Cassava production and sustainable livelihoods of smallholders in Son La: Preliminary Results of a Household Survey

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North-West Research Symposium
Hanoi, Vietnam
23-24 November, 2017

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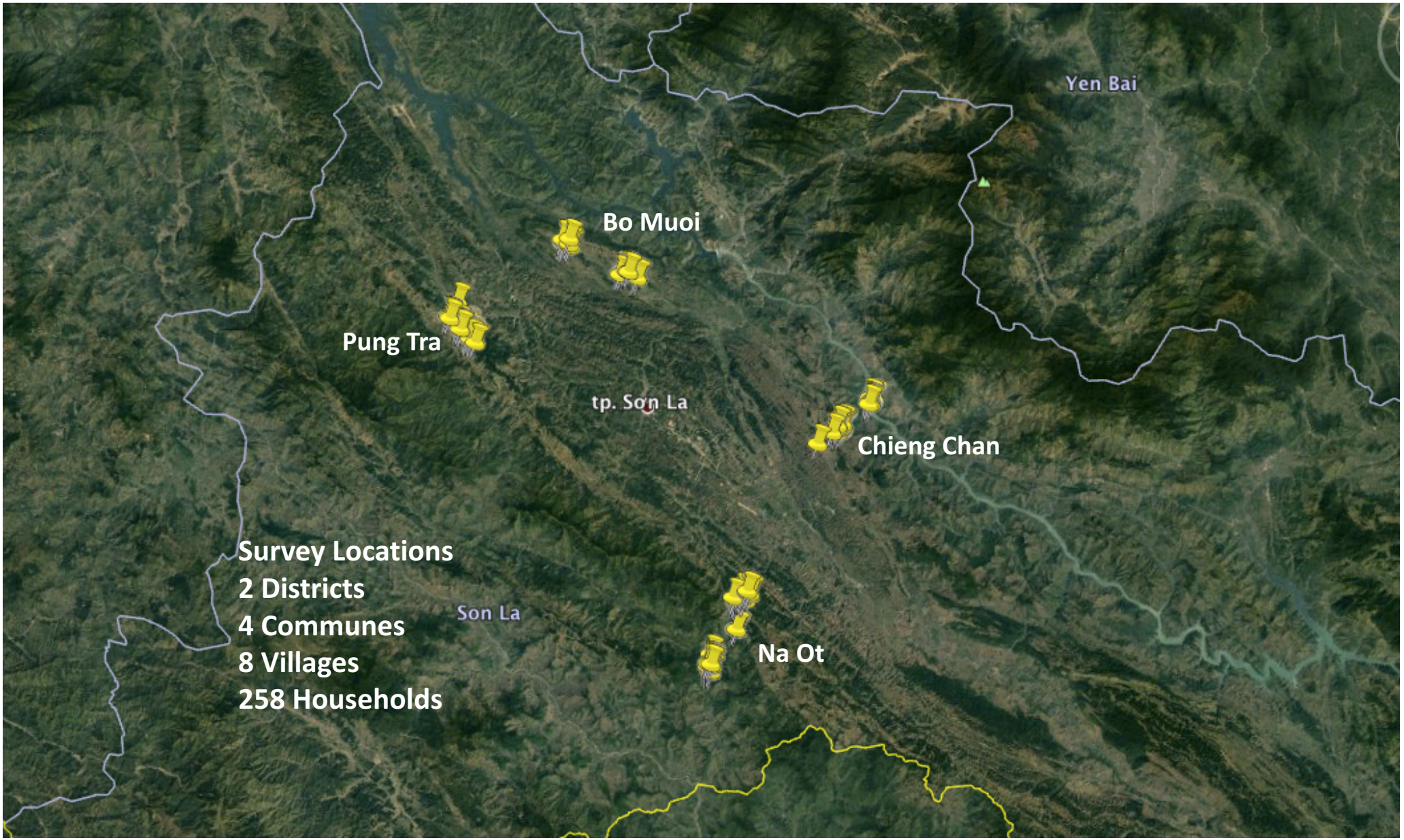
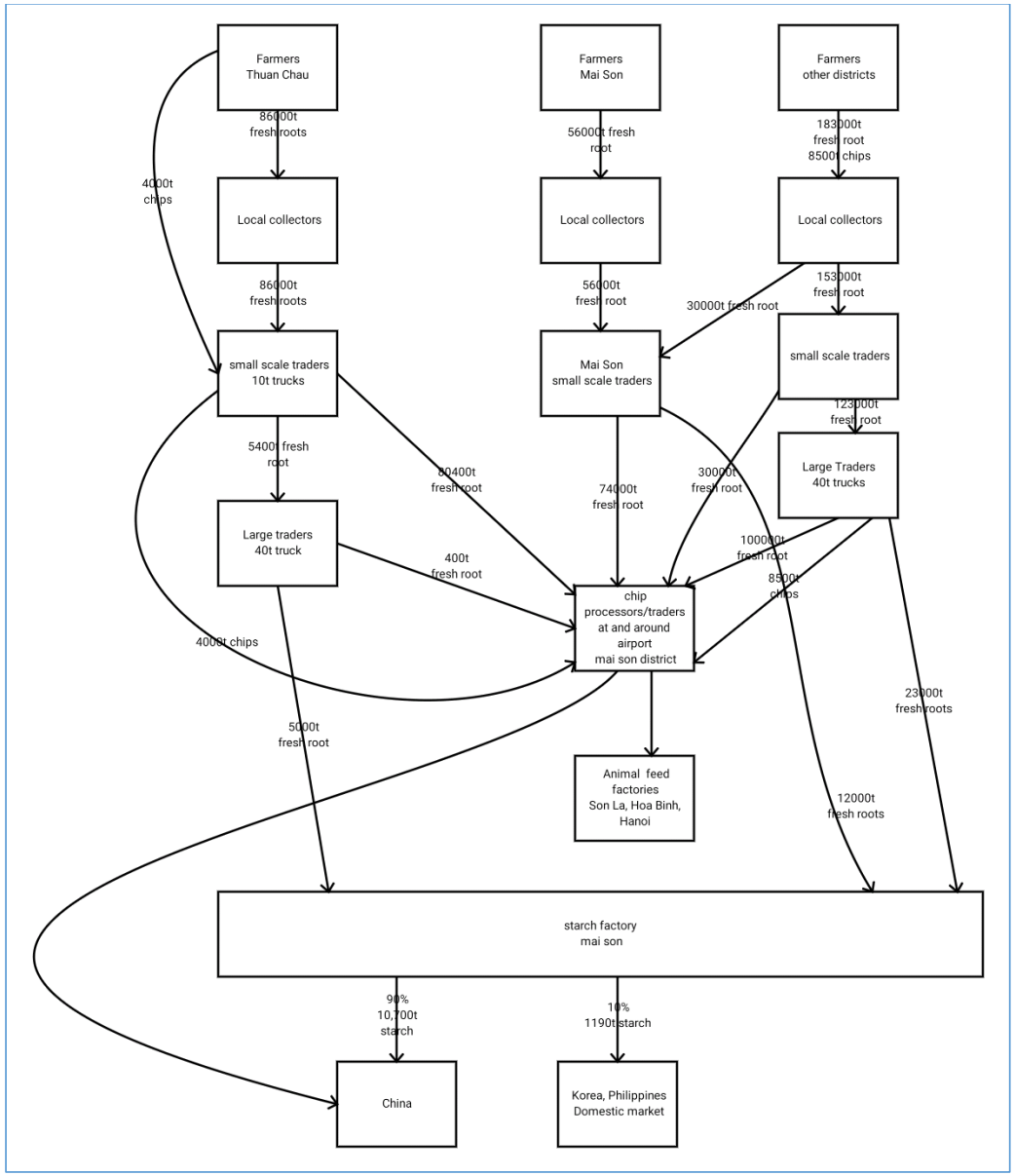
Outline

- Survey Characteristics
- Value Chain for Cassava
- Contribution of Cassava to smallholder livelihoods
- Key Agronomic Characteristics
- Implications for project interventions

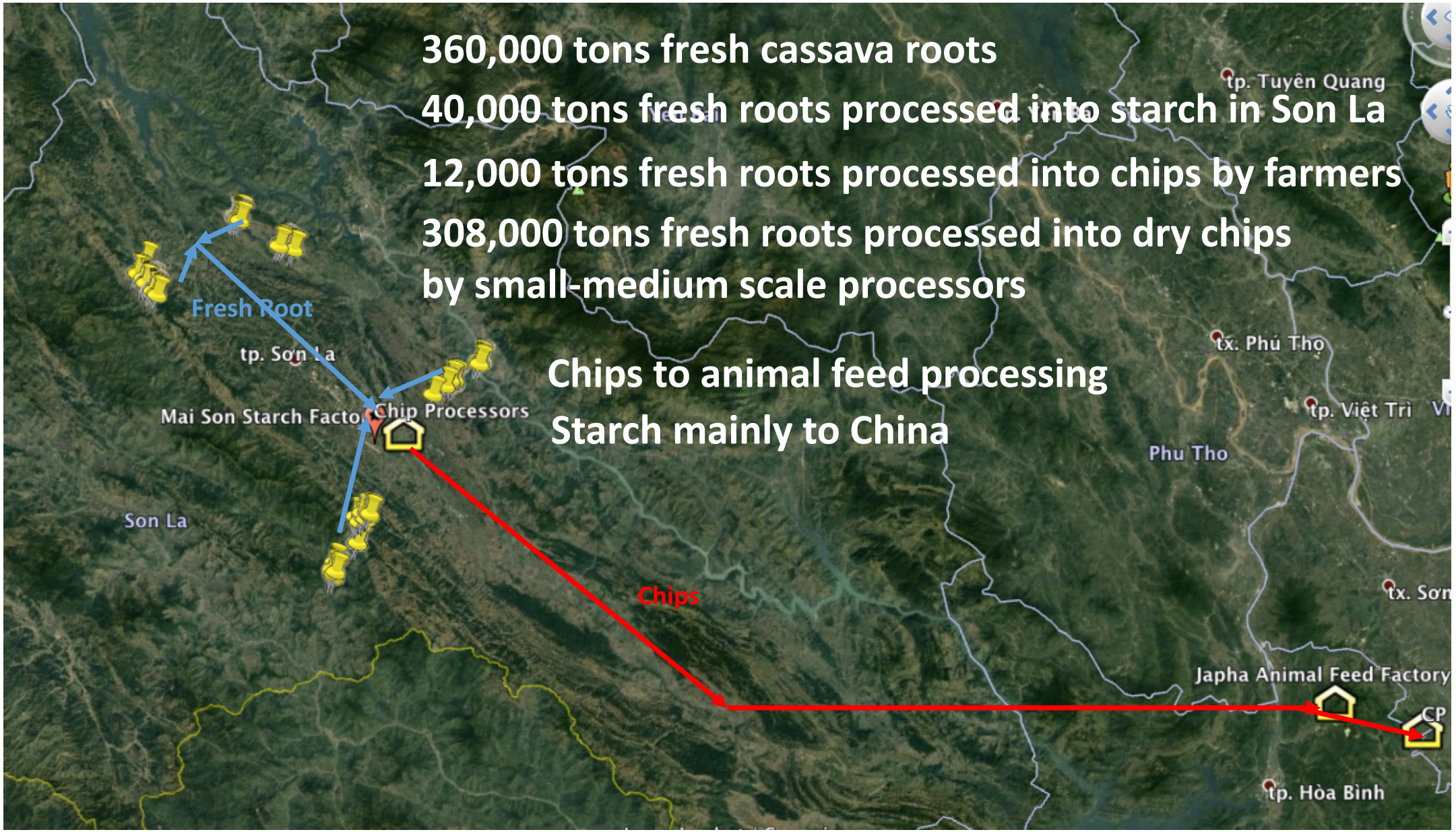

Yen Bai
Bo Muoi
Pung Tra
tp. Son La
Chieng Chan
Survey Locations
2 Districts
4 Communes
8 Villages
258 Households
Son La
Na Ot

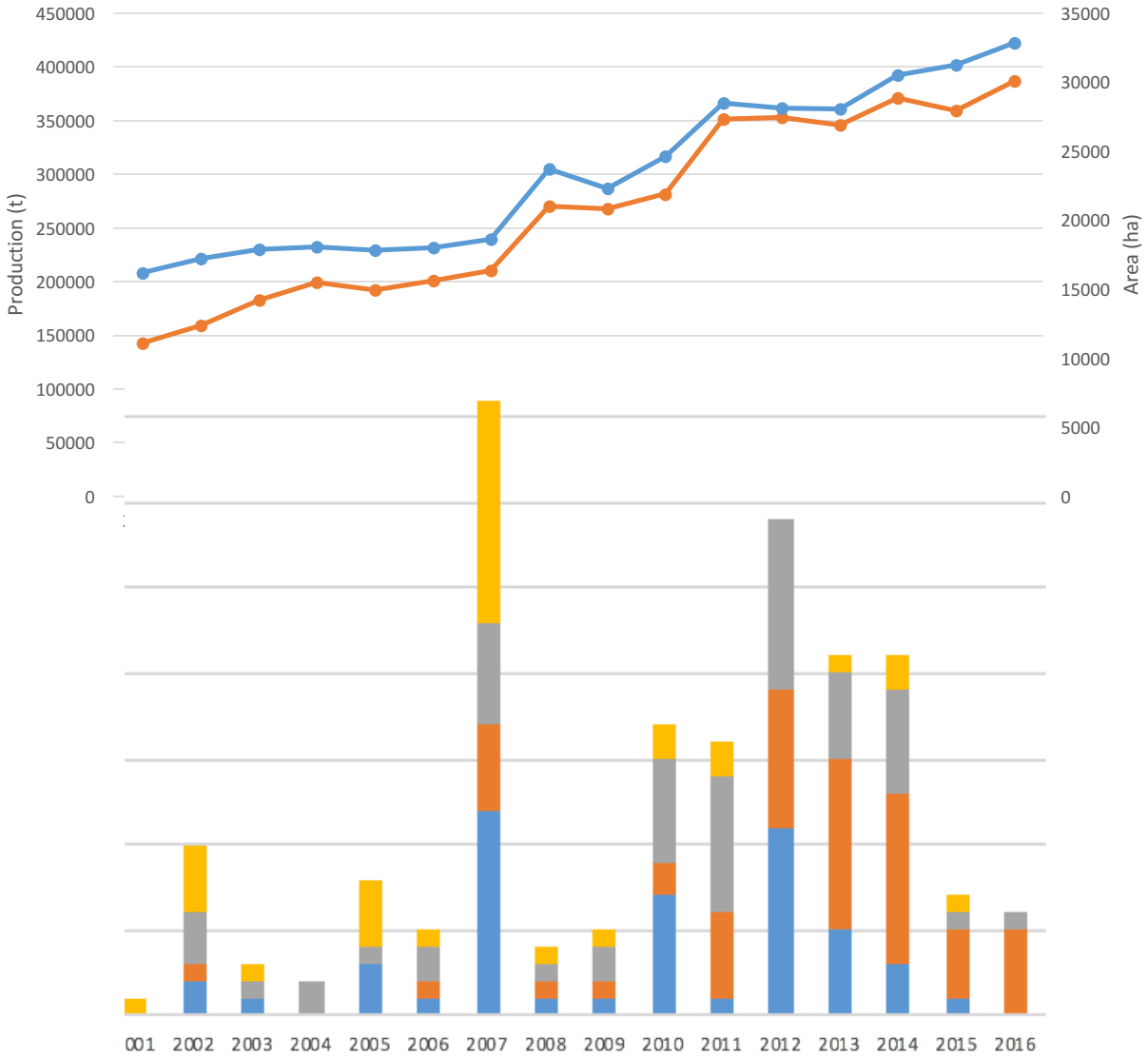


Complex, well developed value chain for starch and chips

Many intermediate layers between farmers and final processors

Price differential between producers and processors indicates well-functioning value chain


360,000 tons fresh cassava roots
40,000 tons fresh roots processed into starch in Son La
12,000 tons fresh roots processed into chips by farmers
308,000 tons fresh roots processed into dry chips
by small-medium scale processors
Chips to animal feed processing
Starch mainly to China
Fresh Root
tp. Sơn La
Mai Son Starch Facto
Chip Processors
Son La
Chips
tp. Tuyên Quang
tx. Phú Thọ
tp. Việt Trì
Phu Tho
tx. Sơn
Japha Animal Feed Factory
CP
tp. Hòa Bình

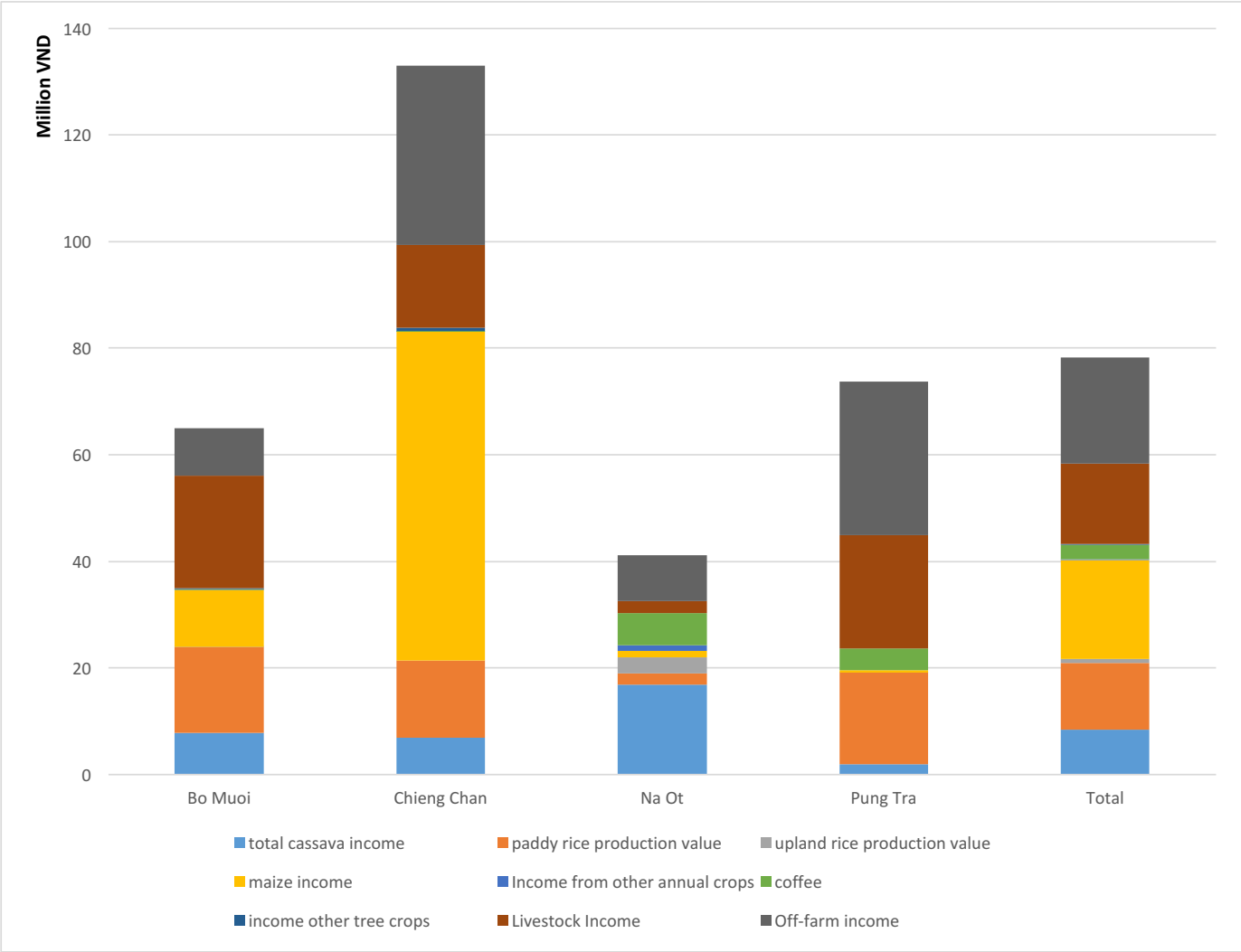


Son La Cassava Production and Area by Year

Production Area

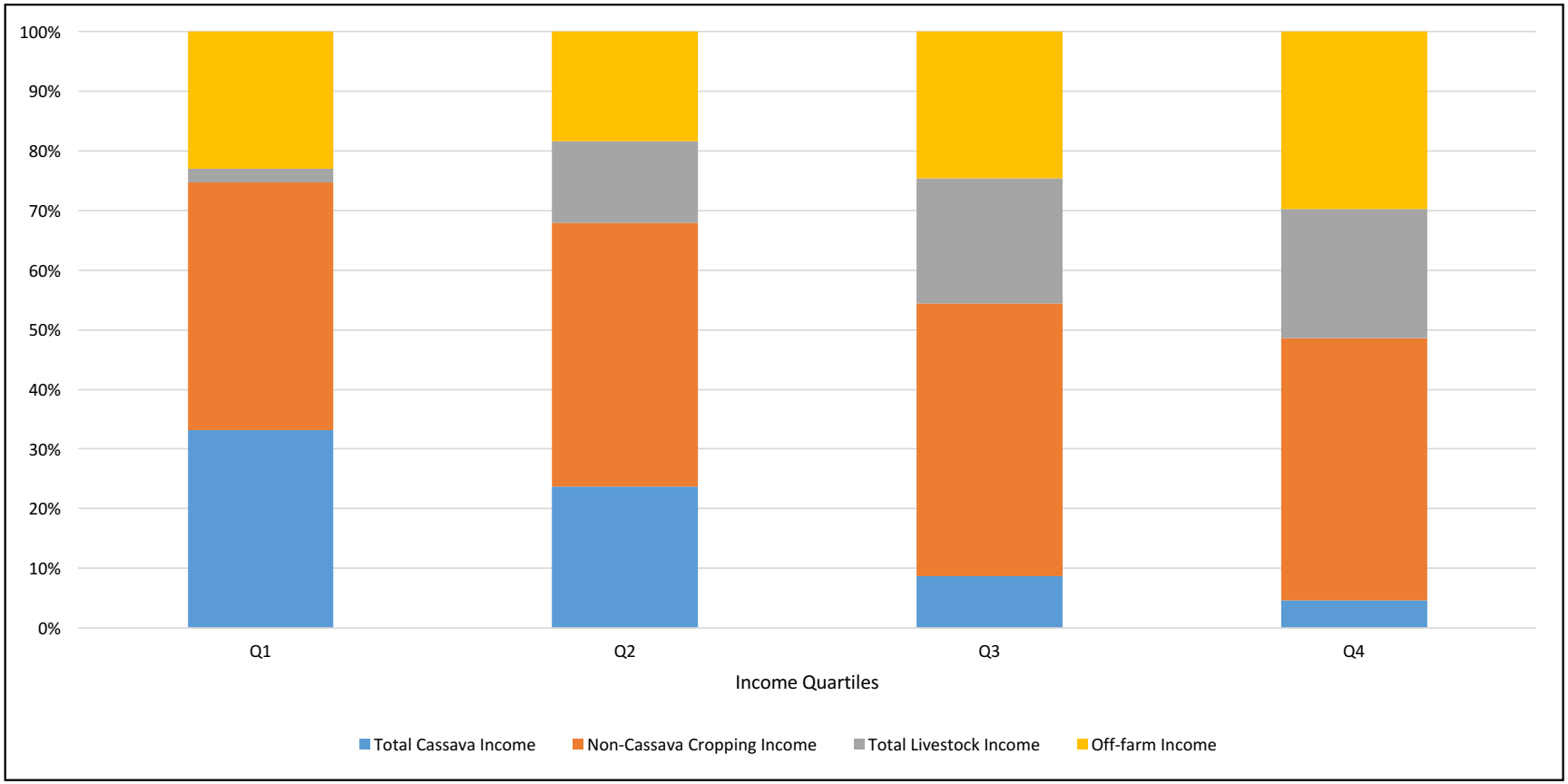
Year of first production in surveyed communes

Livelihoods of smallholder cassava farmers

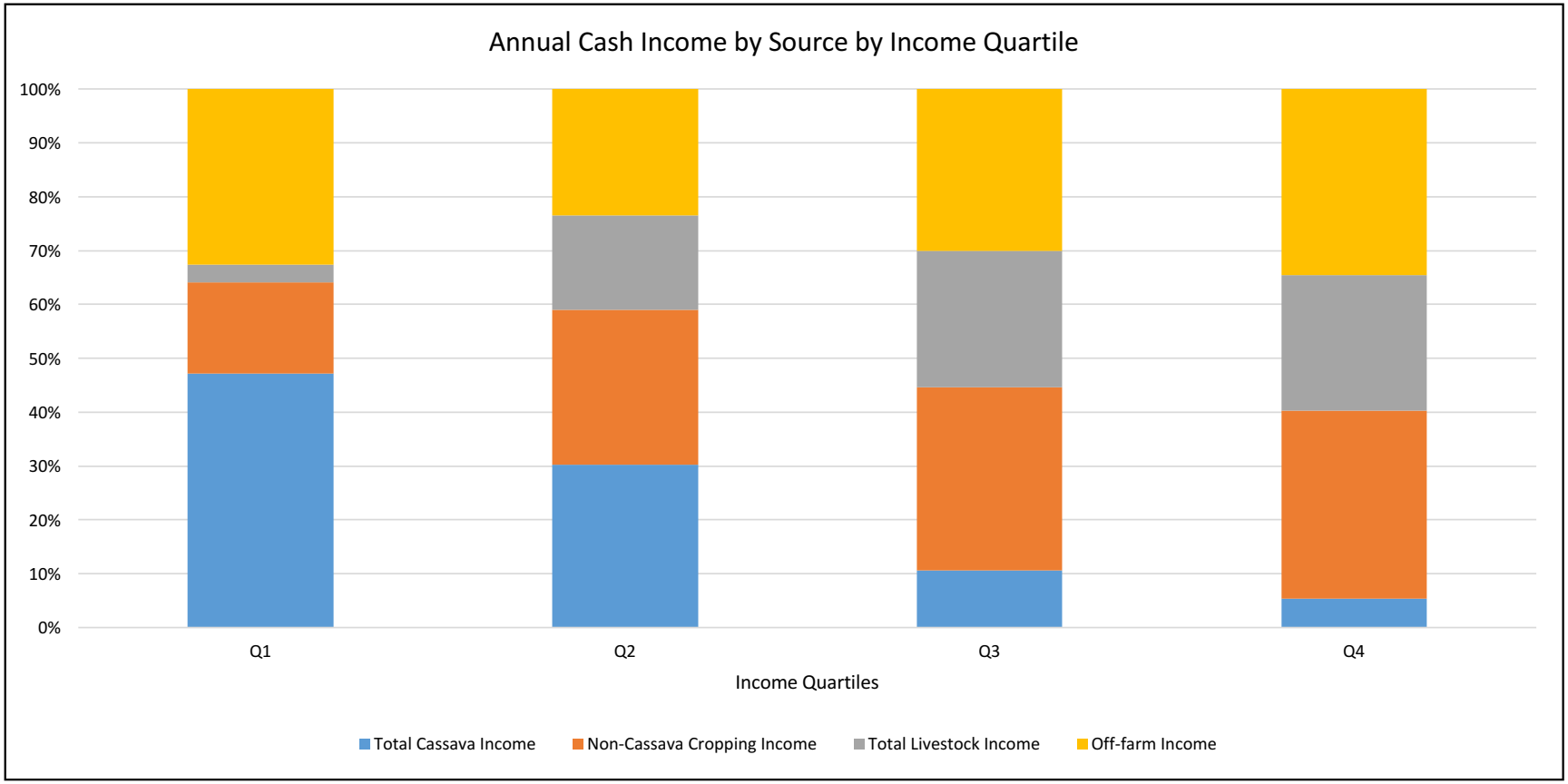


- **Almost all households have either lowland or upland rice fields**
- Maize is a significant upland crop in Bo Muoi and Chieng Chan, while coffee is cultivated by a majority of households in Na Ot and Pung Tra
- Livestock – especially large livestock is an important contributor to livelihoods
- Off-Farm incomes are important contributor to livelihoods

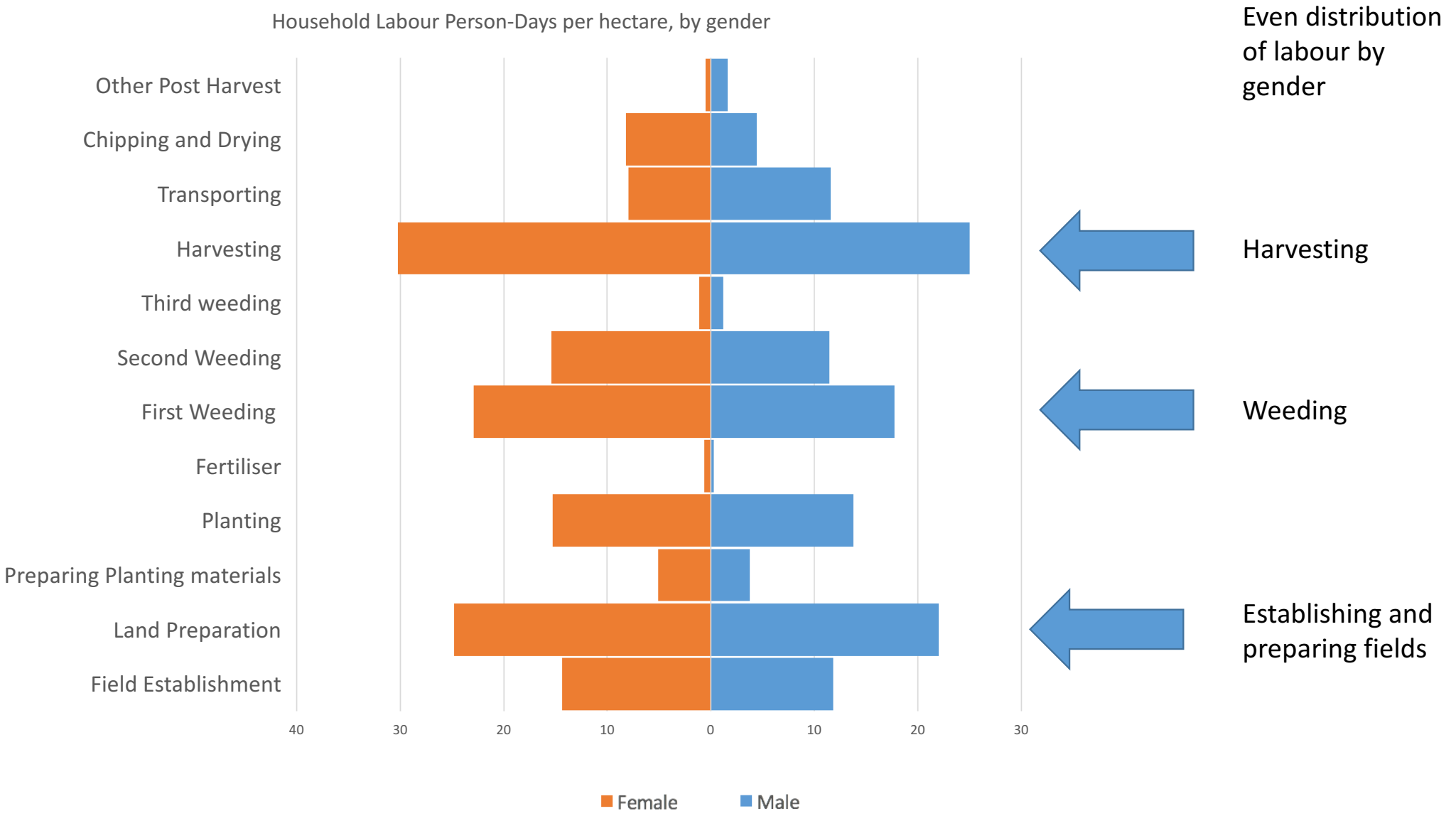
Livelihoods of smallholder cassava farmers

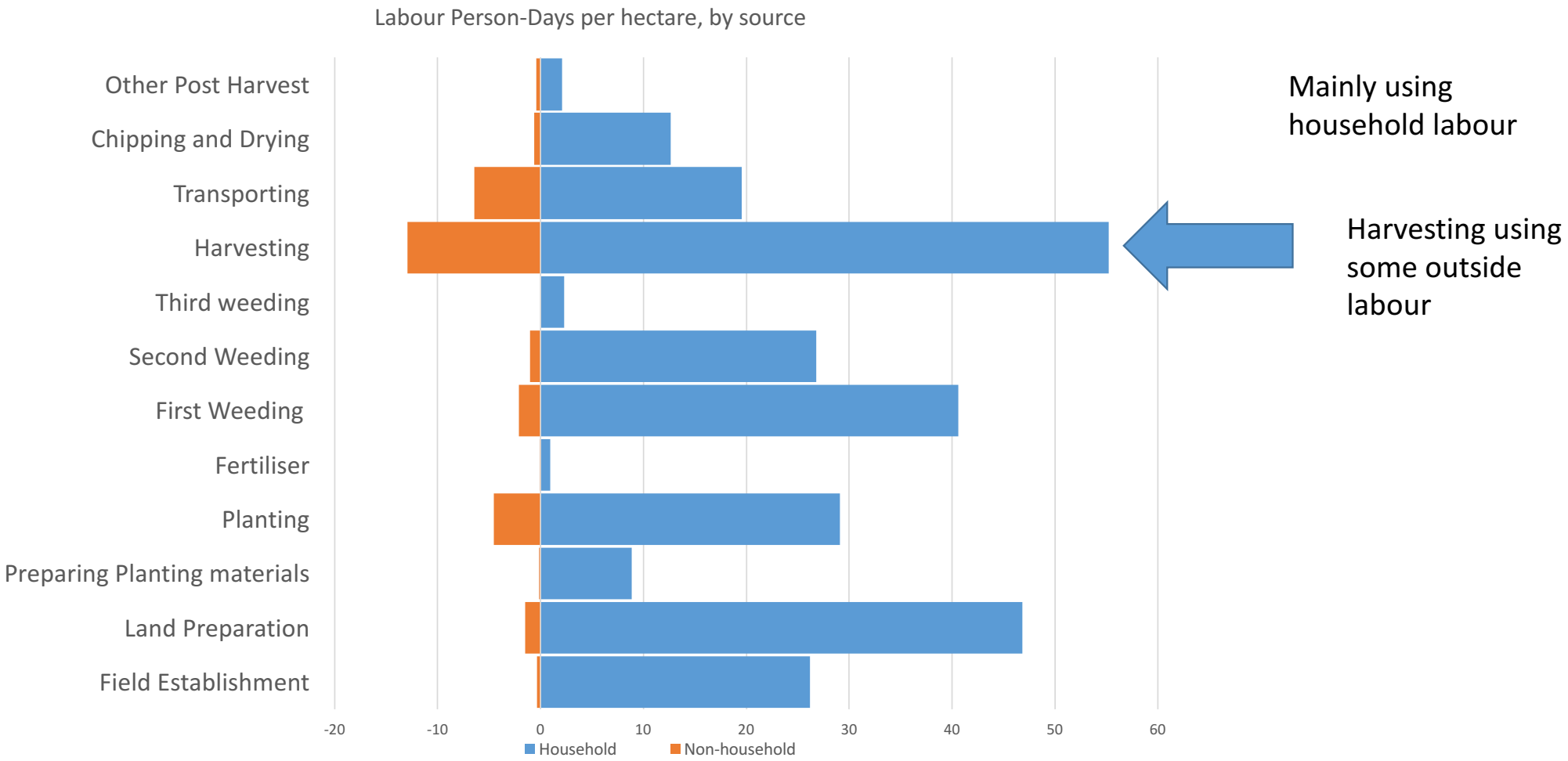


Cash Incomes of smallholder cassava farmers




Field Trial Site Na Ot
Grown on Steep Slopes
Important for Poor Households

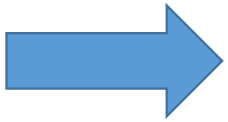

Household Labour Person-Days per hectare, by gender
Other Post Harvest
Chipping and Drying
Transporting
Harvesting
Third weeding
Second Weeding
First Weeding
Fertiliser
Planting
Preparing Planting materials
Land Preparation
Field Establishment
40
30
20
10
0
10
20
30
Female
Male
Even distribution of labour by gender
Harvesting
Weeding
Establishing and preparing fields


Labour Person-Days per hectare, by source
Other Post Harvest
Chipping and Drying
Transporting
Harvesting
Third weeding
Second Weeding
First Weeding
Fertiliser
Planting
Preparing Planting materials
Land Preparation
Field Establishment
-20
-10
0
10
20
30
40
50
60
Household
Non-household
Mainly using household labour
Harvesting using some outside labour

Land preparation techniques

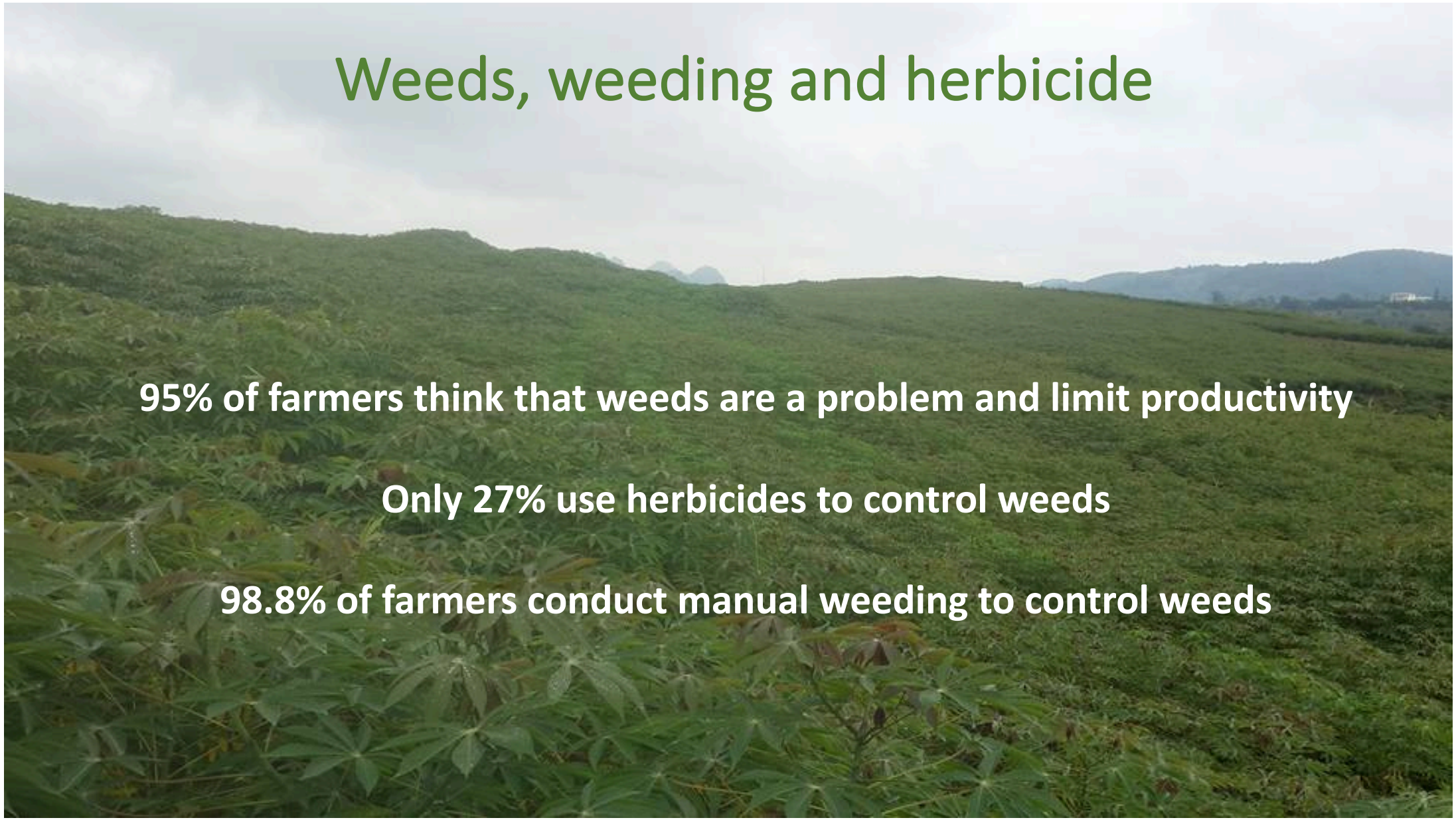
Varieties of Cassava planted by farmers

Actual Variety Name



Variety Name	Proportion of total varieties
Cao San	55.3%
La Tre	27.5%
San Den	12.1%
San Xanh	1.9%
San Tau	0.6%
Giong Nghe An	0.6%
KM94	0.3%
Giong Cao Bang	0.3%
San lau nam	0.3%
san Moc Chau	0.3%
San Mot Than	0.3%
San nguoi kinh	0.3%

Weeds, weeding and herbicide



95% of farmers think that weeds are a problem and limit productivity

Only 27% use herbicides to control weeds

98.8% of farmers conduct manual weeding to control weeds

Adoption of fertiliser

High rate of adoption of chemical fertiliser – 74 percent of farmers use NPK

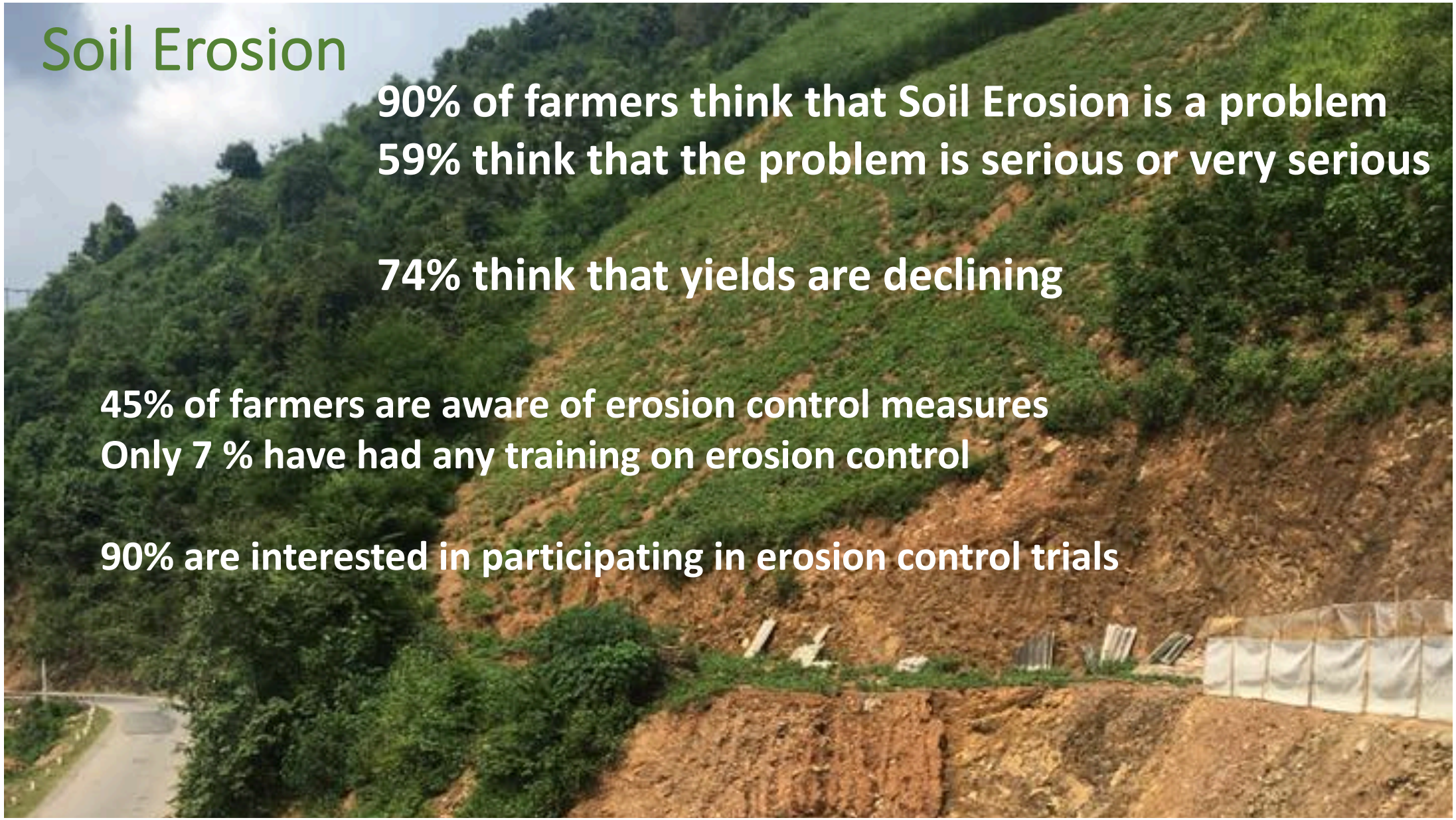
BUT Quantities used are relatively small - ** kg per hectare**

Lack of understanding – only 11% of farmers know what NPK means

Most common fertiliser formulation
– 60% of fertiliser users

Inappropriate fertiliser formulations used

Second most common fertiliser formulation
– 40% of fertiliser users – “không biết”


Soil Erosion
90% of farmers think that Soil Erosion is a problem
59% think that the problem is serious or very serious
74% think that yields are declining
45% of farmers are aware of erosion control measures
Only 7 % have had any training on erosion control
90% are interested in participating in erosion control trials

Do you think you will still be growing cassava in 5 years?

	Income quartile 1	Income quartile 2	Income quartile 3	Income quartile 4
Yes	76.6%	81.5%	73.4%	73.4%
No	12.5%	7.7%	7.8%	4.7%
Unsure	10.9%	10.8%	18.8%	21.9%

Significant uncertainty about the future.

Implications for Project Interventions

- Mechanised land preparation could save labour costs but land is generally too steep
- Increased herbicide use for weed control could reduce labour costs but it is difficult to carry liquid herbicide up steep slopes
- Higher yields could be gained through more appropriate fertiliser formulation and moderate increases in application rates
- Higher yielding varieties are likely to have the most potential for increasing yields and improving farmer livelihoods and present the least challenges for adoption
- Declining yields and cassava prices, and the fact that cassava only accounts for a small proportion of farmer livelihoods means that benefits of new technologies must be very significant in order to encourage any widespread adoption

Partners for disseminating innovations

- Fertiliser companies have an incentive to develop more appropriate fertiliser formulations for cassava production and disseminate these formulations through networks of input supply shops
- The Mai Son Starch factory has an incentive to support the dissemination of higher yielding varieties of cassava in order to potentially increase throughput of their factory. However, the starch factory has few direct links to smallholder farmers.
- Traders and collectors have more direct links to farmers but only have an incentive to disseminate improved varieties of cassava if (a) they are able to profitably sell planting material; and (b) they are able to collect increased quantities of cassava roots or chips from farmers using improved varieties

Thank You
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