



ATSAF - CGIAR++ Junior Scientists Program

Final Report

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Title: The role of agricultural extension services for the promotion of horizontal knowledge transfer - an analysis within cocoa agroforestry systems in Colombia

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1. Purpose of my research

My master thesis examines the role of extension services for the promotion of horizontal knowledge transfer by exploring a case study in the field of cocoa agroforestry systems in the department of Cesar, Colombia. Cocoa (*lat. Theobroma Cacao*) has been promoted as a peace crop for farmers in rural areas, particularly those that have been affected by illegal crop production and armed conflict in order to sustain livelihoods and build peace. Cocoa is a productive and sustainable option for rural development in Colombia since cocoa plantations can be established in agroforestry systems on smallholder farms, as is the traditional way, which require both little labour and few inputs. Increasing cocoa agroforestry systems (CAFS) on one hand but, more importantly, improving the current management practices and arrangements (e.g., species selection, post-harvest management) is of great importance in this regard. As CAFS are site-specific, complex, and reactive to climate variation, they require detailed knowledge and experience in the management practices and selection of species in order to be able to adapt to occurring risks and uncertainties. Agricultural extension services supporting farmers on that journey can be of great value for farmers however they need to be designed in an adaptive and community-based manner. Rural extension in Colombia is managed on a sectoral and departmental basis seeking to improve the productivity of particular crops in specific departments.

The research questions addressed in the thesis are:

- (1) Which knowledge transfer mechanisms can be identified in agricultural extension services in the cocoa sector?
- (2) How can agricultural extension work in CAFS in Cesar, Colombia be improved?

In order to answer the research questions, a literature research was conducted which was then complemented by data from a total of 24 interviews from different actor groups as well as an addition of four further expert interviews to contextualise the collected data and fill remaining knowledge gaps. The results were then embedded into the theoretical perspective and recommendations for practical application are derived.



2. Collaboration with CIAT and the Research Group

Travelling to Colombia was unfortunately not possible due to the corona pandemic. Thus, the collaboration and data collection were entirely based on virtual encounters.

I was part of the team within CIAT dealing with Cesar cocoa value chain analysis activities.

My contact person in Colombia was Augusto Castro-Nuñez for supervising the project-related aspects of my research as well as general administrative and consulting issues. Moreover, I was working together with another team that was preparing and implementing a large research tool that was used for the value chain analysis.

Here, I was involved in the implementation process of the tool and was able to also integrate questions relevant to my personal research.

The interaction with the team from CIAT was as follows:

- Jour Fix with my supervisor Augusto Castro every 4 weeks
- Update meetings with one research associate every 2 weeks
- Further virtual meetings for specific activities
- One virtual workshop week for reviewing the developed tool before taking it to the field
- Participation in some of the virtually conducted interviews within the scope of the tool implementation in the field
- Other members of the SLUS project also supported me with the additional data collection which consisted of 4 additional interviews in order to complement the results obtained within the large data collection through the tool

The team in CIAT supported me to settling into the topic and to better understand the cocoa value chain in Colombia in general and in Cesar, which was my focus region, in particular. Furthermore, they also guided and consulted the focus of my work with me in order to find a good balance between my personal interests and relevant outputs in order for them to use the results of my research for the continuation of their projects. My research and capacities were clearly assigned to a particular activity of the overarching project “Sustainable land use system” and I was integrated in the workplan for the second semester of 2020. While the CIAT team gave me good guidance in all site-specific as well as practical implementation issues, I supported CIAT in the tool development and first examination of the results. Furthermore, all results will be shared with the team and any publication possibly resulting from the thesis will be effected in close collaboration.



3. Research and Data collection

The research process was delayed in time due to the pandemic and thus the team at CIAT waited until personal visit with stakeholders from the cocoa value chain was possible again in order to increase completeness of the data collection where virtual encounters couldn't be done.

I was only partly involved in the interview conduction per se which was based on time difference and more importantly geographical distance that did not allow for field visits and live interviews.

However, I was provided with the data and could use it as a main basis for my research.

Since the specific focus of my work on the evaluation of agricultural extension services and participation in the cocoa sector of Cesar, Colombia was not applicable to all actors interviewed nor in such detail, additional interviews were conducted. Members of the SLUS team helped me to find the right stakeholders for the additional interviews and also participated in the interviews for support.

4. Preliminary Results

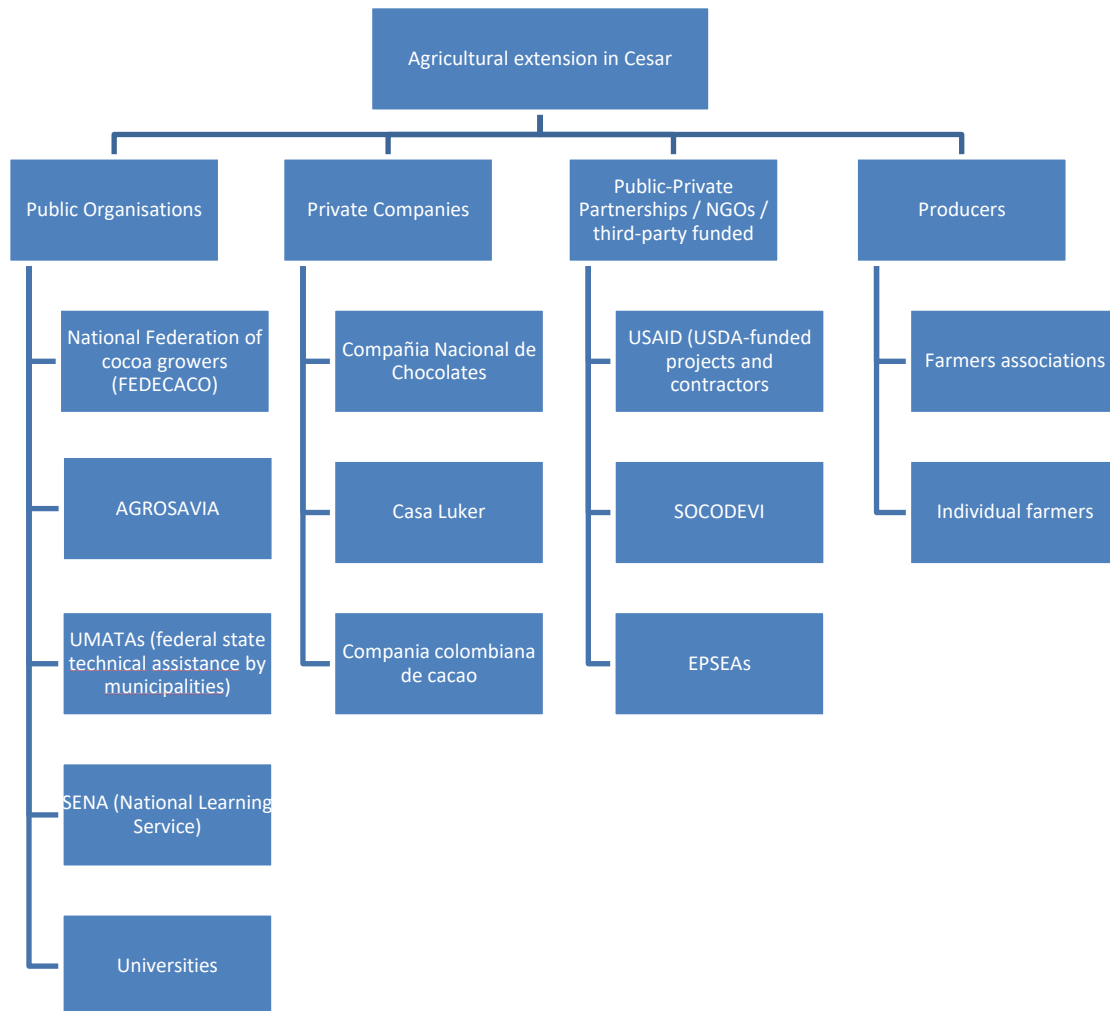


Figure 1 - Overview of entities providing agricultural extension in Cesar, Colombia

In Colombia, there is a variety of organisations, institutions and private persons of national and international nature that provide agricultural extension services. Some of them only offer their services within the cocoa sector. Thus, the figure below, gives an overview of the entities providing agricultural extension in the cocoa sector in the department of Cesar, Colombia.

Additional to the general overview on the agricultural extension services in Cesar, challenges and possible improvements were identified and further analysed within the working with people framework (WWP), which encompasses certain principles and values in order to effectively work with people in a knowledge exchange setting.



WWP component	Challenges for AE services
Technical Entrepreneurial	<ul style="list-style-type: none"> • Lack of financial resources • Need for more integrated approach to AE • Biophysical challenges (weather, droughts, species) • Irrigation and water management • Use of ICT • Accessibility of farms
Political Contextual	<ul style="list-style-type: none"> • Availability of public AE due to registration bypass • Access to project allocation for all entities providing AE • Coordination between institutions • Local and regional investments • Measurement of AE impacts and effectiveness → need for indicators • Lack of knowledge and experience (farmers & extensionists) • Availability of research and knowledge
Ethical-Social	<ul style="list-style-type: none"> • Traditional practices of farmers vs. new practices • Lack of continuous accompaniment • Lack of trust in institutions • Program tailored to farmer's needs • Illiteracy • Cultural issues: knowledge appropriation

The preliminary results can be summarised as follows:

1. There is a high demand for agricultural extension in the cocoa value chain in the department of Cesar that is currently not addressed effectively.
2. The distribution of technical assistants depending on the sales registration of the respective departments is a major challenge.
3. Horizontal knowledge transfer plays a role in current extension service methods; however, it is not utilised as additional support or for relief of the extension services.
4. The remoteness of the farms and the motivation of the farmers are factors that hamper the exchange and transfer of knowledge from farmer to farmer.



5. Consistency in farmer support and the dependency on project funding and implied time restrictions are further challenges to the effectiveness of rural extension in CAFS in Cesar, Colombia.
6. The new legislation for agricultural extension offers great potential for improvement of the system, though the implementation process is not done and is likely to pose challenges for all actors involved.

In Colombia, the extension is managed by cultivations, segmented - so Cocoa has its own extension services, but the farmers usually (given it's an agroforestry system) different cultivations and therefore they are complying with their goals and numbers they have to reach. However, it would be good if extension in Colombia could be organised in a more integrated manner in order to also address the interplay of cultivations and complexity of the given cultivation systems.

The results were further discussed, and action recommendations will be developed. Since the thesis work is still in the finalisation process, conclusions are still to be drawn.

5. Conclusion & Reflection on the program

The jointly developed interview tool is a crucial and fundamental component of my thesis. The data is very rich in information and provides further material for different research questions and creates a solid base for the analysis of the cocoa value chain in Colombia.

The collaboration with CIAT has been a very positive experience in every sense. It has not only been a vital part for my thesis work but also has it enriched me personally. The integration in the team was a huge support for me to better understand the local conditions and needs of the cocoa sector that I would have never been able to grasp, particularly not remotely, being in Germany. I am very thankful to have been given this opportunity. I am positive, that the results of my work can also contribute to current and further research and might inspire project proposals for CIAT in the future.