

EFFECTS OF WATER AVAILABILITY ON COFFEE PRODUCTION, FARMER LIVELIHOODS AND ADAPTIVE STRATEGIES

A PERCEPTION-BASE CASE STUDY OF SMALLHOLDER COFFEE FARMERS IN VERAGUAS, PANAMA

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INTRODUCTION

- ▶ Water scarcity may have severe effects on smallholder's livelihoods, and can drive detrimental land use change decisions
- ▶ When these production systems are located at river headwaters, these effects can be extended along the hydrological basin.



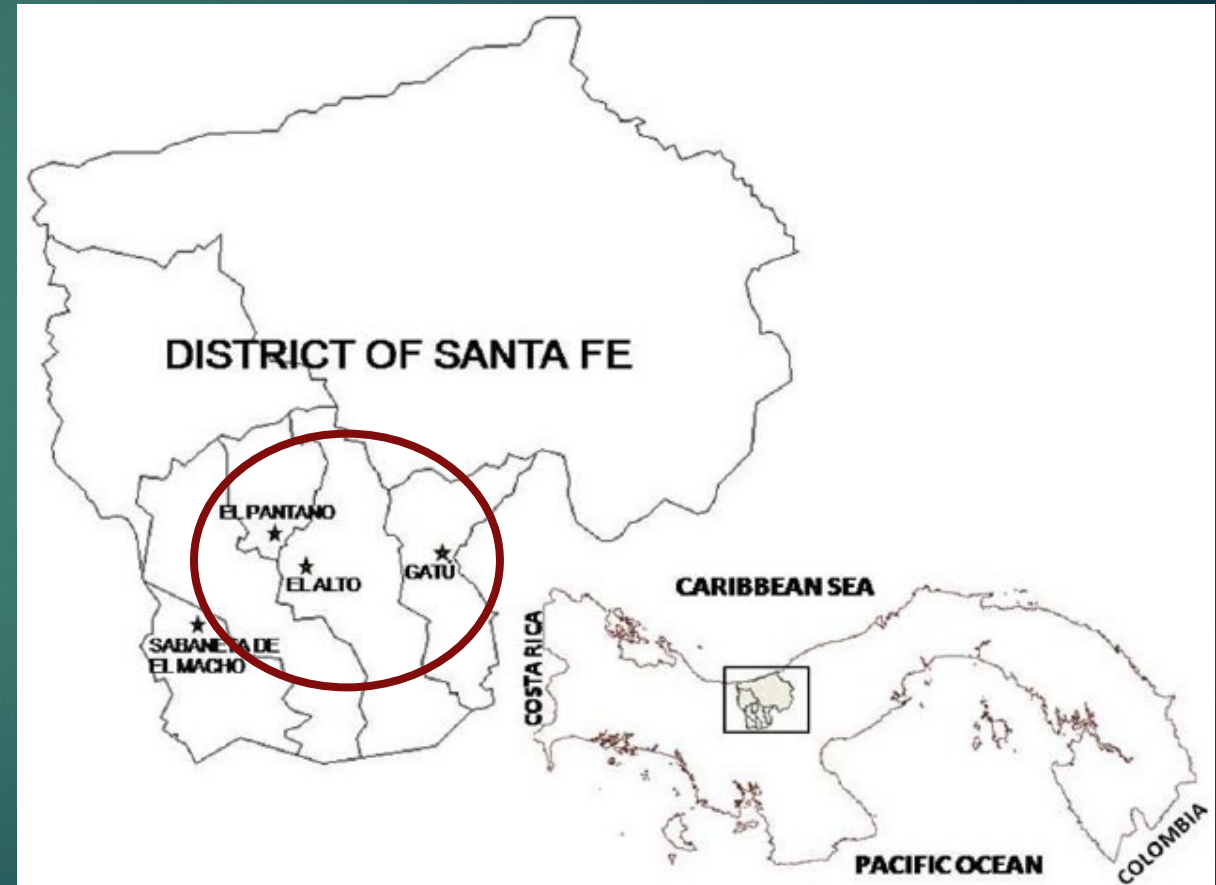
OBJECTIVE

- ▶ To analyze farmer perceptions of water availability impacts on:
 1. coffee production,
 2. livelihoods, and
 3. socioeconomic vulnerability in relation to potential land use change decisions.

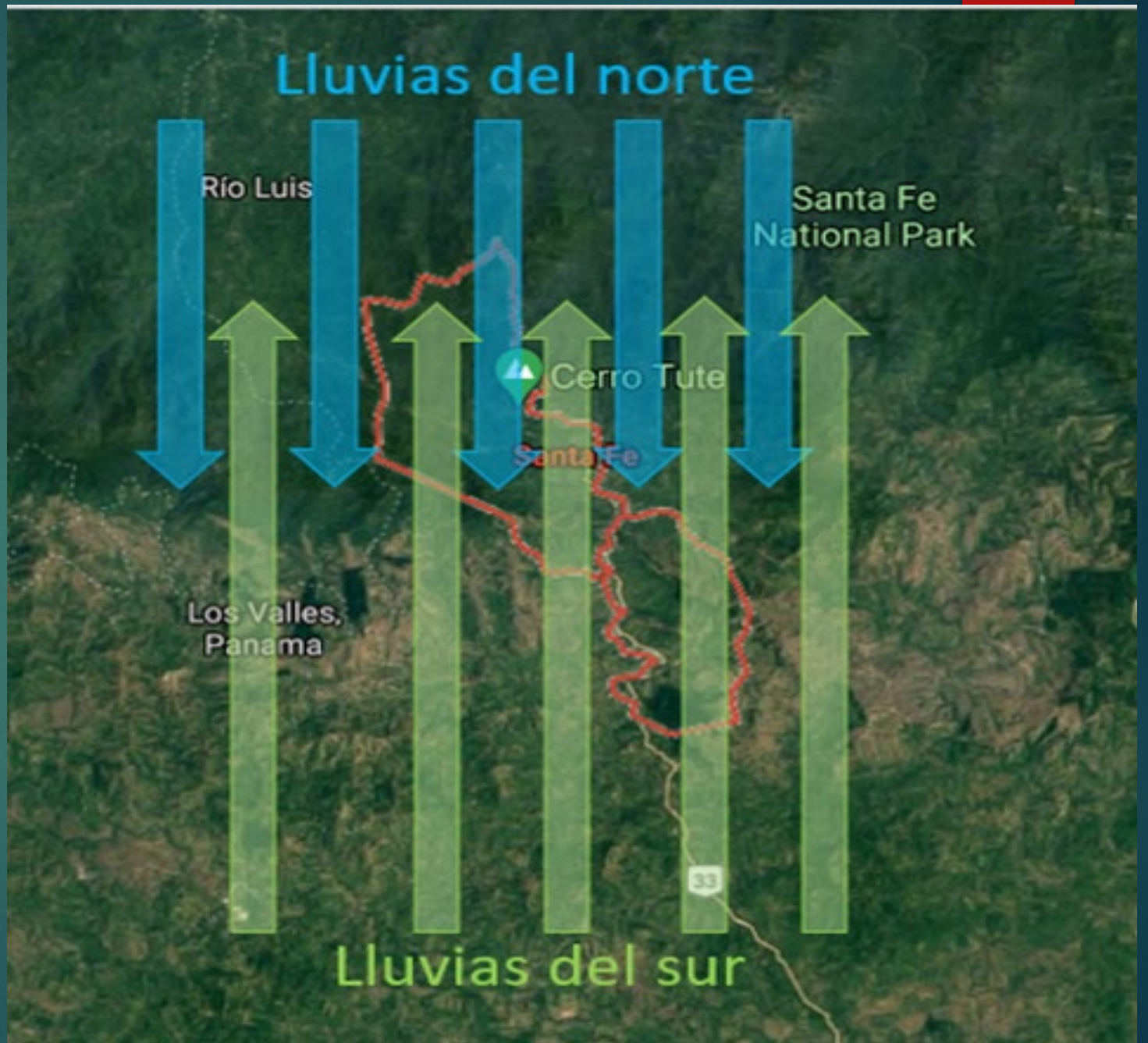


STUDY POPULATION AND SITE

- ▶ Smallholder coffee farmers of Santa Fe de Veraguas in Central Panama.
- ▶ Affiliated to the Cooperative La Esperanza de Los Campesinos



Northern and Southern precipitation fronts



Local communities, according to water availability stress



METHODOLOGY

- ▶ Perception-based study, since farmers perception drive decisions.
- ▶ Mixed methods included participant observation, semi-structured interviews of key informants, and household surveys.
- ▶ Production areas and farmer households were divided according to the perceived water availability:
 - ▶ **high rainfall,**
 - ▶ **moderate rainfall,**
 - ▶ **and dry zones.**
- ▶ 10 households randomly selected in each zone



RESULTS

Question: Describe the effects of water scarcity on coffee production for your household

Severe / Moderate / Mild / None

1. SEVERE EFFECTS OF WATER SCARCITY ON COFFEE PRODUCTION (PER AREA)

Dry area (80%)

Intermediate area (50%)

Humid area (40%)



RESULTS

Question: Describe the effects of water scarcity on your household's livelihoods

Severe / Moderate / Mild / None

2. SEVERE EFFECTS OF WATER SCARCITY ON SMALLHOLDER LIVELIHOODS (PER AREA)

Dry area (70%)

Intermediate area (60%)

Humid area (50%)



RESULTS

Question: Describe the effects of water scarcity on your household's socioeconomic vulnerability, and potential land use change decisions

Severe / Moderate / Mild / None

3. SEVERE EFFECTS OF WATER SCARCITY ON SOCIOECONOMIC VULNERABILITY – POTENTIAL DRIVER OF LAND USE CHANGE (PER AREA)

Dry area (90%)

Intermediate area (50%)

Humid area (60%)



CONCLUSIONS

- ▶ Empirical findings of correlation between water scarcity and perceived effects on coffee production, farmers livelihoods, and socioeconomic vulnerability.
- ▶ Farmers from dry areas perceive more severe effects of water scarcity on the three variables.
- ▶ We recommend that organizations concerned with environmental conservation and livelihoods consider the effects of changes in water availability especially in dry regions, such as in the case of Santa Fe de Veraguas.



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Thank
you!