clear opportunity to increase maize production, productivity and quality as part of Indonesia's drive towards import substitution.

At national level the price of maize has been increasing steadily over recent years. However, the province of NTB has experienced no growth in its maize production, despite productivity being above the national average at 5.8 MT per ha. Most farmers here plant their crop during the wet season on dry farmland, with only a small number having the capacity to irrigate their land during the dry season. Poor post-harvest handling and lack of storage facilities add to the problem of inconsistent supply.

Around 127,000 ha of land in NTB is given over to maize farming, with approximately 87,700 maize farming households living below the poverty line. Just over half of these (43,900) are in PRISMA's four target districts: Bima, Dompu, West Lombok and North Lombok. PRISMA has chosen these districts because of there are huge harvested area of maize cultivation but in another hand some of farmers in some area still getting lower productivity compared to the potential yield can get.

### **Challenges and constraints**

Maize farmers in NTB find it difficult to increase their income because of five major reasons:

- **Limited provision of information and extension services because of weak public provision and lack of private alternatives.** There are few reliable sources of information for maize farmers. Government extension services are not able to satisfy the need for technical information, and it is rare for input suppliers and traders to provide embedded information on maize cultivation. When input suppliers do provide information services, these are geared towards promoting their own products.
- **Few commercial providers of fertilizer, post-harvest equipment, and irrigation services, particularly given the strong government presence in these areas.** Farmers rely mainly on subsidised fertilizer, but the government fertilizer distribution program is unable to supply it in sufficient quantities. In addition, the distribution of subsidised inputs from the government creates disincentives for private sector input supply companies to invest in new products and distribution channels or to provide training and information to farmers about such products. Input supply retailers have noted a decreasing volume of sales since the introduction of the government fertilizer subsidy program. Similarly, government involvement in the distribution of subsidised post-harvest equipment and the provision of irrigation has meant that few private actors have entered these markets. Outreach as part of both government programs has been limited, and in the case of irrigation, these services are usually only available for rice cultivation.
- **Limited affordable options for finance, particularly given the difficulties in accessing bank loans.** The use of hybrid seed requires a sufficient supply of other inputs such as fertilizer, agro chemicals (e.g. herbicide, pesticide) and labour, as well as careful and informed treatment and maintenance. Poor famers

have little money to support these, and no access to external financial resources. Some farmers rely on moneylenders who provide loans at exorbitant rates of interest.

### Vision of change

PRISMA's vision of change is that by 2018, maize farmers in NTB will have increased the volume and quality of their maize production, in ways which are sustainable and increase their income. This will attract other maize farmers to adopt GAP and start to produce hybrid maize. Domestic production will have increased, contributing towards filling the export gap. This will be achieved through:

- **Input companies** providing GAP knowledge as an embedded service. This will address hybrid maize cultivation, informing farmers on the use and benefits of non-subsidized fertilizer, post-harvest handling, and effective drying and storage services;
- **Private fertilizer companies** carrying out the promotion and distribution of non-subsidised fertilizer in areas where subsidised fertilizer is not available, either in the right quantity or at the right time, and
- **The private sector** improving irrigation facilities and management.

### The PRISMA approach

To achieve its vision, PRISMA collaborated with private sector partner PT Sarottama and supported it to:

1. **Improve access to GAP and promote its use.** This includes the use of appropriate quality seed, maintenance and technology.
2. **Improve access to fertilizer and promote its use** by strengthening distribution of non-subsidised fertilizer.
3. **Promote low cost, household-level storage techniques** among the target farmers, raising awareness of the benefit of selling the maize over a longer period of time.
4. **Develop improved access for maize farmers to a proper irrigation system** and the technology needed for dryland cultivation to give the farmers the ability to plant maize in the dry season.

### Progress status

PT Sarottama and PRISMA agreed to establish farmer resource centres (FRCs) as a sustainable mechanism to provide the market with the required access to inputs and information. The model was designed to develop an incentive structure to enable the FRCs to achieve self-sufficiency and ensure continuity of service delivery. However, Sarottama backed out of its own deliverables, resulting in only one of the four proposed FRCs being established. This hindered the lone FRC's ability to generate enough revenue to self-sustain during the start-up period. With service provision limited to around 500 farmers in NTB, it was not possible to assess the value addition of the promoted GAP and access to fertilizer provided by the business model. This fact, alongside a lack of cooperation from Sarottama, resulted in the termination of the agreement. PRISMA plans to develop interventions with other potential partners to address the issues in 2016.

## 16. MAIZE, NTT

### Overview of the subsector

Maize is one of Indonesia's primary food crops. Across the country, almost 20 million MT are grown each year on three to four million ha of farmland; almost half is used to cater to the ever-increasing demand for animal feed. It is a seasonal crop, with a surplus during peak harvest months and a severe undersupply the rest of the year. PRISMA has identified a clear opportunity to increase maize production, productivity and quality as part of Indonesia's drive towards import substitution.

In NTT province, maize is the staple food of the majority of the population, and one of the local farmers' most popular crops. Despite its importance however, maize cultivation is characterized by low input, low output subsistence farming practices. This low productivity, which consistently fails to meet mainly for local consumption, is largely caused by the limited access to improved seeds as well as use of extension services, which are insufficiently technically equipped to assist farmers. Most farmers in NTT plant their crop during the wet season on dry farmland; only a small number have the capacity to irrigate their land during the dry season. Poor post-harvest handling and lack of storage facilities adds to the problem of production loss.

PRISMA, through the Australia-Indonesia Partnership for Rural Economic Development (AIP-Rural) saw an opportunity to improve maize productivity at farm level by encouraging the use of GAP. Since 2011, AIP-Rural has supported food security in NTT by boosting the productivity of maize; by the end of 2011 it had increased



by more than 35%. AIP-Rural had achieved this by increasing farmer access to an improved variety of maize seed and technical knowhow. There is thus a clear opportunity to promote the viability of maize cultivation as a business for farmers through increasing the demand for quality seed, alongside embedded services that promotes GAP.

### Challenges and constraints

Maize farmers in NTT find it difficult to increase their income for two following reasons:

- **Limited knowledge of GAP.** Farmers practice subsistence farming on a small amount of land (usually half a ha or less). This produces insufficient maize to feed the household, partly because of low yielding variety crop management practices and substantial post-harvest loss due to pest attack.
- **Recycling of seed from the previous harvest.** Most farmers in NTT do this, a practice which eventually reduces yields.

### Vision of change

PRISMA's vision of change is that by 2018, maize farmers in NTT will be using an improved variety of maize which will increase their production volume and productivity, enabling them to supply their consumption needs as well as the local market. Moving out of subsistence farming means they will receive a higher market price for their crop, attracting more farmers to use better inputs and GAP. Domestic production will have increased. This vision is being achieved by:

- **Input suppliers** increasing their supply of improved quality seed available in more consumer-friendly packaging, and retailers advertising and distributing it at a fair, affordable price.

### The PRISMA approach

To achieve its vision, PRISMA is collaborating with the private sector to:

- 1. Promote the use of improved seed (composite or open pollinated varieties, as well as hybrid seed)**
  - a. Work with local seed producers to improve the sustainability and outreach of the business model. This will include building the management capacity of seed producers, conducting an area mapping, establishing a "Champion Jagung" club, and developing an effective marketing program.
  - b. Work with four private sector partners to promote composite or OPV of seed in West Timor. During the initial phase of the intervention 21 MT OPV have been sold.
  - c. Continue support to existing partners (e.g. expanding their private distribution network to Flores); consider the potential to support additional intervention partners, particularly in Sumba and Flores.
- 2. Introduce affordable commercial fertilizers**
  - a. The ultimate goal is to ensure the availability and use of fertilizer, which is essential for maximizing yields from hybrid seed and can also improve yields from composite seed. There is potential to work with fertilizer companies and agro-input dealers to develop fertilizer products and private distribution channels to target smallholder farmers.
  - b. The supply of subsidized fertilizer is insufficient, and delays in the government distribution scheme often mean that it arrives at the wrong time, providing opportunities for private sector involvement.
- 3. Introduce more effective, affordable farm-level storage solutions**
  - a. This will help reduce losses once farmers have increased productivity and are growing more composite and hybrid seed. PRISMA is working through YIPD as a co-facilitator to develop this strategy.
  - b. Work with manufacturers, distributors, and traders of storage equipment to develop alternative, cost-effective storage solutions. In 2016, this will involve the commercialisation of airtight containers based on market incentives.

### Progress status

- PRISMA has signed a contract with four seed producers in West Timor.
- Partner adapted the business model to produce, and promote maize seeds via their distributors, retailers, and Champion Jagung; and hire agronomist to ensure production of quality seeds.
- Outside the business model, Partner also are producing more seeds, investing more in promoting OPV maize seeds, and hiring more agronomist.
- Over 21 MT of OPV seed were sold last season, including Lamuru (the most suitable), Srikandi Putih and Srikandi Kuning. Some additional seed has also been sold in Flores.
- In 2015-16, the region is witnessing the most severe case of El Nino for 23 years. This has negatively affected seed sales, and delays to the rains have led to a shift in the planting season and farmers' choice

of crop. This delay has also been favourable to the distribution of government subsidized seed (the delivery of which is frequently delayed in NTT), which has also negatively impacted the market development progress of PRISMA's partners.

- Despite roadblocks such as these, the business model has been deemed plausible by partners and there are interested parties in West Timor, Flores and Sumba who wish to expand their markets.

### **Contributions of other publicly funded programs/private contributions**

The Gol is providing extension services and is involved in the distribution of OPV of composite maize seed to farmers, which may affect the impact of PRISMA's intervention despite being on a very limited scale. Nevertheless, PRISMA's impact assessment will ensure that the actual impact of the intervention is calculated, and not overlapped with any impact attributable to the government initiative.

## **17. MAIZE DRYING AND STORAGE NTT<sup>18</sup>**

### **Overview of the subsector**

Indonesia is the largest maize producer in Southeast Asia and the sixth largest globally; increased demand has resulted in maize prices increasing over the past seven years. At the same time however, Indonesia is a net importer of maize. Maize production in Indonesia is highly seasonal, typically concentrated within three months of the year. To tackle this seasonal variation and meet demand, particularly that of the country's feed mills, Indonesia imports maize.

NTT ranks seventh out of the 10 largest maize-producing provinces in Indonesia. Most of NTT's poor farmers grow maize following traditional, minimalistic cultivation techniques, and perceive it to be a crop with low commercial value. In 2012, the province produced approximately 626,000 million MT of maize, and over the last few years has experienced an average annual growth rate of 5%. Almost 99% of total production is absorbed by the local market and is mainly used for human consumption. Only a few farmers have started to grow industrial varieties of maize to supply the small local feed mills. Overall, the productivity and production capacity of maize farmers in NTT is very low, and to meet local demand, NTT imports maize from NTB and South Sulawesi provinces.

Maize farmers in NTT use traditional post-harvest drying techniques – using smoke, and in the sun – for both the grain and the cob. Their storage techniques also tend to be highly traditional, involving hanging the cobs above the kitchen fireplace, storing grain inside airtight bags, jerry cans, plastic bottles and water tanks.

### **Challenges and constraints**

The main challenge to NTT's maize farmers is a loss of 30-50% of their harvest, which is due to:

- **Traditional storage practices.** These lead to the grain being damaged after being stored for more than four months
- **Lack of awareness of alternative ways of drying and storing grain.** Farmers are continuing to use traditional practices.
- **Limited or non-existent information on alternatives to traditional practices.** Farmers remain unaware of the options available to them to improve their practices.
- **Lack of involvement of the private sector,** which has not yet entered this market segment.
- **Lack of involvement of local government extension services,** despite the fact that maize is has been identified by government as a priority commodity in NTT.

### **Vision of change**

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<sup>18</sup> Interventions in this subsector are being co-managed by YIPD (Yayasan Inovasi Pemerintahan Daerah) (as PRISMA's co-facilitator).

PRISMA's vision of change is that by 2018, maize farmers will have increased their through reducing post-harvest loss and improving the quality of maize during the drying and storing processes. This will be achieved by:

- Improved drying and storage practices at the service level, at various stages of the value chain, primarily at the farmer level, and
- Improved local government capacity is needed to support drying and storage facilities; operational public drying and storage facilities may contribute to the vision in the long run, when more maize is produced in NTT.

### **The PRISMA approach**

PRISMA's field assessment showed that given the low volume of production in NTT, there is not a strong business case for investment in creating large drying and storage facilities, which will not immediately improve the current drying and storage practices of the farmers. Rather, promoting the availability and usage of appropriate storage products and materials at the household level, in addition to improving the knowledge and capacity of farmers for proper drying and storage techniques, seemed to be viable and immediate solutions to the problem.

The provincial government of NTT has placed a strong emphasis on the promotion of maize as a major crop; to support this policy position it has established large-scale commercial drying and storage facilities in five districts in NTT. The subsector assessment conducted by YIPD and PRISMA showed that none of the facilities are operational. This is as a result of insufficient supply of maize in the facilities, as there is hardly any surplus maize (both for human consumption and industrial use). Improving sector competitiveness through better functioning of commercial drying and storage facilities is therefore entirely predicated on the improvement in production and productivity of maize in NTT. However, in future the scope of assessment of the drying and storage market system may include drying and storing facilities which can process multiple crops in NTT. A further assessment therefore may be conducted, to analyse the drying and storage services for multiple crops in NTT with a view to identify solutions which will improve the support market functioning of drying and storage.

Based on the analysis, the focus of the intervention is on improving the drying and storage practices among the NTT's maize farmers at the household level.

PRISMA is considering collaborating with the private sector partners to:

#### **1. Support the promotion of improved technology and appropriate tools & materials for good postharvest (drying & storing) practices for maize farmers in NTT.**

a. Promote and develop appropriate storage facilities in partnership with private tool and materials producers. Knowledge and information about good post-harvesting techniques will be also communicated to farmers as embedded information. PRSIMA has considered the following opportunities:

- There is a need to improve drying and storage practices at the household level.
- The intervention can be initiated as a small pilot in areas with maize surplus to test and prove the concept.
- The intervention is relatively simple and does not require significant resources.
- Success in pilot area will trigger replications by other households.
- The design of the intervention is to reach farmers at the household level.

2. However, in further developing and implementing the intervention, the following risks were identified:

- Appropriate technology comes with associated costs as opposed to the often simpler and cost-free traditional methods;
- Additional investment for improved drying and storage may not be considered necessary by the farmers due to their subsistence orientation;
- Farmers with large volume of production prefer to sell their produce instead of investing in storage;
- Drying and storage is a function naturally served by collectors and traders - there is a risk of increased competition, and

- The business model relies on the sale of non-consumables (non-repetitive business may limit motivation of potential traders)

### **Progress and signs of systemic change**

PRISMA has started implementing the intervention: 'Support the promotion of improved technology and appropriate tools & materials for good postharvest (drying & storing) practices for maize farmers in NTT'.

- An MoU was signed with partner PT Buana Ika Syahputera (BIS) on August 14, 2015, and the main highlights and achievements since then are:
  - A maize expert and a marketing consultant have been contracted to provide knowledge to BIS on maize and the market situation in NTT;
  - BIS contributed to the identification and selection of ISPs;
  - Eight ISPS were selected and have signed business agreements with BIS;
  - Two ToTs sessions were conducted for the ISPs on drying and storage technology were conducted; 53 members of staff participated;
  - Three ISPs have socialised the drying and storage technology; 139 maize farmers have been informed about the use and benefit of jerry cans, and
  - BIS has invested in the design of the new jerry can moulds, as per the demand of the farmers.
- The challenges encountered during the first few months of implementation are:
  - A jerry can sample has not yet been supplied. This creates a challenge when explaining to the ISPs and maize farmers interested in buying improved products, and
  - High investment is one of the barriers to entry for the market, although the potential huge demand may attract other plastic companies to produce and sell the new jerry can.
- Early signs of systemic change are:
  - The partner has adopted the business model; it has engaged ISPs in the promotion and sale of the new jerry cans, and trains the ISPs on promoting jerry-cans and the new D&S technology;
  - The partner has modified the design of jerry-cans to make it more appropriate for maize storage;

### **Contribution of public programs**

A local government program has started to encourage maize farmers to utilise used drums as containers to store maize. One other PRISMA program in Timor Island promotes the use of composite seed. Some other development agencies like FAO had activities on promoting jerry cans for storage of maize

## **18. MUNG BEAN EJ<sup>19</sup>**

### **Overview of the subsector**

Mung bean is grown mainly in South and Southeast Asia; its cultivation has also expanded into Australia, USA, Canada and Ethiopia. In Asia, its production increased from 2.3 million MT in 1985 to 3.1 million MTs in 2000. China is the largest exporter of mung bean in the world, followed by Myanmar, while India is the largest importer. Global demand for mung bean remains consistently high and stable.

Demand for mung bean in Indonesia is largely met by domestic production, despite its decline particularly since 2012. This results in persistent increase in imports to cater for the food processing industry which dominates domestic demand. Availability of mung bean-based food products has increased significantly in recent years and its market price in Indonesia has remained relatively stable.

East Java is Indonesia's second largest producer of mung bean; together with the largest producer, Central Java, the province accounted for 64% of Indonesia's total production of mung bean in 2014. East Java has around 200,000 mung bean farmers, roughly half of whom are in Madura, while the rest are spread throughout

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<sup>19</sup> Interventions in this subsector are being managed by UPUK-Surabaya (Perkumpulan Untuk Peningkatan Usaha Kecil) (as PRISMA's co-facilitator).

30 or more districts. Since 2005, mung bean production and its cultivation area has decreased in East Java, although productivity has increased.

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, and is therefore widely used in crop rotation. It remains particularly relevant to the poor in terms of both income and nutrition. It is cultivated as an attainable interval cash crop in the dry season due to its low maintenance and production costs. Poor farmers in EJ have the potential to increase mung bean productivity without significantly raising production costs. There is viable scope for import substitution, due to escalating domestic demand coupled with the rising sale prices witnessed over the last years.

### Challenges and constraints

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

- **Lack of use of appropriate quality and quantity of inputs.** Minimizing cost and effort dominates the farmers' cultivation methods.
- **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.
- **Farmer reliance on residual fertilizer present in the soil** from previous crops. Fungicide, herbicide and pesticide are widely available in the market, but are not targeted to mung bean production.
- **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.
- **Limited or non-existent post-harvest and storage services for mung bean.**
- **Mung bean is not considered a nationally important crop by government development strategy.** As a result, extension services – which are functioning with limited knowledge and resources – do not focus on mung bean.

### Vision of change

PRISMA's vision of change is to increase the income of mung bean farmers in East Java by improving the quality and productivity of their crop. It is essential to ensure the availability and usage of appropriate inputs and proper cultivation techniques, which can be achieved by, at the service level:

- **Seed industry actors** supplying quality mung bean seed and embedded services, to educate farmers about better cultivation practices;
- **Fertilizer and pesticide companies** promoting better cultivation practices and proper usage of their inputs to farmers;
- **Agro tool companies** promoting the appropriate tools (e.g. for planting, threshing) and providing embedded information about better practices and application of the tools, and
- **Government** improving its support for mung bean farmers.

### The PRISMA approach

To achieve this vision, PRISMA plans to collaborate with public and private sector partners to:

- 1. Assist seed producers and suppliers to produce, distribute, and promote quality mung bean seed in East Java**
  - a. Assist local seed producers to assess the untapped market potential of mung bean seed.
  - b. Assist them to expand their existing seed production.
  - c. Facilitate the distribution and promotion of mung bean seed through input retailers and suitable distribution agents.
  - d. Promote embedded information services alongside the sale of seed.
  - e. At a later stage, replicate this model with other seed producers and retailers.
  - f. Start negotiating with large seed companies for future scale-up of the model.

- 2. Assist fertilizer and pesticide companies to promote the application of fertilizer (particularly micronutrients and compost), appropriate pest control solutions and better farming practices**
  - a. Work with fertilizer and pesticide companies to develop a business model targeting mung bean farmers, who are large in number but yet to be considered as clients of the companies.
  - b. Pilot the model with at least one company, stimulating the use of micronutrient fertilizer, compost and pest control solutions appropriate for mung bean.
  - c. The partner will disseminate knowledge on better cultivation practices to mung bean farmers through distribution agents and demonstrations.
  - d. Scale up the intervention by expanding to work with additional partners.
  
- 3. Assist local agro-tool producers to promote sowing tools appropriate for mung bean**
  - a. Promoting improved cultivation practices, including facilitating the production and promotion of sowing tools for mung bean with local agro-tool producers. Such basic tools, along with simple changes in cultivation practices, can make significant improvements in yield.
  - b. Scale up the intervention by working with additional agro-tool producers.
  
- 4. Assist public extension agencies to promote existing, successful extension model to other districts**
  - a. Work with provincial and district level public agencies to replicate the existing public extension service model, which successfully targets mung bean farmers in the Sidoarjo district, East Java.
  - b. Try to facilitate a system where provincial government funds and guides district agencies to replicate the model.
  - c. Assist district agencies to implement the model better.
  
- 5. Assist local agro-tool producers/agents to promote a commercial model of threshing services**
  - a. Promote better post-harvest practices and increase the quality of mung bean prior to sale, resulting in better returns for the farmers.
  - b. Work with local agro-tool producers and potential providers of commercial threshing services to conduct a pilot.
  - c. Scale up the intervention by gradually increasing the number of service providers and agro-tool producers.

#### **Progress status and signs of systemic change**

PRISMA has started implementing a combination of interventions 1 and 2, with activities designed for the promotion and usage of quality inputs (seed and fertilizer) among mung bean farms. During the final deal-making stage, PSP PT Ajinomoto, which had been identified as a potential partner, withdrew from the partnership. Pupuk then initiated a new deal with PT Indo Acidatama, Tbk.

- The main highlights and achievements since then are:
  - A contract has been drawn up with an expert from local university Trunojoyo, Madura to set up a research plot.
  - Four research plots have been set up in all districts of Madura.
  - Potential nurseries have been identified, one of which is interested in providing good quality and certified mung bean seed.
  - Prospective partner PT Indo Acidatama Tbk has contributed to research plot activities, providing fertilizer and a researcher, and promoting and socializing the research results
  - As part of the research plot activities, around 500 mung bean farmers received information about the use and benefits of fertilizer and good quality seed
  - Two potential distributors in Madura have been identified
- The challenges encountered during the first few months of implementation are:
  - The prospective partner has not yet signed the MoU, citing its busy schedule, although they have shown positive intent by contributing to the research plots. The signing is expected in January 2016.

#### **Contribution of public programs**



None; mung bean is not a prioritized commodity.

## 19. PEANUT, NTT<sup>20</sup>

### Overview of the subsector

Between 2007 and 2012 annual global consumption of peanuts increased from 31.20 million MT to 36 million MT (by 15.5%). Global annual peanut production ranged between 31 and 37 million MT during 2007-2013. China is the leading peanut producer, contributing 46% of world supply; India contributed 14%; and USA, Nigeria, and Indonesia collectively contributed 12% in 2013. World export of peanuts, on average, was around 4% of the total global production during 2007-2012.

Indonesia is currently ranked fifth among global peanut producers. However, the country's productivity remains consistently low compared to other peanut producing nations, and between 2009-13 acreage and yields have shown a downward trend. With a generally consistent increase in national demand and availability of cheap imported peanuts, Indonesia remains the largest importer of peanuts in the world. Unmet domestic demand, expected growth in future demand, coupled with rising prices for local peanuts, create strong growth potential for the peanut sub-sector.

Although NTT is the sixth largest peanut producing province in Indonesia, it lags far behind the top four provinces which are all in Java. Here, productivity, at 1.18 MT per ha, is below the national average of 1.35 MT per ha; peanut production and acreage however have steadily increased, contrary to the national trend of decreasing production and area cultivated. In 2013, NTT produced 20,000 MT of peanut, of which 2,000 MT were exported to other islands in the archipelago.

NTT's peanut is produced in Flores, Sumba and Timor. Timor has the largest production base spread over four districts. Significant imports have occurred during periods of lean production, such as 2011 when up to 8,000 MTs were imported into the province.

Many poor farmers are involved in peanut cultivation in NTT. Climatic conditions here makes peanut a suitable crop. There is immense scope for improving productivity and quality by introducing quality seed, improving production and post-harvest practices, and increasing the number of buyers. Peanut in NTT thus has potential to reduce poverty, substitute imports, and increase exports to other provinces and countries.

### Challenges and constraints

The overarching problem with the peanut sub-sector in NTT is its low competitiveness. This stems from the fact that productivity and production is relatively low, which does not attract traders prepared to give a good price. The specific problems and their underlying causes are summarised below.

- Farmers do not apply good farming practices (seed selection, land preparation, planting and maintenance). In general, farmers lack access to information on better farming practises.
- Farmers use retained seed, as there is no commercial business to multiply and distribute good quality seed in NTT. Seed producers in other provinces have no established networks or knowledge about NTT to motivate them to promote peanut seed.
- Farmers do not apply good post-harvest technology (especially drying technology) and this restricts them from improving quality (e.g. lowering the water content), and storing for long period. Since peanuts is not yet a very commercial crop, no commercial provider has filled this information and service gap. The collectors and inter-island traders lack capacity to provide information about post-harvest techniques and drying. Inferior quality further pulls down the price.
- Farmers also get low price of peanut as they sell their product immediately after harvest because of cash needs, when price is normally low
- Farmers have to sell their crop at local markets or to small traders. Limited presence of direct sourcing networks of large traders or processors, and low number of inter-island traders in NTT make the market less competitive and less profitable.
- Farmers often do not have enough capital to buy and use better inputs and tools. Farmers have limited financial literacy and cannot make use of the available financial services

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<sup>20</sup> Interventions in this subsector are being co-managed by YMTM (Yayasan Mitra Tani Mandiri) as PRISMA's co-facilitator.

- Government extension service has limited resource and capacity. So they focus on other priority sectors and cannot meet peanut farmers' needs.
- Private input companies do not see peanut farmers as major clients. They lack capacity and vision to expand their client base and business.

### **Vision of change**

PRISMA's vision of change is that by 2018, peanut farmers in NTT will have increased income; this will be achieved through increased production, productivity and market access. At the service level, this can be achieved by ensuring:

- Availability of quality seed and other inputs;
- Functional provision of appropriate agricultural practices, and
- Consistent access to competitive markets.

### **The PRISMA approach**

To achieve this vision, PRISMA is considering collaborating with private sector partners to implement the following:

- 1. Facilitate availability and usage of good quality seed through provincial seed producers in NTT**
  - a. Work with the existing breeders (and following a successful trial introduce new seed breeders) to start producing and promoting peanut seed, while at the same time introducing better varieties.
  - b. Seed breeders provide farmers with information on more efficient production techniques.
  - c. Seed breeders cooperate with agro-input dealers in the market and agents in the villages to ensure effective distribution to farmers.
  - d. Input dealers stimulate farmers' demand by providing knowledge about the benefits of using quality seed and improved cultivation technology.
- 2. Support national seed companies to establish distribution and marketing channel for making quality peanut seed available in NTT**
  - a. Work with national seed companies to facilitate the setting up of a peanut seed production and distribution system.
  - b. National companies integrate existing breeders in NTT into their production system, along with to seed suppliers currently without a presence in NTT.
  - c. Seed companies work with the dealers to promote the seed and give embedded information to farmers.
- 3. Facilitate direct linkage between large traders and farmers for better market linkage and better flow of information on post-harvesting processes and quality requirement**
  - a. Motivate large-scale traders and buyers to make direct investment in NTT (opening a branch, having representatives in NTT).
  - b. The buyers provide support to farmers to enable better post-harvest practices.
  - c. The large-scale traders cooperate with the district wholesalers and traders, creating an incentive for them to provide services to the farmers.
- 4. Facilitate establishment and expansion of organic peanut production clusters in NTT**
  - a. Collaborate with organic peanut exporters who will build a field management unit in NTT to support the development of organic peanut production, and
  - b. Provide support in the form of quality seed, information on organic-specific agricultural technology, certification requirements and purchasing organic peanut.

### **Progress status and signs of systemic change**

PRISMA has started to implement intervention 1: 'Facilitate availability and usage of good quality seed through provincial seed producers in NTT'. The following points capture the progress status of the intervention. An MoU with partner CV Tiga Putri Mandiri (TPM) was signed on August 1, 2015.

- The main highlights and achievements since then are:
  - TPM developed a demo/production plot on two ha of land using 240 kg of certified seed (Hypoma 2) (July-Nov 2015).

- Peanut experts trained a primary service provider and 30 farmers in better seed cultivation.
- The demo/production plot's first harvest of seed was on November 13, 2015. Productivity was around 2.5 MT per ha. Around 380 farmers attended the harvesting event and received information about the benefits of quality seed.
- TPM sold the first batch of packaged seed (Hypoma 2) in mid-December 2015.
- As of December 1, 2015, TPM had allocated IDR48.3 million to implementation of the intervention.
- Challenges encountered during the first few months of implementation are:
  - Harvesting costs turned out to be rather high due to the higher than predicted cost of labour; this had increased exponentially because of the strong demand for labour for planting other crops (i.e. maize).
  - The certification process needs to wait until after the peanut harvest, when BPSB NTT will take a sample for testing. This could affect the timely delivery of seed to retailers and farmers.
- Early signs of progress towards systemic change are:
  - TPM has demonstrated its commitment and buy-in to continuing with the seed production business by recruiting a new member of staff (an agronomist), solely responsible for the company's peanut seed production. It has increased the amount of land allocated to demo/production plot for the next planting session and provided additional funds to speed up the harvesting process in the demo plot area.
  - The first harvesting event conducted by TPM raised interest in buying and using good quality seed. Around 1,200 kg of the Hypoma 2 peanut seed has been ordered from the company by farmers for use in the next planting season (Dec 2015-Feb 2016).

### Contribution of public programs

The NTT provincial government, independently of the project, plans to buy good quality seed and distribute it to farmers. PRISMA is mindful of the potential distorting impact of this, and take this into consideration in future assessments.

## 20. PEANUT, EJ

### Overview of the subsector

Indonesia is the eighth largest peanut producing country in the world. Its population, however, consumes more than it can produce, leaving a shortfall of around one million MTs every year. Between 2011 and 2013, peanut imports into Indonesia increased by 20% and are continuing to rise. A clear business opportunity exists therefore, to increase the production volume and the quality of the peanut crop, thus helping to reduce imports.

Indonesia produces around 780,000 MTs of peanuts every year. Java Island is the centre of production and East Java the highest contributing province, supplying 30% of total national production. Despite this, local producers are still unable to meet the needs of domestic households (10%), home industry (80%) and large-scale food manufactures (10%).

East Java is home to around 408,000 peanut farmers; the highest concentration is in six districts, including PRISMA's two target areas of Magetan and Ponorogo. Here, the farmers use a local seed variety which produces a poor yield; at the same time they have little access to information on quality seed. Although Balitkabi (the Indonesian Legumes and Tuber Crop Research Center) has developed and released two varieties of better quality peanut seed, there are few nurseries able to produce it in quantities large enough to be commercially accessible. The nurseries which do, do so to provide a small quantity for free distribution by the government.

PRISMA has chosen Magetan and Ponorogo as target areas because of (1) the large numbers of peanut farmers in the two districts, and (2) the high growth potential here, particularly in Tuban which is already servicing Indonesia's biggest peanut processing companies in Pati, Central Java.

### Challenges and constraints

Peanut farmers in East Java are currently unable to increase production for three major reasons:

- **Low quality and low productivity.** Peanut farmers are unable to access high quality or improved varieties of seed. Instead they are dependent on local and retained seed which produces suboptimal yields.
- **Lack knowledge on market standards.** Most farmers here do not know about the standard preferred by the market, particularly industrial markets.

- **Limited knowledge of good post-harvest handling practices.** Peanut traders have to ship the harvest to the food processing companies within forty-eight hours to avoid the risk of spoilage by Aflatoxin (a naturally occurring carcinogenic toxin which can develop in warm, damp storage conditions).

### Vision of change

PRISMA's vision of change is that by 2018, farmers in East Java will have improved their productivity and be producing higher quality of peanut to supply the domestic home industry, households and food processing companies. They will get a better return for their crop as a result, and this will attract more farmers to start peanut cultivation. Domestic production will increase, helping Indonesia to reduce its dependency on imports. This vision can be achieved in a number of ways:

- **Peanut seed nurseries** expanding their market beyond their traditional customers via distribution channels which enable them to sell good quality seed to farmers;
- **Nurseries and collectors** working together to establish good, reliable distribution channels, providing farmers with access to good quality seed, and
- **Nurseries and agro input companies** collaborating to provide embedded services aimed at improving farmers' understanding of the need for GAP and post-harvest quality control.

### The PRISMA approach

To achieve this vision, PRISMA has collaborated with private sector partner CV Trubus Gumelar to:

1. **Promote good quality seed**
  - a. Trubus Gumelar replicates the new improved variety of peanut, Takar 2, which it acquired for commercial use.
2. **Improve GAP among farmers**
  - a. Develop a marketing and promotional strategy for use by agro input companies.
  - b. Develop a set of activity plans to educate peanut farmers about GAP and promote its use.
  - c. Input companies provide these embedded services along with the products they sell.

### Contributions of other publicly funded programs

The Gol has a free seed distribution program which may affect the impact of PRISMA's interventions.

## 21. SHALLOT EJ

### Overview of the subsector

In Indonesia, domestic consumption of shallot outstrips production by about 100,000 MTs each year, and imports are needed to close the gap. This creates a clear business opportunity to substitute imports by increasing national production. PRISMA's market analysis revealed a number of barriers preventing Indonesia's shallot farmers from taking advantage of this market opportunity, and identified the optimum measures needed to address them. Its pilot intervention has started to show positive results.

East Java province is the second largest shallot producer in Indonesia, contributing 24% of national production in 2013. Around 65% (5.3 million) of farmers in East Java are poor; around 11 per cent of the aforementioned total are shallot farmers. Imports of shallot usually peak between January and May, suggesting a shortage of local produce at that time of year.

Nganjuk and Probolinggo are the main areas in East Java where shallot is produced, with around 25,000 farmers involved in the production process. Here, issues around low income mainly relate to a) high production costs resulting from pest and disease attack, b) lack of access to good storage facilities during the peak season; and c) low productivity.

### Challenges and constraints

The key challenge which prevents smallholder shallot farmers taking advantage of this market opportunity is high crop failure and losses due to pest and disease attacks. The main reasons for this are:

- **Lack of knowledge of pest and disease management.** Farmers are unaware of the technologies available to combat disease and pest attacks. Crop losses from fungi disease attack (*Fusarium Oxysporum*) and pest (in particular *Spodoptera exigua* caterpillars) can range from 10 to 90% of the entire crop and have a significant impact on the volume of shallot available for sale.

- **Large amount spent on chemical inputs** by farmers to combat the high incidence of pest and disease. This further reduces their income by keeping average production costs high.

### Vision of change

PRISMA's vision of change at the sector level is that by 2018, smallholder farmers will have increased their productivity and production particularly during the rainy season, and that farmers will have improved their market performance, realising higher prices through greater flexibility when they sell shallots. At the service level, farmers will have improved access to a) pest and disease control technology and information services, b) nursery and planting bulb services, and c) storage services. This vision can be achieved by:

- **Agricultural equipment companies and nethouse manufacturer/service providers** providing pest and disease control technology and information service, with possible collaboration with BPTP, and
- **Nursery and planting bulb services** involving nurseries, associations/cooperatives and planting bulb traders.
- **Storage services** involving government, cooperatives and traders.

### The PRISMA approach

PRISMA will collaborate with private sector partners and support them to:

1. **Provide alternative technologies to overcome pest<sup>21</sup>.**
  - a. Establish demonstration plots to test and promote the lamp and pheromone trap;
  - b. Assist the lamp and pheromone supplier to establish a market for it.

### Progress status and signs of systemic change

- In October 2015, partner PT Solusi Bioteknologi Indonesia conducted a workshop with 11 (Eleven) lead farmers in Nganjuk. It invited a pest expert from the Indonesian Agency for Agricultural Research and Development under the Ministry of Agriculture in Bogor to demonstrate the solar panel insect light trap and pheromone trap. The event captured what the farmers need and their problems in the field.
- PT Solusi Bioteknologi Indonesia has drawn up an agreement with local pest lamp producer in Nganjuk to develop the solar panel insect light trap, including sales and pricing. The producer already has credibility in the farmer's community nearby, through the PRISMA intervention, it will gain more sales and disseminate to broader area.
- It has approached pheromone producer CV Nusagri to secure a distribution license for the East Java area. The license is currently held by agriculture distributor PT Sanitas.
- Through its local field staff, PT Solusi Bioteknologi Indonesia has prepared several demo plot areas in Nganjuk. These are planned to run in early February.

### Contribution of public programs

By the end of 2015, Bank of Indonesia had developed a project through its CSR program, to provide subsidized wired insect light traps to several districts in Nganjuk. This is in line with PRISMA's intervention, supporting farmers to use alternative technology to overcome the problem of pest in an environment friendly manner. However, the outreach of this government project is very small (one farmer group in one sub district), and it will not affect much to Prisma's outreach.

## 22. SHALLOT NTB

### Overview of the subsector

Between 2008 and 2012, national consumption of shallot averaged 1.04 million MT per year. Indonesia is the world's second largest shallots importer. Although Java and Bali are the highest shallot producers in Indonesia,

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<sup>21</sup> These are 1) a low cost, solar powered, commercially available insect light trap, 2) a pheromone trap, and 3) integrated pest and disease management. By using a single, environmentally friendly solar panel or pheromone trap, farmers' spending on pesticide can be reduced by up to 50%.

making up about 77% of national production, production still could not meet national demand. Imports of shallots have increased sharply over the past decade, with most imported bulbs being consumed as food. Thailand, the Philippines, and Vietnam are the main sources of Indonesia's imported shallots, followed by India and Myanmar. Between 2002 and 2008, imports increased from 33,000 MT to 128,015 MT. Between 2008 and 2012, imports averaged 110,000 MT per annum, despite significant inter-annual fluctuations. Imports accounted for 7 to 15% of domestic shallot consumption each year. Exports are negligible – less than 1.5% of total production. Shallots are mainly exported in September and October, with Thailand and Vietnam the two main destination markets, followed by Malaysia and Singapore. Since 2007, imports of shallot have peaked around March, suggesting a local shortage around this time of the year. There is a clear business opportunity to substitute imports by increasing the production volume of shallots during the rainy season.

In terms of total production, NTB is the fourth largest shallot producer in Indonesia – after Central Java, East Java, and West Java provinces – with 117,500 MT of shallots or approximately 10% of national production in 2014. The district of Bima and Sumbawa Besar in Sumbawa Island and Lombok Timur constitute NTB's production area, despite the province's relatively low productivity compared to Java. Generally, shallots farmers employ traditional cultivation methods, using low-quality inputs. Both of these contribute to sub-optimal yields.

PRISMA has identified a possibility for local farmers in NTB to increase productivity through the availability and use of higher quality planting materials with embedded GAP services and quality assurance. This may involve: (1) supporting the production, promotion and distribution of new TSS varieties (such as the Tuktuk variety), (2) developing linkages between traders in NTB and suppliers of certified or good quality Super-Philip planting bulbs from Java, and/or (3) supporting the development of certified producers of Super-Philip planting bulbs in NTB.

In order to promote higher quality planting materials in NTB, PRISMA has been working with EWINDO to promote the use of true shallot seed and to develop a market for first generation bulbs (G0)<sup>22</sup> and seedlings grown from Tuktuk seed. The decision to work on increasing productivity is because of following reasons: firstly, the intervention offers the potential for a quick win for farmers by buying TSS seed, seedlings and good quality bulbs which are labelled and branded and the company will eventually gain more profits from large use of the seed in the targeted area; Secondly, through branding and promotion activities, traders will support more nurseries and can sell more good quality branded bulbs and seedlings to an increased number of both male and female farmers. Finally, the success of the previous program of establishing nurseries using the improved bulbs from EWINDO need to be strengthened and scaled out to benefit more male and female smallholder farmers in NTB.

### **Challenges and constraints**

The major challenges to the shallot sector in NTB are:

- Farmer productivity is low because of their use of poor quality planting materials. Almost all smallholder farmers use retained bulbs sourced from their own farms, neighbouring farms or shallot traders. Access to good quality planting materials is limited; there is no system to differentiate between good and poor quality bulbs.
- Production costs, crop failure and losses are high because of pest and disease. Farmers lack knowledge of GAP and are unaware of more affordable technologies (including those suitable for rainy season production) to combat disease and pest. Crop losses from *Fusarium* and pest attack (in particular the *Spodoptera exigua* caterpillar) range from 10-90%. Farmers spend large amounts on chemical inputs, further reducing income by keeping average production costs high.
- Farmers are unable to benefit from higher prices during the off-season. They tend sell their entire crop immediately after harvest (when prices are low) because of lack of access to storage facilities. While farmers need sufficient cash flow for household needs and inputs for the next planting season, this can usually be fulfilled by selling part of the harvest; the remainder of the crop could be stored and sold when price conditions are more favourable. Traditional storage practices are not suitable for extended periods of time. The lack of mechanisms to control humidity and to ensure that the shallot harvest stays dry can result in a significant deterioration in quality.

### **Vision of change**

PRISMA's vision of change is that by 2018, at the sector level (1) smallholders will have increased their productivity and production, both during the rainy season and in the early months of the dry season, and (2)

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<sup>22</sup> G0 bulbs are planting bulbs which have higher productivity and are more pest-resistant than the retained bulbs commonly used by farmers.



farmer will have improved their market performance by increasing their flexibility about when they sell shallots, enabling them to realise higher prices. At the service level, farmers will have improved access to (1) nursery and planting material services (TSS, Seedlings and G0 Bulbs), (2) pest and disease control technology and information services, and (3) storage services. This vision can be achieved through:

- **Involving seed companies, nurseries, traders, input retailers and potentially universities** to provide nursery and planting bulb services;
- **Agriculture equipment companies and nethouse manufacturers/service providers** providing pest and disease control technology, with possible collaboration with BPTP, and
- **Government, cooperatives and traders** providing storage services.

### **The PRISMA approach**

To achieve its vision, PRISMA has already begun collaboration with the private sector (partnership with EWINDO started at the pilot intervention stage in 2014). The aims are:

#### **1. Nursery development**

Newly-established and existing nurseries will buy EWINDO-supplied seed to produce higher quality planting bulbs and seedlings sell them to shallot farmers, either directly or through traders. The incentives for nurseries include improved skills and knowledge, and the assurance and certainty of income. These will increase sales of EWINDO's true shallot seed (TSS), as well as the sale of TSS through input retailers.

#### **2. Promote branded bulbs to traders and retailers.**

Demonstrate the profitability of the business to traders and retailers, to encourage them to buy better quality planting bulbs and sell them to shallot farmers. Work has already started on this:

- a. PRISMA supports studies to identify key areas in which to work to develop certified G0 bulbs.
- b. It has selected certain traders and linked them with EWINDO and the nurseries. EWINDO collaborates with these traders and retailers on branding and promotion, which will help increase sales.
- c. Traders are incentivised by the potential of increased income to be obtained by selling improved quality planting bulbs at a higher price, creating a price differentiation for good quality planting bulbs.

Last year, the number of interested traders was low; PRISMA now plans to work with EWINDO to get more traders into the system.

#### **3. Develop a partnership model.**

- a. Support EWINDO to find a system which works with its distribution channel to sell the planting bulb obtained from the company's seed. This could be a franchise model, a trader system, or a model otherwise appropriate to the needs of EWINDO.
- b. Support EWINDO to develop a branded bulb franchise, trader system, and/or another partnership scheme, by providing consultants a) on post-harvest handling, and b) to carry out a trader study to find potential traders.

### **Progress and signs of systemic change**

- At the company level, EWINDO has changed its approach to shallot, from one of non-focus to making it a priority product.
- The deputy director for business development has been assigned to design a business plan for a number of products, including shallots.
- It has appointed a product specialist to manage the development of the shallot sector.
- Production of a new variety of true shallot seed (TSS) has been planned; 200kg of other TSS variety is going to be produced in 2016.
- Sample of shallot bulb will be provided in 2016 for use for promotional purposes.
- EWINDO copy the private shallot nursery model to produce derivative product of TSS in other areas such as in Central Java, Lampung and Kalimantan.

### **Contribution to public program<sup>23</sup>**

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<sup>23</sup> <http://www.bimakab.go.id/article-mentan-benahi-tata-niaga-bawang-merah.html>;  
[http://www.pertanian.go.id/ap\\_posts/detil/381/2015/06/22/09/34/44/Tambah%20Pasokan-%20Mentan%20Gelontorkan%20Bawang%20Merah%20Bima](http://www.pertanian.go.id/ap_posts/detil/381/2015/06/22/09/34/44/Tambah%20Pasokan-%20Mentan%20Gelontorkan%20Bawang%20Merah%20Bima)

A Gol program covers several areas of the country including NTB, aimed at fulfilling Indonesia's shallot demand gap. In the short term, this will provide planting bulbs for the farmers, and the government is encouraging production of good quality planting material to buy back for the program. In the long term, if the area of land dedicated to production is increased, so too will the demand for quality planting bulbs.

## 23. SOYBEAN EJ & NTB

### Overview of the subsector

The national demand for soybean in Indonesia is estimated to be 2.9 million MT and is growing at an average of 6.4% annually. However, a sharp decrease after 1998 in the country's national soybean production triggered a significant increase in soybean imports. Average annual production is currently 0.9 million MT; Indonesia also imports 1.9 million MT every year to meet domestic consumption, making it one of the world's major soybean importers. Although productivity is increasing, the country's total harvested acreage has been experiencing (particularly after 2009) a downward trend of -7.7% per year. A clear opportunity exists to increase production which will help reduce imports.

Soybean farmers in PRISMA provinces (numbering almost 810,000) can tap into this opportunity. East Java and NTB are among the country's largest soybean producing regions, contributing an estimated 48% to national production. In East Java, around 30% of soybean farmers are poor or near-poor; the province has the highest productivity per ha in Indonesia (1.6 MT per ha) but not all of its districts are able to reach this level. The scenario in NTB is similar. Compared to the average national productivity rate of 1.5 MT per ha, some soybean farmers in NTB experience relatively low productivity (an average of 1.1 MT per ha or less).<sup>24</sup>

### Challenges and constraints

The inability of farmers in EJ and NTB to increase production can mainly be attributed to:

- **Low productivity of soybean.** Farmers use poor quality seed and apply poor agriculture practices which result in lower productivity. This is caused by a) the limited availability of good quality seed, and b) a lack of access to information on GAP.
- **Loss of soybean in the post-harvest process.** Soybean farmers lose about 5% of their harvest because of their reliance on inefficient traditional harvesting methods and lack of post-harvest knowhow and technology.
- **Lack of new and highly productive soybean seed varieties.** Even though there is a market for hybrid seed, companies have not seriously addressed this market.

### Vision of change

PRISMA's vision of change is that by 2018 soybean farmers will improve their productivity and quality, resulting in a higher market value for their harvest. This will attract more farmers to go into soybean production, which will increase domestic production. This vision can be achieved through:

- **Soybean seed nurseries expanding their market** and reaching beyond traditional customers;
- **Input suppliers such as pesticide and fertilizer companies provide knowledge** on the better use of pesticide and fertilizer for soybean cultivation to increase yield;
- **Input suppliers and technology companies provide knowledge** on improved post-harvest techniques and technologies;
- **Companies produce new and high yield seed varieties** to increase production of soybean.

### The PRISMA approach

To achieve its vision, PRISMA will collaborate with the private sector and government to:

1. **Promote certified seed through seed retailers.** Although farmers are aware that certified seed is better than retained seed, certified seed is not available in the market as nurseries find it easier to sell to the government in bulk. A need exists therefore to initiate the development of a commercial market for certified seed.

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<sup>24</sup> BPS, 2013; BPS, 2012; PRISMA calculations, 2014.

2. **Promote certified seed through nurseries by the government.** While the commercial market is being established, it is also important to let the government train up more nurseries and certify the seed from these nurseries. This way there will be more nurseries being able to produce certified seed.
3. **Promote agro-inputs from chemical and fertilizer companies.** The use of quality seed necessitates the use of specific agro-inputs. As part of good agricultural practice, it is thus essential to promote these to farmers combined with certified seed.
4. **Promote new and high productivity seed varieties from seed production companies.** There is an absence of new and high yield seed varieties, and while nurseries produce seed which could yield nearly 1.5 to two MT/ha, newer varieties have the potential to achieve four MT/ha. The above intervention will have a longer term impact. In the interim, we intend to promote nursery seed, as the testing of new varieties will require a minimum of two years.

#### **Progress and signs of systemic change**

During the reporting period, PRISMA worked with the East Java provincial government to achieve the following:

- New soybean nurseries in Sampang and Trenggalek produced six MT and 32.25 MT of certified soybean seed respectively. The Trenggalek nursery produced the seed in two consecutive seasons.
- Market information was provided to soybean value chain actors to increase their understanding of soybean supply and demand in the province.
- Previously the District Agricultural Unit was unable to create nursery farmers. With PRISMA, it now has a better training program with technical assistance from BPSB. For next year, the District Agricultural Unit in Trenggalek has a plan to create another nursery farm, and they have identified a potential nursery farmer.
- PRISMA signed an agreement with PT BASF Indonesia to demonstrate potential soybean yield by promoting GAP through a soy doctor program, addressing challenges in low productivity. In October 2015, BASF trained 16 soy doctors in Bima.
- The project also signed an agreement with PT East West Seeds (EWINDO) to produce new and high yield soybean varieties. PRISMA has connected EWINDO with BATAN, an R&D organization which produces new soybean varieties and which is supporting EWINDO with soybean seed technical experts. EWINDO has conducted seed trials in three provinces (West Java, Central Java, and East Java).
- BATAN is using private channel in promoting their inventions and now has a policy of working with private channel in promoting their inventions.

#### **Contribution of public programs**

Varieties of soybean seed are mainly produced by various government research agencies (Balitkabi, Balai Benih Indonesia and BPTP); no private sector organisations are involved in developing seed. Seed distribution is currently carried out through a government subsidy program.

Soybean is one of the three crops subsidized by GoI, which it does through a seed subsidy program and the Upsus program (Upaya Khusus or 'Special Efforts'). The total budget for the seed subsidy program (which includes rice, maize and soybean) will increase slightly in 2016 (to IDR1.06 trillion, from IDR0.960 trillion in 2015). The program leads some farmers will rely on subsidized seed and creates barriers for private sector actors to enter the soybean seed business. At the same time, it does not provide enough soybean seed to fulfil demand.

## **24. VEGETABLE NTT**

### **Overview of the subsector**

Indonesia's market for vegetable, potato and fruit products grew by 25% compound annual growth rate (CAGR) between 2007-2012, mainly because of business demand. Despite being the 14<sup>th</sup> largest vegetable producer in the world (2012) and the largest in Southeast Asia, Indonesia's vegetable imports continue to grow faster than its exports; during the last ten years the country's trade balance of vegetable commodities ran at a deficit.

Thirty-three of Indonesia's provinces produce over 20 types of vegetable; however, 85% of all vegetables grown are on the islands of Java and Sumatra. Here, the major vegetable producing provinces are West Java (35.6%), Central Java (13.3%), East Java (11.9%) and North Sumatra (10.3%), accounting for over 70% of all the country's vegetable production. NTT is one of the lowest vegetable-producing provinces, contributing only

0.43% of Indonesia's total vegetable production<sup>25</sup>. It is recognized that NTT is a net importer of vegetables (with exception of garlic and spinach), with supply mainly from Java (ACIAR 2007) suggesting opportunity to stimulate production in less developed regions.

NTT is one of the poorest and least developed of Indonesia's provinces with a poverty rate of 25.7% (not taking into account regional difference), significantly higher than the 16% national poverty rate, and relies on agricultural production as its primary source of income. NTT is considered to have low productivity of vegetables, which is reflected by a negative productivity index with just 2.9 MT per ha, less than 30% of the national average (10.32 MT per ha) in 2013.

With an average of eight months per year with no rainfall, Timor Island is one of Indonesia's driest regions. During this time the farmer's lands dry up, limiting production and income generation opportunities. The focus remains on subsistence agriculture, with little awareness of diversified vegetable consumption. A PRISMA study into PPI, August 2015, indicates that 88% of sample households on Timor Island earn less than USD2.5 per day and that food insecurity here is high.

PRISMA has chosen NTT to start the pilot project because (a) growth potential here is higher, (b) it experiences a high level of poverty, (c) farmers find it difficult to access water for agricultural purpose and farming practices, and (c) they find it difficult to access commercial markets.

### Challenges and constraints

The major challenges to the vegetable sector in NTT are:

- **Low productivity.** Farmers employ limited land and water management and traditional farming practices, and a lack of fertilizer and integrated pest management techniques. This is caused by a) limited availability of water and low quality of soil, b) poor farming practices, c) unfavorable environmental and climatic factors, d) limited access to extension services, and e) poor access to fertilizer and pest management practices.
- **Low selling price.** This is a result of farmers having a) an over- or under supply of vegetables, b) limited post-harvest practice knowledge and techniques, and c) weak bargaining power and an inability to access modern markets.

### The PRISMA approach

To achieve its vision, PRISMA will collaborate with the private sector to:

#### 1. Develop integrated approaches to climate-smart vegetable farming

- a. Improve extension services that enable production of integrated solutions to climate-smart vegetable farming. Local retailers will be capacitated and supported in providing on-farm and off farm information and integrated climate smart extension services to farmers in the production of vegetables. Including climate and market information water irrigation, water harvesting, climate smart vegetables cultivation, post-harvest management, and vegetable collection.
- b. Improve productivity and efficiency of vegetable farming by improving farmer's capacity to:
  - apply water and land management, and preparation techniques in water harvesting, water access through irrigation and organizing farmer groups to focus agricultural land in larger plots to efficiently utilize water resources;
  - access market, climate and season planting information and informed decision-making on crop choices; crop rotations to balance food staples and quick growing vegetables in the rainy season, and low water requiring vegetable crops to be planted in dry season;
  - carry out good agriculture practice and input management, and
  - carry out effective post-harvest management, vegetable collection systems and transportation.

#### 3. Improve access to financial services to smallholder farmers.

- a. Local financial services will be supported in expanding services to smallholder vegetable farmers. This includes financial institutions for providing affordable irrigation service and hydrology information as an embedded service to farmers.

#### 4. Conservation based agro-business

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<sup>25</sup> "Final Report AIPD Rural Vegetables NTB & NTT 2013" ; Ignatius Khomasurya and Phillip Morey, 10th October 2013

### **Contribution of public programs**

PRISMA is exploring the potential for cooperation with various government departments (Agriculture, Food Security, Environment, Metrology, Water Catchment Management, Disaster Management, Development Planning, Industry, Trade and Cooperative and Forestry), all of which have programs able to contribute to tackling rural poverty and risk.

## **25. EXTENSION SERVICES EJ & NTB**

In Indonesia, extension services are acknowledged as an important component of achieving food security. National legislation (UU No. 16 Tahun 2006) stipulates three types of extension workers: public, private, and self-help/voluntary. However, most extension services are conducted by public workers, as they are the only actors with a clear mandate to do so. Private workers are usually employed by input suppliers and, despite the 2006 regulation, they are not registered with nor regulated by the government. The last category – voluntary or self-help workers – are lead farmers, whom the government trains and provides with a certificate of competency.

According to data from 2015, there are 32,299 public extension workers for 71,470 farming villages throughout Indonesia. Government legislation (UU No. 19 Tahun 2013) states that the ideal is to have one worker for every farming village, which means there is a gap of about 39,190 workers. The situation is made worse by the fact that the bulk of the extension workers were recruited in the early 1980s: the majority are thus due for retirement within the next five years. The government is well aware that it would be difficult to add 39,000 workers to its payroll. As a solution to close the gap, the Government plans to recruit and train voluntary extension workers instead.

### **Subsector overview: East Java**

East Java is one of the most important agricultural provinces in Indonesia. Based on 2011 official statistics, East Java's contribution towards national production is 16.08% for rice, 30.85% for maize, and 43.11% for soybean. There are 2.1 million ha of crop area in East Java, with an average land ownership of less than 0.5 ha. There are at least 4.2 million farming households in East Java.

East Java farmers are frequently regarded as the most advanced nationally. This is probably due to the fact that some district governments – such as Malang or Banyuwangi – are open to innovation and have actively supported their farmers. Farmers in East Java also benefit from the presence of strong government research bodies that focus on high yield seed and agriculture technologies. In the majority of districts, private agronomists have a significant presence and are also a source of information for farmers.

However, there are only 4,812 public extension workers in the whole province, which means that a single worker has to cover 873 farmer households. Assuming 260 working days per year, and a single worker able to serve 3.35 households per day, each farmer household will only see a public extension worker once a year.

### **Subsector overview: NTB**

Like East Java, NTB is one of Indonesia's most important agricultural provinces, especially for main food crops such as soybean and maize. It is one of the country's epicentres of soybean production, accounting for 9% of national production and with a harvested area amounting to 10% (62,900 ha) of Indonesia's total soybean area harvested in 2012. At the same time, maize has expanded rapidly in NTB. Based on 2012 official statistics, NTB accounted for 3.3% of Indonesia's maize production, compared to 2007 when it contributed only 0.9%. The harvested maize area has grown rapidly; in 2012 it reached 116,817 ha, with productivity of 5.4 MT/ha (higher than the national average of 4.7 MT/ha).

Post-harvest expertise, and pest and disease management are key areas of concern for NTB farmers, who lack access to reliable sources of information. The majority rely other farmers for advice; some get information from kiosks. This limited access to information also affects public extension service workers, who lack up-to-date, relevant knowledge about pest and disease. Average loss due to pest attack can be as high as 30% per harvest.

In NTB, there are 1,785 public extension workers with a routine schedule for field visits from Monday to Thursday each week. A public extension worker provides technical assistance to a handful of farmer groups,

where one group may have more than 200 members. The limited number of public extension workers combined with remote and hard-to-reach areas means that many farmers receive no benefit from the public extension service.

### Challenges and constraints

The major challenges faced by the extension services sector in East Java and NTB are:

- **Limited provision of information.** Farmers have insufficient knowledge of modern, appropriate and efficient farming techniques and practices, which results in low productivity compared to the potential. This is caused by a) a lack of public extension workers, b) general government neglect of non-priority crop farmers, and c) limited reach of private extension services.
- **Limited capacity of public extension workers.** Minimum upfront training combined with a very limited opportunities for continuous learning compromises the quality of the government extension service. It is common to find experienced or progressive farmers who understand agriculture better than public extension workers. Some farmers have understandably become sceptical of public extension workers and are beginning to disregard their advice completely.
- **Poor agricultural kiosk extension services.** Kiosk owners usually direct farmers to purchase products that bring them the highest margins, with little regard to product quality or the farmer's actual needs. This is a serious challenge because collectively these kiosks reach practically all farmers, who are dependent on them for both input availability and advice.

### Vision of change

PRISMA'S vision is one of systemic change, where more extension service providers enter the market for commercial reasons. Input suppliers will increase and improve the embedded service they provide and telecommunication companies will join the market by providing agriculture consultation services as a value added service.

### The PRISMA approach

To achieve its vision of change, PRISMA will collaborate with the private sector to:

1. **Develop a crop protection call centre**
  - a. Work with a pesticide producer to pilot a call centre to provide consultation service on pest and disease in East Java.
  - b. Provide access for farmers (via the call centre) to private agronomists, who can provide advice and appropriate product recommendations.
  - c. Develop a marketing and promotion strategy and activity plan to help pesticide producers promote their free extension service via the call centre and encourage farmers to make use of it.
2. **Increase the capacity of government extension service workers through a smartphone application**
  - a. Support a private application development company to enter into a public-private partnership with the NTB provincial government extension service office, with a focus on tackling pest and disease.
  - b. The private sector partner will build a smartphone application to help public extension workers identify pest and disease and get up-to-date, relevant advice on how to tackle it. The extension workers will then deliver this technical advice to their farmers.
  - c. The private sector partner has a long-term plan regarding the partnership; it intends to sell the data collected from the application usage as market intelligence data.
- 5.
3. **Develop an agriculture helpline**
  - a. Promote a partnership between a telecommunication company, a call centre provider and an agriculture content provider company to create a general agriculture helpline for farmers.
  - b. The telecommunication company provides the network and below-the-line marketing method to reach farmers; the call centre provider trains their operators to understand farmers' queries and answer them based on the database created by the agriculture content provider.
  - c. Farmers pay to use the helpline service. The fee will be split among the private companies involved in providing the service. Through this service, farmers will benefit from the availability of timely information regarding weather, pest and disease issues, as well as other generic agriculture information.

### Progress and signs of systemic change



PRISMA has talked to several private companies who have expressed great interest in the project's proposed interventions, and we continue to observe the market for signs of systemic change. As none of the interventions have started, one or two more semesters are needed before significant progress occurs.

### Contribution of public programs

- Although no longer a top priority for the government, a few programs remain focused on extension services. The government's current main program is to identify, recruit and train independent extension service workers to bolster the dwindling amount of public extension workers. PRISMA has not observed any direct contribution from this program, as the majority of these independent extension workers are lead farmers who are already providing extension services in their respective communities. The government's plan to train and certify these independent workers remains sporadic; of concern is the lack of proper incentives in place for these workers. PRISMA is continuing its observations and will report any significant change as it occurs.

## 26. FINANCING DEEP WELL IRRIGATION, EJ

### Overview of the subsector

Many farmers in Indonesia, especially those in East Java, have a significant need for irrigation. About two-thirds of the 31 million people in the agriculture sector are poor; they mainly grow rice, a crop that requires a significant amount of water. In addition, the GoI's plan for food self-sufficiency by 2018 will further impact the increasing water usage of agricultural lands, amplifying the need for efficient irrigation systems. A well-maintained and well-developed irrigation system would benefit poor farmers by increasing their harvest and decreasing the risk of failed crops, generating a higher income.

Farmers have a difficult time irrigating their crops especially during the dry season when water is scarce. Water from both ground and surface sources is not always enough to fully irrigate one season even for crops such as soybean and maize which do not require as much water as rice. Farms not connected to canals suffer even more as they have to wait for rain in their area in order to irrigate or use groundwater. These areas – non-irrigated lands – make up almost 10% of farmlands in East Java. Irrigated farmlands also exist where rain seldom falls, and can still grow crops but may run out of water during the dry season. These dry lands represent about 50% of all farmland.

### Challenges and constraints

The major challenges to the irrigation sector in East Java are:

- **Water scarcity.** Water for irrigation is limited, and most farmers either wait for rain or use canals to irrigate their farms. This creates uncertainty for farmers around planting, especially during the dry season. Because of this scarcity, sub-districts such as Sampung, Ponorogo district, can only plant once a year. Without an alternative source of water, farmers can do little to ensure a successful harvest, if they even have a harvest at all.
- **Damaged canals.** About 50% of surface irrigation canals are damaged, because of clogging due to lack of maintenance, debris and natural erosion. Distribution of water to farmers is less-than-optimum as a result.
- **Insufficient water from shallow wells during the dry season.** As the dry season approaches, farmers switch to groundwater, using shallow wells to irrigate their farms. They either construct their own well or procure water from a neighbouring farmer for a fee. These wells are inexpensive to construct as they extract water from shallow aquifers. They do however cause problems during the dry season, as farmers simultaneously drain the shallow aquifers to water their crops. Without giving the aquifer time to replenish, farmers have a difficult time watering their following crops. A solution is to use deeper aquifers; however, constructing a well to tap into these can be very expensive.
- **Limited capacity of the Water Users Association.** The Water Users Association (WUA) is the primary organization that arranges and monitors the usage of irrigation water. It is also tasked with tracking upkeep to ensure that repairs are made when necessary. However, many WUAs have limited capacity to perform their jobs, contributing to many irrigation facilities not functioning well.

## Vision of change

PRISMA' vision of change is that by 2018, farmers will have increased the productivity of their land during the dry season through improved access to irrigation and an enhanced irrigation system. This can be achieved by:

- **Public and private providers** supplying improved (in terms of both quality and quantity) irrigation services.
- **Public and private entities** have clear roles, responsibilities and rights within each land coverage or level, leading to the improvement of the nation's irrigation system.
- **Public irrigation providers** (currently very limited) increase in number, leading to an increased availability of irrigation services and creating a better supply of water during the dry season.
- **Public irrigation providers** improve their service quality, especially in terms of coordinating water distribution for irrigation and relevant irrigation programs.
- **Government departments** improve the irrigation infrastructure, by a) developing new infrastructure, and b) maintaining the existing one.

## The PRISMA approach

To achieve its vision, PRISMA will collaborate with the private sector to:

1. **Develop a financing product for deep well irrigation.**
  - a. Work with partner Vasham to create a finance scheme for individuals who want to start an irrigation pump business to sell water to farmers who are in need of irrigation water
2. **Work with existing farmers** contracted by Monsanto and help to educate them about alternate methods of irrigation during the dry season.
3. **Create deeper well pumps to be used by farmers**
4. A successful irrigation service provider can inspire other potential providers to take part in creating an irrigation business.
5. The private sector partner will promote their product throughout East Java, facilitating more irrigation service providers to cover a wider location.

## Progress and signs of systemic change

- A partner will develop the financing product in the form of a loan to ISP. They will first study the capacity of the ISPs to pay back the loans and the amount of interest that is suitable for them. They will also study the farmers' willingness to pay for the service and price point. The partner would implement this product in the field and adjust it accordingly to accommodate both the ISP and the farmers.

## Contribution of public programs

The government has made some effort to address the water scarcity issue. For instance, to anticipate a prolonged dry season from the end of 2015 until the beginning of 2016, central government provided 7,500 diesel pumps for irrigation for free throughout Indonesia, specifically in East Java. Central government has also repaired irrigation canals that could irrigate 1.5 million ha of land in 2015. The target is 2.6 million ha by 2018, including those in East Java. However, the number of pumps provided and the maintenance budget are not sufficient in comparison to the farmers' water needs.

## 27. BEEF NTB<sup>26</sup>

Indonesia is the largest beef producer in Southeast Asia; however, there remains a shortfall in production in the country. At the same time, national demand cannot depend on imports; since 2010, the government has been tightening import quotas with the aim of creating 90% self-sufficiency in beef. Together these two factors have significantly increased demand for locally sourced beef. PRISMA's research indicates that increasing the availability of feed and artificial insemination services will enable Indonesia's cattle farmers to meet export standards and increase their volume of production.

NTB plays an important role in beef production, by providing live cattle and by supplying breeder animals for other provinces. The province plays a major role in national cattle development and in meeting national beef demand. Demand in for NTB cattle and beef is rapidly increasing in DKI, West Java, Kalimantan, Sumatera, Maluku, and Papua regions. There are however some inconsistencies in the available statistics and it is very

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<sup>26</sup> Interventions in this subsector are being co-managed by LP2DER (Lembaga Pengembangan Partisipasi Demokrasi dan Ekonomi Rakyat) (as PRISMA's co-facilitator).

hard to comprehend whether NTB's beef sector is responding to increasing demand by producing more in the years when production and export decreases.

NTB has the potential to produce an additional two million heads of cattle, which would drive future poverty reduction in the province. It is one of Indonesia's key cattle producing regions; the cattle grazing land can be expanded by more than 50% in 10 cities of Lombok and Sumbawa. The natural conditions in NTB are suitable not only for producing beef cattle, but also cattle for other purpose, especially the purification of a) the Bali cow, and b) other varieties for rearing in other districts. There are thus several ways that NTB can become a major supplier of beef and feedlot for the country as a whole and become a key interisland exporter.

PRISMA has chosen to work with cattle farmers in NTB because of (1) the potential to achieve change on a large scale, and (2) the province will be able to fill the national demand gap currently being supplied by imports.

### Challenges and constraints

There are three main reasons for the low income of NTB's cattle farmers:

- **Low weight of ranch beef cattle, particularly in Sumbawa Island.** Calves are low quality, largely as a result of inbreeding due to the farmer's limited knowledge of animal and breeding management. Good quality fodder is unavailable during the dry season, as farmers depend on natural production and do not have knowledge of quality fodder production or understand the need for fodder cultivation. There are a lack of water resources for cattle,
- **Low weight of cattle in enclosed system, particularly in Sumbawa and remote areas of Lombok Island.** Good quality calves are unavailable, with the problem of inbreeding due to farmers having a) inadequate knowledge of the proper timing of AI, and b) limited access to effective and quality AI service.
- **Sub-optimal weight of cattle in enclosed system across the province.** There is low use of supplementary feed because farmers are unaware of its benefits. They do not know how to produce supplementary feed, and ready-to-use supplementary feed is unavailable.

### Vision of change

PRISMA's vision of change is that by 2018, NTB's cattle farmers have improved the quality of their cattle (in terms of weight) in both the ranch and enclosed systems. Ranch cattle farmers have improved access to better ranch management services (including ranch breeding); enclosed system cattle farmers have better access and services to good quality AI, and the information and knowledge needed to produce and apply supplementary feed. This attracts more farmers to go into beef production, increasing domestic production and ultimately achieving import substitution. Progress can be made towards this by:

- **Public extension service providers and breeding companies/bull owners** supporting the development of improved ranch management services;
- **Public extension service and feed companies** (ingredient suppliers) promoting supplementary feed application and production, and
- **Breeding inputs companies** supporting the government capacity to solve the bottleneck for efficient service delivery of AI (e.g. nitrogen supply).

### The PRISMA approach

To achieve this vision, PRISMA will collaborate with the private sector, and support it to:

1. **Support the development of improved ranch management services** by public extension service providers and bull owners.
2. **Support the public extension service/ingredient suppliers/feed companies** to promote the application and production of supplementary feed application.
3. **Support government capacity** to solve bottlenecks in efficient service delivery (e.g. nitrogen supply).

### Progress status

- A contract has been signed with private sector company PT Bintang Pribumi Tulen.
- Bintang Pribumi Tulen has developed the feed composition formula to produce the concentrate feed.
- It has also purchased the machines and raw materials needed to produce the concentrate feed.

### Contributions of private and publicly funded programs

Several programs have been established by local government (e.g. Ministry of Research and Technology) and other donors to train farmers to produce their own cattle feed.

## 28. BEEF EJ

### Overview of the subsector

Indonesia is the largest beef producer in Southeast Asia; the country nevertheless is experiencing a shortfall in production. At the same time, national demand cannot depend on imports; since 2010, the government has been tightening import quotas with the aim of creating 90% self-sufficiency in beef. These two factors together have significantly increased the demand for locally sourced beef. PRISMA's research indicates that increasing the availability of feed and artificial insemination services will enable cattle farmers to meet export standards and increase their volume of production.

East Java is Indonesia's biggest cattle producing province; in 2014 it accounted for 29% of the national total. It is also the largest exporter of live cattle between the provinces; local consumption is a significant driver of East Java's cattle and beef sector. There exists however a national demand gap, currently being fulfilled by imports. In 2013 the provincial government launched Sapi Berlian ('golden cattle') programme, aimed at producing five million calves in five years.

East Java's poor are slightly higher in number than the national average. Most farmers here raise cattle as a family asset and a source of ready cash, rather than by making a conscious decision to participate in national production.

Beef productivity in East Java is low, particularly during the dry season (May to November). This is caused by a) lack of supplementary feedstock, and b) limited awareness of the benefit of supplementary feeding. Farmer reliance on native grass to feed their cattle results in a fattening period of 11 to 12 months; this is halved on a feedlot, where the use of concentrate or complete feed means only three to four months is needed before slaughter.

PRISMA has chosen to work with cattle farmers in East Java because (1) of the potential to achieve change on a large scale, and (2) if the Sapi Berlian program is successful, East Java will be able to fill the national demand gap currently being supplied by exports.

### Challenges and constraints

There are two main reasons for the low income of East Java's cattle farmers:

- **Inability to increase production.** Inefficient artificial insemination practices are a result of farmers having a) a lack of information on proper AI practices and b) a lack of access to timely AI services, and
- **Low productivity.** Slow weight gain in calves and cattle is due to lack of farmer awareness of and access to quality and quantity of feed and proper feed practices, needed to accelerate cattle weight gain.

### Vision of change

PRISMA's vision of change is that by 2018 East Java's cattle farmers have increased their productivity and volume of production, while at the same time meeting export standards and obtaining higher market value of their livestock. This attracts more farmers to go into beef production, increasing domestic production and ultimately achieving import substitution. Progress can be made towards this by:

- **Cattle feed companies** providing affordable, nutritious feed, and making sure it is commercially available, appropriate and affordable, and
- **Breeding companies** promoting professional AI services and providing embedded services to cattle farmers on good AI practices.

### The PRISMA approach

To achieve this vision, PRISMA will collaborate with the private sector, and support it to:

1. **Promote commercially available, appropriate and affordable feed for cattle fattening to facilitate accelerated weight gain.** PRISMA has signed contracts with two potential partners to raise awareness among farmers of the benefits of investing in cattle feed products.
2. **Promote professional AI services, which should include information about good AI practices.** The aim here is to increase the supply of calves through achieving higher AI success rates.

### Progress and signs of systemic change

Contracts have been drawn up with two private partners: Wahyu Utama (to promote supplementary feedstuffs for cattle fattening) and PKM/Holcim (to promote concentrate feed for cattle fattening).

- **Wahyu Utama**
  - Training for lead farmers has taken place.
  - Forty demonstration plots have been developed and are promoting the use of supplementary feedstuffs (e.g. palm residue, rice bran, molasses, bio-energy) for cattle fattening to the farmers in the area around the plots. The plots are managed by the lead farmers who took part in the training.
  - Wahyu Utama has started to sell the supplementary feedstuffs to the lead farmers managing the demo plots.
- **PKM/Holcim**
  - Training for lead farmers has taken place; 60 lead farmers participated.
  - Thirty-five demonstration plots are up and running, promoting the use of concentrate feed for cattle fattening to the farmers in the area around the plots. The plots are managed by the lead farmers who took part in the training.
  - In the two months (Nov–Dec 2015) after the demo plots started operating, more than 45 MT of concentrate feed were sold to the lead farmers and other farmers who attended the demonstration events.
  - This positive market demand response to the promotion of concentrate feed has motivated PKM/Holcim to source additional raw materials to keep up the continuity of feed production.

### **Contribution of other programs**

Holcim (a project partner in this intervention) have a CSR program in relation to cattle farmer development, one strand of which is to produce concentrate. This concentrate production is managed by PKM through their business unit, KSU ('Business Cooperative'). Its current production can be up to 50 MT month and supplies the needs of cattle farmers surrounding Tuban.

## **29. PIGS NTT<sup>27</sup>**

### **Overview of the subsector**

The domestic demand for pork in certain regions is increasing (although in an uneven fashion), including from hotels, restaurants and supermarkets for a steady supply of higher quality pork. NTT province is the largest pork-consuming area in Indonesia, and here too demand is high: it is served at almost every religious ceremony and traditional event, and has become an important commodity. The pig population is highest in NTT province (1.8m pigs), with the largest number on Flores Island (45%) and the smallest on Sumba Island (6.5%). As demand for pork is relatively high on Sumba, pigs are imported from other islands. Demand in Sumba Barat Daya (southwest Sumba) district is for around 60,000 pigs per year for local consumption, of which 35% is imported. In NTT, pigs are a valuable asset for smallholders, as rearing is relatively straightforward and returns can be realised quickly. However, pigs are generally reared in an informal way using traditional practices at small scale (99% of households in Ngada district, Flores Island, and 95% in Sumba Barat Daya raise pigs on a non-commercial, traditional basis). Services are quite underdeveloped, with poor inspection practices and hygiene in informal slaughterhouses. The traditional characteristics of pig farming coupled with underdeveloped transport facilities and the limited local market deter entrepreneurs from investing in the industry. There is a clear business opportunity to increase the volume of pig production while at the same time shifting from traditional to modern pig breeding and rearing practices.

PRISMA has chosen Flores Island, NTT as its target location because here (1) there is scope for pig business development, (2) pig rearing is commonplace but investments are limited, and (3) pig farmers have limited access to high quality piglet feed and modern pig rearing/farming practices.

### **Challenges and constraints**

The two main reasons pig farmers in Flores are not able to increase production can be attributed to:

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<sup>27</sup> The intervention in this subsector is being co-managed by HIVOS (as PRISMA's co-facilitator).

- **Traditional rearing methods.** Farmers lack the skills and experience needed to breed and grow pigs commercially; the use of traditional methods means local pigs are often unhealthy, generating suboptimal returns.
- **Lack of access to quality, high nutrient, local piglet feed.** This limits pig growth; as a result, the private sector is reluctant to invest in pig-rearing activities. Government interventions did not take the need for this feed into account, rendering them unsuccessful.

### **Vision of change**

PRISMA's vision of change is that by 2018, Flores pig farmers will be producing high quality pigs. This will attract other small farmers to scale up their production and meet the demand for pork with a larger supply of pigs, which will also be of high quality. This vision can be achieved through:

- Professional piglet companies providing quality piglets to farmers, and
- A feed company providing quality feed and embedded information on good rearing practices to farmers.

### **The PRISMA approach**

To achieve this vision, PRISMA will collaborate with and support the private sector to:

- 1. Introduce improved breeds and the promotion of commercial pig rearing**
  - a. Develop a business model, which involves a pig industry technical service provider to provide technical services to piglet breeding companies.
- 2. Promote access to quality feed and provide information on GRP**
  - a. Enable piglet breeding companies and the feed company to provide embedded services to shops, credit unions and traders to whom they sell or distribute their piglets or feed. These embedded services include information on good rearing practices, and the provision of good feed and medical services.
  - b. In partnership with the feed company, train and use distribution and other channel members (e.g. traders, input sellers, credit unions) to manage demo plots in order to educate the farmers about GRP and to promote the use of quality feed.
- 6.**
- 7. Progress status and signs of systemic change**
  - PRISMA has decided to gradually phase out the access to finance component of the intervention, firstly because of the difficulty farmers face fulfilling the bank credit requirements (making the entry barrier high), and secondly because of alternative sources of credit (both formal and informal) available at village level. The project will however continue to monitor the development of the farmers credit system, in case the need arises to invest in this further.
  - Last semester, the project introduced a technology and consulting service provider to assist with the capacity building of piglet breeder companies; so far, eight pig breeding companies have adopted this service and invested heavily in their facilities to improve productivity and quality.
  - The project has signed a contract with CP and already started working intensively with other market actors in the system (e.g. veterinarian shops, traders in the traditional market, and credit unions). The idea is to train these actors in GRP and to promote quality feed among farmers along with embedded information.
  - The project with CP and the pig breeding companies supported the implementation of nearly 300 demo plots and the production of learning materials to build the capacity of farmers throughout Flores Island.
  - Geographically, this intervention has expanded to all districts in Flores Island (from an initial focus of only two districts).
  - Sales of commercial pig feed have increased substantially; a scoping study at the end of September 2015 showed that monthly feed sales have already increased fivefold in selected shops. Current data obtained from CP shows a similar trend. An impact assessment will be conducted in December 2015 to evaluate this and farmer-level uptake, including the benefits accruing to farmers.
  - The commercial feed market is now expanding, with Sierad and Menara (two large commercial feed companies) having recently entered the market in Flores. They have approached the project with a request regarding scope for collaboration.



### Contribution of public programs

- The government provides financial program support in NTT via the Anggur Merah program (at provincial government level) and Perak (at district government level).

## 30. MARINE FISHERIES EJ<sup>28</sup>

### 8. Overview of the subsector

Global fisheries production continues to increase dramatically (more than sevenfold in the last 60 years, from 19.3 million MT in 1950 to 163 million MT in 2009). In terms of marine fishing, although growth is declining at a rate of -9.4% per annum due to overfishing, it remains the largest sector globally. Marine and inland aquaculture is expected to overtake marine fishery production in the next few years. Meanwhile, in Southeast Asian (ASEAN) countries, demand has increased faster than the global trend. Here the sector is expected to experience the largest increase in consumption outside China, projected to reach 27 million MT by 2030 (an increase from around 19 million MT in 2010). Indonesia, the largest archipelago country in the world, is the biggest producer of fish, accounting for 35% of Southeast Asia's fish production and with high potential to expand marine culture. Encouraged by the Indonesian government and by shifting customer preference, domestic fish consumption is also increasing by 6% per year and has reached an annual average of 30.4 kg per capita. Demand for Indonesian live kerapu (grouper) fish for export has been increasing in recent years, and production has reached over 100,000 MT annually since 2004 to fulfil Asian market demand, especially from Singapore, China, and Hong Kong. There is a clear opportunity for the fishing community to meet the rising global and domestic demand for fish while avoiding overfishing by increasing productivity through marine and inland aquaculture (that is, cage farming).

Indonesia is exceeding sustainable levels of fish production, prompting the government to address the issue through the designation of nine fisheries management zones. East Java is the largest fish-producing area in Indonesia, as well as being a centre for the fish processing industries. The target district – Situbondo, located in Fishing Zone No 3 (Java Sea and Sunda Strait) – is an area where, although considered overfished, fish production can be increased through marine culture. Traders buy live kerapu from Situbondo and other districts of Java for export to Hong Kong, and there is an opportunity for smallholders to meet the rising local demand for fish in Situbondo through engaging in cage culture fish farming, a viable alternative to marine fishing. Large areas (some 461,600 has) have been identified by the Ministry of Marine Affairs and Fisheries as suitable for the culture of grouper.

PRISMA has chosen Situbondo as the location for its intervention because (1) the development of a more environmentally sustainable fishing method is critically needed, and (2) this will address the key constraints of the local context.

### Challenges and constraints

The major reasons fish farmers in the Situbondo area do not engage in marine aquaculture are:

- **Lack of access to high quality inputs** (feed for fish fingerlings and good quality fingerling supply). This is compounded by poor fish cultivation practices.
- **Lack of access to technical support/facilities.** These are required to engage successfully in alternative production or alternative production strategies during the closed season<sup>29</sup>. Local fisherfolk have neither the sufficient knowledge and skills nor access to support services to successfully engage in alternative production strategies. Their access to financial services, for example, is limited.

### Vision of change

PRISMA's vision of change is that by 2018, farmers have increased their productivity through marine aquaculture. This will attract more fisherfolk to follow the cage farming method thus reducing the burden on marine and coastal fishing and making the fishing industry more sustainable. This vision can be achieved through:

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<sup>28</sup> The intervention in this subsector is being co-managed by ICCO (as PRISMA's co-facilitator).

<sup>29</sup> Closed seasons prohibit fishing at certain times of the year.

- **Grouper exporters providing technical knowhow** and a market for smallholder fish farmers;
- **Banks providing loans** to grouper producers, and
- **Financial institutions offering innovative financial products** to interested farmers enabling them to engage in fish cage farming.

### **The PRISMA approach**

To achieve this vision, PRISMA will support and collaborate with the private sector to:

#### **1. Develop cage farming**

- a. Build up a business model through the development of grouper production units by an ISP (in this case, the Grouper Producers' Association) to promote cage culture, the identification of financial needs and loan brokering.
- b. Provide technical capacity building to the ISP and selected members of the Association in order to ensure a steady supply of quality grouper for export.

#### **2. Develop innovative financial products for fish cage farming**

- a. Develop an appropriate financing product for the Grouper Production Unit (KPU) through a bank partner (guaranteed by the Fish Fund), and provide capacity building for farmers in financial literacy and financial management skills.
  - b. The ISP (the Grouper Producer Association) to promote financial models to the newly-established KPU.
  - c. Establish an agreed payment system among bank partners, private sector partners, the ISP and the KPU.
- 9.

### **Progress status**

- The project signed an MoU with Bank Jatim and collaborated with the bank to provide information to farmers on making loan applications.
- Some farmers received bank loans and started farming, with technical support from a patron (usually a farmer with previous experience in cage farming who agreed to provide supervision and support to the new farmers; they receive commission for this).
- The exporter partner has changed its role from buyer to export facilitator. It will directly facilitate farmers to export the fish they produce to markets abroad; it will receive commission for this new role.
- Due to the challenging nature of the business model and the difficulty of working in the fish sector, a high level management meeting between PRISMA and ICCO was organized to discuss the prospect of the project. This intervention will now be continued as a pilot case, and PRISMA will carry out detailed analysis of its progress to feed into the design of future interventions in this area.
- During the sector review discussion, it was decided to phase out this sector. To this end, PRISMA's Head of Portfolio and SAFIRA's Team Leader have visited the field to evaluate future prospects, learning opportunities and potential for different interventions in the sector.

### **Contribution of public program**

The Local Marine and Fishery Agency distribute free fish cage packages (cages, feed, and fingerlings) to fisherfolk groups on an ad hoc basis

## ANNEX 3: PORTFOLIO DEVELOPMENT PLAN

Sub-Sector	Actual - Cumulative				Actual - Semester			Portfolio Development 2016-1			Portfolio Development 2016-2		
	New & Existing Interventions (Cumulative)				Portfolio Development 2015-2 (New Intervention)			ICN Projected	IP Projected	Interventions with Contract Projected	ICN Projected	IP Projected	Interventions with Contract Projected
	Count of ICN - actual	Count of IP Finalized - actual	Count of Interventions with Contract - Actual	Targeting - Final poor (\$2PPP) outreach 2018	ICN Actual	IP Actual	Interventions with Contract Actual						
Anggur Merah-NTT	1	1	1	-		1				0			
Beef-EJ	2	2	2	2,325				1	1	1	0	0	
Beef-NTB	2	1	1	1,778			1	0	0		1	1	
Beef NTT	1	0	0	-	1			0	0	1	0	0	
Cashew-NTB	1	1	1	693									
Cashew-NTT	4	1	1	443		1	1						
Cassava-EJ	3	2	2	708	1			0	1			0	1
Cassava-NTT	1	1	1	681				1	1			0	1
Cassava P	1												
Cocoa-PA	4	1	1	-		1	1						
Coconut-EJ	1	1	1	2,692	1			1	1			0	1
Coconut-NTB	1	1	1	1,536				0	0			0	
Coconut-NTT	4	1	1	-			1	0	0			0	
Coffee-EJ	2	2	0	-				1	1				1
Coffee-NTT	2	2	2	4,423				1	1				1
Extension services-EJ	1	1		-	1	1		1		1			
Extension services-NTB	1	1		-	1	1				1			
Fish-EJ	2	2	1										
Irrigation-EJ	1	1	1	-		1	1						
Maize-EJ	1	1	1	4,993				1	1	1			
Maize-NTB	1	1	1	-									
Maize-NTT	6	4	4	18,710			3	2	0			1	1
Mango-EJ	2	1	1	2,956	1				1				
Mango-NTB	1	1	1	1,537									
Mungbean-EJ	3	1	1	-									
Peanut-EJ	3	1	1	-	2			1	1	1		1	1
Peanut-NTT	3	1	1	1,990			1	1				1	1
Pigs-NTT	2	1	1	4,681	1			1	2	1	0	0	1
Seaweed-NTT	1	1	1	1,194									
Shallots-EJ	1	1	1	2,034	1	1	1		1	1			
Shallots-NTB	1	1	1	1,286									
Soybean-EJ	5	4	4	8,608		1	1						
Soybean-NTB	1	1	1	3,379		1	1						
Tomato EJ	1												
Vanilla-PA	1	0	0	-	1			0	0				
Vegetable-NTT	1	0	0	-	1				1	1			
Vegetable-WP	2	1	0	-	2	1			1	1			1
Vegetable-EJ	0	0	0	-				2	2	2			
<b>Total</b>	<b>71</b>	<b>43</b>	<b>37</b>	<b>66,648</b>	<b>13</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>	<b>12</b>	<b>1</b>	<b>4</b>	<b>10</b>

## ANNEX 4: PROJECTIONS UNTIL DECEMBER 2016

Sub-sector	No. of interventions	Projection Semester 1 2016							Projection Semester 2 2016					
		Sum of %income Increase	Sum of Access Jun-16	Sum of Use Jun-16	Sum of Outreach Jun-16	Sum of Net Income All Jun-16	Sum of Outreach (\$2PPP) Jun-16	Sum of Net Income (\$2 PPP) Jun-16	Sum of Access Dec-16	Sum of Use Dec-16	Sum of Outreach Dec-16	Sum of Net Income All Dec-16	Sum of Outreach (\$2PPP) Dec-16	Sum of Net Income (\$2 PPP) Dec-16
Beef-EJ	2	0%	-	-	-	-	-	-	6.200	2.976	1.786	5.340.481.920	639	1.909.811.822
Beef-NTB	1	0%	-	-	-	-	-	-	6.768	2.030	509	3.289.248.000	244	1.315.695.200
Cashew-NTB	1	0%	-	-	230	135.552.271	106	62.354.045	2.450	1.392	-	-	-	-
Cashew-NTT	1	0%	750	220	-	-	-	-	-	-	-	-	-	-
Cassava-EJ	2	0%	-	-	750	460.175.000	318	185.450.525	1.300	755	-	-	-	-
Cassava-NTT	1	0%	-	-	-	-	-	-	2.000	537	198	299.457.333	130	196.444.010
Cocoa-PA	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Coconut-EJ	1	0%	2.637	2.110	900	-	396	-	2.537	2.110	1.582	2.316.775.608	696	1.019.381.268
Coconut-NTB	1	0%	-	-	-	-	-	-	9.500	4.800	3.340	1.062.502.400	1.536	425.000.960
Coconut-NTT	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Coffee-EJ	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Coffee-NTT	2	190%	-	-	-	-	-	-	8.530	6.658	4.341	1.799.656.550	2.812	1.165.891.137
Fish-EJ	2	0%	-	-	-	-	-	-	-	-	-	-	-	-
Irrigation-EJ	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Maize-EJ	1	275%	-	-	-	-	-	-	12.300	2.816	2.584	2.103.574.801	1.154	904.537.164
Maize-NTB	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Maize-NTT	4	57%	9.740	3.848	6.778	2.208.406.778	4.812	1.567.958.812	14.250	6.150	4.479	2.389.543.249	3.182	1.697.873.250
Mango-EJ	1	21%	-	-	-	-	-	-	2.753	-	2.598	26.897.066.000	1.079	10.758.826.400
Mango-NTB	1	0%	-	-	-	-	-	-	3.794	1.770	1.239	12.354.923.700	496	4.941.965.480
Peanut-EJ	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
Peanut-NTT	1	0%	-	-	-	-	-	-	3.000	600	500	1.454.400.000	442	1.071.892.800
Pigs-NTT	1	1172%	2.250	-	-	-	-	-	2.250	2.250	1.361	24.410.705.971	1.359	17.819.815.359
Seaweed-NTT	1	0%	615	517	251	1.362.453.478	166	1.064.392.163	752	632	356	1.862.453.478	203	1.064.392.163
Shallots-EJ	1	0%	48	32	32	51.556.664	18	50.997.062	399	258	268	774.029.772	149	431.134.583
Shallots-NTB	1	8%	795	308	277	310.191.525	116	130.230.441	1.355	-	-	-	-	-
Soybean-EJ	4	175%	-	-	-	-	-	-	6.705	3.050	2.301	1.582.489.200	967	527.251.812
Soybean-NTB	1	0%	-	-	-	-	-	-	4.500	1.728	1.382	639.705.600	634	293.624.870
Anggur Merah-NTT	1	0%	-	-	-	-	-	-	-	-	-	-	-	-
<b>Grand Total</b>	<b>37</b>	<b>1903%</b>	<b>16.835</b>	<b>7.035</b>	<b>9.298</b>	<b>5.068.335.716</b>	<b>5.933</b>	<b>3.061.443.047</b>	<b>93.043</b>	<b>40.592</b>	<b>30.724</b>	<b>88.577.013.582</b>	<b>15.722</b>	<b>45.543.546.279</b>

## ANNEX 5: RISK MATRIX

(See separate document)

## ANNEX 6: PRIVATE SECTOR PARTNER DETAILS

### PRISMA PARTNERS DETAILS

Partners' Details		
<b>Maize EJ</b>	<b>Intervention</b>	<b>Promoting hybrid seeds</b>
	Partner 1	PT Asian Hybrid Seed Technologies Indonesia (PT AHSTI)
	Description	PT AHSTI has developed seed stock for dry conditions and piloted cultivation in Gunung Kidul, Yogyakarta. The company is experienced in selling hybrid seed in Sumatra and Sulawesi.
	Partners' Rationale	The company wants to expand their seed market beyond mainland Java island to neighbouring Madura island. To realize this vision, they are willing to invest in demonstration plots and good agricultural practices (GAP) capacity building for maize farmers in Madura.
	Partnership Roles	PRISMA supports PT AHSTI develop distribution channels (sales agents/retailers) in Madura and promote and distribute their seeds among target groups.
<b>Maize NTB</b>	<b>Intervention</b>	<b>Promoting the use of Good Agricultural Practices (GAP) &amp; Good post-harvest Handling Practices</b>
	Partner 1	PT Sarottama Dharma Kalpariksa (Sarottama)
	Description	Sarottama, founded in 2001, is an agribusiness company and is experienced in maize cultivation, primarily supplying to the animal feed industry. Sarottama plans to expand their business by expanding a partnership program for the procurement of tree cutting corn (species: Jabon) and supplying to a milk processing company in West Java.
	Partners' Rationale	Sarottama began developing its corn business in the province of West Nusa Tenggara (NTB) through contract farming. Sarottama provides agro-inputs, especially seed, crop protection chemicals and fertilizers, on credit. Farmers pay at harvest time for agro-inputs at pre-agreed prices and sell their corn to Sarottama at prevailing market prices. To access the market,

		Sarottama partnered with PT Mutiara Vanguard (as a buyer who has a warehouse and drying facilities located in Sumbawa district).
	Partnership Roles	<p>PRISMA supports the company in:</p> <ul style="list-style-type: none"> <li>• Strengthening the organization of the Farmer Resource Centre and PT. Sarottama</li> <li>• Developing promotion and communications tools that adapt to targeted farmers</li> <li>• Expanding outreach to farmers as contract farmers.</li> </ul>
<b>Maize NTT</b>	<b>Intervention</b>	<b>Promoting composite seeds</b>
	Partner 1	CV INTAN
	Description	CV INTAN has produced composite seed and stock for dry conditions and piloted cultivation in Kupang District, West Timor-NTT. Since 2008, CV INTAN had engaged in paddy and maize seed. Breeding effort is made to meet the demand of local government. Since 2013, began to expand its business through the free market. Composite maize seed varieties produced are LAMURU purple and blue label.
	Partners' Rationale	The company wants to expand their seed market around NTT province. To realize this vision, they are willing to invest in promotion include demonstration plots and good agricultural practices (GAP) capacity building for maize growers in Timor island.
	Partnership Roles	PRISMA supports CV INTAN in production of composite seed and develop sales and distribution channels (sales agents/retailers) in TTS and Kupang District and promote and distribute their seeds among target groups.
	Partner 2	Kokdale
	Description	Kokdale has produced composite seed and stock for dry conditions and piloted cultivation in Kupang District, West Timor-NTT. Since 2005, Oscar (Kokdale) has engaged in paddy and maize seed. Breeding effort is made to meet the demand of local government. Since 2014, began to expand its business through the free market. Composite maize seed varieties produced are LAMURU Purple and Blue label.
	Partners' Rationale	The company wants to expand their seed market around NTT province. To realize this vision, they are willing to invest in promotion include demonstration plots and good agricultural practices (GAP) capacity building for maize growers in Timor island.
Partnership Roles	PRISMA supports Kokdale INTAN in production of composite seed and develop sales and distribution channels (sales agents/retailers) in TTS and Kupang District and promote and distribute their seeds among target groups.	



	Partner 3	CV Tiga Putri Mandiri
	Description	CV Tiga Putri Mandiri has produced composite seed and stock for dry conditions and piloted cultivation in Kupang District, West Timor-NTT. Since 2005, CV Tiga Putri Mandiri had engaged in paddy and maize seed. Breeding effort is made to meet the demand of local government. Start on 2015, began to expand its business through the free market. Composite maize seed varieties produced are LAMURU Purple and Blue label.
	Partners' Rationale	The company wants to expand their seed market around NTT province. To realize this vision, they are willing to invest in promotion include demonstration plots and good agricultural practices (GAP) capacity building for maize growers in Timor island.
	Partnership Roles	PRISMA supports CV Tiga Putri Mandiri in production of composite seed and develop sales and distribution channels (sales agents/retailers) in TTS and Kupang District and promote and distribute their seeds among target groups.
	Partner 4	Yayasan Mitra Tani Mandiri (YMTM)
	Description	Yayasan Mitra Tani Mandiri (The Foundation for Partnership with Independent Farmers) was found in 1997 with the aims to help communities to expand its local capacity for economic development by increasing competitiveness, farm productivity and providing alternative source of households' income on sustainable agricultural systems. It has two main activities: 1) project development/ implementer for donors or as co-facilitators, 2) business unit/partner for the intervention or market actor include service provider;
	Partners' Rationale	The business unit of YMTM wants to develop their seed market around NTT province. To realize this vision, they are willing to invest in production and promotion include demonstration plots and good agricultural practices (GAP) capacity building.
	Partnership Roles	PRISMA will support YMTM business unit to produce and distribute quality maize seeds in the region and also conduct promotional activities for the farmers so that the farmers get proper knowledge on maize cultivation. For seed production, YMTM depends on a number of seed producers who produces maize as well in addition to seed production using their retained OPV seeds. YMTM engages a number of seed distributors and retailers for distributing the seeds in those areas and utilize farmer groups for dissemination.
<b>Soybean EJ</b>	<b>Intervention 1</b>	<b>Promoting commercially certified seed</b>
	Partners	Mr. Sugito (UD Karya Tani)
	Description	Mr Sugito currently runs a nursery business and has certificate from BLPP. He currently has 260 ha with 1,000 nursery farmers supplying seeds that he sells to government agencies and also to farmers.
	Partners' Rationale	He would like to expand his nursery business to 1,000 ha with 4,000 contract nursery farmers because demand remains high. Farmers on a 0.25 ha farm can only obtain 2kg of subsidized seed compared to the 10 kg needed. Hence, there is a substantial

	demand for soybean seed in the commercial market. Mr. Sugito will work with farmers currently working on rice nursery cultivation. These farmers will be his marketing and distribution channels.
Partnership Roles	PRISMA will help Mr. Sugito with the marketing of non-subsidized soybeans seeds in the commercial market. PRISMA will also help create distribution channels for Mr. Sugito by identifying the ISP (nursery contract farmers) and/or seed retailers and also prepare marketing tools for the ISPs.
<b>Intervention 2</b>	<b>Improve certification procedures for soybean seed</b>
Partners	East Java Local Government Agencies
Description	The local government of East Java has a mandate to provide certified soybean seed. Several institutions are involved, such as BBI (a provincial government nursery) producing foundation seed, Balitkabi (a national agency) that produces breeder seed/basic seeds, BPSB (a provincial agency) that issues certification, BPPP (a national agency) that trains farmers in nursery skills. The certification process needs to improve to increase efficiency and reduce waiting periods.
Partners' Rationale	Due to the lack of nursery facilities in Sampang, the Sampang Department of Agriculture ( <i>Dinas Pertanian</i> ) has taken the lead to establish new nurseries. The target is 6-22 nurseries, depending on the season.
Partnership Roles	PRISMA will help facilitate the Sampang Department of Agriculture to coordinate the relevant agencies and develop capacity for PPL (extension).
<b>Intervention 3</b>	<b>Improve dissemination of new soybean varieties</b>
Partners	BATAN and PT East West Indonesia (EWINDO)
Descriptions	BATAN as a government R & D agency has mandate to produce and disseminate new soybean varieties. But with limited resources and budget, only small number of farmers in Indonesia has knowledge and use new soybean varieties that can produce high yield.
Partners' rationale	There is no private sector involvement in dissemination of commercial and labelled soybean seed and government R & D has limited capacity in dissemination and production of new soybean seed varieties. BATAN has capacity to produce new and high yield soybean seed and EWINDO has capacity and network to produce/multiply new soybean seed and promote it to farmers.
Partners Roles	PRISMA's role is to identify existing and potential new soybean varieties and potential private sector partner for dissemination of new soybean varieties. PRISMA will work with BATAN in providing support to EWINDO with experts in production, promotion and storage of soybean seed.

	<b>Intervention 4</b>	<b>Increase productivity by promoting GAP information through soy doctor</b>
	Partners	PT. BASF Indonesia
	Descriptions	PT. BASF INDONESIA is a chemical company with broad portfolio including crop protection. The portfolio also includes products for turf and ornamental plants, pest control and public health. PT. BASF INDONESIA Crop Protection division is a leading innovator in partnership with farmers to protect and improve crop yields, enabling them to produce high quality food more efficiency.
	Partners' rationale	Partner saw potential market in soybean and has soybean pilot program in Banyuwangi in 2014. From these pilot, farmers are able to increase income until 45%. Meanwhile, partner has a program called MTA (Mitra Tani Agri-Aexcellent) for other crops to reach farmers through cooperation with lead farmers or head of group farmers. Partner aims to reach as much farmer as possible with minimum operational spending. MTA program did not work well due to lack of planning and management.
	Partners Roles	PRISMA support Partner to improve their program and introduce new name called "soy doctor". PRISMA support for soy doctor improvement include: <ol style="list-style-type: none"> <li>1. Support partner in developing better program management including soy doctor selection criteria, proper incentive and reward scheme, training plan, and monitoring plan</li> <li>2. Support capacity building for soy doctor to be able to deliver GAP information to their peer farmers</li> </ol> Support partner to identify location for intervention where there is significant number of user
<b>Shallots NTB</b>	<b>Intervention</b>	<b>Branding Bulbs by Ewindo Distributed Through Traders &amp; Retailers</b>
	Partners	PT East West Seed Indonesia (EWINDO)
	Description	In previous interventions in the shallot sub-sector, EWINDO focused on promoting good quality bulbs that were labelled and branded. Through branding and promotion activities, traders supported more nurseries and more farmers bought more of the branded bulbs.
	Partners' Rationale	The success of the previous program establishing nurseries using the improved EWINDO bulbs can be strengthened and up-scaled to benefit more male and female small-holder farmers in NTB.

		The incentives for EWINDO are, among others, increased market share for seeds in a sustainable way, increased brand awareness (especially in NTB's shallot-producing areas of Bima and Lombok) and the potential to expand to other eastern districts.
	Partnership Roles	<p>PRISMA's roles in this intervention are:</p> <ul style="list-style-type: none"> <li>• Support EWINDO to conduct Trader Study in order to identify: <ul style="list-style-type: none"> <li>○ Key areas to work on the certified labelling planting bulb (certified G0),</li> <li>○ The possible mechanism of certified G0 market i.e. agreement, contract, etc.</li> </ul> </li> <li>• Support EWINDO to develop partnership models with traders to create the demand for certified G0</li> <li>• Support EWINDO in the creation of promotion and communications tools using the network of traders</li> <li>• Develop certification model with traders on improved quality G0</li> <li>• Develop partnership with UNRAM on expertise of the TSS and establish Shallots Learning Center</li> </ul>
<b>Mango EJ</b>	<b>Intervention</b>	<b>Promoting early flowering</b>
	Partners	PT Syngenta Indonesia
	Description	Syngenta is an internationally renowned agricultural company that produces and promotes seeds, crop protection products and inclusive agricultural solutions in many countries.
	Partners' Rationale	The early flowering technology for mango requires a combination of chemicals: <i>Paclobutrazol</i> , <i>Amistartop</i> , and <i>Actara</i> . Syngenta is the sole supplier of <i>Amistartop</i> and <i>Actara</i> in Indonesia under patent. <i>Amistartop</i> is widely available, as it is used in rice production. <i>Actara</i> is used to control insects in mango crops and improve fruit quality. Although <i>Paclobutrazol</i> is available from many suppliers, Syngenta was the original patent owner and its product is proven to give the best result.
	Partnership Roles	Even though these products have been available in the marketplace, the combination had not been piloted in Indonesia. Syngenta took on a significant financial risk getting into this market. PRISMA supported Syngenta in piloting their products, primarily through supporting the collectors who tested the combination of chemicals in small-scale trials to see which combinations worked best. Now that the products and the business model are proven, PRISMA will support Syngenta to expand its distribution and promotion.
<b>Peanuts EJ</b>	<b>Intervention</b>	<b>Promoting good quality peanut seeds</b>
	Partners	CV Trubus Gumelar
	Description	CV. Trubus Gumelar is a certified seed breeder located in Brotonegaran, Ponorogo, East Java. The company produced seeds since 2011 but has only sold to government projects so far. It has contract farmers working on 26 ha. and produces around 100MT of soybean and peanut seed per year.

	Partners' Rationale	CV. Trubus Gumelar aims to avoid dependency on government orders and sell seed on the commercial market. The company commits to: <ul style="list-style-type: none"> <li>• Becoming a producer of good quality peanut seed that is certified by BBI.</li> <li>• Provide good agricultural practices (GAP) knowledge on peanut cultivation through their distribution channels and to lead farmers.</li> </ul>
	Partnership Roles	PRISMA supports CV Trubus Gumelar to: <ul style="list-style-type: none"> <li>• Promote linkages between seed producers and government agencies for sourcing breeder seeds</li> <li>• Provide technical assistance to seed producers in certified seed production, promotion and distribution through commercial channels</li> <li>• Cost-sharing with seed producers in the following activities: <ol style="list-style-type: none"> <li>a. Seed multiplication through contract seed growers</li> <li>b. Promotional activities for certified seeds</li> </ol> </li> </ul>
<b>Shallot EJ</b>	<b>Intervention</b>	<b>Promoting solar-cell pest trap technology (planned)</b>
	Partner	PT Solusi Bioteknologi Indonesia (Solbi)
	Description	Solbi is a business unit of the SoeGee Group which aims to be a leader in innovative solutions in organic agriculture and as a biotechnology provider. In line with their vision, Solbi is willing to promote pest control technologies to shallot farmers.
	Partners' Rationale	Solbi is willing to invest in the production of pest lamps and provide technical assistance in the form of embedded services, including lamp maintenance, through commercial distribution channels and farmer groups.
	Partnership Roles	PRISMA's roles in this intervention are: <ul style="list-style-type: none"> <li>• Short assessment for selection of distribution channels</li> <li>• Support in developing an effective business plan</li> <li>• Development of a module for distribution channel training.</li> </ul>
<b>Beef EJ</b>	<b>Intervention 1</b>	<b>Promoting concentrated feed for cattle fattening</b>
	Partner 1	Community Business Centre (Pusat Kegiatan Masyarakat)
	Description	Holcim is one of the largest international cement producers in the world and has a plant in Tuban district. As part of its commitment to CSR, Holcim along with local leaders founded a local People's Activity Centre ( <i>Pusat Kegiatan Masyarakat - PKM</i> ). Holcim invests in community economic development through the PKM. One of its programs supports a cooperative of producers of concentrated feed for cattle farming.

	Partners' Rationale	<p>In order to develop the CSR program in the community, especially with cattle farmers, the PKM is willing to provide benefits to the farmers through the development of concentrated feed.</p> <p>In addition to supporting production, the program supports the selling of the concentrated feed, which should enable it to be sustainable in future.</p>
	Partnership Roles	PRISMA brings a commercial orientation and a focus on sustainability to the established CSR program. The program has a built-in component and can benefit a larger population beyond the current operational area. PRISMA will support the development of a business model to promote and distribute the concentrated feed product to more farmer groups through establishing distribution channels (agents/ lead farmers/ retailers).
	<b>Intervention 2</b>	<b>Promoting supplementary feed (crop residues) for cattle fattening</b>
	Partner 1	UD Pangestune Utama or Wahyu Utama
	Description	UD Pangestune Utama or Wahyu Utama, is a Feedlotter, established in 2003 in Tuban, running business on cattle breeding, fattening, live cattle trading, and beef marketing. The company also produces and sells feed for cattle fattening (concentrate, crop residues, and molasses). However, the company only serves a limited number of farmers who are doing cattle fattening under a contract farming relationship model.
	Partners' Rationale	In order to expand the model and serving to a larger farmers outside current contract farming model, the Wahyu Utama is willing to provide benefits to the farmers through promoting the supplementary feed (crop residues) through development of demo plots and involving the retailers into the system to develop distribution channels.
	Partnership Roles	<p>Prisma will support the company in:</p> <ul style="list-style-type: none"> <li>• Mapping out local sourced feedstuffs/fodders to make a cheaper cattle feed composition</li> <li>• Development of cattle feed composition formula using local sourced feedstuffs/fodders</li> <li>• Demo plots development model at selected Lead Farmers to promote crop residues usage for cattle fattening</li> <li>• Bring retailers into the system so that farmers have better access:</li> <li>• Looking for a wide and larger cattle feed market - serving and benefiting larger cattle farmers' population beyond its current market.</li> <li>• Development of a hard evidence based market promotion - using the success story business of demplots that shows commercial benefit of using appropriate feed to farmers in order to change their mindset and behaviors towards such investments.</li> </ul>
<b>Beef NTT</b>	<b>Intervention</b>	<b>Cattle feed demonstration with Puskud in Kupang</b>
	Partner 1	PUSKUD



	Description	During the feed study in NTT PRISMA has identified a potential partner, PUSKUD, one of the big cattle fattening and trading company in Kupang, which has expressed their interest carry out the research by testing the various feed composition. PUSKUD committed to provide the inputs for the research such as supplementary feed inputs (dried cassava), cattle, scales, and on the ground staffs to conduct the research. They also will prepare and select the Lead Farmers to do the feed research. PUSKUD also plans to use this research as demonstration and has plans to sell the cattle which are used for the research/demonstration in December 2015.
	Partners' Rationale	The results of the feed research/demonstration will be used by PUSKUD to develop their feed business strategy for the coming years. This will also help PRISMA to develop interventions to collaborate with PUSKUD and other potential partners in NTT.
	Partnership Roles	PRISMA provides an expert to support PUSKUD in the feed demo design, results measurement tools, implementation, and monitoring as well as develop the intervention plans.
<b>Anggur Merah</b>	<b>Intervention</b>	<b>Synergy of Anggur Merah Program &amp; PRISMA</b>
	Partner 1	Provincial Government of NTT through the Secretariat of Program Anggur Merah (AM). A letter of acknowledgement has been prepared by the Prov. Govt for this partnership.
	Partner 2	PUSKUD (the partner of Sub-Sector Beef NTT, where this AM Intervention will join the partnership).
	Description	This intervention will take advantage of existing AM Program being implemented by the NTT Govt. The AM program provides stimulant grants to a village that majority uses the grants for financing community's cattle fattening. Common problems faced by cattle farmers are low productivity due to feed scarcity and low skills on managing cattle fattening, which impact on low income earned by cattle farmers.
	Partners' Rationale	Prov. Govt. of NTT: to provide stimulant grants (AM funds) to each receiver village (including the location of this intervention); to hire village facilitators (PKM) who supervise the AM activities in each target villages (including the village targeted by this intervention); to establish and monitor the cooperatives at villages level (including those in the targeted villages of this intervention).  PUSKUD: to do feed test; to produce and sell processed feeds through AM cooperatives; to sell input (chemical) through AM cooperatives for producing cattle feeds using local forages; to support in increasing the capacity of AM cooperatives in order to act as the ISP and a business entity.
	PRISMA's Roles	PRISMA: to support PUSKUD to provide technical assistance and capacity building to AM cooperatives; to link AM cooperatives to other market actors for cattle fattening business.
<b>Irrigation EJ</b>	<b>Intervention 1</b>	<b>Promote Provision of Financing on Groundwater Irrigation</b>

	Partners	PT Vasham Kosa Sejahtera
	Description	PT Vasham Kosa Sejahtera or Vasham is a financing company that focuses mostly on providing financial product for farmers to help them with their farming. Their main product is called Konco where they provide microcredit to farmers to purchase inputs. Their current market is in Bandar Lampung since 2013 to now.
	Partners' Rationale	Vasham would like to expand their business mainly towards Central Java and East Java in 2016. In addition to that, they would also like to introduce a new product to the new provinces which is the financing scheme for irrigation businesses. This is a good opportunity for them as they can target any farmers with all kinds of crops as beneficiaries. Vasham also targets mostly smallholder farmers to use their product.
	Partnership Roles	Vasham is providing financing in irrigation provision as their new product for Irrigation Service Provider (ISP) where the ISPs will debit water from deep wells and distribute to farmers. Farmers will then pay for the water to ISP where ISP can use the funds to pay back loan given by Vasham. PRISMA will help in providing consultants to Vasham for Social-Economic perspective, technical aspect and developing the new financing product. Also, since Vasham does not have anyone in East Java to guide them or help them enter the market, Vasham relies on PRISMA in that regard. In addition, Vasham relies on volume of farmers to generate their business hence more area is required. For now the partnership is creating a pilot to test the success of the financing scheme.
	Partner Contribution	Partner has agreed to contribute 50-50 with PRISMA in terms of funds for the project. Vasham will for the most part contribute in the construction of the pumps while PRISMA will focus more in hiring consultants for market/social assesment, technical and financing product development. Travel expenses will be burdened by each respective party. The total budget agreed in this project is 987 Mio IDR where Vasham will contribute 500 Mio IDR and PRISMA will contribute 487 Mio IDR.
<b>Cassava NTT</b>	<b>Intervention</b>	<b>Promoting Fertilizer and Establishment of Feed mill in Sumba Timur</b>
	Partners	PT Garda
	Description	PT Garda is a bio fertilizer and probiotics producer based in Surabaya East Java. The bio fertilizer and probiotics have been produced by PT Garda since 2007. The main buyer of their fertilizer of PT Garda is a plantation companies mainly in Sumatera and Lampung. They also involves in government programs. Since 2014, they are starting to expand their market to eastern part of Indonesia such as Bali and NTT (Timor island) to Timor Leste. For the probiotics, the main buyer is feedlots in East Java and Bali.
	Partners' Rationale	PT Garda is now expanding their market in eastern part of Indonesia. The company commits to: <ul style="list-style-type: none"> <li>• Invest on the 6-ha field test in Sumba Timur. The investment is include decomposer, fertilizer and new cassava variety.</li> <li>• Invest on establishment of distribution channel in Sumba Timur that does not exist before the intervention.</li> </ul>

		<ul style="list-style-type: none"> <li>• Provide good agricultural practices (GAP) knowledge on peanut cultivation through their distribution channels and to lead farmers.</li> </ul> <p>Invest in machineries for animal feed production.</p>
	Partnership Roles	<p>PRISMA supports CV Garda to:</p> <ul style="list-style-type: none"> <li>• Facilitate agreement between PT Garda with Local government of Sumba Timur on the usage of idle asset (building) for feed mill</li> <li>• Access to farmer's land for field test.</li> <li>• Provide consultant to monitor the progress of field test.</li> <li>• Cost-sharing in the following activities: <ul style="list-style-type: none"> <li>a. Capacity building of the distributors and farmers</li> </ul> </li> </ul> <p>Promotional activities for fertilizers.</p>

## CO-FACILITATORS 1 PARTNERS' DETAILS

Partners' Details		
Cassava	<b>Intervention 1</b>	<b>Promoting rewarding system and GAP to increase the quantity and regularity of fresh cassava supply for starch processing</b>
	Partner 1	Pak Amir ( Large Cassava Supplier)
	Description	Pak Amir started his business in cassava since 1998. He began as supplier of chips for local home industry in Sumenep-Madura. Currently, Mr. Amir supplies cassava to big tapioca factories in East Java * Malang, Kediri and Ponorogo. Pak Amir purchase cassava from farmers through local collectors. Pak Amir has 75 local collectors spread across Java and Madura. During the peak season Pak Amir can supply cassava to big factories between 14-25 tons per day
	Partners' Rationale	The company wishes to expand their sourcing base and consistent supply of cassava from farmers in order to meet expanding production needs.
	Partnership Possibilities	Pak Amir has some experience in purchasing cassava from Madura. PRISMA will help Pak Amir develop a cassava collection model as well as provide support in the form of technical mentoring services for good agricultural and post-harvest handling practices, which will be given to farmers through the collectors. This will ensure farmers have better market access and at the same time Pak Amir will be able to get consistent supply of quality cassava.
	<b>Intervention 2</b>	<b>Increasing access to good agricultural practices (GAP) and fertilizer</b>

	Partner 1	PT Natural Nusantara (NASA)
	Description	PT NASA is a liquid organic fertilizer company located in Yogyakarta that has much experience in researching their product. Product development activities began in 1985 and the company was formed in 2002. Many farmers in Java and Sumatra have used products from PT NASA for more than 15 years. PT NASA has a production capacity of 1 million litres per year.
	Partners' Rationale	PT NASA is eager to expand their market for liquid organic fertilizer products through cooperation with local agents and distributors in cassava-producing areas of East Java. For each additional one hectare of land, PT NASA expects additional sales of around IDR 1.2 million (for the use of three products, namely POC NASA, Supernasa and Homonik).
	Partnership Possibilities	PT NASA has the ability and experience to produce liquid organic fertilizer and to deliver technical assistance on product application in the field through their team of experts. PRISMA will help PT NASA develop the market for its products and connect the company with fertilizer distributors.
	<b>Intervention 3</b>	<b>Developing a consistent supply of cassava chips for Animal Feed</b>
	Partner	Unit Pengembangan Sosial Ekonomi (PSE) Keuskupan Atambua
	Description	PSE Keuskupan Atambua consists of 60 Pariko with around 12.000 farmers as members; substantial number of these farmers are also involved in pig rearing. PSE has several production unit including briks, tile, and paving production, furniture production, truck rent, ect,
	Partners' Rationale	PSE is interested to develop animal feed miller business because of the opportunity arising out of limited animal feed availability in the market and growing animal population in NTT especially pig. There are local raw materials available including cassava, which is a major ingredient. The local animal feed thus produced can be competitive in the market due to high transportation cost of bringing feed from outside the island.
Partnership Possibilities	The company is quite new in this business and needs support to establish feed miller company, feed testing, marketing, and collaborating with collectors. PRISMA will help PSE develop cooperative agreements with collectors in the project area as well as deliver capacity building to PSE about developing the feed production, testing, marketing,. PSE will provide capacity building of GAP and post harvesting knowhow to farmer through the collector.	
<b>Coffee</b>	<b>Intervention 1</b>	<b>Development of ICCRI franchise</b>
	Partner	ICCRI
	Description	ICCRI was founded on the 1st January 1911 and holds a national mandate to conduct research and development activities into coffee and cocoa as well as provide data and information to smallholders, private and estate companies, national and regional government agencies, associations and other stakeholders. The institution supports locations for on-farm Robusta coffee experiments. Since 2011, two of ICCRI's units have been awarded accreditation - its certification body and testing

		laboratory. ICCRI has a library with a vast collection of reference materials. The institute has 36 researchers comprising 12 PhD holders, seven Masters graduates and 17 Bachelors holders.
	Partners' Rationale	ICCRI wishes to disseminate knowledge and skills but does not have the capacity to develop branches in many areas of Indonesia. ICCRI branches enable farmers and related stakeholders to better access ICCRI products and services.
	Partnership Possibilities	ICCRI support can help increase the productivity and quality of coffee. PRISMA will help ICCRI expand their services through the franchise model in project locations.
	<b>Intervention 2</b>	<b>Development of decentralized processing facilities for specialty coffee through cooperatives</b>
	Partner	PT Indokom Citra Persada (Indokom)
	Description	Indokom is a coffee exporting company founded in 1996. The company has offices in Lampung province and Sidoarjo, East Java province. In 2012, the company exported 70,000 MT to markets in the European Union, Japan, the Middle East and the USA. Most sales are done under long-term contract with an average price of around USD 4,000 per MT. While for the spot market is only 10% of total volume.
	Partners' Rationale	In order to increase turnover, the company aims to increase sales of specialty coffee and for that it needs a continuous supply of quality coffee from farmers and reliable management systems.
	Partnership Possibilities	Indokom are concerned to improve the welfare of coffee farmers in Indonesia through providing technical assistance at post-harvest and in processing. PRISMA will help Indokom develop a cooperation model based on harvest cooperatives for processing coffee in pilot project areas.
<b>Cashew</b>	<b>Intervention 1</b>	<b>Development of pest control and good agriculture practices (GAP) services for cashew farmers in Bima and Dompu</b>
	Partner	PT Gerbang NTB Emas (PT GNE)
	Description	PT GNE is a state-owned enterprise (SOE) of the West Nusa Tenggara (NTB) provincial government. The company was established on 5 April 2007 and has several business units, including construction and agriculture equipment production. The company's goal is to generate profit for the local government. As an SOE, PT GNE also has a mandate to support the economic potential of the local area and increase social welfare through productive activities.
	Partners' Rationale	PT GNE wishes to increase their business income and is planning to re-establish the currently idle agro-business unit. The unit will provide technical assistance and mentoring to service providers at PT GNE's own cost. PT. GNE will also develop partnerships with input producers and suppliers and will become their main distributor in NTB.
	Partnership Possibilities	PT GNE has a mandate to support the development of local economic potential in NTB. The cashew sector in Bima and Dompu is the target area for their products and services. PRISMA will help PT GNE develop the agro-business unit, mainly in business planning and marketing.

<b>Seaweed</b>	<b>Intervention</b>	<b>Development of a seaweed support centre and seaweed agents in the eastern Flores Islands</b>
	Partner 1	CV EVADIAN (IMTA MUZE Indonesia)
	Description	CV EVADIAN was established by Iain C. Neish (PhD), an international seaweed expert involved in supplying dried seaweed to export and domestic markets. The company is based in South Sulawesi.
	Partners' Rationale	CV EVADIAN is interested in establishing a Seaweed Support Centre (SSC) to work in two districts of the eastern Flores Islands, with investment in warehousing, drying and packaging facilities.
	Partnership Possibilities	Through the SSC, CV EVADIAN will provide technical assistance in the form of good agriculture practice (GAP) development, post-harvest handling, marketing, logistics and market information. PRISMA will support networking in local communities, facilitation of capacity building for SSC staff and facilitate technical know-how and capacity building by SSC staff to seaweed farmers.
	Partner 2	UD. ALGA
	Description	UD. Alga was established by Kevin Suhaili as a seaweed trading company. UD. Alga based at Jl. Raya Ba'a Basalangga, West Rote-Rote Ndao, East Nusa Tenggara. It has seaweed cultivation area in Dodaek of Southern Rote. Since February 2015 UD. Alga has initiated to develop seaweed cultivation of variety "SAKOL" together with local community.
	Partners' Rationale	UD. ALGA is interested in establishing a Seaweed Support Centre (SSC) to work in two districts of the Kupang and Rote with investment in warehousing, drying and provide the training of Good Agriculture Practice (GAP) on Seaweed.
	Partnership Possibilities	Through the SSC, UD. ALGA will provide technical assistance in the form of good agriculture practice (GAP) development, post-harvest handling, marketing, logistics and market information. PRISMA will support networking in local communities, facilitation of capacity building for SSC staff and facilitate technical know-how and capacity building by SSC staff to seaweed farmers.
<b>Pigs</b>	<b>Intervention 1</b>	<b>Introducing improved pig breed and promotion of commercial pig rearing</b>
	Partner 1	Yayasan Bintang Firdaus (YBF)
	Description	YBF is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Ende since 2008.
	Partners' Rationale	YBF has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet rearing management.



Partnership Possibilities	YBF will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to YBF and link YBF to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 2	Kebun Misi Bhoanawa (KMB)
Description	KMB is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Ende since 2010.
Partners' Rationale	KBM has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	KMB will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to KMB and link KMB to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 3	Biara Bruder (BB)
Description	BB is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Ende since 2000.
Partners' Rationale	BB has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	BB will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to BB and link BB to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 4	St Aloysiu (SA)
Description	SA is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Ruteng since 2012.
Partners' Rationale	SA has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	SA will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to SA and link SA to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 5	Convasionis

Description	Convasonis is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Ruteng since 2013.
Partners' Rationale	Convasonis has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	CONVASIONIS will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to CONVASIONIS and link CONVASIONIS to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 6	Ordo SVD
Description	Ordo SVD is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Labuan Bajo since 2005.
Partners' Rationale	Ordo SVD has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	ORDO SVD will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to ORDO SVD and link ORDO SVD to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 7	Clements
Description	Clements is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Bajawa since 2013.
Partners' Rationale	Clements has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.
Partnership Possibilities	CLEMENTS will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to CLEMENTS and link CLEMENTS to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
Partner 8	Pati Ahu
Description	Pati Ahu is a Pig Breeding Company and Key Service Provider. The company has invested in developing pig business in Maumere since 1995.
Partners' Rationale	Pati Ahu has interest to expand their piglets business in in Flores and other islands by upgrading their sows and piglet management.

	Partnership Possibilities	PATI Ahu will supply piglets and knowledge on good rearing practice to farmers that are interested to improve their pig rearing. PRISMA will provide capacity building support to PATI Ahu and link PATI Ahu to other market actors to promote their piglets, and to source fodder, other necessary inputs for piglets breeding company.
	Partner 9	PT Charoen Pokphand (CP)
	Description	PT Charoen Pokphand Indonesia is Indonesia's largest producer of poultry feed, Day Old Chicks and processed chickens. The Company was established in 1972 as the first high-volume feed mill in Jakarta manufacturing premium quality poultry feed.
	Partners' Rationale	PT CP already worked in Flores and marketed around 50MT pigs feed per month recently. The company aims to increase the pigs feed market in Flores but farmers have limited access to good piglets and are not knowledgeable about the benefit and use of quality feed. Given the size of the pig market in Flores, this is a very high potential area for CP feed and therefore the company is willing to invest in educating the farmers.
	Partnership Possibilities	PT CP with support from PRISMA will train and use distribution and other channel members such as traders, input sellers, credit union etc. to educate farmer by providing embedded service on GRP and promote use of quality fodder.
<b>Coconut</b>	<b>Intervention 1</b>	<b>Promotion of organic coconut sugar certification</b>
	Partner	PT Big Tree Farms (BTF)
	Description	BTF specialises in sourcing and marketing food products and has developed an innovative range of coconut sugar products.
	Partners' Rationale	BTF already works with 7,000 coconut sugar producers, mainly in Central Java. The company aims to establish new linkages with producers in East Java but lacks experience in cook-stove interventions.
	Partnership Possibilities	BTF will take the lead in ToT, developing supply chains, arranging access to finance, covering the cost of organic certification for the first year. PRISMA will support BTF for initial awareness-raising with farmers and developing training materials. PRISMA will also explore the potential market for clean and effective cooking stove for processing, and developing a business model for stove manufacture in coordination with BTF.
	<b>Intervention 2</b>	<b>Promotion of organic virgin coconut oil certification</b>
	Partner	PT Kai Sun
Description	PT Kai Sun is a locally registered company and its activities are backed by US-based company EcoEnviro Corp., which supports PT Kai Sun in marketing, technology and finance. EcoEnviro Corp is the sole distributor of all PT Kai Sun's products.	

	Partners' Rationale	PT Kai Sun is looking to source sustainable exported quality coconut, which has a high demand in the exported market especially China, but has no experience in promoting good agriculture practice in their supply chain which can ensure such supply.
	Partnership Possibilities	<p>PT Kai Sun, with support from PRISMA, will establish and develop commercially-operated coconut aggregation points. Aggregation will be under the management of local actors (such as collectors, traders and lead farmers) and PT Kai Sun will establish supply agreement.</p> <p>PT Kai Sun will provide all supports for promoting good agriculture practice in coconut, including surveys, capacity building for farmers and collectors, for establishing and operating aggregation point. PT Kai Sun will buy all coconut produced by their supply chain at agreed premium price.</p>
<b>Fishery</b>	<b>Intervention 1</b>	<b>Developing fish cage farming</b>
	Partner	PT Trimitra Anugerah Segara (TAS) (formerly CV Berill Jaya Marine)
	Description	TAS is a <i>kerapu</i> (grouper) fish exporter based in Bali.
	Partners' Rationale	The business is rapidly expanding and faces constant demand.
	Partnership Possibilities	TAS will support <i>kerapu</i> production units to improve their productivity and product quality in return for access to an improved and consistent supply of fish. This will be achieved through developing apprenticeships and ToT programs, with the support of the project. TAS will support the apprenticeships and technical assistance providers. TAS will facilitate farmer group directly to export the fish to abroad markets and apply commission for this new role.
	<b>Intervention 2</b>	<b>Developing innovative financial products for fish cage farming</b>
	Partner	Bank Pembangunan Daerah Jawa Timur (Bank Jatim)
	Description	Bank Jatim, established in 1961, is a local government-owned development bank with 40 branches throughout East Java and Jakarta.
	Partners' Rationale	Bank Jatim has a loan scheme focusing on the fisheries and agriculture sectors but the financial products are not specific to fish cage farming.
Partnership Possibilities	Bank Jatim will develop financial products and promote them to <i>kerapu</i> production units through the Kerapu Producers' Association. Bank Jatim will provide finance and also develop a training program to improve the financial literacy and management skills of the <i>kerapu</i> production units and the Kerapu Producers' Association.	

## CO-FACILITATORS 2 PARTNERS' DETAILS

Partners' Details		
<b>Cashew NTT</b>	<b>Intervention 1</b>	<b>To facilitate the development of plant protection services for cashew farmers (male and female) in Sumba, NTT</b>
	Partner	CV Peduli Kasih
	Description	CV. Peduli Kasih is the major player for agri-inputs trade in Sumba that owned by Ny. Feni. The company is based in Waingapu, East Sumba, NTT.
	Partners' Rationale	CV Peduli Kasih id interested to enter the Cashew sector for selling the product as its new business line. By investing through the demoplot and promotion CV. Peduli kasih spread the market in two district initially which are East Sumba and Southwest Sumba
	Partnership Possibilities	CV Peduli Kasih, the major player for agri-inputs trade in Sumba will have an agreement to coloborate with these service providers to develop the tehnnical capacity as maintenance and plant protection services provider, with providing business support via provision of promotion material and supply of input needed - as a part of the business agreement between CV Peduli Kasih and the services providers. This will open up a new market (cashew farmer) and increase turnover for CV Peduli Kasih. in the same time service provider will have a new source of income as well as increasing cashew farmers productivity and income from better yield.
<b>Cocoa Papua</b>	<b>Intervention 1</b>	<b>Increase productivity of cocoa in Papua</b>
	Partners	CV Kakao Kita
	Description	CV Kakao Kita is an export oriented small local company, mainly export to Japanese market and has focused on natural produced cocoa beans, adopting "People to People" trade approach.
	Partners' Rationale	CV Kakao Kita has new increased demand therefore is willing to increase the buying volume and has plan to expand their area of operation.
	Partnership Roles	The private sector partners will be supported in developing modules (or adjusting existing modules to the local context) that can be used to train the ISPs in setting up a demo plot, provide side grafting services and introduce farmers to technical information in good agriculture practices on maintaining the farm, using or producing the fertilizer as well as post-harvest handling. Also, they will get help in selecting the right ISPs (collectors – most of them cocoa farmers themselves, and others – lead farmers) and developing modules to strengthen the business of ISP.

		Once this has proven to be successful, the PSP will involve in special activities for creating demand for the side grafting services. Most of the ISPs (mainly those ISPs that have an own cocoa garden) will set up a demo plot to promote and provide their services while at the same time giving information to the farmers on how to best cultivate cocoa. Depending on the demand, the ISPs will also give embedded service on the use of fertilizer - along with buying access information (incl. finance) and post-harvest handling. The PSP will ensure that the ISPs have the skill and knowledge to do so.
	Partner Contribution	CV Kakao Kita has agreed to contribute IDR 270.375.000,- in strengthen the business of ISPs while YPPWP will focus more in develop business model between CV kakao kita and ISP, hiring consultants/ expert in develop GAP material/ modules, promoting ISP's business.
<b>Coconut NTT</b>	<b>Intervention 1</b>	<b>Organic coconuts for Virgin Coconut Oil (VCO) production</b>
	Partners	CV Nusa Permai
	Description	CV Nusa Permai is an exporter of virgin coconut oil sourced from organic coconut
	Partners' Rationale	Demand of VCO in the international market has been continuously increasing. As one of the major VCO exporter, CN Nusa Permai aim to expand their business in order to fulfill such market demand. They aim to strengthen the supply of VCO and to secure the supply of fresh organic coconut as the raw materials. They will do this by developing business partnership with potential local VCO producer as an Intermediate Service Provider, and by giving premium price to organic coconut farmers.
	Partnership Roles	CV Nusa Permai will take lead in building the capacity of coconut farmers to be registered as organic coconut producers. The company will guide and finance the certification processes which aim to guarantee fresh organic coconut supply from the farmers. As part of a newly developed business, CV Nusa Permai will collaborate with a distributor and assembler of machinery CV Bumi Kencana who will establish a commercial VCO production house. The new VCO factory will be set up in Maumere and expected to accommodate production of VCO sourced from fresh organic coconut farmers in the surrounding areas. PRISMA will support CV Nusa Permai in determining suitable location for organic certification, and facilitating both CV Nusa Permai and CV Bumi Kencana in developing business partnership.
<b>Maize NTT</b>	<b>Intervention 1</b>	<b>Good Drying &amp; Storing Practice</b>
	Partner	PT Buana Ika Syahputra (PT BIS)



	Description	PT BIS produces plastic products such as plastic bottles and plastic containers mostly for packaging. They have enough capacity and equipment to create and produce new product based on customer needs.
	Partners' Rationale	PT BIS is interested to expand their market area and entering eastern Indonesia/NTT. They willing to create new product model and invest in the innovation that will be match with the farmer/customer needs.
	Partnership Roles	PRISMA supports PT BIS in identifying the distribution channels, conducting promotion activities, and supporting in product designing as well as marketing strategy to promote technology on good drying practice using jerrycan (they call "Silo Jinjing") to farmers in Timor island, NTT.
<b>Beef NTB</b>	Intervention 1	Production and Supply of Commercial Feed to Beef Cattle Farmers
	Partner	PT Bintang Pribumi Tulen
	Description	PT Bintang Pribumi Tulen is a maize processor, maize trader, and inter-island cattle trader in Lombok. It has been working for years in maize processing and trading business. From the maize business itself, the company has a lot of waste agriculture products and resources. The company has a little experience in cattle feed production using the waste product of maize for his own cattle. By looking at the market potential of concentrate feed business for cattle fattening, as no one sell commercial concentrate for cattle fattening, the company started new business to produce and sell concentrate feed to the market (cattle farmers).
	Partners' Rationale	In order to start the new business of producing and selling concentrate feed to cattle farmers, PT Bintang Pribumi Tulen is willing to provide benefits to the farmers through promoting concentrate feed through demo plots. And in developing a wider distribution channel, the company will work with inputs shops, cattle traders, and agriculture collectors into the system.
	Partnership Roles	Prisma will support the company in: <ul style="list-style-type: none"> <li>• mapping potential distribution channel</li> <li>• developing strategic business plan and marketing plan</li> <li>• developing training modules and design on use, application and benefit of commercial feed</li> <li>• delivering training</li> </ul> designing promotion material and promotional activities.

## ANNEX 7: QUARTERLY BUDGET BREAKDOWN

Basis of Payment Budget Category	Calendar Year 2016   January 2016 - December 2016 (AUD)				Grand Total
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
	Q3	Q4	Q1	Q2	
	<i>Forecast</i>	<i>Forecast</i>	<i>Forecast</i>	<i>Forecast</i>	
<b>Management Fees</b>	<b>609,253</b>	<b>0</b>	<b>609,253</b>	<b>0</b>	<b>1,218,506</b>
<b>Outcome Performance Payments</b>	<b>0</b>	<b>40,000</b>	<b>75,000</b>	<b>0</b>	<b>115,000</b>
<b>Specified Long-term Advisers &amp; Personnel Costs</b>	<b>432,127</b>	<b>426,072</b>	<b>433,783</b>	<b>424,599</b>	<b>1,716,581</b>
<b>Short Term Adviser &amp; Personnel Costs</b>	<b>56,894</b>	<b>97,357</b>	<b>65,170</b>	<b>45,194</b>	<b>264,615</b>
Adviser Support Costs - Domestic & Int'l Travel	293,528	316,422	286,759	279,813	1,176,522
Adviser Support Costs - Specified Personnel	235,038	92,702	107,202	112,202	547,143
<b>Adviser Support Costs</b>	<b>528,566</b>	<b>409,124</b>	<b>393,961</b>	<b>392,015</b>	<b>1,723,665</b>
Operational Costs - Operational Personnel	131,324	166,603	145,775	148,969	592,671
Operational Costs - Office	235,444	101,831	87,548	96,475	521,298
Operational Costs - Events & Communications	21,400	21,250	52,900	28,050	123,600
<b>Operational Costs</b>	<b>388,168</b>	<b>289,684</b>	<b>286,223</b>	<b>273,494</b>	<b>1,237,569</b>
Implementation Costs - Personnel	375,349	458,679	372,399	424,128	1,630,555
Implementation Costs - Capacity Building	151,693	124,578	43,178	45,638	365,087
Implementation Costs - Intervention	1,547,353	1,085,064	1,193,561	684,204	4,510,182
Implementation Costs - GoI Activities	46,984	173,503	118,949	129,816	469,252
Implementation Costs - AIP Rural Secretariat	0	0	0	0	0
<b>Implementation Costs</b>	<b>2,121,379</b>	<b>1,841,824</b>	<b>1,728,087</b>	<b>1,283,786</b>	<b>6,975,076</b>
<b>Grand Total</b>	<b>4,136,387</b>	<b>3,104,061</b>	<b>3,591,477</b>	<b>2,419,088</b>	<b>13,251,012</b>