



Australian Government
Australian Centre for
International Agricultural Research

IMPACT PATHWAY AND SUSTAINABILITY

Son la province, Vietnam

Project AGB/2012/078 “Developing value-chain linkages to improve smallholder cassava production system in Vietnam and Indonesia”



Northern Mountainous Agricultural
and Forestry Science Institute



International Center for Tropical Agriculture
Since 1967 *Science to cultivate change*



THE UNIVERSITY
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AUSTRALIA

Outlines

1. Main activities completed by the project in Son La province, Vietnam
2. Impact assessments
 1. Objectives and approach
 2. Main results
3. Discussions



I. Activities implemented by the Project

Project's objectives

To improve sustainability of and economic profits of cassava production systems in the interest of farmers and all other actors of the cassava value chains in Son La.

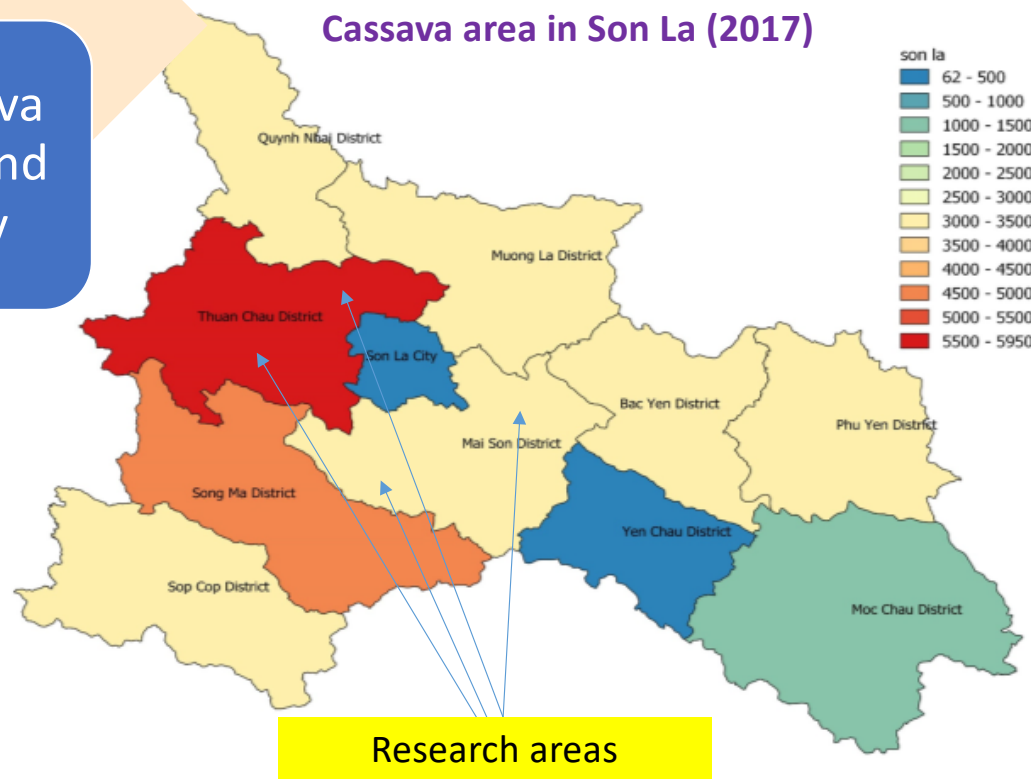
Improve linkages

Promote adoption of technical innovations

Improve cassava yield, profits and sustainability

- Producers (farmers)
- Collectors and traders
- Processing enterprises
- Researchers
- Decision makers/Authorities

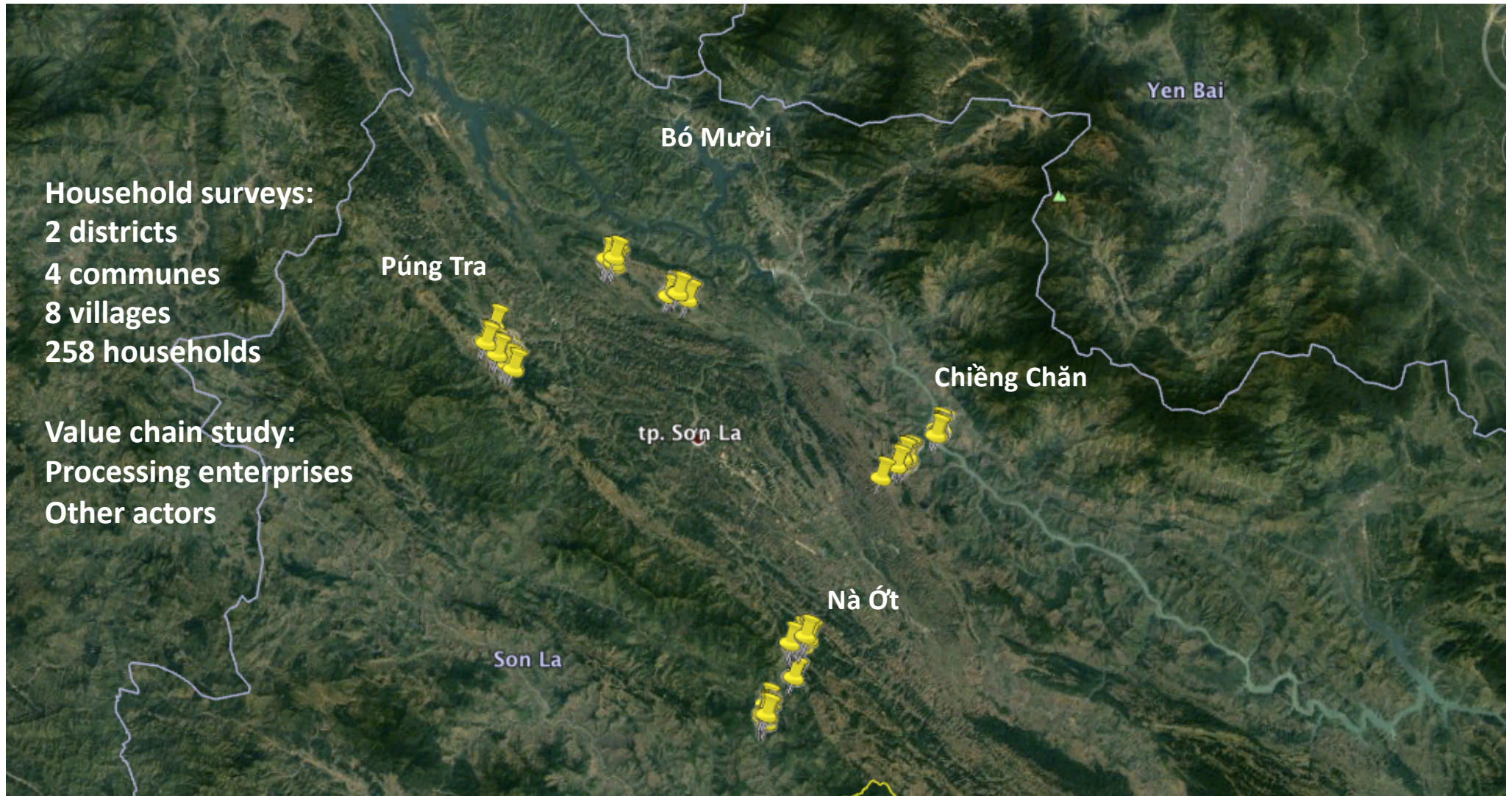
Cassava area in Son La (2017)



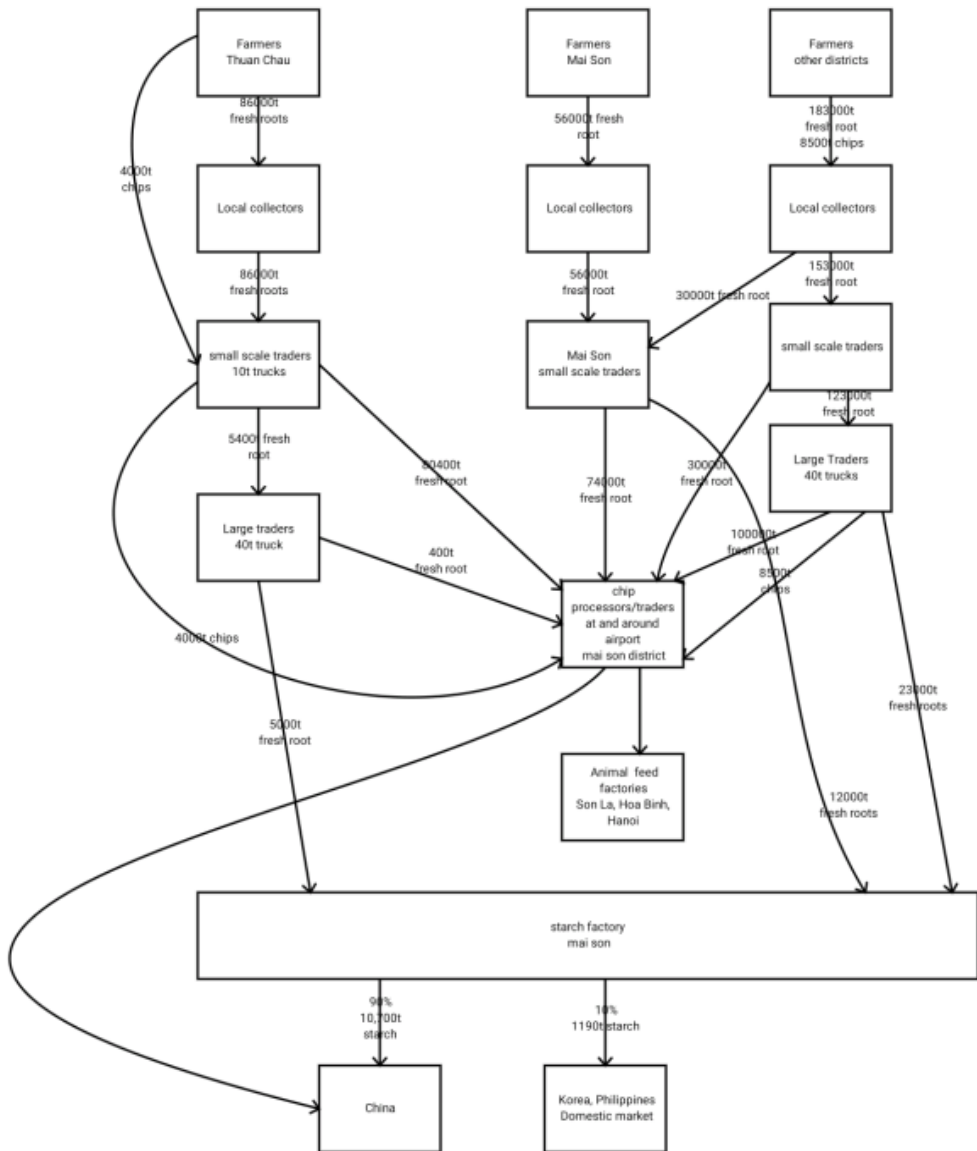
Main activities implemented in Son La

- Value chain studies
- Households survey
- On-farm trials for indentifying and traducing suitable (i) new varieties, (ii) planting densities, (iii) fertilization levels and methods, and (iv) soil preservation techniques\
- Capacity building for local farmers and extension officers, including organization of fields and workshops; and delivery of trainings in (i) techniques for planting and managing cassava on sloping lands, (ii) techniques for applying fertilizers and for controlling weeds, (iii) techniques for pest control, and (iv) techniques of harvesting and postharvest treatment of fresh roots; techniques for storing cassava seed stocks.
- Facilitating dialogues and information sharing between the Departments of Agriculture and Rural Development of Son La province and of the project's districts (Thuan Chau and Mai Son) and with the Starch Factory.

Values chain study and household surveys



Cassava value chains in Son La



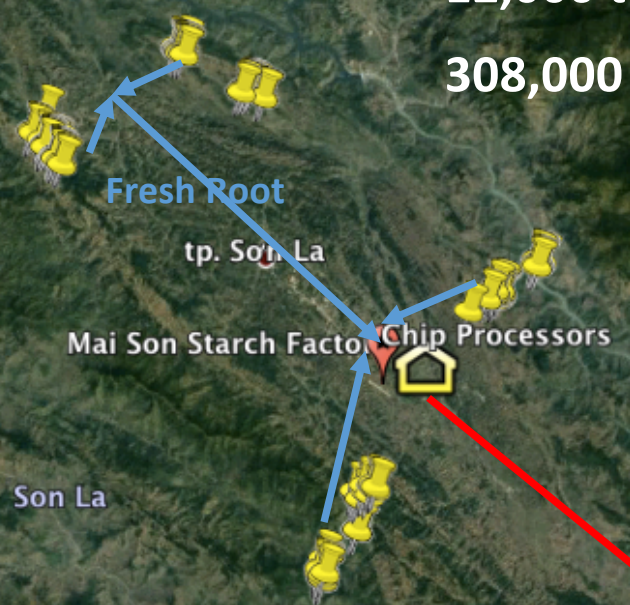
- There are many collectors and traders involved in the transportation of cassava fresh roots from the field to processing factories.
- There are significant price gaps between farm-gate and factory-gate
- There is the lack of suitable fertilizers types and rates for cassava
- Extension services for cassava very much limited
- Over-supplies of fresh roots for the 2 starch factories in the province during in-season, but no supplies for during May – October (off season).

360,000 tons of the total fresh roots annually

40,000 tons processed in starch by factories

12,000 tons processed in dried chips by farmers

308,000 processed in dried trips by small and medium enterprises



- Dried trips sold to feed factories

- Starch mainly exported, mostly to China

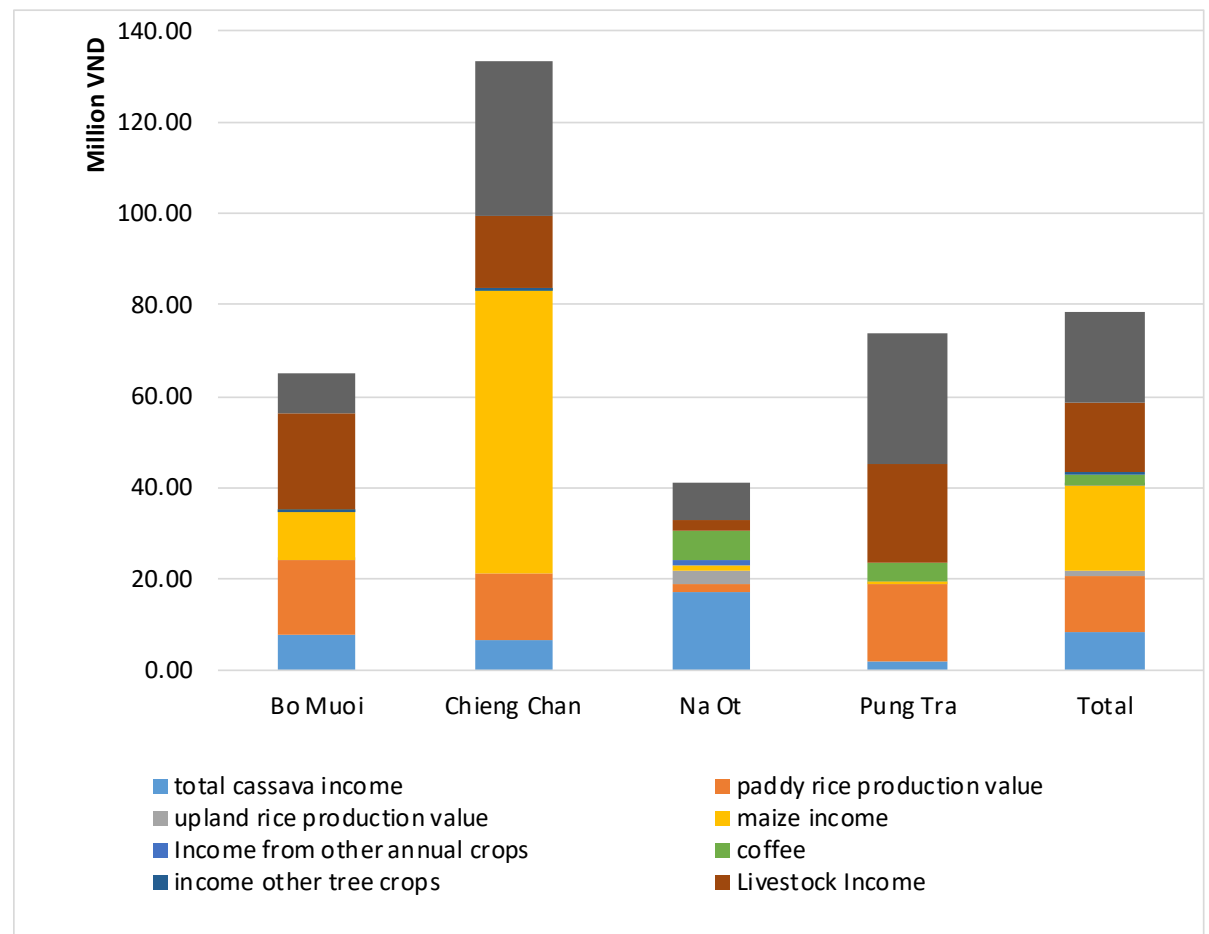
Chips

Japha Animal Feed Factory

tp. Hòa Bình

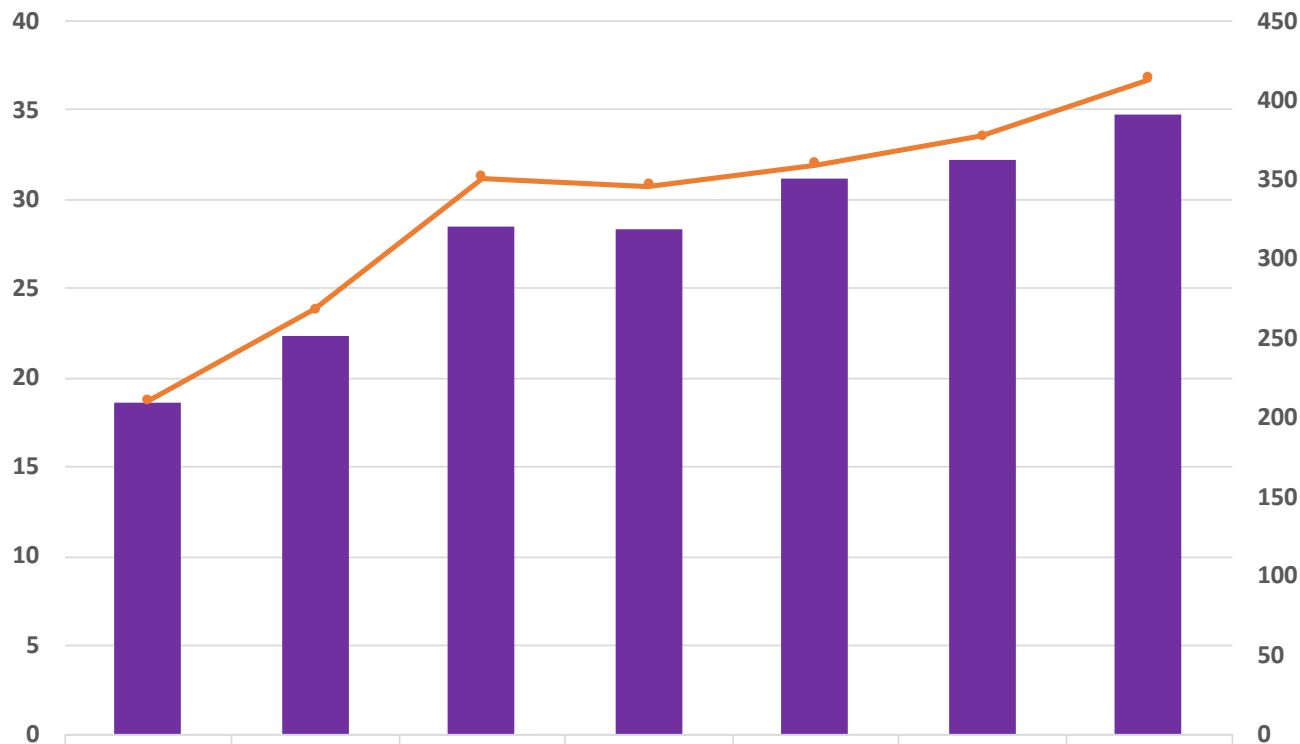
Main income sources of cassava growers in Son La

- Cassava contributes only a small but very important share to the total HH income.
- Husbandry, especially cattle has an important role in HH economy.



Cassava area in Son La (2007 -2018)

Area
(000 ha)



Total production
(000 tons)

Production increases
due to increase in
area.

■ Diện tích	18.6	22.3	28.5	28.3	31.2	32.2	34.8
— Sản lượng	210.6	267.9	351.5	345.9	359.5	377.4	413

Main results of on-farm trials

- **Variety:** Two new varieties 13Sa05 and BK identified as suitable for the province
- **Planting density:** For Km94 (the locally popular variety) the density of 12,500 plants/ha is most appropriate for the common conditions in Son La
- **Fertilizers:** The level of 40N-10P-40K or 60N-15P-60K could be suitable options for KM94, depending on the concrete conditions (soil fertility, slopes...)
- **Soil preservation practices:** Intercropping with cowpea or peanut increase the income and profits; Grass contours and plant residue strips reduce soil erosion. The practices do not impact cassava yield.
- **Harvest season:** KM94 harvested in any months of the year (over 9 months after planting) could have high enough starch content for starch processing.

Capacity building

- Field days to the trial sites
- Training of farmers and extension officers
- Production and distribution of extension and communication materials



II. Project impact assessment

- **Objectives:**

- Understand the changes in knowledge, awareness and practices among the chain's actors.
- Understand the impact of Covid 19 on the cassava production and processing
- Understand the perspectives and ideas of the chain's actors regarding sustainable development of cassava in Son La

- **Approach:**

- Focus group discussions with farmers participated the project's activities
- Interview leaders of the starch factories
- Interview the leaders and staff of local organization: Provincial DARD

Impacts in Pung tra commune, Thuan Chau district

Total commune's cassava area is ca. 80 ha, mostly sloping and remote, difficult to reach by vehicles, farm gate is low -> farmers changed lot of land to coffee, but still grow cassava in 1000-5000 m², mainly for HH husbandry

Techniques adopted by farmers :

- Seed stakes reservation and cuttings preparation
- Planting the cuttings
- Fertilization: Many HHs applies stop dressing (Instead of only basal dressing) and 5 HHs applied K-containing fertilizers
- Harvest tools: 5 HHs modified and use simple tools introduced by the project.

Feedbacks and proposals

- Need new high yielding varieties of which roots can be used for feeding animals
- New varieties introduced by the projects had yields lower than KM94 (due to crops management by farmers)
- Fertilizers: Understand the role of K, but it is difficult to buy K-fertilizers in the local markets
- Grass contour: Understand the impacts of grass contours in soil erosion prevention, but due to difficulties they only grow grasses in marginal lands near houses for feeding cattle.
- Intercropping: Require high labour inputs
- Need to be trained in different techniques but so far only few farmers were trained.
- Wish its is easy to sell fresh roots , and the price should be at least 1500đ/kg

Impacts in Bo Muoi commune, Thuan Chau district

Almost HHs changed land use from annuals to perennial fruits under the programs of the province. They still grow cassava or maize in some small area each for feeds using the variety La Tre.

Techniques adopted by farmers

- Farmers do not pay attention on cassava cultivation techniques
- Grass contours planted in the trial area by the project are still kept in the field to reduce the soil erosion although the field was planted to fruits.

Feedbacks and proposals

- Need new high yielding cassava varieties of which roots could be used for feeding animals

Impacts in Na Ot commune, Mai Son district

Cassava is mainly cultivated in difficult, far, steep slopes. Many areas were changed to coffee land. The commune's total cassava intends to be reduced.

Techniques adopted by farmers

- Seed stakes reservation and cuttings preparation
- Planting the cuttings
- Fertilization: Some HHs applied K-containing fertilizers, of which 1 top dressed with K for cassava.
- Cassava plant residue strips: HHs realize the impacts on soil preservation and 5 HHs adopt the technique for the cassava fields.

Feedbacks and proposals

- Fertilizers: Although understand the role of fertilizers, but the price of fresh roots is normally low and the fields are often far, farmers prefer to apply only once when planting (basal dressing only)
- Grass contour: Farmers only grow grasses in marginal lands near houses for feeding cattle.
- Intercropping: Fields are far, and thus difficult for farmers to manage the crops and harvest beans/peas.
- Rotation with upland rice is practiced by farmers to have food and also to remain the yield of cassava.
- Wish it is easy to sell fresh roots, and the price should be at least 1500đ/kg

Impacts in Chieng Chan commune, Mai Son district

Total cassava area increased from 250 ha to 350 ha in 2020, due to land use change from sugarcane to cassava. This is because the lands are near to processing factories and the farm gate price is high compared to other locations, ranging among 1,300 – 1,500 vnd/ha (could be 1,600 – 1,700 vnd/ha at the end of season).

Techniques adopted by farmers

- Density: Spacing 80-90 cm
- Seed stake preservation; planting cuttings
- Fertilization: Application of higher fertilizers levels and 3 times (basal, 1st top dressing and 2nd top dressing)
- New varieties, as they give high yields and easier to harvest.

Feedbacks and proposals

- New varieties give higher yield, however were more impacted by pests than KM94
- Extension of new varieties: The farmers participated in the trials gave seed stakes of new varieties to other farmers to grow.
- Grass contours: Farmers removed the contours planted in the trial block. Some HHs grew grasses in marginal land areas near houses for feeding cattle.

Son La starch factory (Fococev)

Positive acknowledge about the project impacts

- The project has contributed to cassava industry in Son La. It changed perspectives of many people that cassava is a land-degradation-causing crop, and improved knowledge on sustainable cassava cultivation among farmers .
- Good new varieties introduced by the project are now further promoted by the factory. towards development of varieties collection and also of the factory's supply areas.

Feedbacks and proposals

- Due to small-scale trials the impacts of the project remain limited. If the project conducted trials and demonstration in large areas it could have much better and clear impacts. The factory is ready to take part in trailing and promoting new varieties.
- Need further researches to extend the harvest season such that the factory could be able to extend its operating time: diversify varieties and planting and/or harvest times.

Management organizations

- There are currently 2 starch factories in the province; 2 more are planned to be built . Although the province have no policies promoting cassava production the cassava area still slightly increases annually (in 2019 increase by 6.2% to 37,000 ha).
- Most cassava lands are poor, not suitable for other crops, and thus need to pay more inputs for supporting farmers cultivate cassava more fruitfully and more sustainably.
- The project research results serve as basic for the DARD of Son La to propose for developing linkages between enterprises and the Provincial Agricultural Services Center, for developing agricultural calendars for optimizing the operating time of the factories and production calendars of farmers.
- Mai Son district, where the 2 starch factories are based, during 2021 – 2025 about 1,500 ha of sugarcane land and 4,000 ha of maize land will be changed to cassava. New varieties introduced by the project will be used for planting in these new cassava land areas.

III. Discussions

Measures to promote the adoption:

- Training and following-up activities in 1-2 years time period to support farmers to adopt practices
- Focus on simple practices easy for farmers to adopt
- Strengthen links between value chain's actors and (farmers, collectors, traders, factories,...) and value chain's supporting stakeholders (authorities, researchers, local relevant organizations, input providers). Involvement and commitment of, and links between stakeholders, and actors will have value in solving problems in consumption, stabilizing prices and encourage farmers apply improves practices.
- Strengthen involvement of private sector in introduction of new varieties and appropriate types of fertilizers.
- Factories to build their supply areas where farmers are supported to adopt technical innovations such that the yield and benefits could be improved for all actors' interest.

THANK YOU



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