

# ACTION PLAN

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**Constrain**

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# **NORTH SUMATERA, INDONESIA**

# 1. Variety Evaluation, seed systems

CURRENT CONDITION	CONSTRAINS
Mostly are bitter variety with high starch content for tapioca production, mainly are Malaysia and Lampung variety.	The factory (PT Bumisari) needed cassava variety with high yield and high starch content.
Farmer used planting material from their own land, traded with local farmers in the same area.	

# 2. Fertility Management

CURRENT CONDITION	CONSTRAINS
Farmer are already using fertilizer mainly phonska (NPK). However, the current fertilization is not effective.	Farmers need the appropriate fertilization application to maximize yield and starch content

### 3. Intercropping

CURRENT CONDITION	OPPORTUNITIES
A few farmer applied the intercropping, only for additional food source	Intercropping can be used as safety measure if the cassava price falls

### 4. Pest and Disease Management

CURRENT CONDITION	CONSTRAINS
Results from the variety trial showed that some varieties are susceptible to Root Rot (.....).	Less understanding about the Root rot problem in the particular climate region

# 1. Action Plan Variety Evaluation, seed systems

Attributes	Action Plan
Description of the planned activities	<ul style="list-style-type: none"><li>• Variety dissemination, Malang 4 variety (bitter variety) for tapioca starch production. PT Bumisari (factory) prefer cassava with high starch content - Malang 4.</li><li>• Planting material propagation.</li></ul>
Who in the value chain is important to have involved in the activity?	<ol style="list-style-type: none"><li>1.NGOs-University as project coordinator → giving technical advices.</li><li>2.ILETRI as R&amp;D support → provide the variety</li><li>3.Trader → to support the variety availability</li><li>4.Local dinas/agency →</li></ol>
Where should these activity be conduct?	Primarily in Simalungun, and Pematang siantar. But will be implemented to Toba-Samosir
Others Innovation	Network analysis for trading cassava planting materials.

## 2. Action Fertility Management

Attributes	Action Plan
Description of the planned activities	Fertilizer experiment in Simalungun, simplified fertilizer application from the experiment – adoption (2018).
Who in the value chain is important to have involved in the activity?	<ol style="list-style-type: none"><li>1.NGOs-University as project coordinator → giving technical advices.</li><li>2.ILETRI as R&amp;D support → provide the variety</li><li>3.Trader → to support the fertilizer availability to the farmer</li></ol>
Where should these activity be conduct?	Simalungun district, but will be implemented in Pematang siantar and Toba-samosir

### 3. Action Plan Intercropping

Attributes	Action Plan
Description of the planned activities	Intercropping as securities measure if the price of cassava drop, farmer adoption with maize-cassava. Looking at other crops for suitable intercropping in wet-climate condition (peanut, melon, maize, forages-cowpea).
Who in the value chain is important to have involved in the activity?	1.NGOs-University as project coordinator → giving technical advices. 2.ILETRI as R&D support → provide the variety 3.Local dinas → Provide support to market 4.Trader → to support the fertilizer availability
Where should these activity be conduct?	Primarily in simalungun and pematang siantar, but will be implemented to Toba-Samosir

## 4. Pest and Disease Management

<b>Attributes</b>	<b>Action Plan</b>
Description of the planned activities	Survey for Root rot occurrence (when, how the climate condition affect the attack, the effect to cassava yield, is different cassava variety have the same magnitude of attack)
Who in the value chain is important to have involved in the activity?	<ol style="list-style-type: none"><li>1. NGOs-University as project coordinator,</li><li>2. Iletri as R&amp;D support</li><li>3. Other university to help in the survey</li></ol>
Where should these activity be conduct?	Simalungun district, but will be implemented in Pematang siantar and Toba-samosir

## 5. Policy engagement

### **Policy :**

#### **Identified Issued**

At regional and national level, there are no government policy that support the development of cassava farming. Currently there are limited network information between government – farmer – factory – researcher.

#### **How to reach that issued (engage with government)**

FGD and invite the local government in the Simalungun District to disseminate the research results and to discuss the the policy support needed.

Create network between the local (simalungun district) government, farmers, factory and the ministry of agriculture (Directorate General of Food Crops).



# **EAST NUSA TENGGARA    INDONESIA**



# 1. Variety Evaluation, seed systems

CURRENT CONDITION	CONSTRAINS
Farmers mostly plant local variety (sweet variety), although some farmers have the bitter Variety (Malang 6 and Adira).	Farmers are reluctant to plant new variety (bitter), but some farmers are willing to try new sweet variety

# 2. Fertility Management

CURRENT CONDITION	CONSTRAINS
Farmers only used fertilizer for maize, but not on the cassava	Access to fertilizer are limited for individual farmer (due to the paperwork that only available to farmers group)

### 3. Intercropping

CURRENT CONDITION	CONSTRAINS
Farmer's intercropping practice mainly maize+cassava, but with low density in the cassava. After maize, farmers usually grow mung bean and/or peanut.	Low density in the cassava, no fertilizer application for cassava.

### 4. Pest and Disease Management

CURRENT CONDITION	CONSTRAINS
Mealy bugs attack during the dry season (July - October) (NTT)	Farmers do not know any pest and diseases control for cassava. The local agricultural dinas/agency do not address the issues

# 1. Variety Evaluation, seed systems

Attributes	Action Plan
Description of the planned activities	<p>Variety dissemination, 4 variety that farmers choose and planted with the introduced intercropping system (Sikka).</p> <p>Variety adaption in Larantuka (upland area and wet climate).</p>
Who in the value chain is important to have involved in the activity?	<ol style="list-style-type: none"> <li>1. NGOs-University as project coordinator → giving technical advices.</li> <li>2. ILETRI as R&amp;D support → provide the variety</li> <li>3. Local dinas-agency provide guidance to the farmers</li> <li>4. Trader → to support the new variety availability (logistic)</li> </ol>
Where should these activity be conduct?	<p>Primarily in Sikka, but will be implemented in Larantuka (2018-2019).</p>
Others Innovation	<p>Network analysis for trading cassava planting materials.</p>

## 2. Fertility Management

Attributes	Action Plan
Description of the planned activities	Fertilizer experiment (starting 2018) in Sikka, in the monoculture (control - cassava & maize) and the intercropping system.
Who in the value chain is important to have involved in the activity?	1.NGOs-University as project coordinator → giving technical advices. 2.ILETRI as R&D support → provide the variety 3.Local dinas-agency as government involment 4.Trader → to support the fertilizer availability
Where should these activity be conduct?	Primarily in Sikka, but will be implemented in Larantuka (2018-2019).
Others Innovation	<ul style="list-style-type: none"> <li>• Organic amendment improvement by plant residue (maize, coconut)</li> <li>• Trader are expanding the planting area to Larantuka (East) and Bajawa (West)</li> </ul>

### 3. Intercropping

Attributes	Action Plan
Description of the planned activities	Improve income for the farmers, by increasing cassava population. Increasing the plant density (experiment), adoption by farmers (current practices). Planting cassava between cashew (after cutting).
Who in the value chain is important to have involved in the activity?	1.NGOs-University as project coordinator → giving technical advices. 2.ILETRI as R&D support → provide the variety 3.Local dinas-agency as government involment → 4.Trader → involved to provide support & dissemination
Where should these activity be conduct?	Primarily in Sikka, but will be implemented in Larantuka (2018-2019).
Others Innovation	National-Regional workshop in NTT, to reach other stakeholder that interersted in cassava and intercropping product

## 4. Pest and Disease Management

<b>Attributes</b>	<b>Action Plan</b>
Description of the planned activities	Survey for mealy bugs occurrence (when, how the climate condition, the effect to cassava yield, is difference cassava variety have the difference attack)
Who in the value chain is important to have involved in the activity?	<ol style="list-style-type: none"><li>1. NGOs-University as project coordinator,</li><li>2. Iletri as R&amp;D support</li><li>3. Other university to help in the survey</li></ol>
Where should these activity be conduct?	Sikka district (NTT)

## 5. Policy engagement

### Policy :

### Identified Issued

There is no business model that incorporate cassava farming-animal feeds factory-tapioca starch factory between Private sector (Pak Tomi) and the support from the government (Larantuka - Sikka - Bajawa). Formulating a business plan and policy that support the business model, government involvement in the bussines model.

### How to reach that issued (engage with government)

FGD and regional workshop invite the local government in Flores + Governor to dissemination research results and to discuss the business model and the policy support needed. Business analysis for the activities in NTT - feasibility study.

Business analysis from the data : experiment, household survey to make a business plan - in the context of farmers benefit.



Thank You

