**Eastern Indonesia-Agribusiness Development Opportunities** 

# **Stakeholder Consultation Workshop**

# Legumes (soybeans, peanuts, mungbeans)

Kuta, Bali, Indonesia

25<sup>th</sup> April, 2013



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#### Eastern Indonesia Agribusiness Development Opportunities (EI-ADO)



- Research commissioned by ACIAR, implemented by Collins Higgins Consulting and Indonesian partners
- EI-ADO project objectives:
  - Identify five commodity value chains linked to NTB, NTT and East Java with most potential to increase income of poor farmers
  - Identify opportunities and interventions with most potential for improving the efficiency, competitiveness and income of poor farmers
- Information and recommendations from EI-ADO study to inform DFAT in the design of the Australia Indonesia Partnership for Decentralisation – Rural Economic Development Program (AIPD-Rural).
  - \$112 million DFAT funded development program targeting Eastern Indonesian



# **AIPD-Rural**



- **Goal:** Increase the net income of 1 million poor male and female farmers by at least 30% by 2022 (300,000 of which should be reached by 2017)
- **Objective**: to increase the competitiveness of poor male and female farmers
- **Strategy:** To address the "systematic" constraints of the agricultural sectors that are important to the poor in selected districts
  - Outcomes:
    - Improved farm practices
    - Increased access to input and markets
    - An improved sub-national business enabling environment
- Approach: Market Development or M4P





# **EI-ADO Methodology**





- Reference Group selected down to 16 commodities
- 16 commodity literature reviews preformed
- Provincial and Reference Group consultation for commodity prioritization
- Identification of 5 priority commodities for detailed value chain studies.

1.	Beef	
2.	Legumes	Soybean, mungbean, peanut
3.	Mango	
4.	Maize	
5.	Vegetables	Chilli, shallot, tomato & potato





## **Commodity Prioritisation**

#### Commodities with most potential to increase income of the poor



### Soybeans





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08/10/2012

## **Project Approach and Key Findings**



#### **Project Approach**

- Three distinct value chains examined: peanuts, soybeans, and mung beans\*
- Field interviews with market actors all along each value chain
- Identified key constraints in value chain competitiveness at each level
- Identified contacts to develop potential intervention strategy





## **Project Approach and Key Findings**



#### **Project Team**

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- Ketut Puspadi BPTP NTB
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## **Project Approach**



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### **Rationale for Areas Visited**

#### In East Java:

- Epicenters of soybean production in East Java target districts of Malang, Trenggalek
- Surabaya is key for all three legume crops as it is a trade hub through which a significant proportion of domestic (and imported )production flows
- Ubiquitous presence of tempeh and tofu processors

#### In NTB: Bima and Dompu

- Features the highest production concentration of soybeans of all districts visits relative to other legumes
- Strength of local production vs. Imports among processors



# **Key Findings**

EJ										
	Sampang	Situbondo	Malang	Trenggalek	TOTAL - EJ					
Area Harvested (ha)	22,229	581	545	5,629	252,815					
Production (MT)	31,031	592 677		6,789	366,999					
NTB										
North West Lombok Lombok Dompu Bima TOTAL										
Area Harvested (ha)	869	3,981	11,158	29,124	75,042					
Production (MT)	1509	4,940	10,833	29,383	88,100					

Source: BPS 2012

	2005	2006	2007	2008	2009	2010	2011	2012
East Java	335,106	320,205	252,027	277,281	320,155	339,491	366,999	361,986
NTB	106,682	108,640	68,419	95,106	95,846	93,122	88,100	74,156
All Indonesia	808,353	747,611	592,534	775,710	924,511	907,031	851,286	851,647

Source: BPS 2012



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## **Project Approach**

#### Summary of interviews conducted in the soybean value chain

	Input Supplier	Producers / producer groups	Wholesale Traders	Retail	Tofu / tempe/ sauce Processors	Research	Research Govt./BSO		
Jakarta							1	1	
East Java:									
Trenggalek	2	1	2		1		2	8	
Surabaya			2				1	3	
Malang			1		2			3	
Sampang	2	1	2	1	3		1	10	
			N	TB:					
Mataram	2		1		5			8	
N. Lombok	1							1	
W. Lombok									
Bima	1	2	4		3			7	
Dompu	3		1					4	
Total	11	4	13	1	14		5	45	

• Indonesia an important consumer and producer



Declining production despite increases in consumption:



Millioin Ha

Declining production despite increases in consumption



• Rising prices: Chicago Board of Trade



Source: mongabay.com and World Bank data





Rising prices



— Monthly Average Soybeans Farm Price Received in US 2008 - 2012



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- Rising prices: Kediri, East Java
- Price tracks CBOT



Source: Indonesian Ministry of Agriculture, 2012

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## **Soybean Costs**



Source: Legume team field work and calculations 2012









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#### Input supply

- There is a lack of commercially-available certified seed for farmers; many are using seed from their own seed banks, and the yields decrease with time as a result. Some wholesalers are distributing seed to farmer suppliers, but this seed is not selected professionally.
- Access to credit to smallholder farmers to purchase inputs. In certain cases, farmers entering into informal agreements with buyers.
- There is reportedly a large amount of cheaper but inferior-quality, often counterfeit, seeds, pesticides, and herbicides on the market.





#### Wholesale

 Lack of VC communication between market actors; Soybean wholesalers in Lombok express a lack of knowledge and communication with potential/existing buyers in Bali and Surabaya. Sometimes these actors have organized business-to-business meetings to counteract this.



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#### Pre and post harvest

- Farmers often apply unskilled methods for planting, weeding, and harvesting, which lowers their harvests and results in uneven product quality (e.g. beans of varying sizes, etc.)
- Farmers lack knowledge in and access to proper post-harvest storage methods for soybeans.



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#### Processing

- Tofu processors often lack access to affordable fuel and more efficient processing techniques, which limits their ability to make higher amounts of tofu at lower cost.
- Certain tofu/tempeh processors would like to diversify their buyers/markets and upgrade their branding, packaging, and marketing strategies in an increasingly tight market.



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#### **Strengths**

- Pricewise, Indonesian soybeans are as much as
  5-10 percent less expensive than imports
  (especially where they are most available, in
  NTB).
- Tofu producers interviewed acknowledge that Indonesian soybeans - especially those produced in NTB - offer advantages in terms of quantities of tofu produced, resulting in at least 10 percent more tofu than when tofu is processed from imported beans. *(Source: tofu processors)*







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#### Weaknesses

- Availability and supply of dom. soybeans is irregular.
  - Local soybeans reportedly have higher moisture content on avg. – up to15% compared to imports with a humidity level of between 10-12%. Distributors of local soybeans must sell quickly or risk more rapid degradation. Some elect to dry them out further but this erases their margins.
  - Local soybeans are irregular in size and on the whole smaller than imports - a characteristic that influences tempeh processors to purchase imports.
  - Little quality control postharvest down the value chain. Local soybeans often arrive on the market with debris, discoloration and non-uniformity.
  - At farm level, the value chain is threatened by low productivity. Avg. is 1.2 - 1.6 MT/ha reported, whereas imports are 3 MT/ha.





#### **Opportunities**

- There are opportunities for collaboration between value chain actors to spur local production and quality controls to fulfil unmet market demand.
- Farmers are consistently willing to purchase quality seed if this were available through market channels. Several private seed companies could generate substantial profits in supplying this market.
- Improved efficiencies by tofu and tempeh processors could result in healthier demand through lower sales prices and higher purchasing quantities.



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#### Threats

- High attention by GOI favouring maize and rice planting over soybeans encourages farmers to plant those other crops instead of soybeans.
  - Lack of attention by input supply companies to soybean-specific products (incl. seed, fungicide) and training to farmers also inhibits farmers from planting.



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## **Illustrative Interventions**





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# Summary

- Develop capacity of lead firms to conduct producer training and extension activities
  - Support LFs to introduce improved and new varieties of seed to producers
- Build the capacity of LFs to improve and expand their procurement from producers
- Introduction of new technologies to improve LF efficiencies (and their products / services provided to producers)
- Exposure visits/ business-to-business meetings
- Facilitating market access for LFs (who in turn will purchase more from producers)
- Improving LF quality management systems (allowing them to improve products and services to producers)



## Follow up Interviews / Gaps in Research



- More seed companies doing seed multiplication on Sumbawa Island.
- More input supply companies based in East and Central Java.
- The three major importers of U.S. soybeans These have been referenced by large-scale distributors in Surabaya: Cargill, Teluk Intan, and Suryabudi.
- Financial institutions Of those offering loans to soybean wholesalers and processors in EJ and NTB, the two most quoted banks are BRI and Bank Jatim (the latter in East Java).



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## Follow up Interviews / Gaps in Research



- KOPTI (National Association of Tempeh and Tofu Processors) - None of the small processors interviewed in target districts of NTB or in Sampang belong to this organization. They have collaborated with the American Soybean Association in the past.
- Market actors in the AIPD-Rural target district of Situbondo - As the team did not make a visit there, there is little information on that district as to how it fits into either the peanut or soybean value chains: farmers, input suppliers, wholesalers, etc.
- Marketing agencies or consultants based in EJ -Are there any marketing agencies who have collaborated at any level with small tofu/tempeh processor? Have they ever been approached for such work? Why or why not?



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# Gaps in Knowledge



- Crop management (irrigation, fertilizer, IPM)
- Suitable varieties (soils/climate)
- Post harvest management technologies (moisture)



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#### Peanuts



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## Project Approach

#### Summary of interviews conducted in the peanut value chain

	Input Supplier	Producers / producer groups	Wholesale Traders	Retail	Snack food processor	Research	Govt./BSO	Total
Jakarta					1			1
			Ea	st Java:				
Trenggalek								
Surabaya			3	2				5
Malang		2			2			4
Sampang	2	2	3	2			1	10
				NTB:				
Mataram	2		1	5	1			9
N. Lombok	1	2	3					6
W. Lombok		2	1					3
Bima	1							1
Dompu	2		0					2
Total	8	8	11	9	4		1	41

# **Project Approach**





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#### **Rationale for Areas Visited**

#### In East Java:

- Epicenters of soybean production in East Java target districts of Malang, Sampang, Trenggalek
- Surabaya is key for all three legume crops [esp. Pabean market for peanuts] as it is a trade hub
- Highest quality local peanut reported from Tuban, where at least three major traders are based

#### In NTB: Lombok

- High production relative to other legumes, climate ideal
- Production stable in this province despite overall decline in Indonesia
- Thick network of traders in Mataram and Central/West Lombok



• Global producer



East Java											
AIPD target districts:	Sampang	Situbondo	N	lalang	Trenggalek	East Java TOTAL					
Area Harvested (ha):	26,451	411		29 2,2 <sup>2</sup>		164,921					
Production (MT)	27,685	462		37	2,186	211,416					
NTB											
AIPD target districts	North Lombol	West Lomb	ook	Dompu	Bima	NTB TOTAL					
Area Harvested (ha):	6,342	2* 1,	433	6	67 11,290	26,319					
Production (MT):	8,870	)*	667	82	28 14,913	37,964					

\*Note: In 2010 the district of West Lombok was split into both West Lombok and North Lombok. The data presented is for N.Lombok 2010. 2011 data for N. Lombok not available. Source: BPS 2012






### **Overview of Peanut Sector in Indonesia**

#### Peanut Kernel Production (MT) by AIPD-Rural Province

	2007	2008	2009	2010	2011
Indonesia	789,089	770,054	777,888	779,228	676,899
EJ	196,886	202,345	216,474	207,796	203,493
NTB	32,913	32,348	38,615	33,666	37,331

Source: BPS, 2012



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### **Overview of Peanut Sector in Indonesia**



### **Production Costs**

#### Production costs for dryland peanuts in East Java and North Lombok



Source: Legume study team, North Lombok, Oct. 2012





#### Input supply

- There is a lack of commercially-available certified seed to farmers; many are using seed from their own seed banks or buying unofficial commercial seed from other farmers.
- Producers lack access to inputs on credit which prevents them from being able to purchase inputs.
- There is reportedly a large amount of cheaper but inferior-quality, often counterfeit, seeds, pesticides, and herbicides.



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#### **Pre & Post Harvest**

- Farmers often apply unskilled methods for planting, weeding and harvesting, which not only lowers their yield but results in uneven product quality (e.g. varying bean size).
- Actors across the entire value chain are unaware of (or not expressing concern with) the hazards associated with aflatoxin\*\* contamination of peanuts. Existing national government standards are not being enforced.



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#### Processing

As annual peanut production falls across Java and NTB, larger-scale peanut processors (Garuda, Dua Kelinci et al.) do not have sufficient access to quality peanuts and are forced to import kernels from India. These are ultimately more expensive.



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#### Strengths

- Indonesian peanuts often enjoy a lower price than Indian imports at retail level, sometimes by as much as 20 percent.
- Indonesian peanuts from Tuban and NTB are often cited as the benchmark in terms of quality and taste.
- Relative to other legume crops, peanut farmers and traders enjoy higher margins and have a ready market able to absorb production.
- The presence of lead firms in the peanut value chain such as Garuda and Dua Kelinci can be an asset in driving export demand and quality.



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#### Weaknesses

- There are limited quality controls at farm gate.
- higher moisture content which limits storage time.
- There is a lack of quality, certified seed of appropriate varieties.
- Lack efficient processing equipment which keeps them from increasing their productivity and competitiveness.
- Lack of good quality seed, fertilizers, and chemical inputs which limits yields.
- Peanut is a secondary crop, compared to rice and maize.



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#### **Opportunities**

- Farmers are often willing to purchase quality seed if it were available through market channels; private seed companies could introduce such seeds into their product lines.
- Product diversification could find ready consumers on the domestic market.



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#### Threats

- High attention by GoI favouring maize and rice planting.
- There is insufficient supply of domestically grown peanuts to larger processors, who are the drivers of the peanut value chain.
- Share of imports on the domestic market is steadily growing in order to satisfy demand.



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### **Follow up Interviews - Peanut**



- *Travel to Tuban Regency* Appears to be the epicentre of peanut production in East Java.
- Interviews with lead firm processors/exporters -How do their sourcing models compare, and what kind of relations do they have with suppliers in EJ or NTB?
- Oil and cake/animal feed processors what role do these actors play in the value chain and what relations do they have with suppliers?



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### **Illustrative Interventions**





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### Summary

- Develop capacity to conduct producer training and extension activities
- Support the introduction of improved and new varieties of seed to producers
- Build capacity to improve and expand procurement from producers
- Introduction of new technologies to improve efficiencies (and their products / services provided to producers)
- Exposure visits/ business-to-business meetings
- Facilitating market access
- Improving quality management systems (allowing them to improve products and services to producers)
  - Activities to achieve these interventions may



### Mungbeans



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### **Project Approach**



### **Rationale for Areas Visited**

- Only NTT, Timor Island visited; two target districts located there
- Existing ACIAR project on tropical pulses
- Competitiveness of mung beans from Belu district historically high (although declined in recent years)



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### **Project Approach**

#### Summary of interviews conducted in the mungbean value chain

	Input Supplier	Producers / producer groups	Wholesale Traders	Retail	processor	Banks/Fin. Org.	Govt./BSO	Total
Jakarta								
East Java:								
Trenggalekk								
Surabaya			2					2
Malang								
Sampang								
NTT:								
Kupang	2	1	2	2		2 + 1		9
ТТО	2	1	2	4				9
Belu	2	1	2	3		1	1	10
Total	6	3	8	9		4	1	29

### **Overview of Mungbean Sector in Indonesia**

### **Dry Bean Production (tonnes)**



### **Overview of Mungbean Sector in Indonesia**



### **Overview of Mungbean Sector in Indonesia**

NTT						
	SBD	TTU	East Flores	Ngada	Belu*	Total NTT
Area Harvested (ha):	282	825	418	280	1869	15,767
Production (MT):	271	848	466	316	1761	13,462

\*Not an AIPD-Rural target district. Major production center located adjacent to TTU Source: BPS 2011









#### **End Markets**

- Most raw mung beans are sold at wet markets, bazaars, and rural markets. A small amount is used to make more processed end products. Their final uses in Indonesia include the following:
  - Fresh sprouts
  - Sweet porridge Cakes and snacks
  - Mung bean starch and flour
  - Mung bean drink



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#### Input supply

- Despite the presence of seed developers in Belu district, there is no active private sector distribution network
- Input retailers (in TTU) are not practicing formal seed grading when they sell mung bean seed back to farmers.



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#### **Farm-Level**

- The highest capital costs for NTT farmers (Belu and TTU) are seed and labour (land preparation/crop management).
- Most farmers not using fertilizer and inputs.
- Most TTU farmers taking advantage of rain-fed growing opportunities ("bimodal rainfall).
  - A limited number of farmers that receive assistance from BPTP and other GoI institutions enjoy higher productivity returns of over 1 MT/ha, as well as access to improved variety seed.



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#### Inter-island wholesale

- The majority of mung beans sourced in Surabaya come from Eastern and Central Java; some of those beans are exported elsewhere to ASEAN markets.
- Production and shipments to Surabaya from Belu/Atambua suppliers has fallen over the last decade, reportedly down to 2,000 MT/yr from over 10,000 MT/yr 10 years ago.



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### **Mungbean Value Chain Map**



ACIAR SMAR 2007/068 (2009)

#### Seasonality of prices: Mungbeans from Timor Island



### Gaps and Follow Up Interviews - Mungbean



- Flores and Sumba Islands all indications are that the majority of mung bean production for NTT is on these two islands (in addition to Belu district); contact more seed developers and wholesale traders in these areas to compare with the information gathered from West Timor.
- Follow-up with seed developers in NTT. This outreach alone might result in certified mung bean seed being made available to thousands of farmers in Belu and TTU districts. Are there other seed developers in Flores or Sumba islands?



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### **Gaps and Future Research**



Examine the possibility of transposing ACIAR's public-sector mung bean loan program model into the private sector - the current setup of the NTT bank loans might be better off if implemented by more private sector actors. The legume team interviewed one other bank in Kupang (BRI).



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### **General Questions**



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### **Income Impact Matrix – Criteria**



# 1. Potential to increase income of households

#### Consider

- What is the technical feasibility of this intervention to increase prices, yields or reduce cost of production for individual poor farmers, traders, wholesalers and retailers?
- What is the potential for this intervention to contribute to the AIPD-Rural goal of increasing household income by 30%?



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### **Income Impact Matrix – Criteria**



### 2. Potential to implement, scale up and benefit large numbers of poor households

Consider

- What is the feasibility of implementing and scaling out this intervention, so that it will benefit a large number of farmers and poor households over the long term?
- What is the potential for this intervention to contribute to the AIPD-Rural goal of benefiting 300,000 households by 2017?



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### Income Impact Matrix – facilitated discussion

High feasibility for increasing income Low feasibility for impact at scale	High feasibility for increasing income High feasibility for impact at scale				
Low feasibility for increasing income Low feasibility for impact at scale	Low feasibility for increasing income High feasibility for impact at scale				

Potential to benefit large numbers of households



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### **Proposed Interventions**



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### **Key Intervention Areas**



#### Intervention Area 1:

 Work with lead firms to build closer relations with suppliers (farmers and traders), boosting their capacities.

#### **Intervention Area 2:**

• Work with lead firms to improve their market access.

### Intervention Area 3:

 Introduction of new technologies and firm-level management systems.



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Work with lead firms to build closer relations with suppliers (farmers and traders), boosting their capacities to:

- Provide extension services (training and inputs)
- Source higher amounts from farmers

Examples of potential solution providers and partners for intervention:

- Soybean wholesalers in Dompu (NTB) and Trengalekk (E. Java)
- Peanut wholesalers in North and Central Lombok
- Peanut wholesale collectors in Sampang
- Mung bean wholesalers in Atambua and Kefa



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### **Illustrative Facilitation Activity**

## Develop capacity of lead firms to conduct producer training and extension activities

#### Specific examples for legumes

- Improve sourcing abilities and building better relations with farmers,
- Support in developing training materials to improve trust, product quantity and quality

## Support LFs to introduce improved and new varieties of seed to producers

 Enhancing the ability to test and extend new and improved peanut seed to its sourcing areas



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#### **Possible Impacts**

- More than 10,000 farmers and their families could benefit directly from producer training activities
- More than 10,000 farmers and their families could benefit from expanding outgrower operations in the peanut snack food industry
- As many as 100,000 farmers could benefit from the introduction of improved variety peanut seed in collaboration with largescale lead firms like Garuda, Dua Kelinci, PT Heinz, etc.



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# Work with lead firms to improve their market access

- To increase their sales volumes with resultant improved abilities to source from small-scale suppliers
- To improve overall value chain competitiveness

Examples of potential solution providers and partners for intervention:

- SME tofu processors in NTB (Bima, Mataram) and Sampang (East Java)
- SME peanut processors in E. Java
- Mungbean drink processors?\*




### Illustrative Facilitation Activity Exposure visits/ business-to-business meetings

#### Specific example for legumes

SME tofu processors in NTB (Bima, Mataram) and Sampang (East Java) were interested in improving efficiencies in their fuel usage.



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#### **Illustrative Facilitation Activity**

Facilitating market access for LFs (who in turn will purchase more from producers)

Specific examples for legumes Includes:

- development of promotional materials,
- facilitation of trade show participation to lead firms,
- business-to-business meetings, and
- technical support to meet requirements of existing or potential markets;
- branding activities



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#### **Possible Impacts**

- Overall improvement in value chain competitiveness
- Indonesia's export profile improved
- 100,000+ farmers to benefit



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### Introduction of new technologies and firmlevel management systems

- To improve firm-level and value chain competitiveness
- To improve farm-level productivity

Examples of potential solution providers and partners for intervention:

- Input supply distributors and producing companies
- SME peanut roasters in East Java
- Seed development companies



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### **Illustrative Facilitation Activity**

Introduction of new technologies to improve LF efficiencies (and their products / services provided to producers)

- Introducing new or improved tools/equipment to processors or producers (<u>not</u> buying them for them)'
- Technical support in developing improved post-harvest techniques, storage, or
- Support efforts to develop or improve final products (quality, packaging, labelling, product diversification etc.).



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- SMS-based product verification scheme for input supply distributors/producing companies for verification
- Collaboration on finding new markets for peanut roasters and to upgrade processing technologies
- Seed development companies assistance to facilitate connections across networks



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# **Feasibility of Proposed Interventions**



- Ultimate feasibility of proposed activities (and implementation details) must still be determined
  - need more in-depth discussions with targeted market actors themselves
  - proposed providers of MBS need to take full ownership and responsibility for proposed initiatives
- Any illustrative facilitation activities should be vetted with market actors to get feedback on what is feasible or not



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# **Key Interventions: Approach**



### **Invitations for Applications**

- Mechanism for soliciting partnerships with lead firms to develop interventions/facilitation activities
- Builds on their ideas and initiatives
- Follows strict guidelines that ensure transparent program development and sustainability
- Includes clear guidelines and parameters that stipulate the potential size and nature of project technical and cost share activities



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## **Gaps and Future Research**



- Potential toxicity of waste from tofu processing businesses into ground water.
- Competition with maize and rice farming in East Java, NTB, and NTT.
- Reasons that farmers and collectors are not following best practices in terms of post-harvest storage.
- Incentives or disincentives for snack food companies.
- Improvements to food safety by minimising aflatoxin contamination risk in the supply chains across the AIPD districts of NTB? (to be discussed during feedback session).



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