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THE SCALING-UP POTENTIAL OF AGROFORESTRY SYSTEMS IN COLOMBIA: A COMPARATIVE EX-ANTE ASSESSMENT ACROSS TWO CONTRASTING REGIONS.

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INTRODUCTION

- Agroforestry systems (AFS) are a sustainable land-use strategy that integrates woody within farming systems with positive effects on biodiversity conservation, climate change mitigation, and rural livelihoods. *(Jacobi et al., 2015; Lasco et al., 2014; Pagiola, Rios, & Arcenas, 2010).*
- In Colombia, AFS have proven to be sustainable practices and are being adopted in cacao, coffee, and cattle production systems *(Somarriba et al., 2012).* They are the most appropriate use for 16.3% of the Colombian land in order to have a sustainable production without natural resource depletion *(IGAG, 2017).*

STUDY SITES

	CESAR	CAQUETÁ
Ranking by national surface area	**21st**	**3rd**
Protected areas	**12%**	**63%**
Suitable land for agriculture	**34%**	**1%**
Agricultural area	**64%**	**17%**

RESEARCH GAP

Until now, there is no particular study that ex-ante addresses regional differences for AFS scaling-up across different regions and farming systems.

SELECTED FARMING SYSTEMS

COCOA FARMING

- Established and managed under shade with other crops.
- Low yields in both study areas

COCOA AGROFORESTRY SYSTEMS (CAFS)

Cropping systems where cocoa trees are associated with other crops and woody species (Cerda et al., 2014)

CATTLE RANCHING

- The most widespread land-use in Colombia.
- It has been managed extensively for a dual purpose.

SILVOPASTORAL SYSTEMS (SPS)

Arrangements that combine fodder plants with shrubs and trees (Calle et al., 2013).

RESEARCH OBJECTIVE

To assess scaling-up potential of AFS across two farming systems (cattle and cocoa farming) and two regions of Colombia (Caquetá and Cesar).

RESEARCH QUESTIONS

(1) What are the requirements for promoting AFS within cattle and cocoa farming in Cesar and Caquetá, Colombia?

(2) Which factors could hinder AFS scaling-up within these two farming systems in the study regions?

METHODS

QUESTIONNAIRE SURVEY

ScalA – Sustainability impact assessment tool

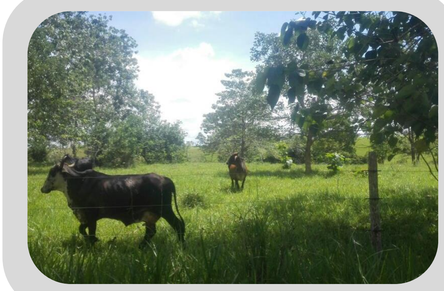
Version ScalA-Peacebuilding/ScalA-PB. It allows for assessing and comparing the scaling-up potential of specific projects, strategies or actions that support sustainability, climate change responsiveness, and peacebuilding *(ZALF, 2020).*

SAMPLE

18 assessments between February and May 2020 through individual and group interviews.

CESAR	**5 individual interviews** Public rural institution Regional university Livestock extension institution Research institution (2) **1 group interview** Agricultural research center (9)	**5 individual interviews** Cocoa extension institution (2) Agricultural research institution Rural extension institution Cocoa trading company
CAQUETÁ	**3 individual interviews** Research institution (2) NGOs	**3 individual interviews** Research institutions (3) **1 group interview** Cocoa extension institution (3)

CAFS in Cesar, Colombia
@Tatiana Rodríguez



SPS in Caquetá, Colombia
@Pablo Motta

DATA ANALYSIS

Resource requirements	Relevance of 11 financial, human, institutional and agricultural inputs needs	0: not relevant 1: low 2: medium 3: high
Scaling-up Potential	Compliance of 59 scaling-up factors divided in 7 categories	0: no, not at all 1: not completely; there are some lacks 2: yes; very good; very much

Potential success rate of SPS/CAFS scaling-up
A percentage (%) that indicates a deviation from the optimal situation. Thus a lower % denotes a higher chance for scaling-up.

RESULTS

RESOURCE REQUIREMENTS

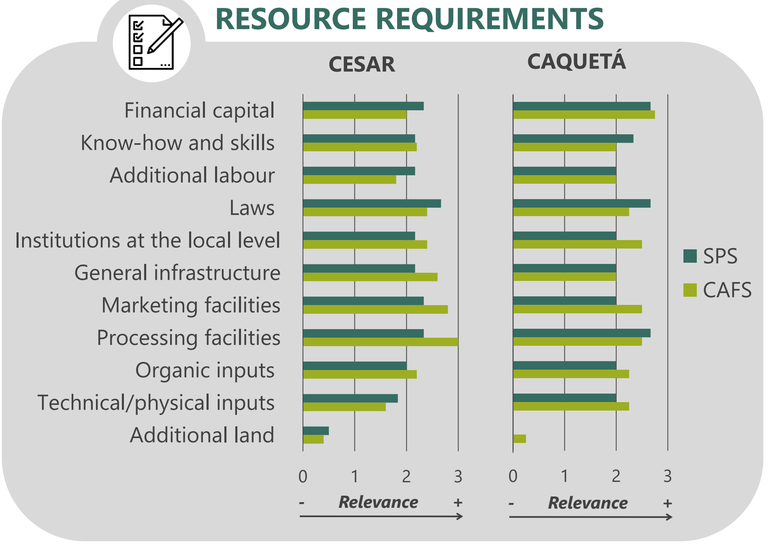


Figure 1. *Resources requirements for promoting SPS and CAFS in Cesar and Caquetá and their average relevance based on experts' scoring. The requirements with highest scores denote the most significant constraints for promoting these systems.*

SCALING-UP POTENTIAL

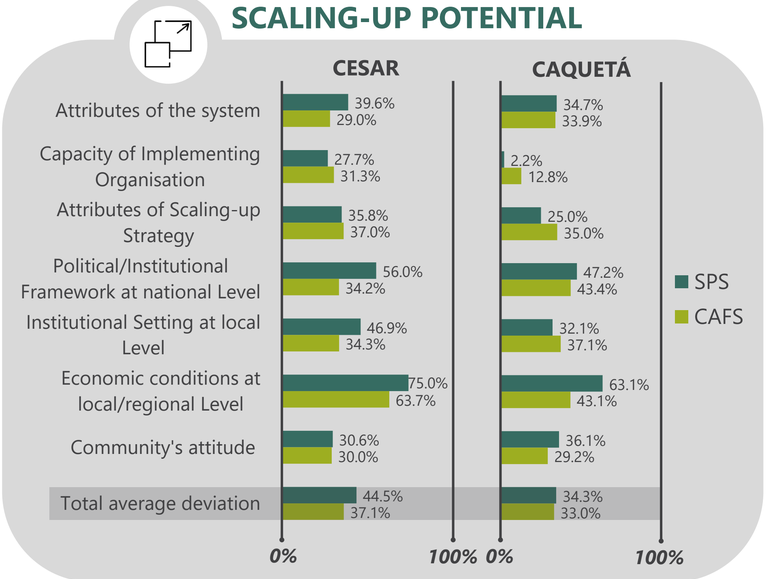


Figure 2. *Scaling-up categories of factors and average percentage deviation based on experts' rating of scaling-up factors. The lower values of deviation, the more likely successful scaling-up will be. The last bars show the total average deviation.*

CONCLUSIONS

- The scaling-up potential is perceived slightly higher for CAFS than for SPS in both study regions *(Figure 2).*
- Agricultural and natural resource management laws are perceived as a highly demanding requirement for promoting SPS in both regions *(Figure 1).* In the same vein, the institutional framework at the national level is a barrier to scale-up SPS in both regions *(Figure 2).*
- For both farming systems in the study regions, scaling-up is hindered by insufficient access to financial means by farmers to afford the cost of the systems and the lack of a stable market that guarantees reasonable prices for products derived from them *(Figure 2).*
- Land availability is not a barrier for promoting AFS in both regions *(Figure 1)*, however, uncertainty concerning land rights is perceived in cocoa farms from Cesar.

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