

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

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## **Introduction**

Throughout Southeast Asia, cassava (*Manihot esculenta Crantz*) is an increasingly important crop in terms of both rural livelihoods and regional economic development. Son La is one of the major cassava producing provinces in Vietnam, with production more than doubling between 2001 and 2011. Production levels remained relatively stable between 2011 and 2016 as yield declined from 12.3 to 11.7 tons per hectare while production area increased to 32,840 ha in 2016. Government policy for future development of cassava in Son La is oriented towards increasing productivity through improved cultivation and post-harvest technology.

In order to understand the livelihoods and production practices of cassava farming households a household survey was conducted in Thuan Chau and Mai Son districts of Son La province. The survey covered 8 villages including upland locations with difficult access to commune centres and midland villages close to transportation links. The results are being used to inform upcoming ACIAR supported activities including the introduction of improved varieties and cultivation practices.

## **Research approach**

The household survey covered different aspects of cassava production, post-harvest and marketing activities. In addition to information on agronomic practices, data was also gathered on costs, labour use and revenues. Gender and ethnicity disaggregated data was also collected where relevant. The survey also included questions on livelihoods of farm households, including lowland and upland perennial cropping, tree crop production and livestock raising, as well as off-farm activities.

Survey activities were undertaken in Bo Muoi and Pung Tra communes in Thuan Chau District and Chieng Chan and Na Ot communes of Mai Son district in Son La and included one upland and one midland village in each commune. In each of the 8 villages, 32 cassava farming households to be surveyed were selected at random from household

lists kept by the village head. Surveys were administered face to face in the farmer’s home wherever possible. A total of 256 household surveys were completed by the survey team using the Commcare app on Android tablets.

## Results

The majority of cassava farmers are still growing paddy or upland rice as a staple, with maize an important cash crop, especially in Chieng Chan and Bo Muoi communes. Some form of livestock is kept by almost all households, with large livestock (cattle, buffalo or goats) kept by more than half of households. In all communes except Na Ot, cassava accounts for a relatively small proportion of overall income (Figure 1).

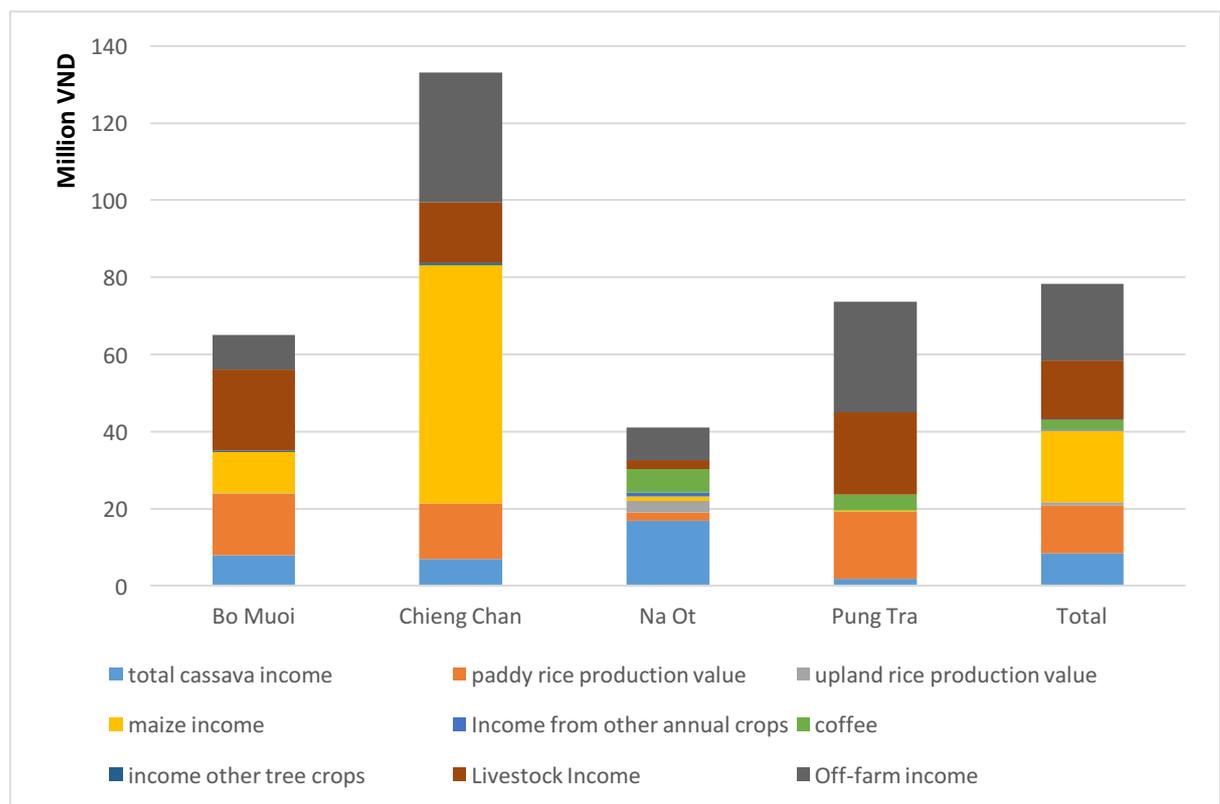


Figure 1: Annual Income by Source (Million VND/year)  
note- includes imputed production value of rice

Only 1.2 percent of farmers used organic fertiliser, while inorganic fertiliser was used by almost 74 percent of farmers. Only 26.5 percent of farmers used herbicide, while 99 percent did manual weeding. More than 75 percent of farmers used manual tools in land preparation, with tractors only used by 2 percent. Field and land preparation, weeding and harvesting were the most significant labour activities for both men and women (Figure 2).

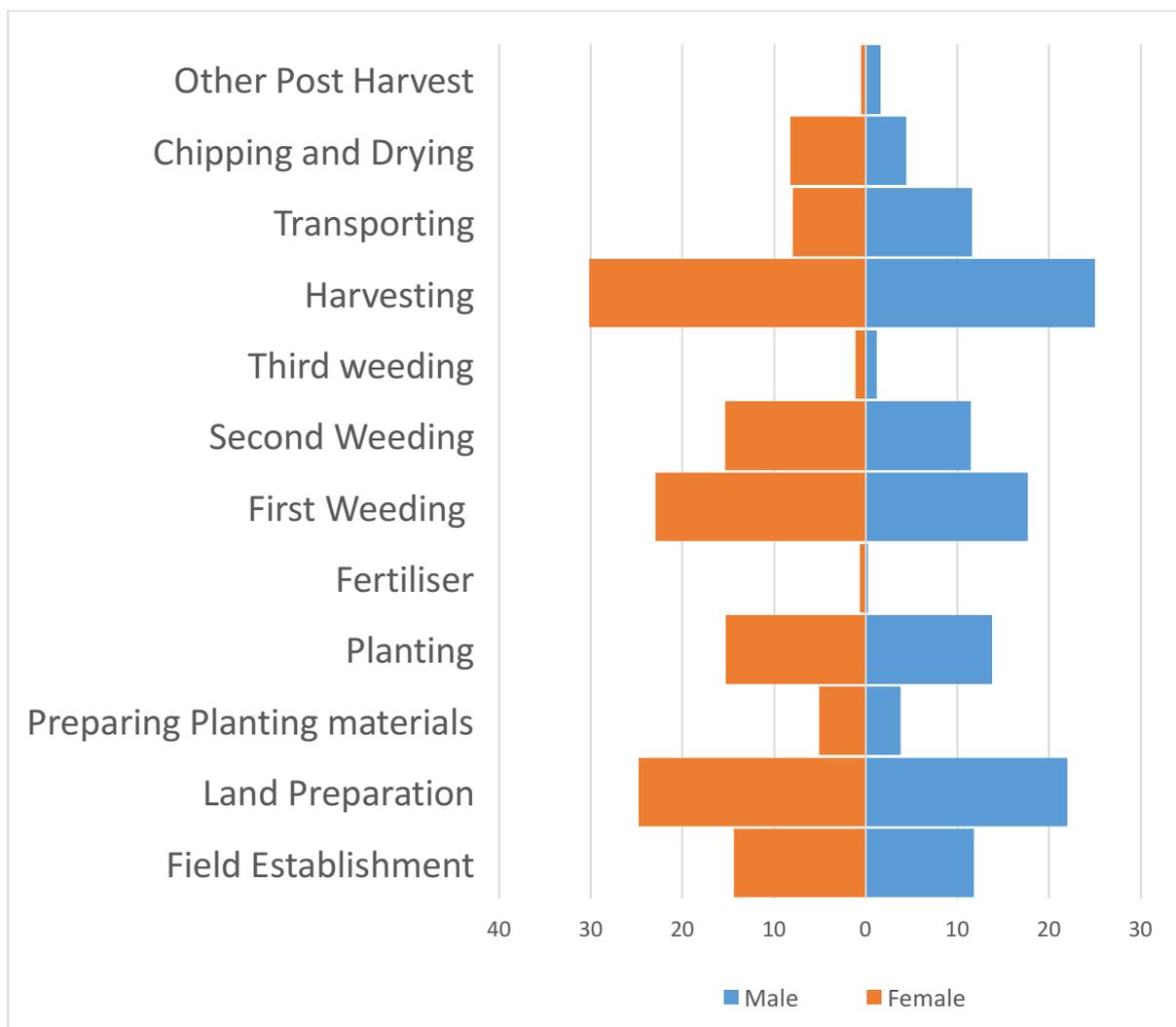


Figure 2: Household Labour Person-Days per hectare, by gender

More than 80 percent of farmers thought that weeds limited productivity, soil erosion was perceived as a problem by almost 90 percent of farmers, and almost 74 percent of farmers noted that cassava yields in their fields were declining. Almost 25 percent of farmers either would not grow cassava in the future or were unsure about whether they would grow cassava.

### Discussion and conclusion

In addition to the characteristics of various technologies and the characteristics of the cassava value chain, the characteristics of farming households and communities have a significant effect on the diffusion and adoption of improved technologies – including new varieties and improved cultivation practices.

Almost none of the farmers were aware of what exact cassava varieties they were growing, but the majority did indicate that they were planting some type of improved variety. Introduction of new, higher yielding varieties may have good potential to improve farmer livelihoods and would be relatively easy to disseminate and adopt.

The steepness of the land plots used for cassava means that field and land preparation, planting and harvesting will remain labour intensive activities with limited potential for mechanisation. The significant amount of labour expended on manual weeding implies that more widespread adoption of herbicide use could reduce cultivation costs and improve profitability of production.

Only 11 percent of farmers were aware of the meaning of NPK values of fertilisers they were applying and in many cases the formulation of fertiliser used was not appropriate. Introduction of more appropriate fertiliser formulations, combined with information on use has the potential to impact positively on yields and farmer livelihoods.

Introduction of new high yielding varieties and more appropriate formulations of fertiliser as well as increased use of soil conservation practices and herbicide have the potential to improve farmer livelihoods. However, 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.

## **References**

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