ANNEX

Australia-Indonesia Partnership for
Rural Economic Development

AIP-Rural	July 2017

ANNEX.01

Growth Strategy Document (GSD) Structure

1. Executive Summary

2. Background

3. Sector description

3.1 Sub-sector profile
- 3.1.1 Overall context
- 3.1.2 Local context

3.2 Sub-sector dynamics
- 3.2.1 Market overview
- 3.2.2 Sub-sector Map
- 3.2.3 Core value chain
- 3.2.4 Supporting functions / services
- 3.2.5 Supporting rules and regulations (enabling environment)

4. Analysis

4.1 Problems and underlying causes

4.2 Services, enabling environment, and weaknesses analysis

5. Strategy for change

5.1 Market potential

5.2 Vision of change for the sub sector

5.3 Intervention areas

5.4 Current status of the interventions and systemic changes

5.5 Sub-sector vision of change logic

5.6 Contributions of public actors

Annex 1: Intervention Logic Analysis Framework (ILAF)

Annex 2: Gender table

ANNEX.02

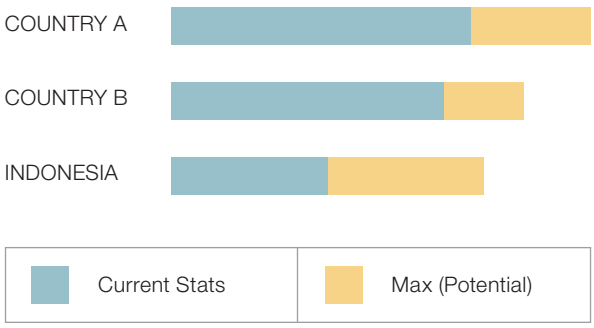
ICN-IP

Format

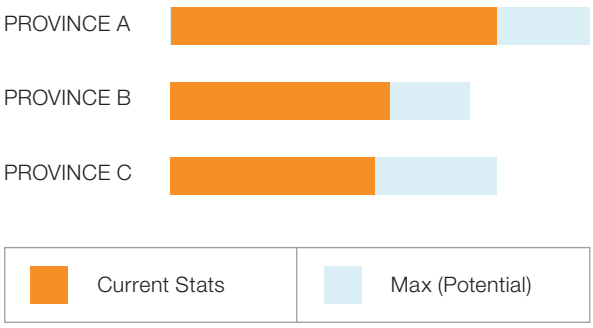
Rationale for Sub-sector

Sector Profile (global and national trend)

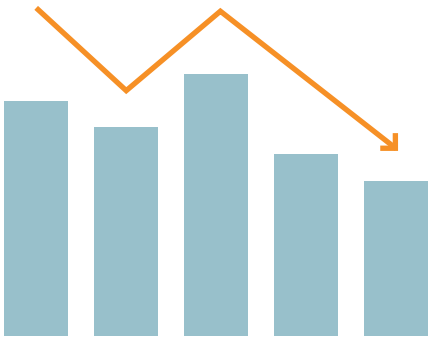
Global trend by country
(production, acreage, productivity, export-import)



National trend by province
(production, acreage, productivity, export-import)



Growth potential, demand and supply gap (Global/Local)



TIPS

Put explanation on the gap between current, ideal, and potential situation in terms of production, acreage, productivity, export-import, etc.
Always provide source of information

Sub-Sector Background

Number of farmers in XX sub-sector	Geographic concentration of farmers
100,000 farmers	70% of farmers are located in XXX district

Reasons for selecting particular district

1. Reason A
2. Reason B
3. Reason C

TIPS

Always provide source of information

Sub-sector feasibility

Availability of market players

Explanation on which market players exist in the market, including their current roles and leverage potential. Presence of large businesses

Willingness of private sector and prospect of attracting market players

- ☑ Investment in the sub-sector
- ☑ Expansion of businesses
- ☑ Profitable and potential market

Regulatory environment

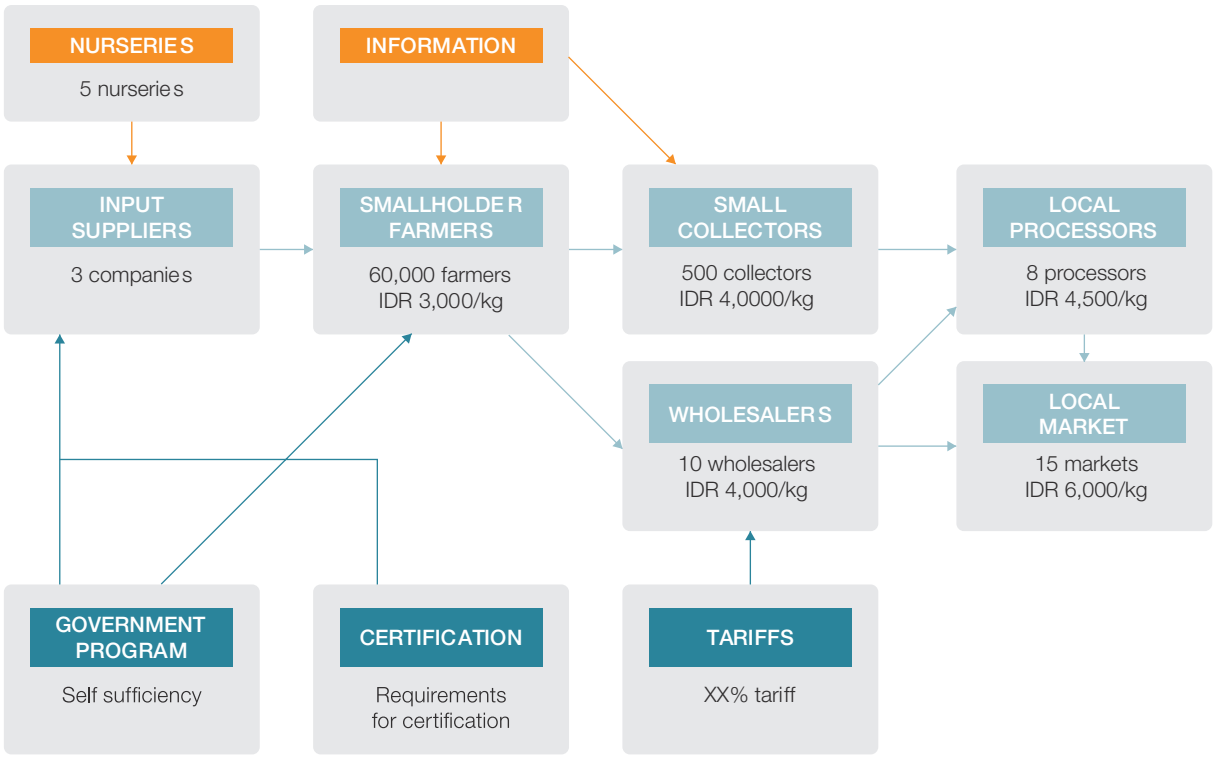
Explanation on government's regulation that related with the sub-sector and could be a challenge for the intervention in the future (e.g. certification or license for producing and promoting certain products).

LEVEL OF MARKET DISTORTIONS

Explanation on how other market players could distort the intervention, especially when their action contradicts with what the intervention wants to achieve (e.g. government keep distributing free seeds to farmers).

Analysis of the Underperforming Market System

Sub-Sector Market Map



TIPS

- Put numbers as much as possible
- Put solid arrows for strong link and dotted for weak link
- Do not mention weak or missing services and rules

Gender Analysis

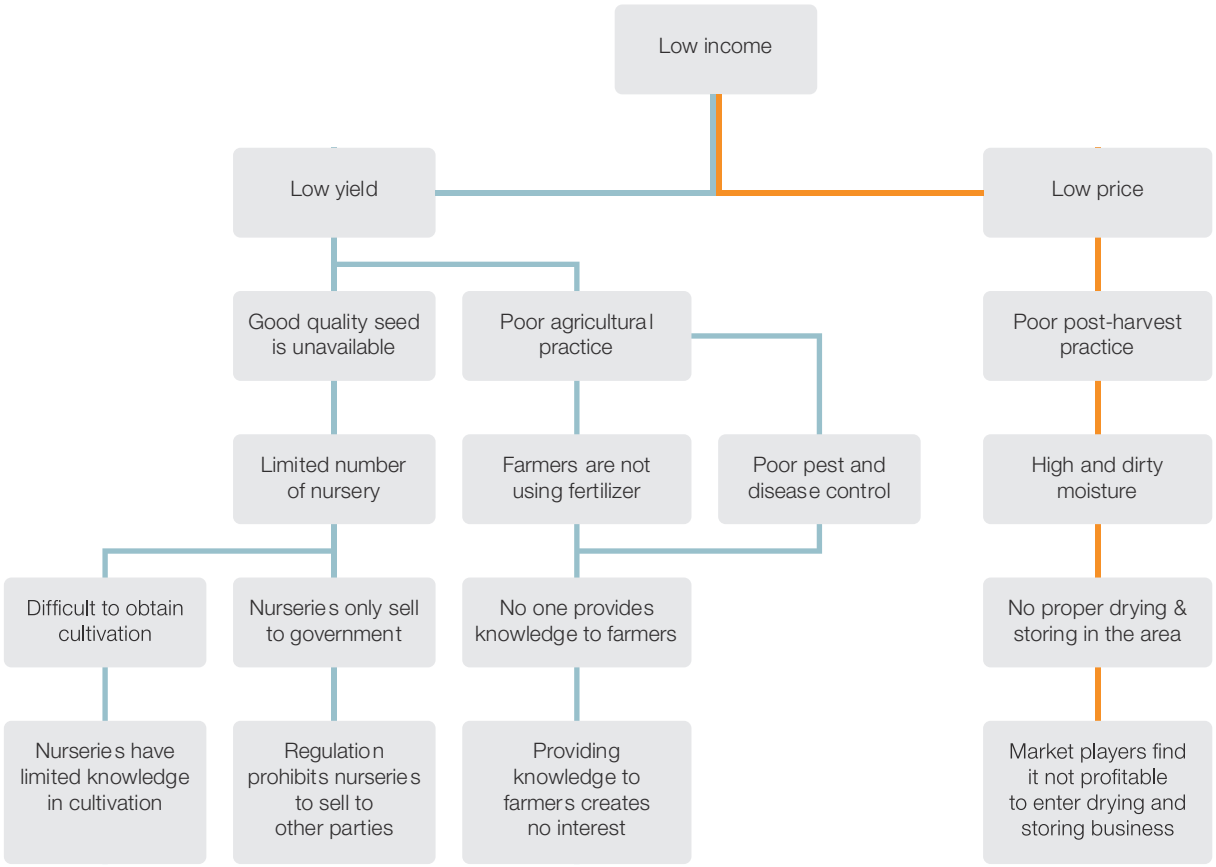
1. Activity // 2. Decision making

Activity in production cycle	Men	Women	Men Labors	Women Portion	Explanation
Decision on type of commodity	0.0	4.0	0.0	0.0	Using labor is not common, women in household usually make decision in almost every activities
Buy seeds	4.0	0.0	0.0	0.0	No seeds can be found in near location, thus it became men's job to go purchase the seed in neighboring sub-districts
Planting	2.0	2.0	0.0	0.0	Planting is seen as responsibility of every single household member
Fertilizing	0.5	0.5	1.5	1.5	Fertilizing is not really seen as an important activity. Even if it does, using labor is more preferable
Harvesting	1.0	1.0	1.0	1.0	Due to limited time, using labor service is very common when farmers harvest the crops
Sell crops	1.5	2.5	0.0	0.0	Sell crops mostly done by women, women then keep and manage the money

TIPS

- Breakdown the relevant activities at household level as much as possible, along with who does the work and makes decision
- Explanation part should present fact on why the portion happens (e.g. activity totally done by men because women focus more on other household activities

Constraint Analysis



TIPS

Put short explanation on which constraint should be prioritized, and was it caused the underperformed system

Sub-sector Vision & Interventions

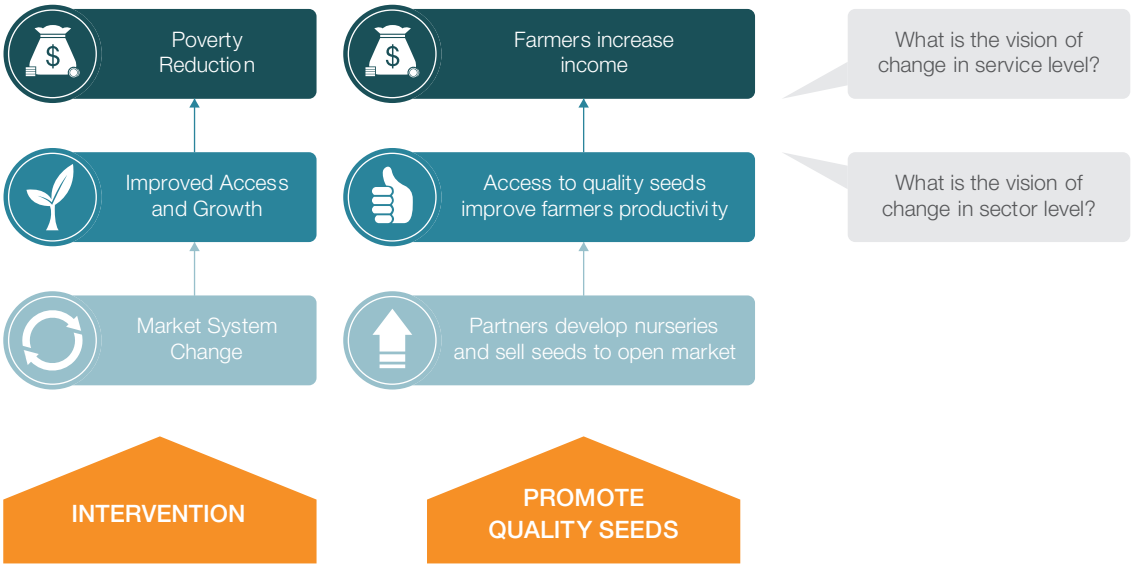
Sub-sector Vision

TARGET	PSP	ISP	FARMERS
By 2018, coffee farmers in NTT district will be able to improve their productivity and quality to meet the existing demand in the market By 2018, coffee farmers in NTT able to sell more coffee to coffee processors which price is better compared to local trader	Coffee buyers increase their turnover, as a result of collaborating with coffee processors in providing GAP and technical skills to coffee farmers in the intervention area Financial institutions provide loan to coffee processors to increase their capital so that they can purchase and process more coffee from coffee farmers	Coffee processors able to absorb more farmers and process more coffee cherries as a result of working with coffee buyers in providing GAP and technical skills to farmers Coffee processors purchase and process more coffee from coffee farmers after receiving loan from the financial institutions	Coffee farmers able to increase their productivity and the quality of coffee cherries produced after improving their agricultural practice through knowledge that they received from ISP Farmers sell more coffee to coffee processors, which provide better price compared to local traders, and receive a better income

TIPS

Sub-sector vision should be followed by a more detail vision on PSP, ISP, and farmers level. This shows that targeted vision can be met once vision on every level are achieved

Sub-sector vision of change



TIPS

Explain general strategy on each level in order to achieve the vision

Existing Intervention(s)

Intervention name

Development of nurseries XXX

Area

Intervention works in knowledge area, strengthening nurseries capacity in seed cultivation

Location

Intervention located in District A, B, and C of XX province

Expected changes

Increase nurseries quality and seeds production capacity → Retailers link nurseries with farmers in new areas → Farmers increase their income after increasing their productivity

Proposed Intervention(s)

Intervention name

Post-harvest process of XXX farmers

Area

Intervention works in Good Post-Harvest practice area, strengthening farmers knowledge and capacity

Location

Intervention located in District A, B, and C of XX province

Expected changes

Bigger buyers are attracted to enter the market, provide knowledge to farmers and buy their quality crops → Collectors link big buyers to farmer with quality crops → Farmers increase their income through selling quality crop with higher price

Proposed Partner(s)

PT. Herbicide

Explanation on the partner's background, activities that could be done by the potential partner, how it is relevant with the intervention, and justification of choosing the partner.

Cattle Grower Co.

Explanation on the partner's background, activities that could be done by the potential partner, how it is relevant with the intervention, and justification of choosing the partner.

Super Seedling Inc.

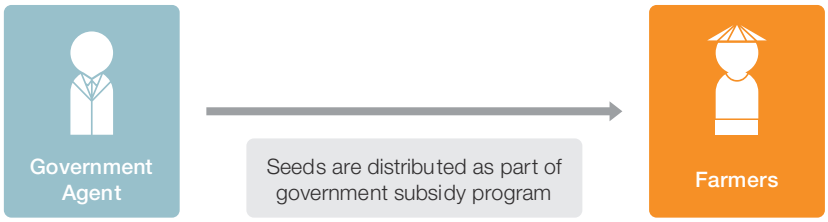
Explanation on the partner's background, activities that could be done by the potential partner, how it is relevant with the intervention, and justification of choosing the partner.

TIPS

Put as much potential partner related information as you can. Other information regarding other potential partners can also be added here.

Business Model

Current business model



Proposed business model

WEE and Environment

Will the intervention involve women?

Short explanation on how women will be incorporated as a part of the intervention

Will it bring negative impact to women?

Short explanation on what kind of negative impact will happen (if any) once women involve in the intervention

What would be the risk?

Short explanation on what environmental risk will be faced once the intervention is running

What would you do to mitigate the risk?

Short explanation on what the strategy to reduce the environmental risk

Additionality from us

What is PSP currently doing?	What will be the additionalities from us?
✓  Sell product through local retailers	✓  Improve distribution channel and work with more retailers
✓  Traditional marketing method	✓  Develop social marketing strategy to promote product
X  No capacity building activity	✓  Capacity building to farmers and PSP staffs

Who Does / Who Pays

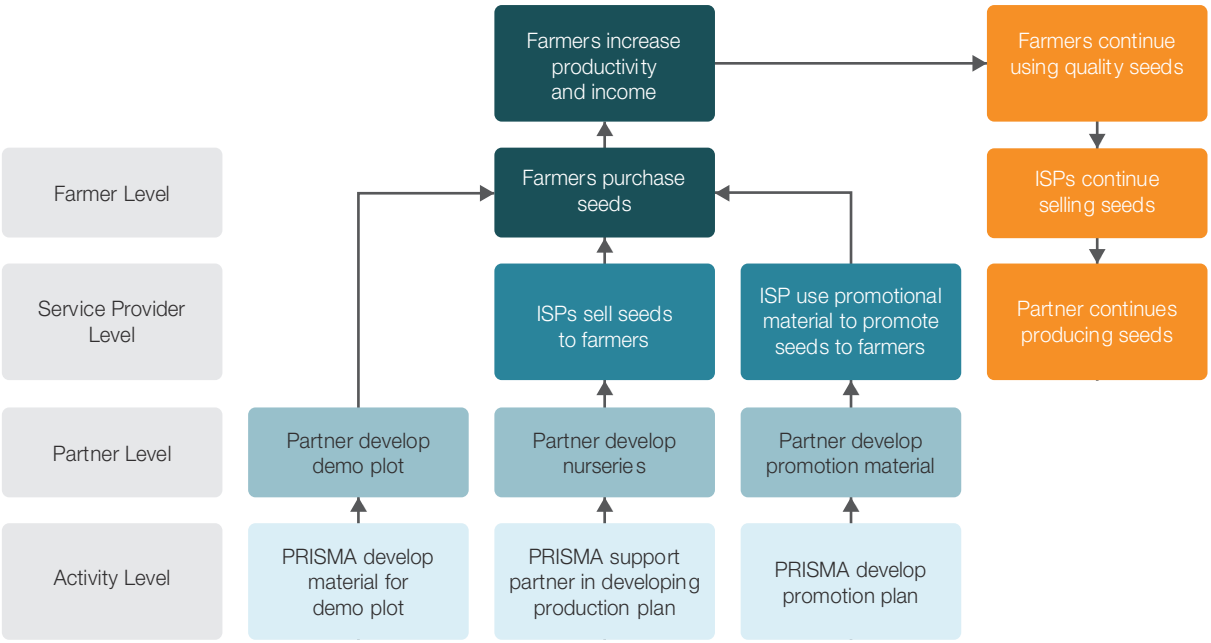
Tasks/ Activities	Before intervention		During intervention		After intervention		Remarks
	Does	Pays	Does	Pays	Does	Pays	
Develop promotion and production plan			P, R	R			One off
Run demo plot			P, R	P, R	P	P	Periodic
Produce promotion material			P, R	P, R	P	P	Periodic
Develop nurseries			R	P, R	P	P	One-off intervention phase, regularly later
Produce and distribute seeds	P, G	P, G	P	P	P	P	One-off intervention phase, regularly later

LEGEND: R = AIP Rural P = Private sector G = Government

Intervention Budget & Contribution

Activity	Cost	Private Partner Contribution	Public Partner Contribution	AIP-Rural Contribution
Nurseries development	IDR 250,000,000	IDR 200,000,000	-	IDR 50,000,000
Seeds production 1st season	IDR 600,000,000	IDR 550,000,000	-	IDR 50,000,000
Seeds production 2nd season	IDR 900,000,000	IDR 800,000,000	-	IDR 100,000,000
Demo plot for 2 seasons	IDR 300,000,000	IDR 50,000,000	-	IDR 250,000,000
Promotions for 2 seasons	IDR 200,000,000	IDR 30,000,000	-	IDR 170,000,000
Total Cost & Contribution	IDR 2.250,000,000	IDR 1.630,000,000	-	IDR 620,000,000

Initial Result Chain



TIPS

- Keep the balance between details and concision
- Put the simple version in the presentation and more detail in excel file

AAER (Vision)

ADAPT (partner has invested further in the initial business model or changed the model to suit their needs)

Behavior change	Actors

RESPOND (other players/stakeholders have made changes in their business due to the actions of partners)

Behavior change	Actors

ADOPT (partner takes up business model and shows concrete plans to continue it in the future)

Behavior change	Actors

EXPAND (similar or competing stakeholders are seen to copy the business model or part of it)

Behavior change	Actors

Exit Strategy / Sustainability

Timing

Short explanation on how long the intervention will work with the partner and when is the best time to withdraw.

Sales

A growing sales is a good sign of sustainability. To ensure that this will happen, the intervention team should keep themselves aware that helping the partner to pump up their sales is also part of their responsibility. Put short explanation on how the intervention team will work on this (i.e. track and analyze their sales, expand to new area, arrange promotional event),

R&D and Investment

The more partner invest their money, the more likely that they will put more effort to support the intervention. Put short explanation on the intervention strategy in persuading partner so that they will invest more in the sub-sector.

Business Calculation &Intervention Milestone

Farmers & PSP NAIC

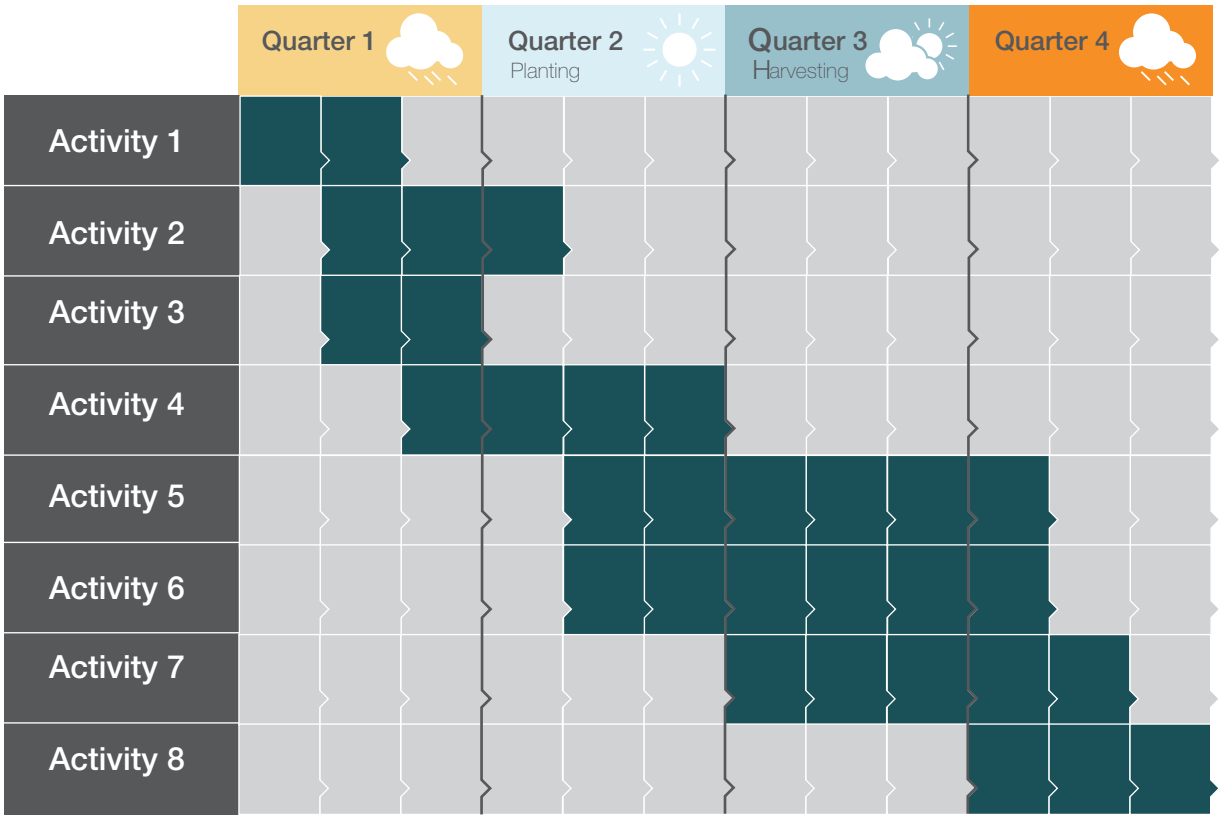
	Before Intervention	After Intervention	Attributable Change
PSP sales	IDR XXX,XXX,XXX	IDR XXX,XXX,XXX	IDR XXX,XXX,XXX (XX%)
ISP sales	IDR XX,XXX,XXX	IDR XX,XXX,XXX	IDR XX,XXX,XXX (XX%)
Farmers prod.	X,XXX kg per season	X,XXX kg per season	X,XXX kg (XX%)
Farmers cost	IDR XXX,XXX per season	IDR X,XXX,XXX per season	IDR X,XXX,XXX (XX%)
Farmers sales	IDR X,XXX,XXX per season	IDR X,XXX,XXX per season	IDR X,XXX,XXX (XX%)
Farmers income	IDR XXX,XXX per season	IDR X,XXX,XXX per season	IDR X,XXX,XXX (XX%)

TIPS

Put the summary in the presentation, keep detail of the calculation in excel file

Expected Date of Contract Signing

Intervention Timeline – Make a GANTT chart



Key Indicator Calculations

Projected Outreach & Major Assumptions

#ISP	30
#District	2
OUTREACH 2017	
Access	3000
User (70% of access)	2100
Benefit (70% of users)	1470

#ISP	40
#District	3
OUTREACH 2018	
Access	4000
User (70% of access)	3200
Benefit (70% of users)	2240

#ISP	70
#District	5
TOTAL OUTREACH UP TO 2018	
Access	7000
User (70% of access)	5300
Benefit (70% of users)	3710

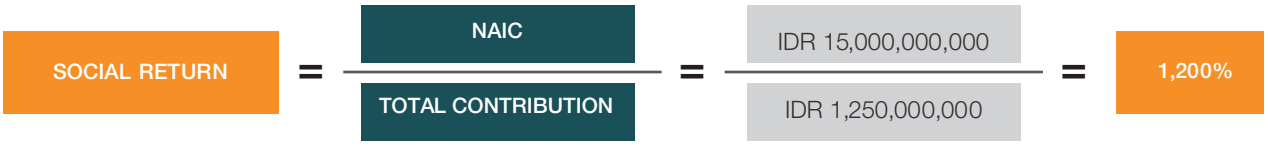
Major assumptions

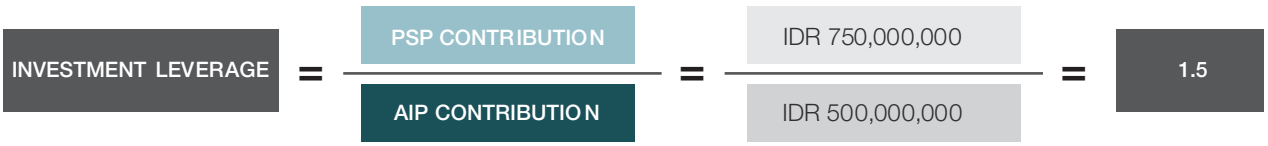
- Land size and number of plants remain constant after intervention
- Crop price remains stable
- Farmers in second year are easier to be convinced after seeing result in the first year
- On average, an ISP can sell seeds to 100 farmers

Value for Money Indicators

NAIC	OUTREACH	AIP CONTRIBUTION
IDR 15,000,000,000	4,000 Farmers	IDR 500,000,000

PSP CONTRIBUTION	TOTAL CONTRIBUTION
IDR 750,000,000	IDR 1,250,000,000





Opinion of Respective HOP &Decision / Suggestion by Panel

Opinion/Suggestion/Decision Taken

ANNEX.03

RESEARCH DESIGN

A - BASIC INFORMATION

Intervention Title	Promoting GAP and Fertilizer	*Survey Start*	2 Okt 16
Intervention Code	1CAA	*Survey End*	11 Okt 16
Sector	Cassava	*In-House/Outsource*	Outsource
Province	EJ	*Research Firm/Consultant Name*	
Study Type	Baseline	*RM Focal*	
Impact & Baseline	Separate	*Task Leader*	
Attribution Analysis Method	Difference in Difference	*If other Analysis method is selected, Please Specify*	
Confidence Level		*Margin of Error*	

B - RESEARCH QUESTIONS

	Reseach Objective
1	Mencari tahu peningkatan pendapatan petani dalam intervensi

	Key Research Questions
1	Bagaimana petani mengakses informasi tentang GAP?
2	Bagaimana petani mengakses pupuk?
3	Mengapa petani mau menggunakan pupuk ini?
4	Berapa besar peningkatan produksi petani
5	Seberapa besar peningkatan pendapatan petani dibandingkan tanpa pupuk sebelumnya?
6	Luas lahan dan informasi diri petani

C - EXTERNAL FACTORS

No	*Level*	*External Factor*	*Isolatable*	*Isolation Method*
1	Farmer	Cuaca	N	
2	Farmer	Harga Singkong	Y	Mengganti harga yang dulu dengan harga yang sekarang

D - CONTROL & TREATMENT GROUP SITUATION

1	*Are control & treatment group assigned before the intervention begin?*	N
2	*Are control & treatment group assumed to have a same level of income before the intervention?*	N

E - SAMPLING

No	*Level*	*Group*	*Required Sample*	*%Additional*	*Final Sample*	*Trt/Ctrl*	*List*	*Sampling Method*	*Data*	*Rationale for Sampling Group*
1	Farmer	Petani Singkong Trenggalek	80	20%	96		Y	Random-Stratified	Before & After	
2	ISP	Kios/Agen	10	20%	12		Y	Purposive-Convenience	After Only	

F - LOCATIONS

No	*District*	*Sub-District*	*Villages*
1	Trenggalek	Trenggalek	Karangsoko
2	Trenggalek	Trenggalek	Ngares
3	Trenggalek	Trenggalek	Parakan
4	Trenggalek	Durenan	Baruharjo
5	Trenggalek	Durenan	Gandor
6	Trenggalek	Durenan	Kamulan
7	Trenggalek	Durenan	Karanganom

G - TASK & PIC

No	Task & Sub-Task	Who Does	PIC	Research Firm Man-Day
1	*Instrument Development and Preparation*			
	Instrument Design	PRISMA	BWM	
	Instrument Testing	SNV	CSR	
	Instrument Quality Check	PRISMA	BWM	
	Collecting population data	SNV	CSR	
	Drawing sample	PRISMA	BWM	
2	*Data Collection*			
	Enumerator Selection	PRISMA	BWM	
	Enumerator Training	PRISMA/SNV	BWM/CSR	
	Interview Process	Enumerator	CSR	
	Data Input	SNV	CSR	
	Data Collection Quality Check	PRISMA	BWM	
3	*Data Processing*			
	Data Cleaning	Prisma	BWM	
	Data Analysis	Prisma	BWM	
	Data Organization (Chart & Table)	Prisma	BWM	
	Data Processing Quality Check	Prisma	KK	
4	*Reporting*			
	Report Writing	Prisma	BWM	
	Report Quality Check	Prisma/SNV	KK/KS	
	Total			

H - DETAILED ANALYSIS METHOD

No	Data/Research Question	Analysis Method 1	Analysis Method 2	Analysis Method 3	Remark
1	Bagaimana petani mengakses informasi tentang GAP?				
2	Bagaimana petani mengakses pupuk?				
3	Mengapa petani mau menggunakan pupuk ini?				
4	Berapa besar peningkatan produksi petani				
5	Seberapa besar peningkatan pendapatan petani dibandingkan tanpa pupuk sebelumnya?				
6	Luas lahan dan informasi diri petani				

ANNEX.04

WORKING RELATIONSHIP BETWEEN SUB-SECTOR AND RESULTS MEASUREMENT TEAM

Summary of sub-sector teams and RM team working relationship in the Major Intervention Stages

No.	Task	Sub-sector Team	RM Team
1.	**Intervention Idea**	a. Sub-sector teams carry out thorough assessment on the intervention idea	a. Total contribution, per year and cumulative, in IDR b. Depending on awareness / knowledge RM focal may suggest views on the intervention location, poverty rate, or other related aspects
2.	**ICN/IP**	a. Sub-sector teams develop ICN & IP documents	a. RM focal review result chain, business calculation (outreach, profit, etc.), and AAER in ICN/IP documents before presentation b. Assessor (HoP/HRML) choose another RM team member to review results chain after presentation and score in QMT
3.	**Contract development and management**	a. Sub-sector team develops and manages contracts with procurement team b. Sub-sector team manage budget spending	a. No direct involvement from RM team in contract development/management unless needed b. No direct involvement from RM team in contract development/management unless needed

4.	**Implementation**	Sub-sector team has full responsibility in implementation stage and should use ISD as a tool for steering interventions. However, both Sub-sector team and RM team should collaborate in developing and maintaining ISD for quality assurance.	
4.1	**Developing ISD**	a. Sub-sector team and RM focal develops ISD together b. Some features in ISD should be completed by sub-sector teams (e.g. background, business model, intervention story, activities in the result chain, projections & MRM plan) c. Sub-sector team provides RM focal information about possible external factors and input into the feasibility of an attribution strategy.	a. Sub-sector team and RM focal develops ISD together b. RM focal should guide how to fill ISD and what is good practice. Should review the ISD especially MRM plan's indicators and monitoring date, result and projection, key indicators, AAER c. RM focal develops attribution strategy based on information provided by sub-sector teams d. RM focal gets the ISD peer reviewed by another RM team member. e. RM focal uploads the final ISD in MIS (IPT) with sub-sector teams' approval
4.2	**Updating ISD**	a. Sub-sector teams update the ISD based on actual figures in the intervention activities b. Sub-sector teams and RM focal together make changes in the assumptions and forecast calculations if necessary. This must be done at least before each sub-sector review; it can also be more frequently if the sub-sector team thinks it is necessary.strategy.	a. RM focal review the updated figures/ actuals b. RM focal escalates to SBC/HOP/HRML if there's any crucial issue in the intervention any time needed
4.3	**Sub-sector review**	a. Sub-sector teams and RM focal and mentor discuss together specific or crucial issue in the intervention	
4.4	**Working with co-facilitators**	a. For co-facs, Task Leader is the key person for coordination and communication	a. For co-facs, RM focal communicates through Task Leader
4.5	**Partner engagement**	a. Sub-sector teams develop and maintain good relationship with partner	a. RM focal to be invited occasionally in partner's meeting to obtain insights about the partner

5.	**Measurement (Baseline/Impact Assessment)**	a. Sub-sector teams finalize ToR based on RM focal input	a. RM focal develops selection criteria/ requirement for vendors (research firm, enumerator, etc.) as needed
5.1	**Procurement**	a. Sub-sector teams complete all documents needed in the procurement process strategy.	a. RM focal supports in developing budget and timeline for contracting vendors
5.2	**Research design**	a. Sub-sector teams support RM focal in research design by providing information on possible location for the assessment, population sizes etc. b. Sub-sector teams and RM focal finalize the research design together c. Sub-sector teams provide information needed in the questionnaire (i.e. intervention activities, farmers' condition, other related information in the intervention) d. RM focal submit questionnaire and research design to HOP/ HRML/RM peer reviewer for review	a. RM focal develop research design based on information provided by Sub-sector teams b. RM focal develops questionnaire based on information from Sub-sector team
5.3	**Data collection (survey)**	a. Sub-sector team and RM focal conduct pre-test of questionnaire with farmers b. For in-house survey, RM focal leads the sub-sector team. For external vendors, RM focal coordinate and control the vendors	a. RM focal adjust the questionnaire based on the result of the pre-test
5.4	**Data entry and analysis**	a. For in-house survey, RM focal lead the sub-sector team. For external vendors, RM focal coordinate and control the vendors b. Sub-sector teams review the draft of data analysis for both in-house and/or external vendor c. Sub-sector team and RM focal agree on the data analysis. HOP & HRML approve final data analysis	a. RM focal adjust the questionnaire based on the result of the pre-test b. RM focal escalates to HRML if there's any crucial issue c. For in-house survey, RM focal develops 1st draft of data analysis. For external vendors, RM focal reviews 1st draft of data analysis

5.5	**Summary of findings**	a. Sub-sector team provides information needed to finalize the report b. Sub-sector team review the final report from RM focal c. Sub-sector team (including HOP) approve the final report from RM focal	a. RM focal develop final report based on approved data analysis b. RM focal adjust the report if needed
6.	**PRIP**	a. Sub-sector team ensure the figures in ISDs are correct b. Sub-sector team escalate to HOP is there's any difference between ISD & PRIP	a. RM focal checks and compiles the figures in ISD for PRIP b. HRML review, adjust and submit to TL & DFAT
7.	**Audit**	a. Sub-sector team provide information and ensure all verifiable indicators from every intervention activities are well documented b. Sub-sector team and RM focal are both responsible to ensure intervention comply with the audit standard	a. RM focal assist and guide Sub-sector team to complete all documents from the intervention activities (evidence files) b. RM peer reviewer, the ISDs related files/ documents c. RM focal submit all documents to auditors

ANNEX.05

COMMON GENERIC INDICATORS

Level	Generic Indicators
1. Farmer Impact	• Number of poor farmers that increase their income due to AIP-PRISMA interventions • Net additional attributable income for targeted poor farmers
2. Farmer Competitiveness	• Sales Revenue (IDR/season) • Selling Price in (IDR/Kg) • Production Costs in (IDR/Kg) • Sales Quantity (Kg/season) • Productivity or Yields (Kg/Ha/season) • Production Area (Ha) • Number of new products or service introduced • Number of new markets entered • Reasons for changes in the above indicators
3. Farmer Outcome	• Number of poor farmers receive new or improved services or inputs • Number of poor farmers apply the new or improved practices or utilise new or improved inputs • How do they apply the new or improved practices or utilise new or improved inputs • Reasons for applying or not applying • Status of capacities and/or incentives of poor farmers related to received services or inputs • Reasons for changes in status of capacity and/or incentives of poor farmers related to received services or inputs <u>To measure likelihood of sustainability:</u> • Opinions of poor farmers on service received • Interest of poor farmers in continuing these behavioural changes • Reason for continuing or not continuing with these behavioural changes <u>To measure systemic Changes (Copying):</u> • Number of indirect poor farmer copying the behavioural changes • Reasons for copying these behavioural changes

4. Service Provider Outcome

- Number of service providers provide new or improved services or inputs related to new business model
- How do they provide new or improved services or inputs related to new business model
- Reasons for providing or not providing

To measure likelihood of sustainability:

- Number of service providers that increase their additional turnover due to AIP-PRISMA interventions
- Net additional attributable turnover for service providers due to AIP-PRISMA interventions (IDR/Annum) from the innovation
- Net additional attributable profit for service providers due to AIP-PRISMA interventions (IDR/Annum)
- Contribution of Service Providers
- Opinions of service provider on new business model
- Interest of service provider in continuing these business models
- Reasons for continuing or not continuing with these business models

To measure systemic Changes (Crowding-in):

- Number of indirect service providers copying these business models
- Reasons for copying these business models

5. Service Provider Output

- Number of service providers received support from partners
- Status of capacities and/or incentives of service providers related to implementation of new business model
- Reasons for changes in status of capacities and/or incentives of service providers related to implementation of new business model
- Opinions of service provider on support received

6. Partner Outcome

- Number of partners provide supports to service provider to implement the new business model
- Number of innovations introduced by private sector partners
- Number of initiatives by the public and private sector actors to improve the Business Enabling Environment
- Changes in the capacity and/or incentive of partners to support service provide

To measure likelihood of sustainability:

- Contribution of public and private partners
- Opinions of partners on the initiative
- Interest of partners in continuing the initiative without AIP-PRISMA supports
- Reasons for continuing or not continuing with the initiative

To measure systemic Changes (Crowding-in):

- Number of indirect service and private sector actors copying these initiatives
- Reasons for copying these initiatives

7. Activities

- Status of Activity Implementation

ANNEX.06

Protocol : Reporting on Indicators

Contents

Background

PRISMA reports periodically on a number of indicators which illustrate how:

- the program develops its portfolio of interventions in different sub-sectors
- the program plans to measure the changes brought about by its interventions
- interventions' are progressing to deliver changes to poor farm households in a sustainable manner
- the program is catering to the overall development goals of DFAT (catering to the ADR)

The aim of this document is to summarize what the program reports, how data will be gathered for each indicator, and how this reporting will be done. It mentions the source documents where further information on the indicators can be collected, and who to contact for those documents. The indicators that PRISMA reports on are also defined in PRISMA's Results Measurement Manual and in DFATs ADR Technical notes.

This protocol starts by listing out the indicators that PRISMA reports on, how frequently those indicators will be reported and which documents can be checked to get information on the indicators. Second the document lists out the protocol for reporting these indicators to DFAT, with what frequency and how additional information can be collected. Thirdly the document outlines the definitions of these indicators, identifying which ones cater to the ADR indicators of DFAT, and explains the validation methods for those indicators.

List of indicators for reporting :

No	List of indicators to report on	Frequency of update	Documents to check for details on intervention
1.	No. of Intervention ideas (IP ideas)	monthly	ICN presentation file
2.	No. of interventions approved (IP finalized)	monthly	IP presentation file
3.	No. of contracts signed for interventions	monthly	Partner agreement
4.	No. of ISDs finalized	semi-annually	ISD
5.	No. of private sector partners	semi-annually	Aggregation File B, ISD (contracts with finance team)
6.	Value of investment by private sector partners	semi-annually	Aggregation File B, ISD (partner interviews, field observations, contract reimbursements)
7.	No. of innovations introduced by private sector	semi-annually	Aggregation File B, ISD
8.	No. of initiative taken by government to improve BEE	semi-annually	Aggregation File B, ISD
9.	No. of local service providers that increase their turnover due to PRISMA intervention	semi-annually	Field studies
10.	Net attributable turnover of local service providers (IDR)	semi-annually	Field studies
11.	No. of farmers accessing changes due to intervention	semi-annually	Field studies
12.	No. of farmers using the service/product (total, male, female)	semi-annually	Field studies
13.	No. of farmers benefitting due to intervention (total, male, female)	semi-annually	Field studies
14.	Net attributable additional incomes of all farmers (IDR) (total, male, female)	semi-annually	Field studies
15.	No. of farm households that increase their incomes due to PRISMA intervention under $2 PPP Poverty Rate	semi-annually	Field studies
16.	Net attributable additional incomes of farm households (IDR) under $2 PPP Poverty Rate (total, male, female)	semi-annually	Field studies
17.	No. of farm households that increase their incomes due to PRISMA intervention under $2.5 PPP Poverty Rate (total, male, female)	semi-annually	Field studies
18.	Net attributable additional incomes of target farm households (IDR) with $2.5 PPP Poverty Rate (total, male, female)	semi-annually	Field studies
19.	Value of additional agricultural and fisheries production	annually	Field studies
20.	No. of Farmers with improved access to financial services (total, male, female)	annually	Presentation file and field studies

[1] Field studies are surveys or in-depth interviews or observations generally carried out as parts of baseline studies, sub-sector studies, monitoring visits, impact assessments etc. further details on these methods can be found in section 4 of the Results Measurement Manual.

Definition and data collection for indicators

PRISMA provides both projections and actual values for the indicators 5 to 18. Indicators 1 to 4, and 19 to 20 are only reported as actuals. For all values that are reported as actual PRISMA will have evidence that shows how the values reported are derived and from what sources. This section outlines the definitions of the indicators 1 to 20, how information for those indicators are generally collected, where information on those indicators can generally be found, and who is in charge of ensuring that the indicators are correct. However a few generic definitions:

- Poor farm households: PRISMA uses the Progress out of Poverty Indicators (PPI) scoring developed by the Grameen Foundation to determine the poverty rate of its target group or of its beneficiary group. Data on the indicators are collected via in-depth interviews, or surveys and are then used to calculate the number of poor farm households in the beneficiary group. PRISMA currently considers those who are below the $2 PPP poverty line as poor. For projections the values may either be from in-depth interviews or surveys done in the sub-sector for other interventions, or as per the table below. For reporting actual values PRISMA will have PPI data collected from field studies such as baseline studies or impact assessments which will reflect actual levels of poverty in PRISMA's beneficiaries.

- Farm households: PRISMA's target group are households who are involved in an agriculture commodity either as producers or consumers. A farm household is defined as a group of people who live in the same house and eat from the same pot and farm a particular agriculture commodity.
- Farmers: in a few cases PRISMA will count individual farmers. Farmer means an individual who is engaged in farming a particular agriculture commodity.

- Gender disaggregation: PRISMA will provide information from primary data sources about how many female farmers above the age of 15 are involved in the sub-sector. This will be collected via either FGDs in the sub-sector or through in-depth interviews and surveys. Gender disaggregated data will always be represented onlhy for actual data. In general from the review of FGDs done so far in different sub-sectors it appears:

- Sub-sectors where men and women are both involved there is an equal representation of men and women. For these sub-sectors the based on the FGD PRISMA will claim a 1:1 ratio of women and men per household working in the sub-sector
- Sub-sectors where women have little role and are rarely involved as found in FGDs, PRISMA will not claim any female beneficiaries, the ratio will be 0:1 for women is to men.
- Sub-sectors where men have little role and are rarely involved as found in FGDs, PRISMA will not claim any male beneficiaries, the ratio will be 1:0 for women is to men.

The table below lists the indicators that PRISMA will report on:

No	List of indicators and their definitions
1.	No. of Intervention ideas (IP ideas)
	a. Number of new ideas that are thought of in PRISMA that can be explored further to see if the ideas have a potential to benefit poor farm households. These ideas are considered to be at a concept stage and have been presented to a panel of PRISMA CMT to seek approval for further exploration. b. Number of IP ideas can be checked from the PRISMA's Intervention Progress Tracking System, and evidence of an IP idea can be collected by downloading the ICN file in the IPT system. c. Ensuring availability of the ICN file is the task of the Head of Portfolio
2.	No. of interventions finalized (IP finalized)
	a. Number of IP ideas that have been further explored and has been developed to a full-fledged intervention plan. IP finalized are also presented to a panel of PRISMA CMT to seek approval for beginning contracting with the partner b. Number of IP finalized can be checked from the PRISMA's Intervention Progress Tracking System and evidence of an IP finalized can be collected by downloading the IP file MIS. c. Ensuring availability of the IP file is the task of the Head of Portfolio
3.	No. of contracts signed for interventions
	a. This is the number of approved interventions that have been successful in terms of getting an agreement signed with partners and can now progress into implementation. An intervention may have several contracts however this indicator measures number of IPs that have progressed towards having an agreement. b. Number of contracts signed can be checked from the PRISMA's Intervention Progress Tracking System evidence of a contract can be collected by downloading the contract in the IPT system. c. Ensuring availability of the contract is the task of the Head of Portfolio
4.	No. of contracts signed for interventions
	a. This is the number of approved interventions that have been successful in terms of getting an agreement signed with partners and can now progress into implementation. An intervention may have several contracts however this indicator measures number of IPs that have progressed towards having an agreement. b. Number of contracts signed can be checked from the PRISMA's Intervention Progress Tracking System evidence of a contract can be collected by downloading the contract in the IPT system. c. Ensuring availability of the contract is the task of the Head of Portfolio
5.	No. of partners (private sector and public
	a. Number of sub-sector stakeholders (either private or public) that sign an agreement to work with PRISMA in its interventions b. The names of each partner (either private or public sector) is uploaded in PRISMA's Intervention Progress Tracking System and evidence of number of partners can be checked by looking in the IPT system. c. This is taken automatically by the MIS system from the evidence for indicator 3
6.	Value of investment by private sector partners ADR : Value of private sector investment leveraged
	a. Actual additional direct contribution by private sector partners that was triggered by PRISMA partnership such as fixed capital and/or working capital within the contract period between PRISMA and partner. b. This information is available in the ISD for each intervention. c. The information is collected via interviews of company representatives, from invoices collected as part of contract payment, sales records, and observation of planned activities. All details of costs collected in is added up to get value of private sector investment. d. Ensuring availability of this data is task of Head of Portfolio
7.	No. of innovations introduced by private sector
	a. An innovation is a combination of a product or service that can increase incomes of poor farm households, and the delivery mechanism to supply the product or service. Each innovation is reflected as the business model with the private sector for each intervention. b. This information is available in the ISD for each intervention. c. Ensuring availability of this data is task of HRML

8. No. of initiative taken by government to improve BEE

a. An initiative taken by the government is defined as a change in existing practice, norms, or process undertaken by a government institution that has the potential to benefit poor farm households or create a change in market functions. Each innovation is reflected as the business model with the public sector for each intervention
b. This information is available in the ISD for each intervention.
c. Ensuring availability of this data is task of HRML

9. No. of intermediary service providers that increase their turnover due to PRISMA

a. Number of intermediary service providers that have achieved an attributable increase in their sales/ revenues due to PRISMA intervention and/or working with PRISMA partners.
b. This information is available in the ISD for each intervention. It is collected from in-depth interviews or surveys of ISPs who have been part of the intervention it will be collected before the end of each semester.
c. Ensuring availability of this data is task of intervention Task Leader managed by the Head of Portfolio

10. Net attributable turnover of intermediary service providers (IDR)

a. Net additional attributable turnover (additional sales, or revenues) in IDR got by intermediary service providers due to PRISMA intervention and/or working with PRISMA partners
b. This information is available in the ISD for each intervention. It is collected from in-depth interviews or surveys of ISPs who have been part of the intervention it will be collected before the end of each semester.
c. Ensuring availability of this data is task of intervention Task Leader managed by the Head of Portfolio

11. No. of farmers accessing changes due to intervention (total)

a. Number of farmers who have information about new services/products and are aware of where/how to seek the service/product to purchase it. This does not necessarily include physical and economic access to the service/product.
b. This information is available in the ISD for each intervention. This information is collected via observations, reviewing data collected by partners, ISPs, FGDs of ISPs, in-depth interviews or surveys.
c. It is collected aggregating the number of farmers who have been involved in various activities done by PRISMA, the partners, or the ISPs to inform farmers.
d. Ensuring availability of this data is task of intervention Task Leader managed by the Head of Portfolio

12. No. of farm households using the service/product (total, male, female)
ADR: Number of poor women and men who adopt new innovative agricultural prac-

a. Number of farm households with information about new services/products and physical and economic access to it that is exhibited in the households purchasing the service/product .
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs on sales; observations of purchase; FGDs; in-depth interviews; or surveys; of ISPs, farmers or partners.
c. It is calculated by getting the sales of the product/service from the partner or ISPs and dividing that with the purchase amount per farmer.

13. No. of farm households benefitting due to intervention (total, male, female)

a. Number of farm households (poor and non-poor) that have achieved a financial benefit due to PRISMA intervention
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs, in-depth interviews or surveys of farmers or ISPs.
c. It is calculated by getting from primary data the percentage of farm households who have used the product/service (indicator 12) and have got an income increase through use of the product/service.
d. Ensuring availability of this data is task of HRML

14. Net attributable additional incomes of all farm households (IDR)

a. Net additional attributable income (additional sales minus additional costs due to the intervention) in the intervention period for farm households (poor and non-poor).
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs, in-depth interviews or surveys of farmers or ISPs.
c. It is calculated by from primary data by deducting from revenue earned by farmers the costs of production.
d. Ensuring availability of this data is task of HRML

[3] Refer to ADR Technical note on indicator “Number of poor women and men who adopt new innovative agricultural practices.”

[4] Refer to ADR Technical note on “Number of poor women and men with increased incomes”

[5] ibid

15. Net attributable additional incomes of all farm households (IDR)

a. Number of farm households (below the $2 PPP poverty rate) that have achieved a financial benefit due to PRISMA intervention
b. This information is available in the ISD for each intervention. For this the PPI rate of the population below the $2 PPP rate is collected from a sample survey or from in-depth interviews of farmers. PPI rates are collected at each impact assessment survey for an intervention.
c. It is calculated by multiplying the number of farm households benefitting from an intervention (indicator 14) with the PPI rate.
d. Ensuring availability of this data is task of HRML

16. Net attributable additional incomes of farm households (IDR) under $2 PPP Poverty Rate

a. Net additional attributable income (additional sales minus additional costs due to the intervention) in the intervention period for farm households (below the $2 PPP poverty rate).
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs, in-depth interviews or surveys of ISPs or farmers.
It is calculated from primary data by multiplying the attributable income per farmer with the number of farmers who are below the $2PPP that get an income increase.
c. Ensuring availability of this data is task of HRML

17. No. of farm households that increase their incomes due to PRISMA intervention under $2.5 PPP Poverty Rate (total, male, female)

a. Number of farm households (below the $2.5 PPP poverty rate) that have achieved a financial benefit due to PRISMA intervention
b. This information is available in the ISD for each intervention. For this the PPI rate of the population below the $2.5 PPP rate is collected from a sample survey or from in-depth interviews of farmers. PPI rates are collected at each impact assessment surveys for an intervention.
c. It is calculated by multiplying the number of farm households benefitting from an intervention (indicator 14) with the PPI rate.
d. Ensuring availability of this data is task of HRML

18. Net attributable additional incomes of target farm households (IDR) with $2.5 PPP Poverty Rate

a. Net additional attributable income (additional sales minus additional costs due to the intervention) in the intervention period for farm households (below the $2 PPP poverty rate).
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs, in-depth interviews or surveys of ISPs or farmers.
c. It is calculated from primary data by multiplying the attributable income per farmer with the number of farmers who are below the $2.5PPP that get an income increase.
d. Ensuring availability of this data is task of HRML

19. Value of additional agricultural production (IDR)
ADR: Value of additional agricultural and fisheries production

a. 'Additional agriculture production' includes both livestock and crops and refers to increased harvests, reduced losses, by improving quality or by reducing costs
b. This information is available in the ISD for each intervention. This information is collected via reviewing data collected by partners, ISPs, in-depth interviews or surveys of ISPs or farmers.
c. It is calculated from primary data by multiplying the additional production or reduced losses per farmer with the market price of the products that farmers receive when selling the commodity.
d. Ensuring availability of this data is task of HRML

20. No. of Farmers with improved access to finance (total, male, female)
ADR: Number of poor women and men who increase their access to financial services

a. Number of poor farm households who have access to finance that they previously did not have in the form of cash or kind (e.g. agriculture inputs in credit, insurance etc.) which is exhibited by their "use" of the financial service.
b. This information is available in the IP finalized for each intervention. The information is collected via FGDs, in-depth interviews, or surveys of farmers, ISPs and partners to assess if they have provided finance in cash or kind.
c. All farmers that are benefitted from an intervention that has a finance component will have access to finance. Thus the number of farmers with access to finance from an intervention is equal to indicator 15 for that intervention.
d. Ensuring availability of this data is task of HRML

[6] Refer to ADR Technical note on "Value of additional agricultural and fisheries production in US dollars"

[7] Refer to ADR Technical note on "Number of poor women and men who increase their access to financial services

Protocol for data reporting

The frequency of update mentioned above is determined based on when changes in the given indicator are likely to have occurred and been validated. Where data that has not been validated is passed on this will be clearly mentioned in emails or in relevant files.

01.
Monthly update

The intervention progress tracking system developed as part of the MIS contains a full list of all interventions in various stages. Indicator 1 relates to Concept (ICN), indicator 2 relates to Approved (IP), and indicator 3 relates to Ongoing (Partner agreement). Each month DFAT Performance Manager can check in that system, or by downloading a file with the data on indicators 1 to 3. The Heads of Portfolio are responsible for ensuring that the MIS is up-to-date. The Intervention Progress Tracking system also contains the files that are proof of the indicator, i.e. the indicator 1 – ICN document; indicator 2 – IP document; indicator 3 – partnership agreement. Where the performance manager feels that any document is missing she can check with the relevant intervention Task Leader, whose name is mentioned in the MIS. The Heads of Portfolio will ensure that interventions and their relevant files are updated into the MIS. The updates to the Intervention Progress Tracking System occurs when ever a new intervention idea or plan is presented or a contract is signed, hence these updates can be collected monthly.

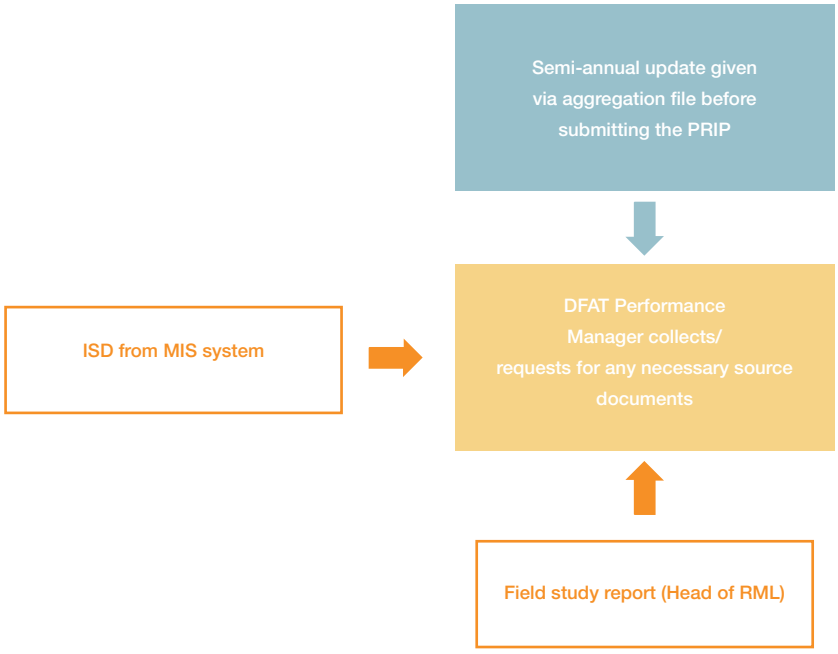
02.
Semi-annual updates

These changes are collated and aggregated by the program every six months in order to write Progress Report and Implementation Plan (PRIP). These will include an aggregation of the actual and validated changes in indicators 1 – 18. These indicators will be presented at intervention level along with aggregations at sub-sector and program level in the aggregation excel file. Details of how indicators 10 to 18 are collected and calculated at intervention level can be collected from the ISDs and from relevant field studies which the Head of Results Measurement can provide.

All indicators along with their calculation methods and data gathering process are explained in the ISD for each intervention. The final aggregated value for indicators may differ from what is reflected in the ISDs due to overlap corrections. The concepts of aggregation and how overlap corrections are done is outlined in Section 5 of PRISMA's Results Measurement Manual. The indicators that are generally corrected for overlap are indicators number 5, 13, 14 and 17. For indicator number 5, number of partners overlap correction will be done by the MIS system which will not aggregate the number of partner per intervention but will take number of partners listed in contracts.

The actual list of partners are available in the Intervention Progress Tracking interface of the MIS system and can be checked by the Performance manager from there. Indicators 13, 14, and 15 will be corrected for overlap in the aggregation file, and a remark will be given in the file explaining the overlap correction where they occur. In situations where they do not occur no correction will be done. Where the DFAT Performance Manager needs further information, s/he can get further explanation and details from the Head or RML.

Every year in June and December the ISDs are updated and uploaded into the MIS system by the Results Measurement team. This allows an update of all indicators 4 – 18. The numbers from all the ISDs are collated into an aggregation file, called File A. The HRML then makes overlap corrections and saves the adjusted numbers as aggregation file B. It is this aggregation file B that will be submitted to the Performance Manager one working week before the end of July and January every year . It is expected that the file submitted at that point will be the final version. In the case that changes happen after that date the Head of RML must inform the Performance Manager of the changes. The Performance Manager can, if required get the ISD or any available field study reports from the Head of RML or her designee.

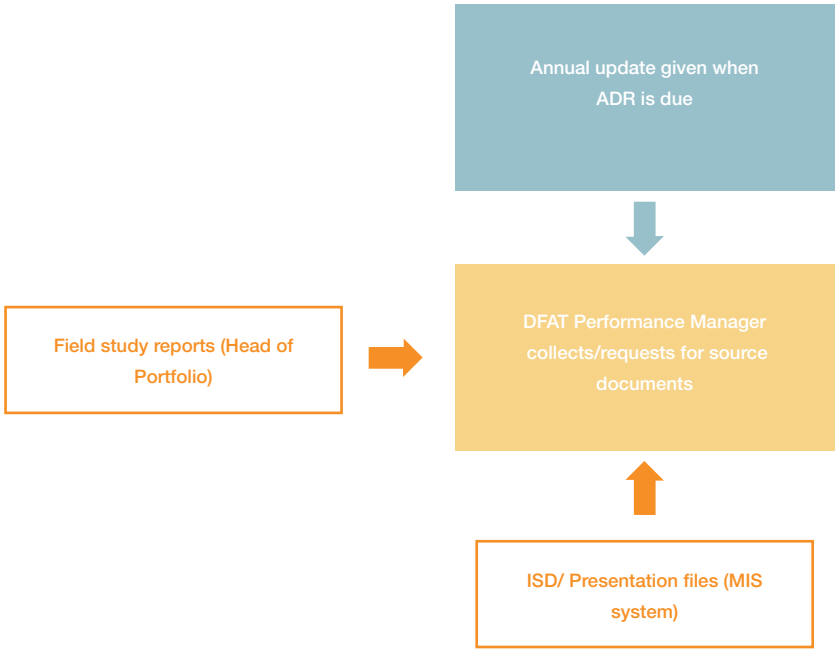


[8] This would be on 24th of these month or the first working day after the 24th of the month.

03.
Annual updates

There are 5 ADR indicators, 3 of them are reported by the program semi-annually, and an additional 2 will be aggregated annually. These additional 2 indicators are “numbers of farmers with access to finance – indicator 20” and “value of additional agriculture production – indicator 19”. Both these indicators will be supplied in the aggregation file by PRISMA.

Indicator 20 will be collected from be Intervention Portfolio tracking system and in the aggregation file. The source documents for this indicator will be the IP presentation file that can be collected from the MIS system. Indicator 19 can be collected from the Farmer Profit sheet in the ISD and from field study reports of the specific interventions. These should be requested and collected from the HRML. These indicators will be collated and given to the DFAT Performance Manager by the Head of RML annually and the sources may be downloaded or provided when requested. The other three ADR indicators are part of the program KPIs and are submitted semi-annually. The annual updates are provided at the same time as the aggregation file given in January each year with updated numbers for the PRIP.



ANNEX.07

Steps to Assess and Claim Systemic Change

PRISMA has categorized systemic change into four different types shown in the matrix below. This annex will explain how systemic change can be assessed and claimed by the program and list indicators of systemic change.

ADAPT	**RESPOND**
Partner modifies the new business model and/or wants to expand to other geographical areas More ISPs that buy into the business model of the Partner	Other stakeholders, with functions dissimilar to the partner or ISPs, react to changes of the market players in the ADOPT, ADAPT or EXPAND stages and modify their business strategies
ADOPT	**RESPOND**
Partner takes up business model and shows concrete plans to continue with it in the future. ISPs that have taken up the business model and show concrete plans to continue with it in the future	Other market players with a similar function to partners copy the business model of the partner. ISPs change their function and copy the business model. New entrants copy the business model.
PARTNER	**OTHER MARKET PLAYER**

The **first step** in assessing systemic change is to check if the changes are attributable to PRISMA intervention/activities.

To be attributable systemic change must satisfy all the three criteria given below, and this should be confirmed at field level by the sector teams and/or the results measurement teams.

01 Timing of the change: Did the change happen after PRISMA intervention was implemented in the field?

02 Knowledge transfer: Is there any plausible way the model/practices could have been transferred from the intervention partner/ISP to other companies or ISPs?

03 Similarity of the change: Is the model sufficiently similar to the model/practices PRISMA piloted? Is it sufficiently similar to the model PRISMA's partner adapted? In case of changes of the 'Respond' category, the changes made by the actor may not be similar. In those situations, the teams should explore how the changes of the partners/ISP have affected their behavior. This will explain why the changes of PRISMA partner triggered or fit into the changes carried out by the Responding actor.

Once the changes have been attributed to PRISMA interventions they can be recorded in the Systemic Change worksheet in the ISD. Only attributable changes should recorded in the ISD.

If the systemic changes are attributable, the **second step** is to understand if the changes are likely to have a significant impact on farmers.

An impact can be considered significant if it generates additional income for poor farmers and benefits a significant number of farmers[1]. This can help to make the decisions for the third step

The **third step** is for the sector team and HoP to decide if they want to take the opportunity and develop new interventions with the actors that exhibit systemic change

If the sector team decides to develop new interventions then further measurement will be made based on the ISD of the new intervention. In this case, no further changes are necessary in the current intervention. If the sector team decides that there will be no new intervention, and the potential farmer impact of the systemic change is likely to be significant, and then move to the fourth step.

The **fourth step** will be to assess changes at farmer level using the existing ISD.

To do that, boxes should be added to the results chain of the current ISD to show how the systemic change in the actors will lead to an impact at farmer level.
Indicators and measurement dates should be added to the measurement plan of the ISD to measure those boxes. The projections sheet should also be updated to estimate and reflect the size of the effect on farmers due to the systemic change. Once the ISD has been updated, the team should then plan and measure the changes as per the measurement plan.

[1]To determine if the number of farmers is significant the program can use the QMT as a basis. If the projected outreach due to systemic change is likely to score 2 or more in the Benefit-Outreach criteria then the program should plan for an impact assessment. If the projected outreach is less then carrying out an mpact assessment will require approval from the program HRML.

The table below contains a list of indicators of the different categories of systemic change.

Categories	Possible indicators of systemic change
ADOPT	**Extent of benefit to partner firm/ISP: margins of partner and/or ISP** • Changes in costs, revenues, and/or margins of partner and/or ISP • Number of first-time/repeat customers of partner and/or ISP • Other commercial benefits (developing a new customer base, identifying and targeting a new market segment, brand recognition) **Partner/ISP buy-in:** • Partner's share of financial and non-financial (e.g. roles, division of labor) costs of pilot; • Partner's willingness to assume all recurrent costs by pilot end. • Location of driving force for innovation within the company (e.g. CSR department, senior management, etc.) • ISP want to rebuy the product/services and sell to customers **Satisfaction:** • Partner's satisfaction with results/utilization of learning from pilot; • Target group's satisfaction with (and benefits derived from) new/better product or service introduced • ISP satisfy with results of pilot
ADAPT	**Independent investments and improvements:** • Partner's financial investment and forward budgeting/planning in the change(s) after program support ends; • Experimentation / refinement / tailoring of product/service; • ISP/Partner 'roll-out' of piloting in new areas and/or markets **Mainstreaming of innovation within market player:** • ISP/Partner dedicates staff to upholding change (e.g. amends job descriptions, team responsibilities); • Budgets, business plans, strategy, and other institutional documents accommodate change adopted. • ISP change their business model with other products which is similar to product/ services introduced **Benefit flows to the poor are sustained:** • Target group continues to benefit after program support to the partner ends. • More ISP continue to benefit after program support to the partner ends.
EXPAND	**Competitors or similar organizations 'crowd-in':** • Commercial players – number of competitors that copy or improve upon the changes pilot phase partners have made. • Involvement of 'scale agents' (a player that can influence other players) • Other ISPs copy or improve upon the changes pilots ISP have made

	Competition or collaboration in the system (depends on their nature): • Level of competition • Extent to which new players (i.e. late adopters) face barriers 'to entry'. • Level of collaboration between players (e.g. effectiveness of representative organizations, joint ventures, adherence to rules/regulations)
RESPOND	**Market Reaction:** • New types of market player take on new roles or responsibilities, or add new functions as a reaction to the gradual mainstreaming of the model introduced • Pro-poor and pro-growth government and sector/industry body responses. • Change in attitudes and norms about how to do business. **Changes in the business environment:** • Fundamental changes in mindset from business and policy-makers. • Changes in regulations, rules, and policy related to the innovation. **Ability of system to cope with shocks:** • Evidence that change can withstand, or has withstood adverse events (e.g. negative responses, economic downturns, drought/flood)

ANNEX.08

AIP-Rural and ARISA Title and Naming Equivalent

Appendix for ARISA – RML Manual

PRISMA TITLE	ARISA Equivalent
Team Leader	Team Leader (33% FTE)
Head of Results Measurement Learning	Grants Manager
Head of Portfolio	Grants Manager
Intervention Manager	Grants Manager
Business Consultant - Results Measurement	Monitoring, Evaluation and Learning Manager

Additional Relevant ARISA Roles

- Capacity Building Manager – oversees capacity building for RIs and gender equity (Michaela Cosijn, 50% FTE)
- Innovation Systems Researchers - oversee innovation systems action research agenda (Andy Hall, 20%; Liana Williams, 25%; Jen Kelley, 20% starting 1 April 2017)

ANNEX.09

Australia Indonesia Partnership for Rural Economic Development (AIP-Rural)

Applied Research and Innovation Systems in Agriculture Project (ARISA)

Partnership Agreement for ARISA grants

Partnership Agreement between UNRAM and PT. Dharma Raya Hutamajaya

Date :
To be completed during sessions in the partnership training workshop and Submit the Partnership Agreement by email to **michaela.cosijn@csiro.au** within two weeks of the workshop.

Name of Partnership	UNRAM –PT Dharma partnership	
Name of Research Institute	Consortium for Large Ruminant Research, University of Mataram	
Name of company	PT. Dharma Raya Hutamajaya, Depok, West Java (www.herbeef.com)	
Duration of the partnership	Start: October 2015	Finish: October 2018

Context

The Applied Research and Innovation Systems in Agriculture project (ARISA) is part of the Australia Indonesia Partnership for Rural Economic Development (AIP-Rural). ARISA aims to strengthen farmer-relevant innovation at the research and business interface by increasing the capacity and incentives for public research institutes to collaborate with private sector agribusinesses to disseminate and commercialise existing innovations for agriculture. ARISA aims to achieve a 30% increase in the incomes for at least 10,000 farmers in East Java, NTT, and NTB by the end of 2018.

ARISA is co-financing collaborative projects in applied research and innovation systems, with partners from private sector agribusiness and public sector research institutes, through the provision of grants and a range of other support. The aim is to develop commercially viable products, practices and technologies through the dissemination and adoption of agricultural innovations. The focus is on applied and adaptive research to commercialise existing innovations, not the generation of new knowledge or technology.
ARISA is co-financing the grant partnership between UNRAM and PT. Dharma Raya Hutamajaya which aims to:

1. To enhance the understanding of the value chain of beef cattle in Sumbawa island in order to better target areas for improvement and what options are available for improvement
2. To establish a win-win relationship between smallholder cattle farmers in Sumbawa with PT Dharma Raya Hutamajaya
3. To improve weaning rate and post weaning growth rate through better cow management, strategic feeding of cows and weaned calves
4. To increase daily weight gain of fattening cattle through better feeding and management
5. To increase supply of high quality feeds
6. To improve beef quality, healthiness and traceability
7. To improve leadership capacity and inclusiveness of the farmer groups

All ARISA grant partnerships will participate in a training to develop increase their existing capacity to work in partnership, as well as to develop a partnership agreement.
This workshop was for this partnership held on 11 August 2015.

Purpose

This document reflects the understandings of UNRAM and PT. Dharma Raya Hutamajaya, Depok concerning their cooperation in connection with the ARISA Grant, as agreed in the partnership-building workshop.
This document is intended to be a working document and will guide the teams of each organisation in their day-to-day engagement with each other. It reflects guiding principles, shared and individual objectives, non-financial contributions, respective roles and responsibilities, and expected behaviours felt important in order to achieve the overarching objectives of the ARISA Grant.

Partnership Objectives

All partners are committed to achieving the shared goals and objectives of the partnership. In addition, the partnership recognises that the each partner has its own valid and individual motivations for being involved in the partnership, which have been discussed and acknowledged by the other partner.

Joint Objectives

a. The partner organisations share the following joint partnership objectives for the duration of the project:

b. Development of a co-dependent and close relationship and partnership with PT Dharma using UNRAM research information and requesting assistance from UNRAM to assist in disseminating new technologies to farmers and to ensure a consistent supply of beef to Jakarta market.

c. Develop a sustainable, long term partnership between PT Dharma and UNRAM.

d. The company buys majority of cattle from farmers with whom UNRAM has engaged and trained, and cattle quality suits the company's requirement.

e. Smallholder cattle farmers increase their trust of PT Dharma through the activities of UNRAM and the partnership.

f. PT Dharma is committed to a long-term, ongoing relationship with cattle farmers that is equitable, and in which each makes a profit and the welfare of farmers households, including children and women, is improved.

g. PT Dharma can stand independently cooperating with cattle farmers and UNRAM is not perceived as "salesmen" to farmers.Attempt to develop the potential for genetic improvement of cattle via better management practices.

Individual Objectives

In addition, UNRAM's individual partnership objectives are to:

a. Publish on the partnership activities, including: Agricultural Innovation Systems model; developing successful partnerships; Value chain development in Indonesia; and technical aspects of the project (e.g. forage and animal production).

b. Play a role in assisting local government and cattle farmers to adopt recommended technologies identified by UNRAM.

c. Attempt to ensure that other private sector partners want to work with UNRAM due to PT Dharma promoting UNRAM.

d. Ensure that UNRAM is seen as an actor that cares for the welfare of farmers.

e. Ensure that UNRAM is seen as a neutral and independent party that is able to bridge interests of PT Dharma (and potentially other private sector partners) and farmers through increased trust.

f. To ensure that theory is bridged with on the ground practice

PT Dharma's individual partnership objectives are to:

a. In 5-10 years, be the only source of herbal/halal beef in NTB because it is supported by research which is validated by UNRAM.

b. Ensure that the grading system functions smoothly to obtain quality meat for customers.

c. Ensure that they have the confidence to pay farmers according to the quality they produce and the grading system.

d. Ensure that they have the reputation of being caring towards farmers and have a reputation as a company that treats farmers fairly and equitably.

Respective Roles and Responsibilities

The respective roles and responsibilities of UNRAM are to:

a. Transfer technical knowledge to farmers to improved farmer capacity to meet PT DHARMA meat quality standards.
b. Facilitate the relationship between farmers, PT Dharma and local government.
c. Undertake applied research using students and staff to ensure these standards can be met.
d. Work with CSIRO and PT Dharma to develop a business model that is inclusive and functions with smallholder cattle farmers.
e. Manage the grant, including reporting and finances.
f. Ensure that by the end of the grant period PT Dharma can train farmers for long-term sustainability.
g. Provide support on data on quality (e.g. support with data collection for transparency for consumer (e.g. bar codes).
h. Ensure women are actively engaged in activities and the cattle value chain.

The respective roles and responsibilities of PT. Dharma are to:

a. Transfer skills to UNRAM staff and farmers around key business aspects such as the slaughtering and traceability.
b. Support students to undertake their research to support the business model.
c. Ensure the functioning of the abbatoir and supply of meat to the Jakarta market.
d. Support the field activities of UNRAM.

Joint and Respective Contributions

UNRAM and Pt Dharma each bring additional resources to the partnership, over and above the funding component, including:

Resource	UNRAM	PT DHARMA
Knowledge	• Research on animal production systems	• Meat quality required for Jakarta market • Good slaughtering practices
Physical resources	• Motorbikes • Weighing scales	• Abattoir for slaughtering the cattle • Shop/outlet in Jakarta for sale of the meat • Trucks for transport of the cattle and meat
Products	• Fodder crop seeds (including leucanae, grass, turi)	• Cooking recipes on meat • Abbatoir equipment for animal slaughter
Networks	• Networks and relationships with International researcher (e.g. CSIRO, ACIAR) and local agencies (e.g. DINAS)	• Meat distribution networks • Access to the Lantabura international group

Information	• Fodder and cattle production systems • Farmer group locations and participation • Cattle identification (i.e. tagging)	• Meat market distribution systems in Jakarta and wider Indonesia • Customer meat requirements • Carcass percentage
People	• Extension/field staff • Researcher team • Access to senior staff and expertise	• Extension/field staff • Marketing staff • Abbattoir staff
Contacts	• Smallholder farmer groups • Laboratories for undertaking tests	• Customers
Other		• Free interest loan to farmers (probably at year 2)

Guiding Values and Behaviours

UNRAM and PT Dharma recognise the values of each individual partner organisation. The partners also recognise that there are specific behaviours they wish to see reflected in the partnership. As discussed these are listed below:

a. Having commitment from all parties to agreed activities and the partnership
b. Being honest and open with each other regarding project activities, progress and the partnership functioning to ensure transparency
c. Developing mutual trust between UNRAM and PT Dharma, with the view to developing trust with the cattle farmers
d. Ensuring that the partnership operates in an ethical manner which cares for the cattle farmers and that this relationship is long-term and equitable
e. Collaboration between PT Dharma and UNRAM to ensure the effectiveness of the partnership.
f. Communicating flexibly to suit each partner and associated stakeholders (combination of tools: email, direct phone, sms, etc.)
g. Ensuring the independence and neutrality of UNRAM field office (neutrality) so that farmers trust them to undertake trainings, as well as to bring credibility for PT Dharma

A number of **non-negotiables** in the partnership were discussed including:

i.

Ownership and publication rights reside with UNRAM

ii.

Any of PT Dharma's pricing information when given to UNRAM, shall remain confidential

iii.

PT Dharma's profit information is confidential

Governance and Communication

Management structure

The management structure is summarised below (based on the grant proposal):

A management team with 1 senior researcher as overall project leader, 1 senior researcher who undertakes day-to-day management of the project, as well as to convenes the M&E group which will monitor the progress of activities. Management meetings will be attend by 5 Senior researchers who will be responsible for the development of capacity in beef cattle nutrition and feeding management, forage systems, cattle health and reproduction, waste management, farmer group organisation, value chain analysis, cattle marketing and financial systems, and women's economic empowerment, as well as 1 senior researcher who will liaise with provincial and district government to develop support policy. The management team will also consist of 1 representative from Pt Dharma.

Note: 3 field researchers will be recruited and trained to work closely with farmers to implement project activities with guidance from senior project staff. PT Dharma also has field staff.

Meetings

The following meetings are proposed to ensure the efficient functioning of the project and partnership:

- Initially monthly meeting between field staff (UNRAM and Dharma). These meetings will shift to 3-monthly meetings when it is deemed the project is functioning adequately.
- 6 monthly meetings of management, field and research staff from UNRAM and PT Dharma to review progress and plan the following 6 months.
- Monthly M&E meeting to review data collection and review progress.
- 1 start-up planning meeting with DINAS. After that DINAS and other government stakeholders will be invited annually to a meeting to discuss progress.

Communication

Partners will communicate internally in the following manner :

- For day to day activities by telephone as this is Pt Dharma preferred mode of communication.
- Legal and contractual and information will be sent via email.

The partners will communicate **externally** in the following manner :

- With DINAS at the start-up planning meeting and then annually.
- With CSIRO via telephone, skype or and email, as well through the 6 monthly report and review meetings.
- With the media communication will be limited initially. Communications on the partnership with the media will be jointly developed. It is agreed that partners will be able to speak on their individual roles without prior consent of the other partner (i.e. PT Dharma will focus more on the meat product while the technical explanation on the process in the field will rest with UNRAM).
- Any branding of material or events will be developed jointly.
- Publication in journal (socio-economics, technical, gender, partnership, etc.), UNRAM will verify with PT Dharma regarding sensitive information

Reporting

Reporting will be undertaken as follows:

- 6 monthly report to meet CSIRO rrequirements
- Report for UNRAM will be as requetsed internally
- Report for PT Dharma will be as requested

Success indicators

The partnership organisations will assess their partnership to be a success when the following indicators are achieved or on their way to achievement:

a. UNRAM is better known to the private sector due to the partnership with PT Dharma and has more partnerships with the private sector.
b. The company purchases the majority of cattle from farmers working on the project as that meet the quality criteria.
c. There is a co-dependency and close relationship between Dharma and UNRAM and the partnership is co-designing activities with farmers.
d. The cattle farmers trust UNRAM-Dharma partnership and their differing roles.
e. The business model developed is used by the government as good practice, and policies or regulations are changed.
f. PT Dharma increases its investment in the project.

Partnership review and healthcheck

Review of the partnership mechanism is being formally building into the monitoring and evaluation of ARISA. In addition in order to ensure that the partnership grows and improves in its efficiency the following will be undertaken:

a. A short internal review of the partnership every 6 months at the 6 monthly meetings.
b. Take individual and joint responsibility to support the partnership and to making it function.

Managing transition / inductions (i.e. when people leave)

The partnership recognises that periodically there may be transition of key individuals in the partnership which may pose challenges if not well managed. In addition new staff may join the partnership. The partners commit to the following in the case of a transition:

a. Ensuring that each partner is informed of the changes
b. Ensuring CSIRO is informed of the changes
c. Ensure that new staff are actively informed of the intent of the partnership, as well as its objectives, culture and nature, through meetings and field visits.
d. Ensure that the new staff are aware of this partnership agreement and are thoroughly briefed on the background.

Decision making process in case of dispute

Every effort will be made to resolve any disputes internally through the structures within the partnership organisations. As there is no financial contract there will be no formal legal resolution. If the conflict is not resolved, it will be determined how to proceed (i.e. whether to proceed or dissolve the partnership).

Risk Management

A risk register for the partnership has been jointly developed as per table below. This risk register should be reviewed when the partnership is reviewed, or more regularly if required.

Risk	Likelihood (high, medium, low)	Consequence	Risk rating	Mitigation	New rating (high, medium, low
PT Dharma withdrawing	Low	High	Low	• Informal communication between the partners	Low
Lack of resources	Low	Medium	Low	• Optimizing contribution from all partners • Adjust activities to available resources	Low
Purchases from traders from Kalimatan – higher prices	High	High	High	• Pt Dharma offering good prices for live cattle to farmers • Building trust between Dharma and the cattle farmers • Payment in cash by Pt Dharma on sale of animals meeting quality standards • Down-payment (advance money provided to cattle farmers) in the future (year 2) • Guarantee from PT Dharma to purchase cattle anytime	Low
Communication around procurement from farmers	Low	Medium	Low	• Develop a good mechanism of communication between cattle groups / field workers and PT Dharma	Low
High expectation from government regarding the partnership/project	Medium	High	Medium	• Annual meeting to discuss results • Field visit for government staff to see constraints and reality in the field	Low
High expectation from farmers regarding the partnership/project	Medium	High	Medium	• Socialization and facilitation by field staff • Extension and guidance from UNRAM team	Low

Amendments

This Document is intended to be a living document and as such may be amended at any time by mutual agreement in writing between the Parties.

Legal status of this document

UNRAM and PT Dharma acknowledge and agree that this Document is a description of understanding between the parties and the operational arrangements relating to PARTNERSHIP and it is not legally binding. Nothing contained in this Document shall be construed as creating, legal commitments, or legal rights and obligations.

Duration

This Document will take effect from the date of signing of this Document and will remain in effect through to the end of ARISA Grant unless otherwise agreed or revised by mutual agreement between the parties

We agree to work together as described in:

1. The approved grant proposal;

2. The grant contract (for the lead organisation);

3. This partnership agreement.

For the research institute:
Research Institution: UNRAM

Name: _____

Designation: _____

Signature: _____

Date: _____

For the company:
Company: PT. Dharma Raya Hutamajaya

Name: _____

Designation: _____

Signature: _____

Date: _____

ANNEX.10

ARISA Maturity Model Template

Changes in 'innovation capacity' of:

1a.

Research institute intervention teams

1b.

Targeted research institute faculties – notes on framework and scores.

Innovation capacity encompasses 'traditional' skills in the production of knowledge as well as a less tangible range of skills and practices that support how knowledge is embedded within enterprises (including agriculture) and society more generally, and put into use. The emphasis on research into use inevitably brings in a range of non-research partners, including the private sector.

In ARISA, measurement of changes in innovation capacity will focus on changes in capacity across two levels: (a) research institute (RI) intervention teams and (b) faculties targeted RI's involved in ARISA. Targeted universities include the University of Jember and University of Mataram. The decision to look at these two levels of change was driven by the immediate effort in ARISA to support and build the capacity of research teams but acknowledges the longer term ambitions of ARISA to support change within the research sector. The framework for measurement of KPI 1a and 1b, including indicative rationale for assigning scores, is summarised in Table 1 and 2 respectively.

At the team level, tracking change in capacity to innovate considers focuses on the nature of the research-private sector engagement to support particular goals along a spectrum from transactional to transformational. This classification blends classifications of participation[1] with types of partnership. This is not to suggest that a transformational partnership is always required - the type of partnership should be matched for purpose and problem at hand.

[1]Biggs (1989) Resource-poor farmer participation in research: A synthesis of experiences from nine National Agricultural Research Systems. OFCOR Comparative Study Paper, vol 3. International Service for National Agricultural Research, The Hague.

However our contention in ARISA is that to foster agricultural innovation, something beyond transactional partnerships is required. For example, transactional relationships may be suitable where the private sector is seeking assistance in simple problems, such as checking quality of feed product sold to dairy farmers; to address the systemic barriers for increasing dairy production, a collaborative or transformational partnership is more appropriate. These types of partnership are also less common for most of the ARISA intervention partners, who have, with some exceptions, typically experienced contract based public-private relationships in the past. It is also important to note that, although a partnership fundamentally involves at least two actors, in ARISA we are focusing primarily on building capacity within the research institutes, rather than the private sector. The allocation/scoring for KPI 1a therefore focuses on the RI side of the partnership, and the 'theoretical' capacity of the RI, rather than the health of the partnership per se. The ARISA interventions are used as demonstrative case studies to determine this theoretical capacity.

At an organisational level, increasing capacity to innovate may require changes in organisational policies, management systems, and incentives. Increases in capacity are likely to be context specific depending on the specific RI/PS organisational settings, however example indicators could include: changes to professional incentives that encourage collaboration across research institutes and private sector organisations; established routines for engagement/communication between research institutes and private sector organisations; expanded networks/connections between private sector and research organisations; and reframing of research in a market perspective.

Given the range of potential indicators discussed above, assessment of change in innovation capacity at an organisational level will focus on changes in routines for engagement with the private sector, loosely based on a maturity model[2] approach. Each level characterises the nature of research-private sector engagement, based on how organisational processes support particular goals (in this case, increasing innovation capacity).

By 'routines for engagement' we mean the way in which the team members / RI seek to establish, maintain and improve the ways in which they communicate and collaborate with the PS. More than quantifying the number of partnerships, this indicator seeks to consider how RIs engage with the PS to increase the number and depth of partnerships. The levels and scoring in the maturity model therefore distinguish between the nature and quality of how this engagement happens. We focus on routines for engagement as, where these are mature and work effectively, there is an implication that the other aspects of capacity must also be present. For example, if the research institute has established routines for engagement, it is likely there is a shift towards professional incentives that encourage participation.

[2] http://cmmiinstitute.com/

Information to determine the level and scoring for these KPIs will be collated from a range of sources, including innovation logs, partnership reflections and observations of CSIRO team members. Individual assessments will be made and documented for each RI, and aggregated to reflect an overall summary for ARISA. The requested timeframe for updating these indicators from DFAT is at a 6 monthly interval, however these sorts of changes can take several years to develop and change may not always be apparent within such short timeframes.

Table. 1

Scoring framework for KPI 1a (team level)

Type of partnership	Description/Features	Weighting	Scoring rationale (1-3)
Transformational	These partnerships are oriented for system-level changes in policy and practice. Problem definition and design of actions is shared by RI and PS partners via deliberative processes – both are equal drivers of the partnership. Partnership extends beyond projects to strategic, long term relationship. Partners have equal stake in the partnership. Activities of research institutes support adaptive management and learning.	3	Scoring (1-3) based on the extent to which the RI side of the partnership is reflecting the qualities of the type of partnership. Using ARISA interventions as a case example, these determinations are based on the demonstrated capacity of the RIs, rather than the health of the actual partnerships. For example, an ARISA partnership may be 'transactional' however if the RI through the course of ARISA demonstrated a change in practice, or how they view/think about partnerships that indicates a shift towards consultative partnerships, then they would be ranked as consultative, regardless of the health of the ARISA partnership.
Collaborative	Influencing individuals, organisations and systems RI and PS collaborate to define problems, goals and research process. Each has distinct, active role/ contribution based on relative strengths. Research institutes engage in the experiments/research questions of the private sector.	2	
Consultative	Consultation between RI and PS about problems and solutions. RI activities focus on supporting PS goals with less direct involvement of PS in driving implementation/activities. The role of research extends to surveying and diagnosis of systemic issues rather than focus on agricultural technical fix.	1	

Transactional	Partnership focuses on practical solutions to clearly defined problems PS contracts RIs (either individuals or teams) to provide specific, transaction-based services. The role of research is limited to testing and/or verification of technology. Engagement/communication is limited to the scope and terms of the contract.	0	

Table. 2

Maturity model and scoring framework for KPI 1b (University level)

Type of partnership	Description/Features	Weighting	Scoring rationale (1-3)
Optimizing	Routines for proactive engagement with the private sector are established and subject to reflection and continuous improvement. With channels established, Optimising refers to an ongoing process of learning and improvement within the RI – that is, processes are revised and improved in response to changing external and internal environments, new opportunities etc. At this level, engagement with the private sector is part of core business and habit.	6	3. Mechanisms demonstrate improved performance ratings year on year. 2. Established mechanisms are subject to regular performance review including client satisfaction surveys 1. Mechanisms to engage with the private sector are established. Review is internally focused.
Established	The research institute has established one or more channels for regular engagement with an expanding range of private sector players that lead to collaboration and has set performance targets. This level essentially refers to the institutionalisation of mechanisms tested under Piloting. It indicates that one-off events have been incorporated into regular RI practices.	5	3. The RI regularly uses mechanisms to explore opportunities to work with the private sector and this is used to develop new funding proposals. 2. The RI articulates in strategy documents its desire to engage the private sector through specific mechanisms, resources are allocated to these mechanism and quantitative targets are set 1. Previously piloted event is continued

Piloting	Research institute begins to take a more strategic approach to partnerships, testing mechanisms to promote the value of research to private sector partners and identify collaborative opportunities. Distinct from Demonstration, in Piloting, the RI is thinking beyond project-based partnerships to the processes of how it attract and foster partnerships with the private sector. It is communicating beyond "what we can do for you in this project" to "here is the value of our research to your business".	1	3. Pilots a number of events or actions to engage the private sector, in addition to ARISA-fostered events.The RI undertakes at least one event, outside of 2. ARISA activities, to explore with the private sector opportunities for partnership beyond the scope of special project funding 1. The RI, through ARISA, undertakes one event to explore private sector opportunities for partnership beyond the scope of project funding.
Demonstration	Special projects promote engagement with a narrow range of private sector partners based on past individual relationships, supported by the RI but externally driven as a condition of funding or project approval. In Demonstration, RIs have prioritised working with the private sector, however their experience in doing so as an institution (distinct from through individuals in Ad hoc) is limited and engagement is project driven / on a project by project basis. This level could be considered a 'testing of the waters' from a RI perspective to demonstrate the potential value and benefits of working with the private sector in practice.	1	3. The RI actively seeks a range of projects that include partnerships with the private sector as a central premise. 2. The RI has one additional project with the private sector, and is seeking others. 1. Only ARISA project mandates partnership
Ad Hoc	Engagement is driven by individuals within the RI, therefore narrow and selective. Where collaboration occurs it is likely to be contracted to individuals rather than directly with the research institute.	0	Weighting is zero so no need to score
None	No practice of engagement with private sector at RI level.	0	Weighting is zero so no need to score

NB: The bottom 4 weightings reflect limited change beyond ARISA activities The upper 2 however do indicate that something is happening beyond ARISA activities. Scoring indicates the relative "depth of the change".

RI – Research Institute

KPI 1a.

Increased capacity of research institute intervention teams

Intervention Team	Baseline				June 2016				Change	Estimated change attributed to ARISA
(Intervention start date)	Type/justification	Weighting	Score	Total	Type/justification	Weighting	Score	Total		
Beef - UNRAM (Sep 2015)	Transactional: Limited prior experience with the private sector, except through individual team members who are contracted for specific services.	0	-	0	Consultative: Through partnership with PT Dharma, UNRAM team have shifted from limited contracts and traditional technological framing of research (increasing production) to consider systemic challenges (market development). They are seeking to diversify the partners they are working with. UNRAM is driving activities and policy engagement.	1	2	2	2	2
Maize - UNRAM (Sep 2015)	Transactional: Some experience with private sector via individual contracts and project-based work. Past experience with Syngenta limited to field trials/provision of inputs.	0	-	0	Consultative: UNRAM team and Syngenta in close consultation to try and find solutions to financing; UNRAM's diagnosis of the system has shifted from a focus on maize/technology to the broader financial system.	1	3	3	3	2
Cassava - UNEJ (Oct 2015) UNEJUNEJ	Collaborative: UNEJ team collaborate closely with PT BCM. Roles are distinct, and partnership activities are driven by UNEJ.	2	3	6	Collaborative: UNEJ team collaborate closely with PT BCM. Roles are distinct, and partnership activities are driven by UNEJ. UNEJ are seeking to diversify the range of partners they are working with. UNEJUNEJUNEJ	2	3	6	0	0

Sugar - ISRI (Dec 2015)	Consultative: Well established partnership between ISRI and PTPN X based on historic ISRI role. ISRI struggling to engage PS in more strategic partnership with greater sharing of resources. Role of University is as contracted service provider.	1	2	2	Consultative: Well established partnership between ISRI and PTPN X based on historic ISRI role. ISRI struggling to engage PS in more strategic partnership with greater sharing of resources. Role of University is as contracted service provider.	1	2	2	0	0
Dairy - UNBRAW (Mar 2016)	Transactional	0	-	0	NA - too early for change	0	-	0	0	NA
ARISA TOTAL	At the commencement of ARISA, partnerships with the private sector were mostly limited and characterised by individual contracts/ fee for service. Two key exceptions were the Cassava intervention, where the partnership extends back to 2008, and the company was established with the purpose of fostering the nascent industry defined by UNEJ; and ISRI, where the mandate of the institution has been to serve industry, but where ISRI is struggling to change the modes of partnership from Consultative to a longer-term collaboration with industry. UNEJ			8	2/3 RIs that were originally 'contractual' can be considered to have shifted to 'consultative' with a much broader view of the research/ development challenge to consider market, finance and other systemic problems. For ISRI and UNEJ, who had deeper/more mature partnerships at the commencement of ARISA, the degree of change is less visible. UNEJ			13	5	4

KPI 1b.

Increased capacity of research institute - routines for engagement

	Baseline				June 2016				Change	Estimated change attributed to ARISA
Research Institute	Type/justification	Weighting	Score	Total	Type/justification	Weighting	Score	Total		
UNEJ (cassava) UNEJUNEJ	Demonstration: UNEJ is seeking ways to engage with the private sector, such as through the annual Innovation Fair. However current design of activities focuses on showcasing / promoting university achievements rather than facilitating dialogue with the PS. UNEJUNEJ	0	-	0	Piloting: Through ARISA activities, university is experimenting with different format of Innovation Fair to facilitate dialogue between research and private sector.	1	2	2	2	2
UNRAM (beef and maize)	Demonstration: UNRAM has some projects with the private sector in addition to ARISA, and is seeking ways to engage with the PS more formally. However mechanisms to support engagement are lacking.	0	-	0	Consultative: UNRAM team and Syngenta in close consultation to try and find solutions to financing; UNRAM's diagnosis of the system has shifted from a focus on maize/technology to the broader financial system.	0	-	0	0	0
Total	Ris encourage staff to engage with private sector and there are some projects, however limited support is provided to staff to support engagement with private sector beyond promotion of achievements.	-	-	0	ARISA is trialling new ways to engage with the private sector such as through the targeted redesign of the Jember innovation fair to directly facilitate or 'match make' between private sector needs and research institute capabilities. Trials will be expanded in the future.	-	-	2	2	2

ANNEX.11

ARISA Innovation Systems Research Framing Document

Andy Hall, and Liana Williams, Jimmy Tanaya, Mona Usmani,
Klara Esti, Halida Nufaisa and Lauren Xie

September 2016

EXECUTIVE SUMMARY

ARISA has a research and policy engagement component that uses an innovation systems framing to explore and advance smallholder-relevant innovation through partnerships between public research institutes and the private sector.
This involves:

1.

Drawing lessons from ARISA including what works well, what needs more attention, and identifying the broader roadblocks in the organisational setting of research institutes, businesses and government.

2.

Leveraging this analysis with lessons from policy domains dealing with questions of how to make better use of agricultural science and technology, partnerships approaches and private sector engagement to drive innovation and impact

The purpose of this report is to present an initial diagnostic analysis of the Indonesian agricultural innovation system, to identify priority areas that could be addressed to better support innovation, and to explore options and opportunities to do this in the scope and comparative advantage of ARISA.

The report is based on an innovation system landscape study and briefings from the Centre for Innovation and Policy Governance (CIPG), and a synthesis of information collected on the ARISA's interventions through innovation practice logs — a tool to track practice changes and challenges in the interventions.

The report contains a number of high-level messages:

1.

The innovation system of Indonesia is characterised by many of the generic weaknesses that while not unique to Indonesia are deeply embedded in the culture and institutional setting of the country. These include: weak or missing links between research and the private sector reinforced by patterns of professional incentives and routines; underdeveloped capacities in research organisations to work with the private sector, lack of policy coherence; limited capability in key agencies to implement innovation initiatives; investment / disbursement driven performance metrics; and risk aversion in public bureaucracies.

2.

There are however, highly contextual conditions that add to the challenge of making innovation policy work effectively in Indonesia, such as the cultural and geographical diversity and a decentralised system of government. These features add complexity through the diverse local contexts of which policy is interpreted and implemented.

3.

The practice of documenting and organising lessons from policies and program implementation has not yet become a routine habit in Indonesia. (This is a missed opportunity for policy learning. Such learning is needed to craft a coherent set of policies and interventions that support innovation system capacity building and do so in a way that address the contextual issues of Indonesia. This challenge is exacerbated by lack of appropriate metrics and associated data on the functioning and performance of the innovation system as a whole.

4.

The policy space around innovation is a crowded one with multiple agencies with overlapping roles and multiple champions. There are also other DFAT investments at play in this domain. However there is convergence on the importance of strengthening the innovation policy environment as a route to systemic change and national goals.

5.

Over the last decade much of the high-level policy debate in Indonesia has adopted an innovation systems framing. However a lot of the energy around this debate has focused on trying to specify what this system should ideally be and has been pre-occupied with a search for best practice models from global experience. This has value, but distracts from the need to contextually design policies and interventions that address the needs of the country and address the specific challenges in the capacity of the Indonesian innovation system.

Ironically this blueprint approach to innovation systems design and strengthening contradicts the core global best principles of innovation system capacity development — experimentation, learning and evolutionary improvement. In the same vein ARISA needs to avoid the temptation of making normative recommendations on innovation systems reform. Instead it needs to identify areas of weakness or opportunity where it can make a useful contribution and engage with associated stakeholders in the development of solutions.

Priorities appropriate to the scope of ARISA include:

1. Building the capacity of public researchers to work with the private sector. This is already the main focus of ARISA, although a focus beyond the interventions is needed.

2. Strengthening links between analysis and lessons of the effectiveness of interventions and policy for program and policy learning. ARISA's interventions and analysis are a source of lessons, but ARISA could play a role in piloting a wider process for program and policy learning.

3. Leveraging off the convergence of interest around improving the enabling environment for innovation. Current interest in innovation policy reveals a number of champions and wider dialogue processes that ARISA could connect with.

Options going forward include:

01.

Using lessons from ARISA to inform policy.

The practice logs are a key source of data to help interpret ARISA's intervention experiences and document lessons that can be shared more widely. They also play an internal learning function. Experience to date suggests that this is a viable way of developing new insights into the realities of making public-private sector partnerships work in public research institutes as well highlighting wider institutional challenges related to practice traditions and professional incentives. In the next 12 months the collection of information through the practice logs will be continued. This information will be used as an input into the wider capacity development support being provided to interventions (i.e. helping with reflection on what is working and where the challenges are). As the interventions mature over the next 12 months information from the practice logs will also be used to develop case studies and a synthesis of broader lessons from across the interventions. This material will serve two purposes: to share with organisations and policy agencies (see policy engagement options below) to help with improved design of their new initiatives in innovation; and for publication in collaboration with ARISA's partners.

02.

Leverage off institutional entrepreneurs in public research institutes

Based on the two or three individuals that have self-selected through the intervention commission process, use their energy and networks of influence to implement capacity building and private sector engagement events that go beyond the existing intervention. Pitching ideas to private sector partners, or assisting with connection to funding for public-private sector partnership could give this real meaning. This could be a way of progressing the mainstreaming of ARISA approaches in partner organisations beyond the interventions.

03.

Structure the partnership with RISTEKDIKTI as a technical assistance and as a learning alliance.

Partnering with RISTEKDIKTI as an implementing partner presents the opportunity to contribute to two of the identified challenges in the innovation system: the need to strengthen innovation program implementation capabilities; and a limited tradition of learning in intervention cycles. One option is to broaden the partnership with RISTEKDIKTI to include joint assessment and lesson learning not just of the ARISA interventions but also of similar RISTEKDIKTI investments and grants. A first step will involve developing simple protocols to jointly assess existing program and schemes.. This protocol would need to incorporate RISTEKDIKTI key performance indicators as well innovation systems criteria
developed by ARISA.

04.

Act as a hub for sharing experience and bridging between field experiences of other public-private agricultural innovation partnerships.

ARISA is only one source of lessons on public-private sector partnerships for agricultural innovation. Given the weak tradition of learning from experience in the innovation system, ARISA could play a role to collect, collate and share these experiences with policy partners. This would help expand the evidence base of ARISA. Linking it to RISTEKDIKTI would lend legitimacy and provide a useful connection to policy with considerable convening power. The Jakarta based Centre for Innovation Policy and Governance (CIPG), an innovation policy think tank could play a valuable role in this, particularly in tackling issues currently beyond the scope of ARISA. This option requires further scoping and it would need to consider ways of engaging local level agencies within the decentralised government system as well as the national agencies
mentioned above.

05.

Form / join a policy engagement coalition.

With the convergence of a number of DFAT and other related initiatives around the broader capacity and innovation policy agenda there is much scope for collaboration. This direction is already being pursued by other parts of DFAT and it would seem sensible to join rather than duplicate these efforts. One configuration maybe that ARISA partners with the Knowledge Sector Initiative (KSI) and takes a lead on issues specifically related to agricultural innovation policy. This could be done either in a “light mode” (using ARISA evidence only) or in a more comprehensive mode incorporating elements of options 2 and 3. This option would need further scoping and will be contingent on any recent changes in KSI following their mid-term review earlier in the year.

01.
Introduction

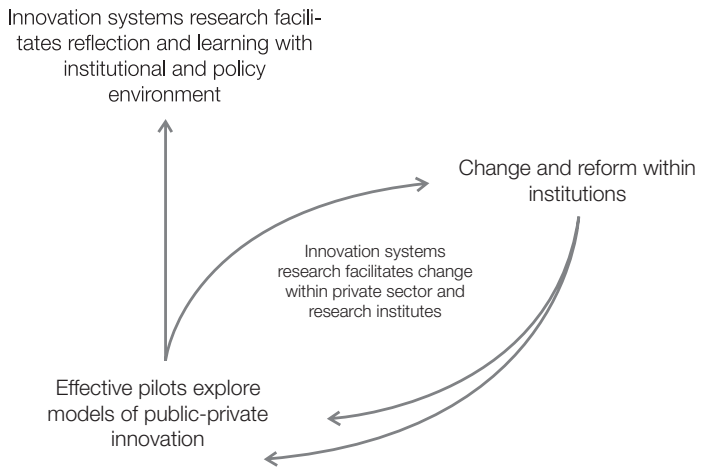
Innovation systems is a framework for understanding the organisational and policy conditions and capacities needed to enable innovation and impact. ARISA has a modest research and policy engagement component that uses an innovation systems framing to explore and advance smallholder-relevant innovation through partnerships between public research institutes and the private sector. This involves two linked dimensions that build on six public-private sector partnership interventions established by ARISA to date.

The first dimension seeks to draw lessons from ARISA's experience of establishing and progressing partnerships between public research organisations and the private sector with the purpose of delivering technology and business solutions to smallholder farmers. The focus of this analysis is on what works well and what needs more attention and also identifying the broader roadblocks in the organisational setting of research institutes and businesses, and at the policy level.

The second dimension is to leverage this analysis with lessons from policy domains dealing with questions of how to make better use of agricultural science and technology, partnerships approaches and private sector engagement to drive innovation and impact. The focus in this dimension has been to review the existing landscape of players and initiatives, the dynamics of debates in this arena, identify champions of the change process and to explore ways of engaging with relevant areas of policy development. How these two dimensions interact is illustrated in Figure 1.

Figure. 1

Representation of relationship between pilot projects and institutional change across levels.



The purpose of this report is to present initial diagnostic analysis of the nature of the Indonesian agricultural innovation system, to identify priority areas that need to be addressed to support innovation, and to explore options and opportunities to do this in the scope and comparative advantage of ARISA.
The paper begins by framing this discussion with a brief explanation of the innovation systems perspective and its relevance to the strategic intent of ARISA.

1.1.
An introduction to the innovation systems perspective

The global interest in innovation stems from the recognition of its economic importance as a process of creating and implementing new ideas in both business and social contexts. While the creation of ideas and knowledge through research and other means remains important, it is only when these ideas are brought into use that they create social and economic value. Simply put, although rather tritely paraphrased “research turns money into ideas, innovation turns ideas into money”.

Over the past 30 years or so countries have grappled with the question of how to get better at innovation. In recent decades the policy framing around this challenge has witnessed a major shift from managing the scale, quality and priorities of investments in science and technology (the creation of ideas and knowledge) to a much broader perspective that focuses on the necessary conditions needed to make use of these ideas. It is in this context that the idea of an innovation system has emerged.

An innovation system can be defined as a network of organizations, enterprises, and individuals focused on bringing new products, new processes, and new forms of organization into social and economic use, together with the institutions and policies that affect their behavior and performance (World Bank 2006).

Innovation in this framing is understood as a process rather than a technological artefact or output. An innovation system is heuristic to understand, plan and invest in the organisational and policy conditions and capacities involved in sustaining the process of innovation.

This provides an analytical lens to explore 4 key dimensions of the innovation process.

A.

Assessing the strength and quality of the linkages and interaction between knowledge producers and users that allow ideas and information to flow, particularly at the public-private sector interface.

B.

Assessing the patterns of incentives, regulations, public and private investments, capacities, financial services and operating environment conditions needed to make use of ideas and information and the alignment of these towards particular policy imperatives

C.

Assessing national and organisational policies and practices, routines and norms (institutions in the sociological sense) that give rise to failures of the component parts to operate as a system or lead to a failure of the system to evolve in response to changing conditions and lessons from practice.

D.

Assessing the effectiveness of mechanisms to align the investments of the public and private sector around issues of mutual and strategic importance (environmental protection, food security, inclusive economic growth etc.).

From an analytical perspective an innovation systems perspective reveals the very wide range of enablers and impediments to the innovation process and has particular strengthens in unravelling institutional dimensions. In the context of policy formulation it helps identify leverage points where innovation and impact performance can be improved and the ways in which this can be targeted towards specific policy imperatives. In the last decade or so innovation systems has come to prominence as a guiding framework for science and technology, innovation and economic development policy in OECD countries, but also in emerging economies. In Indonesia this can be seen in the priorities and policies of the Ministry of Research and Higher Education (RISTEKDIKTI).

1.2.
How does this perspective relate to the intent of ARISA?

As part of the wider suite of AIP-Rural projects, ARISA is unusual in that it combines an applied research mandate with short-term impact ambitions of a scale more usually associated with a development project. AIP-Rural and PRISMA in particular have taken a market delivery approach, with the rationale that if market based solutions can be pioneered with project support, other market players will respond to market signals and "crowd in" to take advantage of an emerging market opportunity. The rationale of ARISA is that market-based solutions can be leveraged through technological opportunities emerging from public research institutes. This fills a perceived gap in the PRISMA portfolio, but also it also provides a way of exploring how the role research and technology could be better rolled into the PRISMA operating model.

The impact logic of ARISA, like PRISMA and the wider AIP-Rural program is that the demonstration of successful partnerships between the public and private sector will effectively stimulate public research institutes and businesses to "crowd in", copying the approach and catalyse a wider range of partnerships as standard practice. This may well happen to some extent if sufficient market incentives become apparent to encourage this type of behavioural change.

However, the factors that condition public-private sector partnerships involve a deeper set of issues that do not necessarily respond to market signals and that will require purposeful capacity building and institutional and policy change. In other words scaling of the ARISA model cannot be left to market forces alone and will require engagement with, and influence of, the institutional settings of public research institutes as well as the wider policy environment dealing with research and innovation.

It is in this context that the heuristic of an innovation system is relevant. It provides a framing that can guide enquiry into the complex of institutional and policy issues that shape the progress and spread of public-private sector partnerships. Equally it provides a lens to explore the wider policy landscape of innovation, identify leverage points and helps frame lessons and insights from ARISA in ways relevant to institutional and policy design and reform.

02.
Innovation Research Activity Progress

Starting with a research framing document (Hall and Williams, 2015) developed in June 2015 ARISA's innovation research activities have proceeded on a number of fronts over the last 12 months as follows.

2.1. Understanding the policy landscape and influence points

The Centre for Innovation Policy and Governance (CIPG) was commissioned to undertake a mapping study that explored key actors and organisations, networks and influence in the policy environment relevant to agricultural innovation at the public-private sector interface (Appendix 1). CIPG are unique in Indonesia in that, to the best of our knowledge, they are the only dedicated research group working on innovation policy issues. The purpose of their study was to inform the way ARISA can develop a learning interface with champions in relevant areas of the policy arena. CIPG are well positioned to do this and have strong personal links and familiarity across the public policy domain relating to science, technology and innovation policy. This emerges in part from their work on innovation and capacity building under the EU-Indonesia Trade Cooperation Facility (EU-TCF). A draft study has been completed which has provided a broad picture of the landscape (Appendix 1), this includes an inventory of innovation initiatives that are implemented non-government agencies. CIPG has also provided confidential briefings and briefing notes to help in understanding and navigating some of the more sensitive dimensions of the innovation policy environment.

2.2 Tracking institutional change and challenges in the interventions

The core of value-add of ARISA is that it has on the ground interventions dealing with the day-to-day realities of making public-private sector partnerships work and deliver results to smallholder farmers. It is here that lessons on how to enable these partnerships will emerge and it is here that implications for institutional and policy adjustment will be revealed. ARISA's interventions are briefly described in box 1.

A tool — referred to as an innovation practice log — has been developed to capture the institutional change processes and challenges experienced by the intervention teams. The tool comprises an interview guide that asks interviewees to reflect on previous and current public-private sector partnership practices, changes that ARISA is catalysing, and the fit of these practices and changes in the wider setting of their organisations. The logs are also informed by a review of project documents over time, project team observations and review of relevant literature and news pieces. To date, the logs have sought to capture the starting point of the different organisations and partnerships and the extent to which their experience in ARISA has changed their approach and capacity to partnering. It is important to note that the sorts of changes that ARISA is seeking to foster through the partnership arrangements take time and for partnerships that have commenced later, such as dairy and sugar, it is too early to expect to see significant change.

These innovation practice logs will be updated at regular intervals in conjunction with the partnership reflections. They will therefore become an important record of how attitudes and practices around research-private sector partnerships change over the course of ARISA, and the key challenges and constraints to making the partnership work. The value of this is two-fold: first, they form an important input into intervention team capacity building. A summary of the logs will be discussed with intervention teams through the partnership reflection meetings organised by the capacity building component of ARISA, encouraging learning across the teams. Second, by capturing insights into the challenges of 'doing' research-private partnerships in situ, an evidence-based, practical discussion can be had regarding key institutional or policy level changes that are required to enable innovation. To date the first practice logs have been completed for the maize and sugar interventions. Initial interviews have been conducted for dairy, beef and cassava, and finalised summaries will be available by the end of August.

Box 1: An overview of the ARISA interventions	ARISA is supporting collaborative projects between research institutes and private sector companies to incubate and deliver technology and business solutions appropriate to smallholder farmers in eastern Indonesia. These projects are be supported by capacity building and technical assistance tailored to the individual partnerships. ARISA seeks to identify and analyse opportunities and barriers to the expansion of research-private sector partnership that can help translate and deliver ideas and solutions from research to farmers. Interventions are described below.
Beef intervention.	This intervention involves developing a profitable and sustainable beef production system in Sumbawa Nusa Tenggara Berat. This is being done through improved engagement of cattle farmers with a traders association (PEPEHANI), individual large traders, and a beef processing company (PT Dharma Raya Hutamajaya). The research institute partner is the University of Mataram. The intervention aims to improve the incomes of approximately 1,100 cattle farmers in West Sumbawa and Sumbawa Districts by the end of 2018.
Maize intervention	This intervention involves promoting best practices for dual cropping models using new hybrid maize with pulses (mung bean and ground nut) on drylands in NTB. The partners are PT Syngenta Indonesia, Bank NTB, and the University of Mataram. The intervention aims to improve the incomes of about 1,100 smallholder farmers in East and North Lombok by the end of 2018.
Cassava intervention.	This intervention involves developing integrated modified cassava flour (MOCAF) chip clusters for improving the welfare of smallholder farmers in the southern part of East Java. The partners are PT Bangkit Cassava Mandiri (PT BCM), University of Jember, the KEHATI Foundation (NGO), plus a range of enterprise cooperatives. This intervention aims to improve the incomes of approximately 2,800 cassava and sheep farmers in the Jember region of East Java by the end of 2018.

Sugar intervention.	This intervention involves improving market linkages, the commercialisation of agricultural innovations, and an enabling policy environment for sugarcane development in Madura, East Java. The partners are PT Perkebunan Nusantara X and the Indonesian Sugar Research Institute, along with Trunojoyo University. This intervention aims to improve the incomes of approximately 1,200 farmers in Madura by the end of 2018.
Dairy intervention.	This intervention involves developing fodder farming business models for smallholder dairy production in East Java. The partners are PT Nestle and the University of Brawijaya. The intervention aims to improve the incomes of approximately 1,200 dairy and fodder farmers in the Malang region of East Java.
Shallot Integrated pest management (IPM) intervention.	This intervention involves the using integrated pest management for shallot production in East Java. It is a joint ARISA-PRISMA intervention. The main partners are PT NuFarm, PT Nasa, PT Solbi, University of Gadja Mada, and the Plant Protection Agency. CropLife Indonesia will also be involved. The intervention aims to improve the incomes of at least 3,000 shallot farmers in East Java through the adoption of IPM.

2.3

Engagement with policy and wider stakeholders

In parallel to, and in support of, the efforts to understand the policy landscape and define an appropriate set of mechanisms to enter dialogue with policy makers, the ARISA team have sought to engage with a wide set of stakeholders. This has included:

- Discussion in Jakarta with BPPT and the science Director at the Ministry of Industry
- Hosting of an Indonesian Science Academy delegation to Australia led by Prof. Sankot.
- Discussion with DFAT's Knowledge Sector Initiative.

The key message is that Indonesian agencies are searching for "models of what works". That is, identification of models that are useful in promoting public-private sector partnerships that mobilise science for innovation.

Discussion with the Knowledge Sector Initiative drew attention to the way a number of streams of DFAT and economic diplomacy work including ARISA, the wider Commonwealth agencies (AusTrade, ACIAR) and the initiatives above are starting to converge in terms of strategic intent. Specifically, the recognition in both development assistance and in bilateral economic cooperation that capacity and policy issues around research, innovation and private sector led growth need to be tackled in order to unlock step change impacts and progress. In other words the systemic change agenda of development and growth strategies is going to need a much more concerted effort towards policy development for innovation. A specific implication of this convergence is that there are opportunities (outlined in Section 5) for ARISA to collaborate and contribute to larger scale policy engagement initiatives in related parts of DFAT such as KSI and beyond.

03.

Situational analysis of the innovation system at policy and organisational levels

This section presents a situational analysis of the innovation systems in Indonesia at both a policy level and based on the experience of ARISA's intervention experience at the research and private sector organisational level.

This purpose of this analysis is to highlighting key challenges where progress needs to be made and where ARISA could usefully play a role. Having identified these challenges a subsequent section explores the key agencies, debates and dynamics in policy enabling environment for agricultural innovation. Table 1 below provides an overview analysis of the challenges in the Indonesian innovation system. The sections that follow explore these issues in more detail.

Dimensions of the Current status innovation system	
Strength of linkages	Weak linkages across government, research institutes and the private sector. Disconnect particularly between developers and users of technology. Strength of linkages within ministries and departments is stronger, but this does not necessarily support innovation (ie. too internally focused).
Patterns of incentives	Government regulations and programs aim to incentivise collaboration between research and private sector. However could be better coordinated across different government departments.
National and organisational policies and practices	Strong leadership at regional and ministry level, and strong policy support for innovation, but so far this has not been sufficient to translate into fruitful innovation system. Structural and procedural issues that limit the capacity to turn strong political will into enabling environment Design of policies and programs is strong, but implementation capacity is weak, which limits effectiveness. Opportunities for evaluation and learning are missed due to a focus on monitoring financial accountability and outputs.
Effectiveness of mechanisms to align to development priorities	Varied — limited learning/sharing of experiences within or across programs. Limited mechanisms for aligning agendas of public and private sector at macro and implementation levels, with the possible exception of PISAGRO.

Table 1: Overview of challenges in the Indonesian Innovation System. (Source: Authors' analysis).

3.1

The policy environment and the national innovation system of Indonesia

At the macro-level there is a clear policy narrative about the importance of science and innovation as part of wider development and economic growth ambitions. There is also widespread interest within different government agencies to promote public-private sector partnerships for innovation. This occurs across the economy as a whole, but includes agriculture. It is evidenced by a number of schemes dealing with technology and business incubation. However despite this interest, there remains a lack of clarity about how to support and strengthen the innovation system as a whole. Debate on this issue spans Ministries, universities and industry, however with multiple actors and agencies there is added uncertainty regarding where authority to push a change agenda resides, or which models should be applied.

There has been considerable debate about the importance of developing an innovation system in Indonesia. However, the habit of only looking for the models from global best practice has tended to distract from the need to properly consider the Indonesian context and the nature of an innovation system appropriate to that. Ironically this blueprint approach to innovation systems design and strengthening contradicts the core global best principles of innovation system capacity development — experimentation, learning and evolutionary improvement. This would require much stronger policy learning processes: analysis and documentation of existing schemes and the use of lessons from this to adjust policy settings. As will be discussed in detail below this sort analysis and learning is yet to become established as a common practice.

A diverse set of unique cultural, social and development contexts

Indonesia is incredibly diverse — this is visible in the range of cultures and languages; administratively, with decentralised government providing partial autonomy to over 500 districts (divided between 34 provinces); and visible in the different stages and pace of economic and rural development across these areas.

This diversity creates challenges in a) designing national policy and enabling innovation conditions that are relevant and appropriate to the diverse context, and b) ensuring the implementation of policy at the provincial and district levels is as anticipated or designed (ie. maintaining connection between national and district actors). Furthermore, the constant churn in government positions across the country at various levels, results in change in personnel, often leading to changes in district policy and programs.

Stakeholder connections and policy coherence

The innovation policy environment is a crowded space. Public policy and implementation agencies have overlapping, complementary and contradictory roles with little coordination between them. Figure 2 illustrates an idealised "division of labour" of different roles and responsibilities in the Indonesian innovation system. However in reality the system is characterised by weak links between research organisations, industry, government and civil society organisations. This results in fragmented or disconnected policies across agriculture, research, education and innovation policies more generally. This is particularly problematic for supporting innovation as it relies not on a single policy (as can be seen from figure 2), but on a coherent set of related policies that contribute to the functioning of the innovation system as a whole.

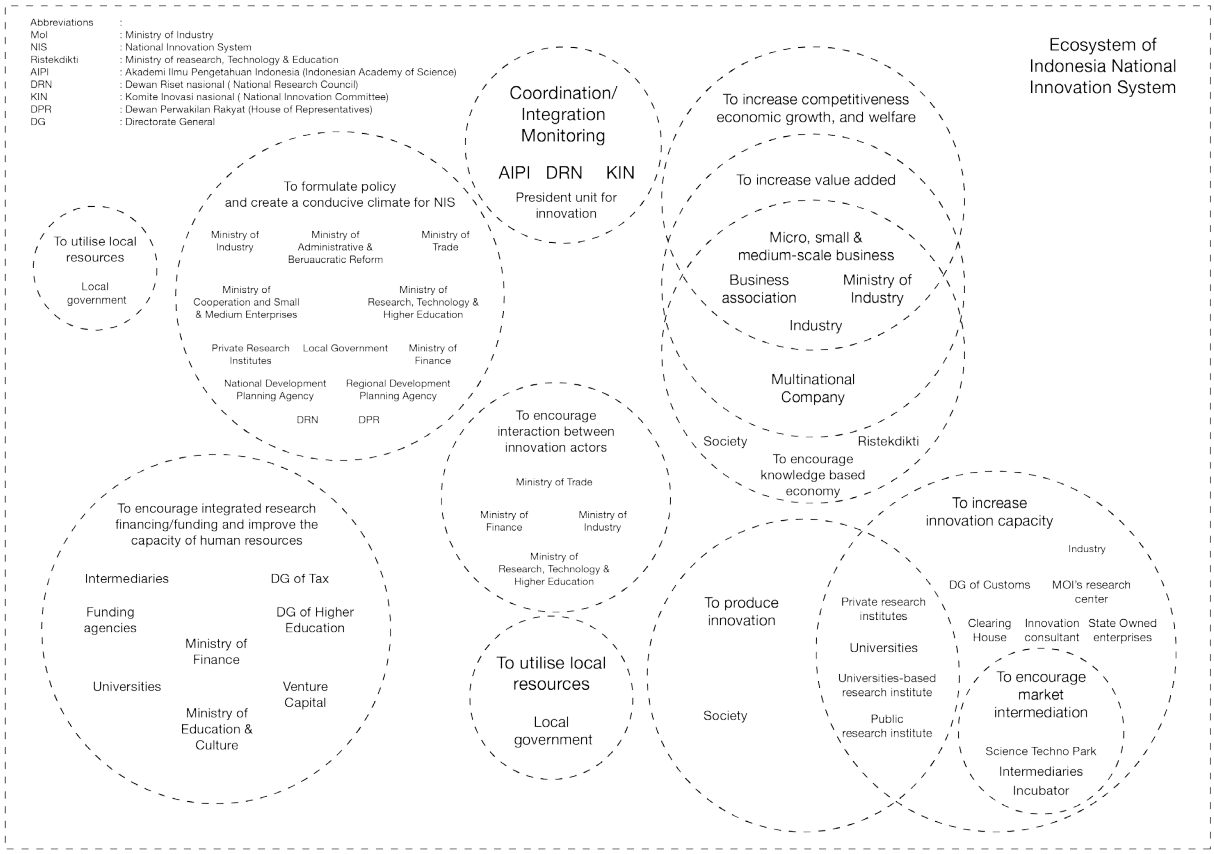


Figure 2: The ecosystem of Indonesian National Innovation System (Source: CIPG, 2016)

A consequence of this is the very wide range of initiatives that fall into the broad category of innovation support mechanisms. These span the infrastructural approach (setting up science and technology parks and business incubators) to a grants type approach (although a notable innovation fund focuses on funding research), and others dealing with risk and business incentives (see Appendix 1). However, the poverty reduction and/or inclusive business imperative is not strongly mainstreamed across different elements of innovation policy. Of course poverty reduction and food security is a clearly articulated policy goal at a national level.

However, while smallholders are emphasised in agriculture related investments, the poverty imperative seems to get diluted in other areas of innovation policy that may have relevance to agriculture. Within the research and industry sectors, there is limited communication between developers and users of technology, with limited exchange or mobility of human capital between R&D institutions and universities. The impacts of this disconnect was discussed in a recent presentation by the Director of Innovation Enhancement (RISTEKDIKTI) and are summarised in Box 2. Within the universities themselves, there is a further disciplinary disconnect with incentive structures that discourage multi-, inter- and transdisciplinary research. Thus the majority of technology development in Indonesia still tends towards a supply-push approach, generating a mismatch between the technology available and user-needs. Though government regulations institute different tax incentives to encourage industry support to, and collaboration with, research institutes, these are either not sufficiently attractive for industry, or not yet operationalised.

The realities of these kinds of fragmentation were apparent in discussion with university staff involved in ARISA interventions and are discussed further in section 3.4. Suffice to say the siloed approach to innovation is reinforced at various scales, across and within organisations, and severely limits the potential for innovation.

Box 2: Challenges and consequences of weak R&D and industry linkages

1. Interactions between R&D institution and business do not develop properly;
2. Not a lot of government-funded R&D products adopted by industry.
3. R & D institutions are not exposed to the challenges faced by industries so that the gap between what R&D activities they do
4. Interactive learning process to transpose R&D products into innovations does not happen, so in the short term, company's competitiveness would not shift to innovation capabilities.
5. Government investment through R & D institutions to strengthen the mastery of science and technology are not effectively influence the performance and economic competitiveness
6. Potential for diminishing of return phenomenon is very likely to occur because of the investment in the form of facilities and equipment in the production sector is not supported by the strengthening of the mastery of science and technology.

Source: Dr. Ir. Jumain Appe MSi.
General Director of Innovation Enhancement Ministry of Research, Technology, and Higher Education. Business engagement presentation at Indonesian Science

Implementing capacity

Within the research and industry sectors, there is limited communication between developers and users of technology, with limited exchange or mobility of human capital between R&D institutions and universities. The impacts of this disconnect was discussed in a recent presentation by the Director of Innovation Enhancement (RISTEKDIKTI) and are summarised in Box 2. Within the universities themselves, there is a further disciplinary disconnect with incentive structures that discourage multi-, inter- and transdisciplinary research. Thus the majority of technology development in Indonesia still tends towards a supply-push approach, generating a mismatch between the technology available and user-needs. Though government regulations institute different tax incentives to encourage industry support to, and collaboration with, research institutes, these are either not sufficiently attractive for industry, or not yet operationalised.
The realities of these kinds of fragmentation were apparent in discussion with university staff involved in ARISA interventions and are discussed further in section 3.4. Suffice to say the siloed approach to innovation is reinforced at various scales, across and within organisations, and severely limits the potential for innovation.

Evaluation and learning

There is significant opportunity within the Indonesian innovation system to learn from the large number of programs, grants and incentives that have been implemented across different agencies (see Appendix 1 and 2). However, the architecture of effective monitoring and evaluation programs are under-developed as are the processes to translate evaluation results into learning and improvement. As a result there is much reinvention of the wheel due to the lack of knowledge on how previous policies succeed or failed. The practice of documenting and organising lessons from policy implementation has not yet become a routine habit in Indonesia. The general evaluation documentation available usually consists of budget evaluation and target achievement.

At the level of national policy, assessing the effectiveness of clusters of policy intervention in terms of building the capacity of the innovation systems at a whole is a challenge. Benchmarking innovation performance at a national or sectorial level holds many challenges because of the difficulty of finding indicators to track system health rather than just the individual components of the system. The OECD innovation survey based approaches work well in industrial economies. However attempts to do this in the agricultural sector that use indicator based approaches have been largely unsuccessful (see Spielman and Birner 2007), with alternative approaches underdeveloped (eg. IDRCs work benchmarking rural innovation capacity, Dorai et. al, 2011 http://www.cprindia.org/research/reports/south-asia-rural-innovation-capacity-benchmarking-report).

At program and project levels, the focus of M&E is tightly framed around outputs and financial accountability rather than critical review and learning. Departments commission their own evaluations which tends to circumscribe the scope of enquiry. There is a degree of risk aversion in how KPIs and other performance criteria are defined, with a tendency to favour easy targets (ensuring success and securing future budget funding) rather than ambitious targets that would push innovation targets.

Ministry level champions are driven by their own KPI. These are variable but an important part of the engagement strategy going forward. ARISA will need to be able to articulate its achievements and associated lessons in existing terms of success and performance.

3.2

Implementation of research-private sector partnerships — insights from ARISA interventions

Table 2 presents an overview analysis of the key challenges of the innovation systems from at the public research institute level. These issues are elaborated in the sections below.

Dimensions of the Current status innovation system	
Strength of linkages	Individuals can and do work with the private sector but rarely as part of a broader strategy on the part of the universities to position themselves as partners and service providers that the private sector can work with. Limited tradition of working with the private sector means that linkages and capability are weak. Capacity weakness in the private sector and particularly SME's makes partnership difficult
Patterns of incentives	There is a broad based set of professional incentives in place, but disciplinary bound publication in international journals trumps all in matters of promotion.

National and organisational policies and practices	Broad-based national policy shift for research to work more closely and collaboratively with the private sector, but challenges of translating this into practice. Traditions of research practice and community service orientation reinforce weak orientation to working with the private sector
Effectiveness of mechanisms	Intermediary agencies and mechanisms to coordinate the efforts of public and private sectors and to broker and facilitated partnerships are generally missing

Table 2 Challenges in the system of innovation at research institute-private sector level. (Source: Authors' analysis.)

Shifting understanding and expectations of partnerships

Limited prior experience partnering with the private sector (aside from simple transactional relationships) left some university partners unprepared for the realities and complexities of shifting from more traditional agricultural research to collaborations that push the focus from the farm to the market. Initial designs and conceptualisations of the interventions in some cases were shaped by past experiences in traditional research and familiar modes of practice that underplayed the new way of thinking and opportunities brought by a private-sector partner. For the ARISA team, this has led to reflections on how early partners were chosen, and how the aims and goals of ARISA could be better articulated.

The capacity building activities of ARISA, particularly those associated the development of the partnership agreement and developing results chains has helped the university researchers (and indeed the ARISA team) come to grips with the fundamentally different nature of ARISA. For example, in the beef intervention, researchers had a tradition of organising field trials and demonstration and taking responsibility for scaling technology to farmers. ARISA has encouraged the researchers to partner with traders and government agencies allowing them to play to their technology scaling strengths. This alignment of research with broader and market-facing development initiatives is a new direction. These modest changes are indicative of the role for ARISA like-interventions in reframing the role of researchers in a more market-facing technology delivery model.

The maize intervention illustrates further reframing of research. In this case the university partner's initial engagement primarily concerned the technical dimensions of maize agronomy. This role changed as the intervention progressed, particularly following the departure of a partner providing production credits to farmers. Increasingly the university has had to play a facilitator role, negotiating how the market systems could be used to provide farmers access to credit. This is not yet a pervasive change in the university. However it does illustrate the way experiences from an intervention exposes researchers to different problem solving roles and the way prescribing private sector involvement and setting impact targets can help drive this problem solving.

Research institute structures and incentives

The reality of the institutional setting of the universities is that, as a whole, traditions of research practice and modes of funding and professional performance rewards need considerable transformation before partnership with the private sector can become common practice. The scale of the task would be daunting even in one university department. Attempting this across multiple universities through modest scale interventions supported by ARISA is extremely ambitious.

There is certainly a broad-based national policy shift for research to work more closely and collaboratively with the private sector (see discussion below) and this is evident in the meta-narrative of the universities. However, the mandate of the

universities is structured around research, teaching and community service, which have particular implications for guiding how academics work and are incentivised (or not) to work with the private sector.

Science publication in international journals is the main route to promotion. Furthermore, value is only attributed to publications that are in the researcher's primary or original discipline — that is, an agronomist only receives recognition for agronomy publications, an animal nutritionist only for publications in animal nutrition and so on. Where an initial strategy in ARISA was to try and broaden the scope of thinking around what is publishable (eg. to include the science of innovation or partnerships) this is a clear disincentive, especially for junior academics with an aspiration for promotion. It tends to be only when academics have reached their desired level of seniority that they become more comfortable to explicitly and deliberately broaden the scope of research and how they publish. This is not to say that other performance metrics are not in place for example teaching, providing project experience for students, community service and even working with the private sector. In reality the actual and perceived weighting of these metrics is over-shadowed by the pressure to publish in order to be promoted. This is not a challenge restricted to the research profession in Indonesia. Our own experiences at CSIRO tell us that a shift to a more outward, impact focused professional reward scheme requires strong leadership and deep cultural change. It would be extremely unlikely to achieve this sort of change bottom up from an intervention like ARISA.

Another interesting ambiguity is that universities in one sense already have a reward system for being outward and impact focused through their community service mandate. Researchers are mandated and encouraged to work with farmers and communities. A result of this laudable emphasis on local community impact is that this has been interpreted very narrowly as specifically not working with the private sector. For example, much of the rural enterprise development work observed at universities has been focused on establishing community-based enterprises that either compete with the private sector or have a very incomplete understanding of the markets that these rural enterprises might be serving. This community service tradition therefore reinforces the idea that working with the private sector is not part of normal professional practice.

This is not to say that scientist do not work with the private sector. In fact there are rules that allow them to do this on a contract basis, with the university retaining a small percentage. In many cases this work is an important supplement to otherwise modest university salaries (Hill and Wei 2012). This is very much a transactional process between companies and individual researchers. It does not seem to be part of a broader strategy on the part of the universities to position themselves as partners and service providers that the private sector can work with. One result of this is that the capability of universities to work effectively with the private sector is very thin and dependent on individuals and their networks with the private sector. Similarly universities have not established a deep tradition of service provision to the private sector (let alone partnership or collaboration).
It is worth acknowledging here that there are "institutional entrepreneurs" operating within the universities who are leading the way in innovative engagements. The lead researcher in the cassava intervention is one such character. He has a history of knitting together alliances with cooperatives and the private sector in order to open up new (cassava) market opportunities for farmers. ARISA support is helping expand the scope of this. Institutional entrepreneurs typically face significant

challenges as they push organisational boundaries and norms of behaviour.
A key feature of the history relating to the development of modified cassava flour (MOCAF) in the cassava intervention is the persistence, determination and creativity of the lead researcher to navigate professional and operational challenges to get to his end goal of delivering benefits to smallholders. The entrepreneurial aspects extend to working with a company, PT BCM, on cassava policy to achieve higher recognition for this crop in national programs and priorities. It remains to be seen whether this individual's drive can be harnessed by ARISA to drive wider changes in the university by using his sponsorship of an innovation fair as a way of broadening the interface with the private sector.

Compared to the universities, the intervention with the Indonesian Sugar Research Institute (ISRI) paints a different picture due to the history of ISRI and different funding dynamics. Historically this was a public funded research institute charged with developing improved sugar varieties and allied technology that was provided as a free service to the public sugar industry. Public funding was stopped and ISRI has struggled to generate revenue even though it diversified its offering to industry considerably.

Some public core funding has now been reinstated to maintain research facilities and to allow ISRI to continue long term strategic research (ie. plant breeding). This has created a very different sort of institutional setting compared to the university system. ISRI has the ambition to play the role of science informed sugar innovation agency; a source of technology and related expertise, and is also undertaking sector development feasibility studies and helping to address market and social issues associated with smallholder sugar production. It is experimenting with acting as a hub to broker in other expertise; for example it is supplementing its biophysical and economic skills in the ARISA intervention through a partnership with the anthropology department of the local university. ISRI already has close historical relations with industry. Its challenge is how to develop its capacity to fulfil its new role, and to demonstrate its value to industry players who are accustomed to free services.

Unlike the university based interventions the appetite for institutional change is strong and led from the Director of ISRI who has a clear vision of the nature of the role her organisation needs to play within the sugar sector: another institutional entrepreneur, though it could be considered quite differently to the cassava case. In contrast to the institutional entrepreneur in cassava case where challenges to norms and behaviours were driven by the individual's own motivation, in the ISRI case, there are strong external forces driving change (specifically changing funding modalities). ISRI's involvement with ARISA is evidence of how they are trying to change their agenda and capacity. With a champion of change of this sort in place, a real window of opportunity exists for ARISA to help ISRI better fulfil its sugar innovation agency role with various forms of technical and organisational capacity building. However the design of such support needs careful consideration and probably considerably more resources — this needs to be co-developed but could include capacity and understanding in multi- and interdisciplinary work, giving greater strength to current attempts to partner with other universities and bring in missing skills to address industry needs.

The private sector environment

Interviews with at least one private sector partner suggests that past experiences of trying to work with a university was unsuccessful because the research undertaken had not been orientated to deliver practical solutions. This is a familiar challenge and illustrative of the cultural differences between research and private sector organisations. It does however illustrate that simply putting public and private sector players on the same team is not sufficient to support successful outcomes. It involves changing the institutional setting of research by framing research questions differently and setting new measures of what constitutes a useful research finding, as well as a research success. It involves researchers joining the private sectors' experiments rather than pursuing more curiosity driven lines of research enquiry. That is, it involves both research and private sector partners having a better understanding of their respective priorities, goals and requirements. ARISA has an important role in helping advance this perspective in its interventions. Supporting researchers to present an attractive pitch to potential private sector partners will be a critical element of ARISA capacity building going forward.

It is worth noting that there is uneven development and presence of private sector actors across Indonesia. Though this is evolving, it can mean a limited pool of potential private sector actors for research to partner with. Furthermore, the capacity to partner with universities — eg. through co-funding — is limited for many of the small/medium enterprises that are would gain the most benefit from collaboration with research.

There are also challenges on the private sector side including, limited capacity and confidence to approach or partner with universities in the first instance or limited technical capacity for them to engage with science advances. The innovation practice logs highlight the way initial support and resourcing for a partnership can address this capacity gap. For example, we have seen partnerships shift from pure transactional exchanges of resources to collaboration with a deeper appreciation of the universities legitimising role for the private sector in negotiations with government agencies and in building relationships with farmers. Another dimension of this is the way universities can play in a regulatory role, certifying products; for example in the beef case they play a role in certifying 'herbal' beef. This presents another avenue for collaboration.

This, however, also underscores the observation that public-private sector partnerships in Indonesia is not a match of equals and that intermediaries are, at times, going to need to broker these types of alliance. With few intermediaries in the current innovation landscape, ARISA is currently playing this intermediary function. As part of the CIPG led landscaping study a number of mini case studies are presented that reinforce the way NGOs often play this role: for example Mercy Corp has been convening the pre-competitive aspects of its “8 villages program” that will eventually be driven forward by the private sector partners. There is currently no public agency playing this role. The PISAgro platform is perhaps one example that has the ambition to be a mechanism to coordinate the efforts of public and private sector collaboration. Going forward it would be useful to explore how ARISA could both strengthen this type of intermediary role, but also use the capability of existing intermediary organisations as part of the intervention commissioning and capacity building process.

The challenge of institutional change in public research institutes and the universities is formidable. While macro-level policy ambitions are sending positive signals about the importance of innovation and partnership with the private sector, there is a disconnect between these ambitions and their implementation. Institutional inertia in the universities arises from their historical emergence and deep traditions as seats of learning, research excellence and community services. These are laudable traditions, but difficult to change quickly without considerable capacity building and support at the upper levels of university governance structures – which is further compounded by the continued control of the Ministry of Education in many aspects of university governance. ARISA has made links into a number of departments in a number of universities. The energy generated by “institutional entrepreneurs” who are already pushing boundaries within the system provides an opportunity for ARISA to further progress dialogue on how to support innovation. This could create an avenue to undertake capacity building and private sector engagement initiatives that go beyond the interventions and engage a wider set of university staff in a subset of the universities ARISA is partnering with.

4.

Overall assessment of the innovation system and its challenges and opportunities.

The following presents the key features of the Indonesian innovation system that ARISA needs to consider going forward.

- The innovation system of Indonesia is characterised many of the generic weaknesses that while not unique to Indonesia are deeply embedded in the culture and institutional setting of the country: weak or missing links between research and the private sector reinforced by patterns of professional incentives and routines; underdeveloped capacities in research organisations to work with the private sector, lack of policy coherence; limited capability in key agencies to implement innovation initiatives; investment / disbursement driven performance metrics; and risk aversion in public bureaucracies.

- There are however, highly contextual conditions that add to the challenge of making innovation policy work effectively in Indonesia, such as the cultural and geographical diversity and a decentralised system of government. These features add complexity through the diverse local contexts of which policy is interpreted and implemented.

- The practice of documenting and using lessons from policies and program implementation has not yet become a habit in Indonesia. This is a missed opportunity for the policy learning needed to craft a coherent set of policies and interventions that support innovation system capacity building and do so in a way that address the contextual issues of Indonesia. This challenge is exacerbated by lack of appropriate metrics and associated date on the functioning and performance of the innovation system as a whole.

- The policy space around innovation is a crowed one with multiple agencies with over lapping roles and multiple champions. There are also other DFAT investments at play in this domain. However there is convergence on the importance of strengthening the innovation policy environment as a route to systemic change and national goals.

- Over the last decade much of the high-level policy debate in Indonesia has adopted an innovation systems framing. However a lot of the energy around this debate has focused on trying to specify what this system should ideally be and has been pre-occupied with a search for best practice models from global experience. This has value, but overshadows the need to contextually design policies and interventions that address the needs of the country and address the specific challenges in the capacity of the Indonesian innovation system.

5.

Implications and options for policy and stakeholder engagement to strengthen the enabling environment for agricultural innovation.

This paper highlights that ARISA's strategic intent of progressing public-private sector led innovation through policy channels is well aligned to the broader policy narrative of Indonesia. ARISA is dealing with relevant challenges and has the potential to generate valuable insights into critical policy and institutional change processes. Furthermore ARISA is starting to build relationships in the policy domain and with public policy agencies, notably Ristekdikti (but also others), who are aware of ARISA's strategic intent and show interest in learning "what works". The challenge ahead concerns how this alignment and awareness can be translated into a practical learning alliance.

ARISA has the goal to contribute to an enabling environment for innovation. ASRISA needs to avoid the temptation of making normative recommendations on innovation systems reform based on a slim evidence base from its interventions. Any approach to enable innovation needs to be contextually driven – this is not to say that approaches from other contexts cannot be applied to Indonesia, rather that any transfer of mechanisms or approaches must go through a process of translation and reinterpretation to be relevant and applicable (and owned) by local actors.

Therefore, the approach taken in ARISA has been to understand the current environment of innovation policy in Indonesia as a way of identifying how most usefully to enter into a dialogue about change. This is a step-wise approach: understanding the innovation landscape/actors; proposing different processes for how to engage; seeking feedback and buy in from key actors within the system regarding which of these is the most feasible and has the most support.

The aim is to facilitate discussion to make full use of the existing expert knowledge about the innovation system, as it sits within those government actors that intimately understand the institutional, bureaucratic and cultural complexities of national policy in Indonesia, and can put the theoretical principles of innovation system function into the practical realities of Indonesia.

Priorities appropriate to the scope of ARISA include:

1.

Building the capacity of public researchers to work with the private sector. This is already the main focus of ARISA, although a focus beyond the interventions is needed.

2.

Strengthening links between analysis and lessons of the effectiveness of interventions and policy for program and policy learning. ARISA's interventions and analysis are a source of lessons, but ARISA could play a wider role in piloting a wider process for program and policy learning.

3.

Leveraging off the convergence of interest around improving the enabling environment for innovation. Current interest in innovation policy reveals a number of champions and wider dialogue processes that ARISA could connect with.

Implementation options going forward include the following:

1.

Using ARISA's lessons to inform policy. The practice logs are a key source of data to help interpret ARISA's intervention experiences and document lessons that can be shared more widely. They also play an internal learning function. Experience to date suggests that this is a viable way of developing new insights into the realities of making public private sector partnership work in public research institutes as well highlighting wider institutional challenges related to practice traditions and professional incentives. In the next 12 months the collection of information through the practice logs will be continued. This information will be used as an input into the wider capacity development support being provided to interventions (i.e. helping with reflection on what is working and where the challenges are). As the interventions mature over the next 12 months information from the practice logs will also be used to develop case studies and a synthesis of broader lessons from across the interventions. This material will serve two purposes. Firstly to share with organisations and policy agencies (see policy engagement options below) to help with improved design of their new initiatives in innovation and for publication in collaboration with ARISA's intervention partners.

2.

Leverage off institutional entrepreneurs in public research institutes Based on the two or three individuals that have self-selected through the intervention commissioning process, use their energy and networks of influence to implement capacity building and private sector engagement events that go beyond the existing intervention. Pitching ideas to private sector partners, or assisting with connection to funding for public-private sector partnership could give this real meaning. This could be a way of progressing the mainstreaming of ARISA approaches in partner organisations beyond the interventions.

3.

Structure the partnership with Ristekdikti as a technical assistance and as a learning alliance. Partnering with Ristekdikti as an implementing partner presents opportunity to contribute to two of the identified challenges in the innovation system: the need to strengthen innovation program implementation capabilities; and the need for stronger learning in intervention cycles. An option here is to use the partnership with RISTEKDIKTI to include joint assessment and lesson learning not just of the ARISA interventions, but also of similar RISTEKDIKTI investments and grants. A first step will involve developing simple protocols to jointly assess existing interventions. This protocol would need to incorporate RISTEKDIKTI key performance indicators as well innovation systems criteria developed by ARISA.

4.

Act as a hub for sharing experience and bridging between field experiences of other public-private agricultural innovation partnerships. ARISA is only one source of lesson on public private sector partnership for agricultural innovation. Given the weak tradition of learning from experience in the innovation system, ARISA could play a role in using its analytical expertise to collect, collate and share these experiences with its policy partners. This would help expand the evidence base of ARISA. Linking it to Ristekdikti would lend legitimacy and provide a useful connection to policy with considerable convening power. In the long term, partnering with the Jakarta based Centre for Innovation Policy and Governance (CIPG) their role as an innovation policy think tank responding to agency needs on specific policy issues; for example a more detailed exploration of the implementation capacity

issues and innovation systems capacity benchmarking that have been highlight in this report as areas needing attention, but are currently beyond the scope of ARISA. This option would need further scoping and it would need to consider ways of engaging local level agencies within the decentralised government system as well as the national agencies mentioned above.

5.

Form / join a policy engagement coalition. With the convergence of a number of DFAT and other related initiatives around the broader capacity and innovation policy agenda there is much scope for collaboration. This direction is already being pursued by other parts of DFAT and it would seem sensible to join rather than duplicate. One configuration maybe that ARISA partners with KSI and takes a lead on issues specifically related to agricultural innovation policy. This could be done either in a "light mode" (using ARISA evidence only) or in a more comprehensive mode incorporating elements of options 2 and 3. This option would need further scoping and will contingent on any recent changes in KSI following their mid-term review earlier in the year.

The next steps are to take these options and discuss them in more detail with relevant stakeholders and partners to think through the practicalities and resourcing implications. Once agreement on the preferred pathway(s) has been established, ARISA will need to undertake a more detailed design of next steps, actions and responsibilities, including timeframes. In cases like this there is always going to need to match aspiration with resourcing. In the case of ARISA this probably means a wider strategic set of choices about how to adapt its operating model based on experiences to date. Of equal importance are strategic choices associated with finding a balance between driving market systems change through interventions that rely on market signals to stimulate market change; and investing in processes that connect these and other experiences to the policy and institutional change process and the systemic change agenda that is increasingly prominent in development and economic growth policy and strategies.

6.

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ANNEX

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