

Palacký University Olomouc  
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MASTER THESIS

**Technical assistance and capacity sharing indicators for agricultural  
cooperatives**



*Source: Agriterra Official Website*

Alexandru Beg  
Supervisor: Professor Martin Schlossarek

GLODEP 2023

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## **Declaration**

I, Alexandru Beg, hereby declare that the Master thesis titled “Technical assistance and capacity sharing indicators for agricultural cooperatives” submitted as a prerequisite for the Erasmus Mundus Joint Master Degree Program in Global Development Policy (GLODEP) has been written solely by me as an original work, except when indicated otherwise by the reference or acknowledgement of other sources.

Name: Alexandru Beg

Date: 22 May 2023

Signature:

A handwritten signature in black ink, appearing to read 'Beg', written in a cursive style.

# UNIVERZITA PALACKÉHO V OLMOUCI

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## ZADÁNÍ DIPLOMOVÉ PRÁCE

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### Zásady pro vypracování

Agriterra is an international NGO in agri-business that works with a total of 357 FOs and agricultural cooperatives in developing countries from around 3 continents. The different projects and programs following a three-process approach: financing farmer led cooperatives, providing training and enhancing farmer-government dialogue. The main themes of their trainings and advisory services focus on management and organisation of cooperatives, governance, business development (Schieven, 2023).

#### Research objective

The objective of this research is to provide clarity on quantity-based indicator structure used in measuring technical assistance and capacity sharing for smallholders' farmers part of agricultural cooperatives. Chapter structures are as follows: a brief explanation of smallholder farmers in the context of agricultural cooperatives in developing countries, what is meant by capacity sharing and its dimensions, how quantity based indicators related to capacity development can be constructed, and their measurement. The research on indicators is done from an organizational level perspective (agricultural cooperatives) and draws upon a comparison on how and what type of quantity-based indicators related to capacity sharing exist in the literature, their uses, and their structure. Agriterra's theory of change model and what quantity-based indicators are used for delivering capacity sharing will also be explained in a chapter. A comparison will then be drawn between Agriterra and prevailing literature in their choice of indicators for technical assistance/capacity development.

#### Research methods:

- This research consists of a document analysis of secondary source data present in documents of Agriterra and electronic articles as well as databases related to indicators used in providing technical assistance and capacity sharing to agricultural cooperatives
- Positivist approach in document analysis where evidence is being sought to confirm the research questions put forth in this thesis. The focus will be on facts outlined by authors that have been;
- Use of inductive reasoning to analyze information to answer a research question (Bowen, 2009);

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V Olomouci dne 27. ledna 2023

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The internship at Agriterra offered me insight and inspiration in the development of this thesis. I would like to thank my internship supervisor as well as all my colleagues at Agriterra for providing me guidance, assistance, and flexibility of ideas regarding this research.

Furthermore, I would like to acknowledge the participants of this study for their willingness to contribute their time and insights. Without their cooperation, this research would not have been possible, and I am grateful for their valuable contributions.

## **List of abbreviations and acronyms**

AIN - Access Information Network

ESG - Environment, social, governance

FAO - Food and Agriculture Organization of the United Nations

FO - Farmer organization

GIIN - The Global Impact Investing Network

IFAD - International Fund for Agricultural Development

ICA - International Cooperative Alliance

ILO - International Labour Organization

OECD - Organisation for Economic Co-Operation and Development

M&E - Monitoring and evaluation

NGO - Non-governmental organization

RBM - Results-based management

SDG - Sustainable Development Goal

ToC - Theory of change

UNDP - United Nations Development Programme

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## **Abstract**

Designing quantity-based activities and outputs indicators for capacity sharing is a crucial component of a project's or organization's theory of change when it comes to development projects from the viewpoint of smallholder farmers. Prior studies on agricultural cooperatives specifically investigate outcome and impact level indicators to assess organizational effectiveness, leaving a void in the literature on research on activities and output level indicators. In order to illustrate what an effective activity and output indicator design in capacity sharing initiatives directed towards agricultural cooperatives looks like, I use document analysis and semi-structured interviews as my primary qualitative research methodologies in this study. Additionally, I triangulate the data and group these indicators into two categories for capacity sharing: technical and organizational. The research finds that technical output indicators in capacity sharing affect a member's particular abilities and capacities and organizational output indicators affect the agricultural cooperative's general management structure. Activity level indicators focus on highlighting the actions conducted to realize the output metrics and have a strong focus on scoping and assessments of the agricultural cooperatives.

**Keywords:** Monitoring and evaluation (M&E), agricultural cooperatives, smallholder farmers, capacity sharing, output indicators.

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## Agriterra

Agriterra is a Dutch agri-agency founded in 1997 that works with 357 farmer organizations (FOs) and agricultural cooperatives in total from Asia, South America and Africa through different projects and programs. Its mission is to professionalize cooperatives as part of farmer organizations (FO) worldwide in order to better serve the needs and interests of their member farmers (Schieven, 2023). Agriterra collaborates with already-existing cooperatives. The organization follows a three-track approach also called main trajectories (See Figure 1) which provides a focus on farmer enterprises, entrepreneurship, and advocacy.

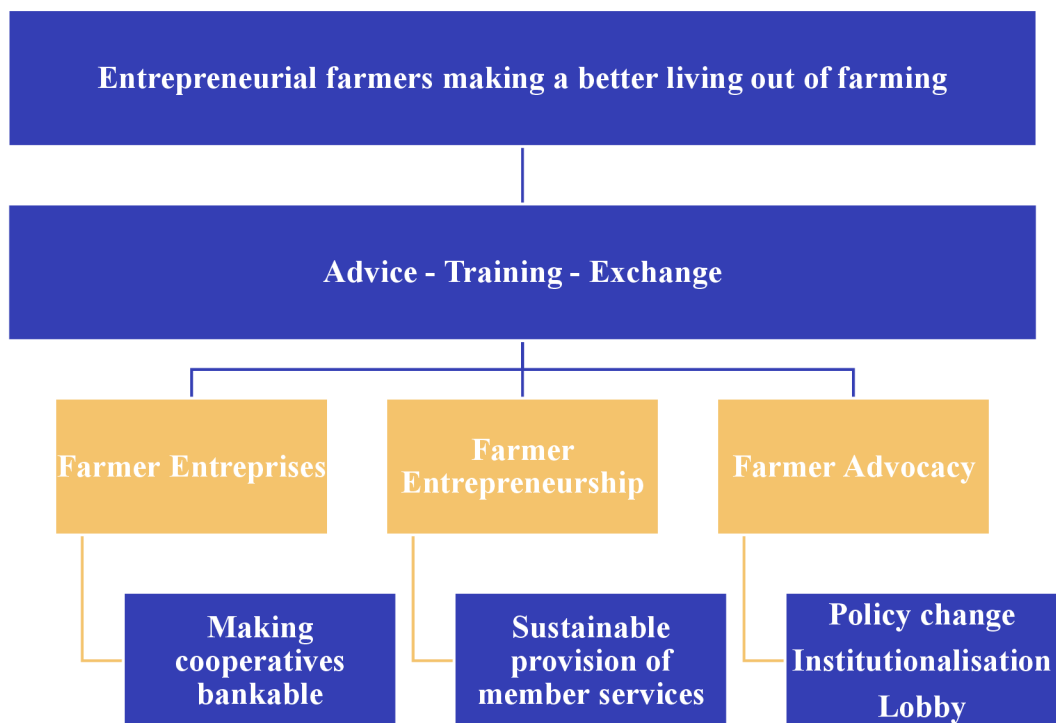


Figure 1 - Three-track approach, adapted from Agriterra (2023, p. 26)

In addition to these main trajectories, Agriterra also has transversal trajectories (governance, financial management) and cross-cutting trajectories (gender, youth, climate). Each aspect of the three types of trajectories is accompanied by indicators that are monitored to oversee the progress. In order to achieve their main trajectories, the organization provides capacity sharing in the form of scoping, assessment, training, peer-to-peer, business advice, consultancies, exchange visits, small grants, or internships (Agriterra, 2021). Figure 2 provides a detailed overview of these three types of trajectories as well as the activities it does to achieve these.

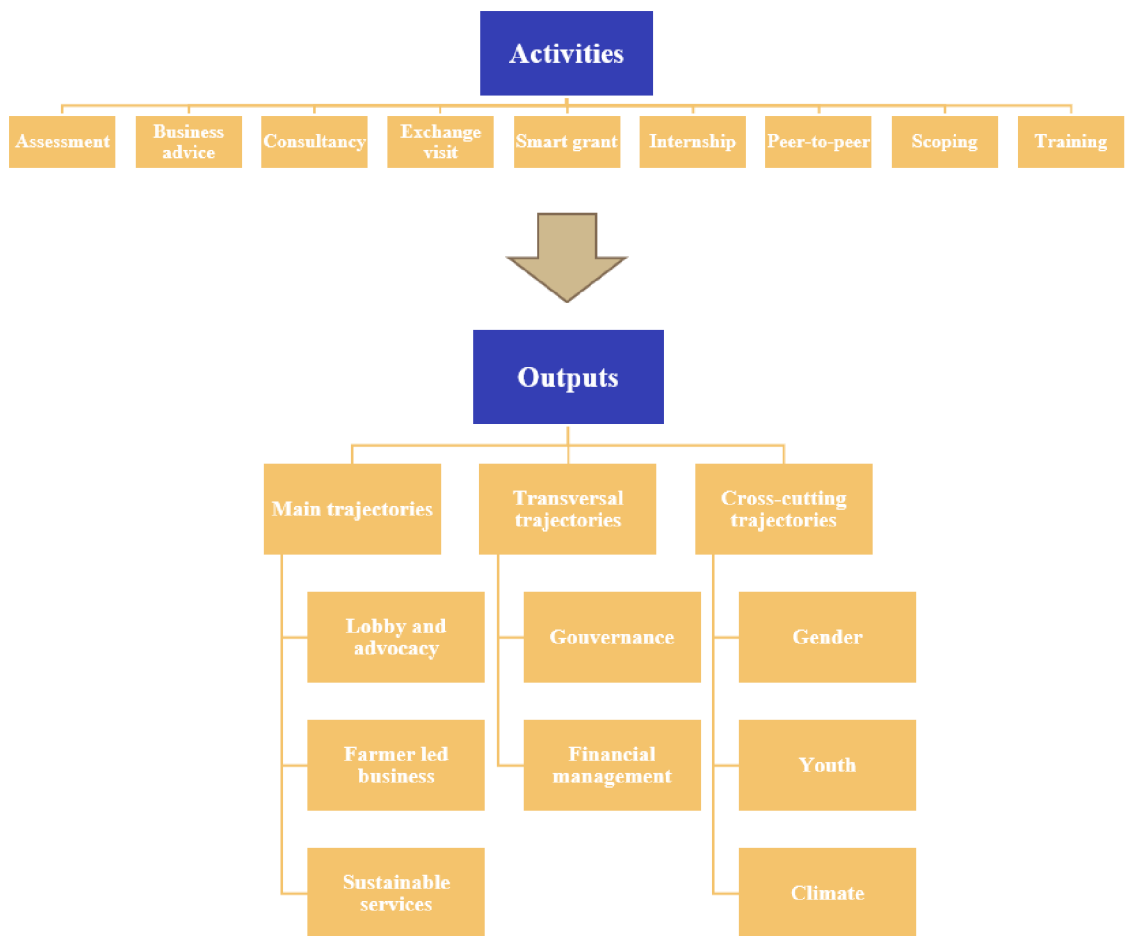


Figure 2 – Agriterra's theory of change showing activities and outputs, adapted from Agriterra (2021, p. 25)

In order to achieve these trajectories, the organization provides 5 types of training: management and organization, governance and leadership, financial management, business development, and lobby (Agriterra, n.d.). To ensure an effective alignment of their interventions with other stakeholders and the national and local government, the organisation follows a four-stage approach at the country level to best determine key stakeholders, appropriate value chains, cooperative landscape, and key agricultural policies (see Figure 3)



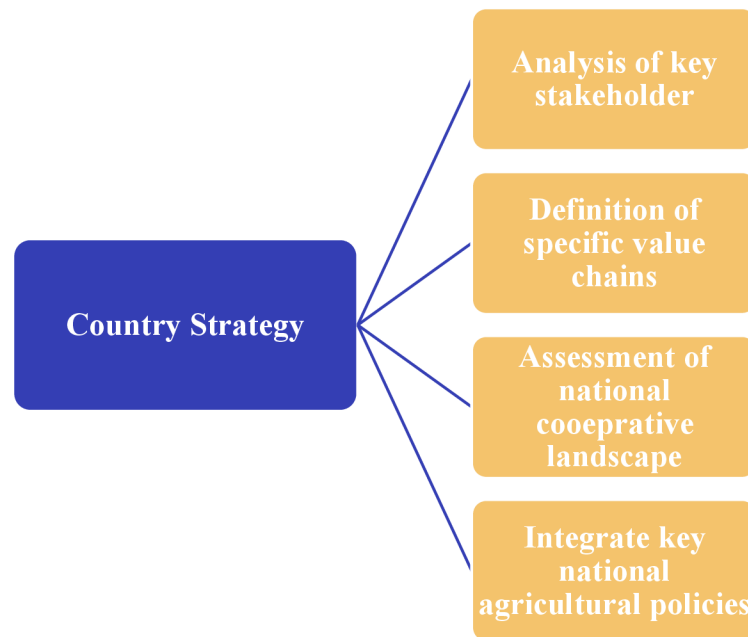


Figure 3 – Four-stage approach to develop a country strategy, adapted from Agriterra (2021, p. 16)

## Internship mandate

At Agriterra, in my role as an impact analyst of the ABC Fund<sup>1</sup>, I have been tasked to present a data analysis process, done in Microsoft Excel, consisting of descriptive statistics which aim to better understand what impact did the loan and/or technical assistance bring to the investees and the smallholder farmers. Part of my responsibilities include communicating with various project stakeholders such as the fund manager, the investment advisors, and the project manager in order to get access to the most up-to-date and reliable data. The analysis takes into account the theory of change (ToC) outcome indicators. The deliverables consist of a white paper report as well as a presentation that will be handed in by the end of the internship. While a chronogram of activities is not available for my internship, a workplan for my thesis assignment can be consulted in Appendix 3.

## Introduction

A good indicator design from a donor perspective allows not only clarity in reinforcing capacities for the specific needs of an agricultural cooperative, but also can allow clearer monitoring on the part of non-governmental organizations (NGOs) or other donors to successfully guide agricultural cooperatives to increase performance. Indicators are crucial

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<sup>1</sup> The Agri-Business Capital (ABC) Fund (also referred to as “the Fund”) promotes sustainable agriculture and agribusiness solutions in low- and middle-income countries, with a strong focus on women and youth, by investing into underserved yet profitable segments of agribusiness value chains (Agriterra, 2020). Cooperatives are part of a direct investment strategy in the fund.

tools in monitoring and evaluation (M&E) because they offer quantifiable and visible evidence of success, enabling stakeholders to make informed decisions about the distribution of resources and program enhancements. For M&E to be effective, selecting the right indicators is essential since it makes sure the evaluation is complete, focused, and relevant. Indicators in capacity sharing or capacity building for agricultural cooperatives are relevant because they take into consideration the identity of the cooperatives as well as their unique context and characteristics. This means that the indicators should be able to measure the economic, social, and environmental performance of cooperatives while taking into account values, principles, and objectives of the cooperatives (Aris et al., 2018). Additionally, their relevance comes from a good mixture of measures of member well-being and welfare, strengthening organizational capacities, as well as cooperative performance.

Cooperatives, specifically membership based agricultural cooperatives, represent an integral solution to solving some of the world's pressing problems in the context of smallholder farmers such as food security, youth employment, productivity, economic growth, amongst many others. They are highly relevant for several reasons. They offer an alternative model for social enterprise, with contributions to sustainable development well beyond job creation. Cooperatives play a significant role in employment creation and income generation while they also tend to be more resilient and perform better during financial and economic crises (Gerard et al., 2019). Puri and Walsh (2017) found that the performance, participation, and professionalization are the key variables to improve the performance of cooperatives in Nepal. The authors also find that involving more people in membership in the activities of a cooperative can be a way to accelerate economic growth in Nepal. Cooperatives are also important because they promote democratic participation, encourage community development, and provide a means for individuals to pool their resources and achieve common goals (Wanyama, 2016). These issues are all embedded in the Sustainable Development Goals (SDGs) and targets and as such, governmental organizations, donors, and NGOs executing projects, all aspire that their work contributes to the achievement of the goals and targets.

At the activities and outputs levels of the result chain of a ToC, there is a need to understand what constitutes a useful output indicator to measure capacity sharing for agricultural cooperatives from an organizational perspective and that of their members, who are mostly smallholder farmers. The amount, promptness, and quality of a product or service are just a few examples of the several characteristics that a good output indicator should track. Activities and outputs are often overlooked in the research component with the

emphasis being on outcome and impact-based results at the national or institutional level. The International Labour Organization (ILO), for instance, provides technical training and capacity sharing, but often to support M&E activities at the national level and focuses on outcome-based indicators. That is insufficient because a theory of change (ToC) should clearly state what actions and outputs are crucial components for achieving outcomes and how are they to be achieved. Subsequently, this affects the reporting of a project's total impact and its associated levels of change, which are essential aspects. In order to achieve growth at the organizational capacity level of the agricultural cooperative, it is crucial to comprehend how good activities and output indicators in M&E can influence an agricultural cooperative and subsequently its members to overcome specific challenges. It also provides potential donors with a clear structure in how change was created to reinforce capacities of agricultural cooperatives.

The motivation to write about activities and output indicators that apply specifically to agricultural cooperatives comes from my realization that there are development project interventions that consider only outcomes and impact of a ToC and do not take the time to properly identify and design output indicators. Part of a theory of change focuses on output indicators because they offer quantifiable benchmarks, encourage learning and adaptation, and improve accountability. Additionally, they serve as checkpoints throughout the path toward targeted outcomes and they can help identify bottlenecks and make timely adjustments to increase program effectiveness so that's why they become important. I wanted to do this research in the context of agricultural cooperatives because I believe that agricultural cooperatives are a powerful tool for supporting sustainable farming practices and advancing the economic and social well-being of smallholder farmers. As such, good indicators used in development projects working with these agricultural cooperatives are key in ensuring that the needed progress is properly measured in these interventions.

“Cooperative” can be a difficult word to define and contextualize. ILO states that a cooperative is an independent group of people who come together voluntarily to address their shared needs and objectives in the economic, social, and cultural spheres through a jointly owned and democratically run business (International Labour Organization, 2020). Aris et al. (2018) state that the primary concern for cooperatives lies in ensuring the economic progress of their members while also fulfilling socio-cultural interests and protecting the environment. In their research on discovering what is meant by cooperative enterprise, Camargo Benavides and Ehrenhard (2021) perform a systematic review of available literature and mention that the definition of a cooperative is based on particular theoretical frameworks and can vary

according to what type of information is needed to analyse. The International Cooperative Alliance (2020) describes cooperatives as an autonomous association of persons united voluntarily to meet their common economic, social, cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Seven principles related to agricultural cooperatives are outlined (Elijah, 2023; International Cooperative Alliance, 2020):

- voluntary and open membership.
- democratic member control.
- member economic participation.
- autonomy and independence.
- education, training, and information.
- cooperation amongst cooperatives.
- concern for community.

Respecting these principles is an important step in ensuring economic growth for members of a cooperative. This research paper will focus on agricultural cooperatives in the context of rural agricultural development which will be talked about in detail in section I.

This research aims to explore capacity sharing indicator design and measurement at the activities and output levels within the context of agricultural cooperatives that is used by donors to track progress. The definition of capacity sharing is adapted from Koojman (2021) who states that capacity sharing is the external interventions or support that build capacity in order to facilitate change. This research identified two important dimensions that are divided into technical capacities and organizational capacities which will be presented in section II.

These two capacities dimensions should incorporate indicators that aim at improving organizational resilience and adaptiveness and have transversal themes such as gender equality and youth. Additional information on capacity sharing will be presented throughout the research process. The research paper will assess the work that Agriterra does with agricultural cooperatives, its capacity sharing strategy and framework along with some output indicators used and their measurement. It is important to note that the research work here will not be entirely based on Agriterra's work with capacity sharing initiatives. It will also draw from prevailing literature in the field and from the work related to capacity sharing that other NGOs do with agricultural cooperatives and smallholder farmers.

This thesis research is structured as follows. It will start by introducing the methodology applied in this study. In section I, definitions will be discussed on what are

smallholder farmers and agricultural cooperatives and will discuss briefly how the cooperative sector contributes to the SDGs. Section II will provide an overview on how prevailing literature defines capacity sharing as well as its different dimensions and why is it important to measure them in the context of agricultural cooperatives. The two identified dimensions are specifically defined as the “what” capacities are trying to develop in the capacity sharing process and are divided into technical capacities and organizational capacities. Components of these two dimensions will be discussed in section II. Section III will talk about measurement of activities/output type indicators related to capacity sharing for agricultural cooperatives. Section IV will describe what is a ToC and why is it important in a results-based management (RBM) strategy where activities/output indicators exist. It will not distinguish between ToCs that can dramatically differ between projects. It will apply to a ToC that provides indicators at the activities and output levels for projects focusing on agricultural cooperatives. Afterwards, it will present Agritererra’s ToC model as well as share indicators used in assessing capacity sharing for agricultural cooperatives. Section V will make a comparison between what Agritererra uses as its indicators as part of its capacity sharing, what the interviews and project documents suggest, and what the prevailing literature identified as important activities and output indicators used in capacity sharing. There will also be a recommendation section based on what the findings and literature suggest. The last part of the research consists of outlining the limitations of this study, possible future research, as well as a conclusion. As a final section, I will also discuss the acquired interpersonal skills and practical knowledge during my internship experience within Agritererra and how this thesis research might be useful to the organization.

The term capacity sharing will be used all along this research paper to indicate capacity building, the reason being that “NGOs and other type of organizations should ‘share’ capacities, not ‘build’ the capacity of others. They are also more specific about the nature of the relationship between the organization and the people we work with” (Oxfam International 2023, p. 66). Additionally, technical assistance is defined as the transfer, adaptation, mobilization, and use of services, skills, knowledge, and technology for sustainably enhancing human, economic, technical, managerial, and organizational capabilities (World Bank, 1996). In the context of this research, technical assistance and capacity sharing will signify the same things.

There is also no specific identified geographical context for the analysis that will be discussed in this research process. The aim is to provide a base of activities and output

indicators that can help agricultural cooperatives in developing countries around the world improve their performance and improve the well-being of their members.

### **Research Objective**

The objective of this research is to provide clarity on quantitative indicator structure used in measuring capacity sharing for smallholder farmers part of member based agricultural cooperatives. The research on indicators draws upon a comparison on what indicators related to capacity sharing exist at the activities and output level of a ToC and how are they measured. A comparison is then provided on what indicators does Agriterra use to reinforce capacities in partnering FOs and agricultural cooperatives as part of their ToC framework.

### **General Research Question**

What makes a good quantity-based indicator for measuring capacity sharing at the activities/output level of a ToC for agricultural cooperatives?

### **Specific Research Questions**

- What indicators related to technical capacities are used to measure agricultural cooperative performance at the activities/output level of a ToC?
- What indicators related to organizational capacities are used to measure agricultural cooperatives performance at the activities/output level of a ToC?

### **Methodology**

This research employs descriptive studies to present a document analysis and semi-structured interviews methodology. Secondary source data such as existing documents of Agriterra and electronic scientific articles as well as databases related to indicators are used in researching activities and output level indicators related to capacity sharing for agricultural cooperatives. In this sort of approach, document analysis helps clarify concepts, define conceptual boundaries, and determine the fit and applicability of elements included in the research questions (Bowen, 2009). The inductive reasoning approach was used as part of the interpretive paradigm. The interpretive approach in document analysis represents the idea that evidence is being sought in the analyzed documentation to confirm the research questions defined in this thesis. The following points will be discussed as they were taken into consideration when designing the methodology for this research.

1. Selecting the appropriate documents to analyse:

- a. Documents from peer-reviewed academic journal databases: Journal of Co-Operative Organization and Management, Journal of Rural & Community Development, Journal of Development Economics, and World Development.
- b. Databases that were used to find this information include: Web of Science, Scopus, Science Direct, JSTOR, EBSCO, and Wageningen University Library Search.
- c. Publications from international organizations (ILO, Food and Agriculture Organization of the United Nations (FAO), World Bank, United Nations Development Programme (UNDP)) and governmental organizations (Global Affairs Canada, Austrian Development Agency) that deal with capacity sharing related interventions.
- d. Gray literature from NGO platforms that work with agricultural cooperatives in developing countries.
- e. Gray literature made available from Agriterra.
- f. Three remote informal semi-structured interviews conducted with other NGOs (Solidaridad<sup>2</sup>, SNV<sup>3</sup>, and Agriterra) that outline capacity sharing strategy and indicators used for activities and output measurement (see Appendix 1).
- g. Grey literature outlining capacity sharing efforts from the LSGT<sup>4</sup> project and indicators used made available by UPA DI<sup>5</sup>.
- h. Project document outlining the systematization of the educational component of the FORMAGRO<sup>6</sup> initiative.

## 2. Familiarizing myself with the documents:

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<sup>2</sup> Solidaridad is an international civil society organization with over 50 years of experience in developing solutions to make communities and smallholder farmers more resilient. Their work involves creating fair and sustainable supply chains.

<sup>3</sup> SNV is a Dutch NGO that works to increase capabilities and create collaborations that change the agri-food, energy, and water systems so that everyone can live more sustainably and fairly.

<sup>4</sup> The LSGT (The knowledge of the people of the earth) project ultimately aims to contribute to increasing food security and fostering sustainable economic growth by strengthening the organizational capacities of small-scale producers and their organizations. The project was implemented from 2015-2021 in three countries: Haiti, Senegal, and DRC.

<sup>5</sup> UPA DI is an NGO based in the province of Québec, Canada that works with FOs in developing countries to support the family farm as a model of sustainable agriculture.

<sup>6</sup> The FORMAGRO project was a 5-year initiative (2016-2021) that targeted two regions in Peru with the purpose of improving access to quality technical agricultural education to promote the entrepreneurship of young women and men linked to farming.

- a. Reading of theory and research methods used, valid results, tables, graphs, framework models for capacity sharing, ToC models, list of indicators and how they relate to technical and organizational capacities.
  - b. Based on identified keywords: search terms were used such as capacity sharing definitions and concepts, indicators related to measurement of capacity sharing, agricultural cooperatives, documents related to theory of change and RBM. These keywords allowed to pinpoint data required for this research.
  - c. Linking documents to objective of the research questions.
3. Interpretation of findings
- a. Creation of an indicator criteria checklist based on prevailing findings, document analysis, and semi-structured interviews.
  - b. Comparison between what Agritererra uses as capacity sharing indicators at the activities and output levels and what prevailing literature as well as other NGOs or projects mention.
  - c. Give recommendations into best practices in indicator design for capacity sharing.

In other qualitative research methods such as for example interviews, researcher presence through the process of reflexivity might influence the participants and thus affect the validity of the studied data. Even though the research method employed is a mix between document analysis and semi-structured interviews, reflexivity is still a point that was considered in the process. In the case of document analysis, possible biases in the interpretation of secondary data were still an issue as the results and discussion section are closely related to the opinions and interpretations of the researcher. As stated in Olmos-Vega, et al. (2023) researchers can demonstrate reflexivity by clarifying where the data they present came from, how it was interpreted, and how it is being used. The source of the documentation was presented in the methodology design paragraph above. The interpretation of the data was the difficult part as prevailing literature to study the research question was not abundant in the verified sources. Information related to capacity sharing indicators at the activities and output levels and measurement was extracted to provide content material for this research, but it was very limited. Additional barriers included linking this information with work being done with agricultural cooperatives at the level of organizational capacities. As the researcher, I maybe have been influenced to examine literature related as closely as possible to how Agritererra works with capacity sharing for agricultural cooperatives. As a means to



prevent that, I have contacted eight similar NGO/business-to-business organizations and asked about documentation related to capacity sharing indicators and their measurement. I also inquired into the possibility of doing a semi-structured interview with these organizations. Ruslin et al. (2022) identified some advantages when using semi-structured interviews instead of structured one: the acquisition of in-depth information that can results from the flexibility and adaptability of the structuring of the questions. There was a total of three<sup>789</sup> NGOs that agreed to participate in an informal semi-structured interview. All the three interviewed individuals held an M&E role in the respective organizations, which facilitated the understanding of some of the questions asked. Additional documentation was obtained from the FORMAGRO and LSGT projects, both implemented by two Canadian NGOs, SUCO<sup>10</sup> and UPA DI respectfully.

As a researcher, I engaged in reflexivity within the interview process as well. I was transparent regarding my research objectives and allowed participants to speak freely even if the information given was sometimes out of the scope of some questions. I tried to keep questions simple and clear while being aware that not every organization I contacted worked with output indicators, but also that their vision of what capacity sharing is and how it might be different than the one presented in this research. I allowed participants to express themselves freely, without fear of judgement. If something interesting came up in their answers, I would ask follow-up questions that could help me understand their answers better and also to also address my own assumptions and biases. To this end, I also added a statement at the end of the interview process where the interviewee was free to add any comments or questions (see Appendix 1). Cultural biases were also taken into consideration as the interviewees had different cultural backgrounds than my own, but I do not believe these specifically affected the way that I interpreted findings and drew conclusions.

The characteristics used when selecting the organizations were that they needed to work on projects with agricultural cooperatives and/or with smallholder farmers. They also needed to deliver initiatives focusing on capacity sharing and have activities or output indicators to measure their results. Ethical principles were taken into consideration in order to

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<sup>7</sup> The organization SPARK was also contacted for additional information but has not responded. It is an NGO that works with strengthening youth capacities in projects around the world.

<sup>8</sup> The organization IDH was also contacted for additional information, but their ToC does not go into that much debt to track output indicators related to capacity sharing.

<sup>9</sup> Scope Insight works to advance the level of agribusiness professionalism by focusing on internal and financial management, operations, sustainability, market, external risk, enabling environment, and production base.

<sup>10</sup> SUCO is an international cooperation organization established in Montreal since 1961. It supports communities by improving their social, economic, and environmental conditions by building, alongside them, viable food systems and greater climate resilience.

respect successful collaboration, trust, and accountability. These principles include, but are not limited to, proper citations and access of documents received as well as confidentiality, if deemed necessary, to protect the identity and work of these organizations (see Appendix 1 for more detail).

Triangulation was used in order to reduce the possible biases that may exist from using a single research methodology and increase the validity and credibility of the research findings. According to Morgan (2022), examining information collected through different methods, the researcher can corroborate findings across datasets and thus reduce the impact of potential biases that can exist in a single study.

According to literature (Owen, 2009; Morgan, 2022), four advantages of using document analysis are identified. The first is the stability of data which specified that the researcher's presence does not alter what is being studied and the documents are suited for repetitive reviews. The second is that access to publicly accessible data makes it easier to access information that might otherwise take a lot of time and effort to collect. A third advantage is that there are fewer ethical concerns to address. The availability of data to the public in journal databases or in international organizations has already been processed through ethical checks and has become available to the researcher. The last advantage is related to the use of unobtrusive methods as no direct contact is required with any type of participants.

In terms of disadvantages, prevailing literature (Owen, 2009; Morgan, 2022), state that two aspects might be worth considering. The first mentions the limited scope of data as part of secondary text source analysis. This means that the available secondary source may not be able to provide complete information or grasp the complete picture of the research question. In the case of this research, this was an issue as a lot of available documentation talked about indicators related to capacity sharing, but not limited to agricultural cooperatives. A second point was that indicators were usually presented at the outcome/impact level of the result chain, paying little attention to activities/output indicators. A second disadvantage is the increase in biases from other researchers or institutions who produce this secondary data which translated to a lack of control and accuracy over the work of other authors.

## **Section I - Smallholder farmers in the context of agricultural cooperatives/FOs in developing countries**

There is no clear definition of what smallholder farmers are, but it depends on various perspectives depending upon the object of the analysis. The Food and Agriculture Organization of the United Nations (2013) defines smallholder farmers as "... small-scale farmers, pastoralists, forest keepers, fishers who manage areas varying from less than one hectare to 10 hectares" (p. 21). Khalil et al. (2017), in their paper to review approaches and criteria to define smallholder farmers, assess that an overall encompassing definition of smallholder farmers or small-scale producer is not possible. It has to follow certain criteria such as the size of the farm, the level of technology used, the degree of commercialization, and the type of products produced. This research uses the phrase "smallholder farmer" to refer to both men and women equally; it does not explicitly identify one gender or the other.

Most (84%) of the world's 570 million farms are smallholdings; that is, farms less than two hectares in size (Lowder, Scoet, & Raney, 2016). Additionally, smallholder farmers produce 29% of the world's crops, using only 24% of the world's agricultural land that is up to 2 hectares (see Figure 4).



Figure 4 - The cumulative share of the world's agricultural land, crop production and food supply, broken down by farm size (1 to 2 hectares), adapted from Ricciardi et al., 2018

According to his report on presenting the economic lives of smallholder farmers, Rapsomanikis (2015) defines smallholder farmers as individuals or households who own or manage small plots of land and engage in agricultural production for subsistence and/or sale. They typically have limited access to resources such as land, credit, and technology, and often face challenges in accessing markets for their products. They are typically poor and engage in multiple economic activities, typically in the informal sector as a means to

supplement their small income. They value the stability of the farm household system, using mostly family labour for production and are motivated to increase security and provide an income for their household. The generated produce is also in part used for family consumption. (Food and Agriculture Organization of the United Nations, 2013; Koojman, 2021). There are huge disparities between smallholder farmers in developed and developing countries because of the evolution of a farmhouse is determined by the economic development of a country (Rapsomanikis, 2015, p. 1).

Smallholder farmers face different challenges such as lack of training, lack of knowledge and skills about efficient farming techniques and their usage, about financial literacy, lack of equipment, lack of bargaining power, lack of access to finance and new markets to sell their products.

There are a number of key factors that affect smallholder farmers decision to join a cooperative. In their research on determinants of smallholder farmers' membership in co-operative societies in rural Kenya, Miroro et al. (2023), find out that having farming as the main source of income represents an important factor. Additionally, the authors suggest “that interventions aimed at improving smallholder farmers' access to information and training services may be effective in promoting co-operative membership” (p. 176). In a similar pattern, Wytke (2019) talks about how livelihood enhancement such as an increase in the yields and prices of crops traditionally grown by the smallholder, production of higher-value crops with higher margins, or an increase in the area under production are factors that affect a smallholder's decision to join a cooperative. It mentions the constraints that smallholder farmers face specifically in market access and higher transaction costs. The author adds the positive benefits of several smallholders to join up in formal cooperatives to increase access to new markets or increase scale of operations. This is similar to what Koojman (2021) identified in her research as challenges that smallholder farmers often face such as a lack of resources and market access. Shiferaw, Hellin, and Muricho (2011) find that an important role of producer organizations for economic viability in competitive markets is their potential for expanding access of small producers to new technologies, information and business services in rural areas that contribute to more sustainable and productivity-enhancing intensification, income growth and poverty reduction.

There are three major types of agricultural cooperatives: agricultural cooperatives (farmer cooperatives), utility cooperatives that supply electricity and telecommunication services, and financial cooperatives that provide loans and other financial services.

The International Labour Organization (2020) provides an overview of criteria and characteristics for classification of cooperatives (see Table 1).

Comparability	Cooperative characteristics	Criteria for classification	Example of categories
Comparability with other economic entities	Enterprise	Main economic activity or industrial sector	Financial intermediation, construction, fishery
Comparability between different types of cooperatives	Member-based organization	Member's relation to cooperative	Consumer, user, worker
		Member activity	Crafter, farmer, fisherperson
		Number of membership types	Multi-stakeholder (including volunteer-members, community-members)
	Serving a purpose other than maximizing profits for capital owner	Purpose of the cooperative	Purchasing, marketing, selling, providing work, managing assets

Table 1 - Cooperative characteristics and criteria for classification, adapted from International Labour Organization (2020, p. 14)

This research paper will more specifically focus on member-based cooperatives where the “member’s relationship to the cooperative is identified by their linkage to the cooperative” (International Labour Organization, 2020, p. 15). Linkage is defined in this case by the classification given to members of a cooperative and how they interact with the organization. Membership-based cooperatives usually have two important types of classification for its members: the type of member and the member’s activity (International Labour Organization, 2020).

Cooperatives are believed to provide a suitable alternative to other type of business models such as a corporation regarding quality-based goods and services rendered at a reasonable price to improve the economic standard of living (Aris et al., 2018, p. 234). In order to achieve an increase in economic standards of living for members of agricultural cooperatives, the progress of a cooperative at an organizational level can be traced to strengthening capacity sharing of the different dimensions or organizational performance:

economical, environmental, social, and governance based. There is a body of literature that also point out to non-financial indicators of a cooperative or the ones that do not primarily focus on economic performance. Nwankwo, Olabisi, & Onwuchekwa (2017) highlight some in their study on cooperatives in Nigeria such as service delivery and quality, member welfare satisfaction, and customer satisfaction. The following two non-financial indicators are listed as the most important ones by Ishak et al. 2020 in their research on what management in cooperatives views to be the most significant non-financial indicators: the capacity to provide members with accurate information and the capacity to deliver essential welfare services.

Bijman, Muradian, and Schuurman (2016) describe agricultural farmer cooperatives as member-oriented, pursuing a primarily economic interest of the members of the organization. Lauermaun et al. (2020) discuss the dual nature of cooperative organizations in how they differ from other capitalist entities in that it is internal (social) by the existence of its members and external (economic) by the existence of markets.

Some of the advantages for smallholder farmers to be part of agricultural cooperatives are outlined by Elijah (2023):

- democracy and operation transparency.
- higher farmers' profits.
- improved quality of products and services.
- lower expenses on input supplies.
- larger markets and better competition.
- legal support.
- role in agricultural rural development.

Some of the challenges of agricultural cooperatives are related to rising operating expenses, poor marketing skills of members part of a cooperative, low adoption of precision agricultural technologies, low shared capital of members, and conflict and lack of understanding between members (Elijah, 2023). Additionally, Agriterria mentions another challenge that relates to the polyhydric role of the members part of an agricultural cooperative. Contrary to a private firm where increased revenues are an organizational key aspect, members of agricultural cooperatives have different objectives and interests and it becomes difficult to balance expectations. Examples include where the cooperative should focus its efforts, the types of services they should offer, the varieties of crops to buy and sell, and the pricing at which they should do so (G. Guerra, personal communication, April 25).

Agricultural cooperatives play a key role in improving the livelihoods of smallholder farmers in different parts of the world. World Farmers' Organisation (2022) in its policy document on cooperatives states that agricultural cooperatives play a key role by organizing farmers, empowering them both economically and socially. The document also provides recommendations on the importance of strengthening cooperatives to facilitate farmers' access to information, education, and services amongst other factors. Other benefits that agricultural cooperative can provide to smallholder farmers are the supply of collective marketing and purchasing, input shops for group purchases, and warehouse receipt systems for collective access to credit and market outlet. Cooperatives enable small producers to develop their skills, provide knowledge and information, and support their ability to innovate and adjust to shifting market conditions (Wanyama 2016).

Agricultural cooperatives' roles in the accomplishment of the SDGs and its targets represents an opportunity to develop capacity sharing indicators. With a good indicator design and measurement that focus on agricultural development and the wellbeing of its members, capacity sharing efforts can contribute to the SDG agenda. Wanyama (2016) states that cooperatives offer an alternative model for social enterprise, with contributions to sustainable development well beyond job creation. The author cites examples of promoting gender equality, reducing poverty, providing access to education and healthcare, promoting environmental sustainability, and supporting inclusive economic growth as how agricultural cooperatives can influence the SDG agenda. Cooperatives, on the other hand, have not always taken the initiative in national and international discussions, which explains their comparatively low visibility and attention in the discussion of the post-2015 development agenda. The potential and significance of the contribution that cooperatives can make to the creation and realization of SDGs appears to have been overlooked by policy makers at the relevant levels due to their low visibility at national and international levels. As a result, it's critical to acknowledge cooperatives as crucial players in accomplishing sustainable development objectives (Wanyama, 2016).

## **Section II - Capacity sharing and why is it important in agricultural cooperatives**

Capacity sharing needs a workable definition based on the research objective that is done. Prevailing literature agree that it is a multidimensional concept that is sometimes hard to define and that usually occurs when there is mention of organizational change or changing

needs (Koojman, 2021; Khalil et al., 2017; Gerard et al., 2019; Food and Agriculture Organization of the United Nations, 2010).

Food and Agriculture Organization of the United Nations (2010) defines capacity as “...the ability to create, understand, analyse, develop, plan, achieve set targets, reflect on outcomes of actions, move towards a vision, change and transform” (p. 10). This definition can apply to individuals, organizations, national policies and is part of a larger process that starts from the ability to manage affairs successfully.

United Nations (n.d.) defines capacity building as the process of strengthening the skills, capacities, procedures, and resources that enable organizations and communities to endure, adapt, and prosper in a world that is undergoing rapid change. Transformation that is created and sustained over time from within is a crucial component of capacity building; this type of transformation extends beyond completing tasks that alter mindsets and attitudes. Otoo et al. (2009) in their World Bank publication for creating a capacity development results framework, define capacity building “...as a locally driven process of learning by leaders, coalitions and other agents of change that brings about changes in socio-political, policy-related, and organizational factors to enhance local ownership for and the effectiveness and efficiency of efforts to achieve a development goal” (p. 3). Pultar and Rabitsch (2011), in their endeavours to create reference framework guidelines for strengthening capacities, see capacity sharing as a process in the sense of long-term and complex changes in behaviour patterns, knowledge, and motivation, etc. The authors also advocate for collaboration within organizations as well as knowledge and experience sharing with various stakeholders as essential elements of a constructive capacity sharing process. This involves close cooperation from the partner entities and can therefore be a catalyst for effective local empowerment.

There are different definitions given on capacity sharing by the interviewed organisations. SNV, even though it was mentioned that there is no official organisational definition, sees capacity sharing more about training on certain skills sets and aligning organizational priorities (L. Hoijtink, personal communication, May 5, 2023). Solidaridad mentions skill building and transfer of knowledge with a focus on financial literacy to address the missing middle aspect of smallholder farmers (V. Graham, personal communication, April 26, 2023).

The LSGT project document mentions the need strengthen the ability of smallholder farmers to act in their respective local environments with a focus on good governance, gender equality and the environment (JFL Consultants, 2023).

In her research on capacity building in agricultural development projects, Koojman



(2021) states that “Capacity building can be seen as the external interventions or support that build capacity in order to facilitate change” (p. 8). This is the officially adopted definition within this research. The author proceeds to create a conceptual framework for capacity sharing in the context of smallholder farmers that is identified into 4 dimensions:

- Present business performance which includes current key activities and practices, size of land, market access, available revenue stream and key challenges that are faced.
- Information, experience and skills talk about the type of information that is aimed for in capacity sharing activities and how it is delivered, the already possessed experience with these activities as well as the necessary skills that smallholder farmers have and what to specifically improve.
- Values, attitudes and beliefs which describe the local context, trust, perceptions, ability to take and manage risks, and empowerment.
- Enabling environment contain factors such as available resources, new market opportunities, formal and informal institutions, engagement of key stakeholders, type and duration of desired interventions.

The above-mentioned points are essential in addressing the challenges faced by members of an agricultural cooperative. The author strongly insisted on the addition of a particular attention to the value, attitudes, and beliefs of capacity sharing which influence the cultural aspects, specifically the context in which activity sharing activities operate.

Fukuda-Parr and Lopes (2013) as part of a revision of a UNDP study, state that capacity sharing has three dimensions:

- Individual that involves a person's capacity to learn, accumulate information, and develop abilities that can be used when new opportunities present themselves.
- Institutional that states that countries themselves, building on current capacities, should own and lead institution development and reforms.
- Societal that understands capacities development in the society as a whole to allow and support the use and growth of individual people's capacities.

No matter which dimensions capacity sharing initiatives focus on, they should work closely with local communities and key stakeholders to ensure that initiatives are relevant, effective, context-based, and sustainable (Koojman, 2021).

Wanyama and Mutsotso (2010) as cited in Gerard et al. (2019), conducted research on the relationship between capacity building and cooperative organizational performance and found that a strong positive correlation between high capacity sharing and high organizational

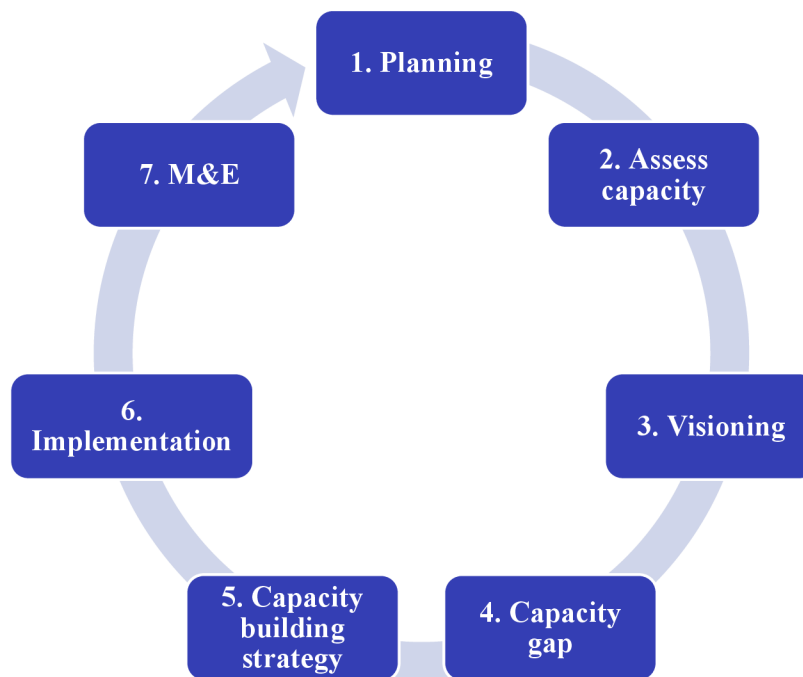
performance and this performance measured in terms of profit ability, revenue enhancement, and shareholder value. A similar trend between capacity sharing activities and performance has been documented by Nwankwo et al. (2017) in their research on cooperatives in Nigeria.

This research paper will focus on capacity sharing taken from two different dimensions:

- Technical capacities related to adoption of new or improved practices used in agricultural and agri-food development, knowledge and skills of members involved in agricultural production, processing, and marketing, adoption of new technologies, access to information and resources.
- Organizational capacities contain aspects such as improved internal organizational governance structure, quality of services or products offered to members or non-members, financial sustainability, and viability.

Both these dimensions should contain as transversal themes organizational resilience and adaptiveness in terms of environmental changes, a focus on women as part of gender equality strategies, and a focus on youth.

Amani (2016) as stated in Koojman (2021) mentions that farmers should, besides training of knowledge, be provided with an environment wherein they can apply the learned skills. Moreover, follow-up support is needed for a behavioural and sustained change. Providing a training is not enough as capacity sharing can be a long process that has to be present after the supporting organisation such as NGOs is gone; it is a process that should become embedded into an agricultural cooperative's way of being for the long term. It should follow a process that is done in seven stages as described in Figure 5.



*Figure 5 - Capacity building process, adapted from Amani (2016, p. 48)*

Even though their research focuses on measuring capacity building to achieve sustained development in health outcomes in developing countries, Brown, LaFond, and Macintyre (2001) state that “capacity building is often equated with strengthening the organizations and the people that enable health services to be delivered effectively and continuously through the execution of different functions (policy making, management, clinical care, logistics, networking)” (p. 5). The authors added that capacity sharing is multidimensional and that prevailing literature in the field have in the past used components, dimensions, interventions, and strategies to describe it based on specific analysis conducted. The same concept can be applied to capacity sharing initiatives for agricultural cooperatives in terms of strategy development, intervention objectives and components and dimensions tied to these interventions for example. In the context of cooperatives, Gerard et al., (2019) state that capacity building is important for cooperative organizations because it helps develop the skills, knowledge, and resources necessary to achieve their goals and compete effectively in their respective market.

Agriterra sees capacity sharing as addressing the challenges that come from the polyhydic role of the smallholder farmers, members of cooperatives, specifically in terms of governance. Other important elements addressed are business development, lobby and advocacy, and sustainable services (G. Guerra, personal communication, April 25). As part of Agriterra’s ongoing ABC fund project, the ESG (environment, social, governance) framework is used to monitor the impact of the project’s investment in agricultural

cooperatives (Agriterra, 2020). Each aspect in the framework contains a subsection of specific questions that gets asked to the organization before and after funds are received and each organisation receives a rating based on answers and weighting of these questions. Each agricultural cooperative that wants to apply for funding in the project gets ranked on high, medium and low risk to related to each ESG dimension (see Figure 6).

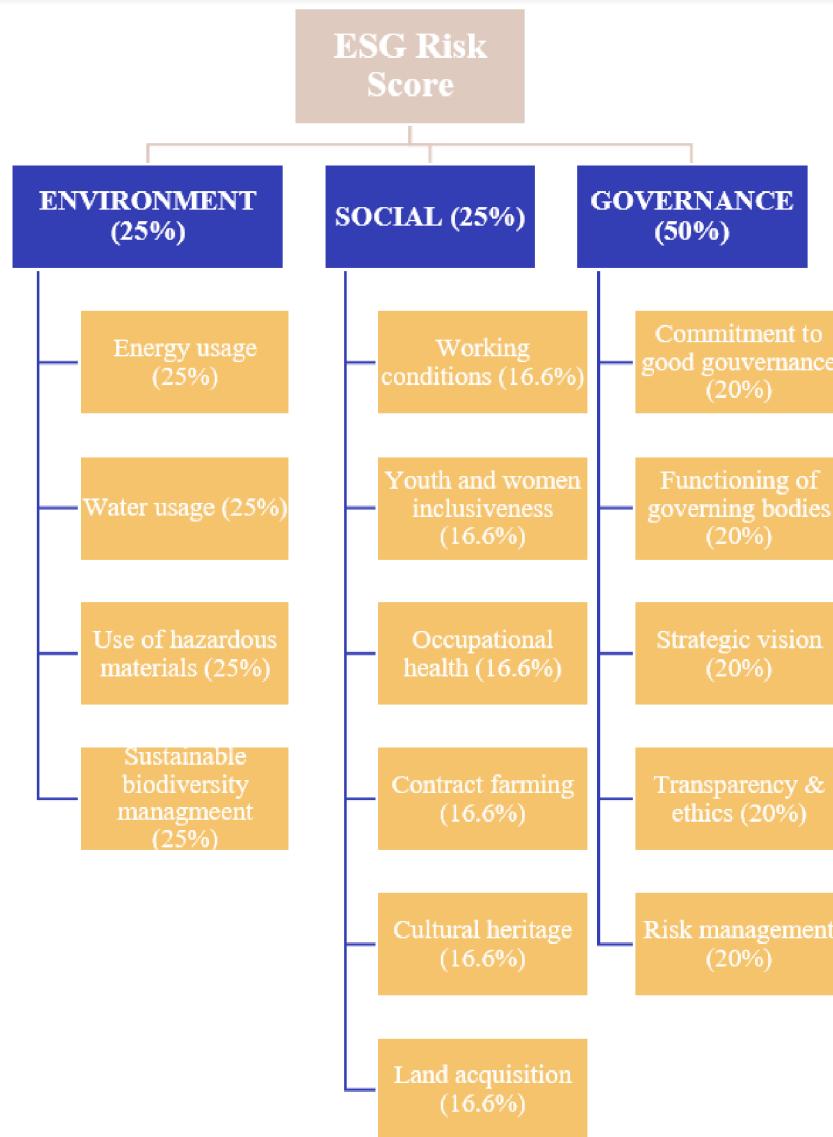


Figure 6 - ESG scoring system and associated weights for direct investments in cooperatives, from Agriterra (2020, p. 28)

Khalil et al., (2017), in their research on studying sustainability of cooperatives in Malaysia and indicator design related to this aspect, suggest the same framework as mentioned above, but add an economic element to business performance indicators and products and services offered by the cooperative.

This is mentioned because these standards are used to the same extent in a lot of projects that offer access to finance for agricultural cooperatives in developing countries. Strengthening

these capacities should be a priority in capacity sharing activities, specifically when it comes to business performance indicators and ESG framework. Agriterra's theory of change model and indicators related to capacity sharing will be discussed more in detail in section IV.

### **Section III - Measurement of existing indicators related to capacity sharing**

Before discussing several measurements of capacity sharing, a brief distinction will be defined between what an output and outcome is. Otoo et al. 2009 define outputs as the products and services that arise from a learning activity that is intended to provide learning outcomes. The primary difference between outputs (certain goods or services) and learning outcomes is that an output typically takes the form of an increase in knowledge and information supply, whereas learning outcomes reflect behavioural changes brought on by the use and application of acquired knowledge and information. This research paper will only analyse indicator design related to activities and outputs. Global Affairs Canada (2022) specifies that while activities are the actions conducted or effort done to mobilize inputs to produce outputs, outputs are defined as the direct products or services resulting from an organization's, a policy's, a program's, or a project's operations. These definitions will be adopted in the context of this research paper. References will be made to outcomes or other parts the ToC result chain, but it will only emphasize the role that outputs play in the process.

Measurement of existing indicators for capacity sharing at an organizational level for agricultural cooperatives are usually performance or non-performance based.

The literature surveyed focuses mostly on performance-based indicators for agricultural cooperatives which are categorized in financial indicators of performance and mostly at the outcome level (Advisors, 2016; Aris et al., 2018; Gerard et al., 2019; Ishak et al., 2020; Shamsuddin et al., 2018) while some mention also non-performance-based indicators. In their research on the examination of comparative performance of agro-industrial cooperatives considering the economic-financial and socioeconomic dimensions, Lauermaun et al. (2020) find that economic-financial performance is not necessarily reflected in the performance of the relationship among cooperatives and their members, therefore in the socioeconomic dimension. It is therefore important to assess indicators for cooperatives in terms of financial performance, but also those that provide a value added for their members and other non-financial aspects.

Most of the reviewed literature focuses on providing a description of the financial health of an organization, on indicators that would be considered at an outcome or impact

level in a ToC model. Prevailing literature (Bijman et al., 2016; Shamsuddin et al., 2018) suggest that organizational performance is measured at the financial level, and it involves financial (liquidity, leverage, efficiency, profitability) ratios, production, and revenue metrics. In some cases where an agricultural cooperative has contracted financing, debt ratio and solvency are taken into consideration. In the literature, there is no indication on specifically what type indicators at activities and output level are supposed to contribute to the organizational performance in terms of economic or other type of benefit and more specifically for the case of agricultural cooperatives. Measurement on capacity sharing should clearly reflect the ToC result chain that would lead cooperatives to achieve better results, should they be economic or any other level. Even though capacity sharing starts from reinforcing capacities of members of an agricultural cooperative, the overall effort to contribute to organizational wellbeing is specifically mentioned in this research paper. Some brief explanations about theory or change definitions as well as how Agriterra uses organizational theory of change will be provided in the next section. Measurement should also reflect cross-cutting themes that are adopted as standards by many organizations in the implementation of development programs around the world: gender equality, climate change and sustainability, and youth. Additionally, to the greatest extent possible, qualitative aspects (such as the ability and readiness to apply new methods or teaching contents in practice) should be added to quantitative indicators (such as training participants and trained personnel) as a means of measuring capacity sharing (Pultar & Rabitsch, 2011). The FORMAGRO project used quantitative indicators to measure the quality of its delivered training modules by measuring the degree of satisfaction measured in percentage level of participant alumni as well as the level of satisfaction of instructors and technical institutes that taught those instructional materials. Training modules are also shown in how many hours for a specific training topic were given per reporting period as well as the average number of provided hours of training. The LSGT project describes quantitative based output indicators through frequency measures such as the percentage of documents that contain concrete aspects related to governance, gender equality, or environment and through the degree of satisfaction of users for the services offered by an agricultural cooperative.

Output indicators can be measured in several ways taking into account the aspects related to the intervention in question. For instance, they might assess a good or service's availability or quantity, the speed of its delivery, or the quality of the production or delivery process (Global Affairs Canada, 2022). Knowlton and Phillips (2012) discuss the frequency (how often), intensity (quality and duration), and targets (with whom) for the outputs can go a

long way to giving the needed leverage to boost measurement diversity within a ToC. With these ideas in mind, Pultar and Rabitsch (2011) add that, generally, long, and complex lists of indicators should be avoided and rather only a few, but sound indicators should be used.

As part of the interviews conducted and consulted project documentation, Solidaridad measures capacity sharing as mainly the number of small holder farmers that are accessing new or improved cooperative services. The organisation also measures the quality of offered services by cooperatives, as well as yearly turnover (V. Graham, personal communication, April 26, 2023). It is mostly done at an outcome level of analysis. SNV measures capacity sharing in terms of reach at the output indicator level and in terms of behavioural change at the outcome level (L. Hoijtink, personal communication, May 5, 2023).

In measuring capacity sharing in agricultural cooperatives and ultimately its members, results need to take into consideration how capacity sharing efforts improve outcomes and the impact, and consequently be linked to a theory of change. These measurements need to be linked to examining the local context in terms of creating assumptions about the country/regional level, organizational needs and the right tools. An interesting approach is presented by PACT, an international non-profit that works in nearly 40 countries building solutions for human development that are owned by the communities they work with (see Figure 7).

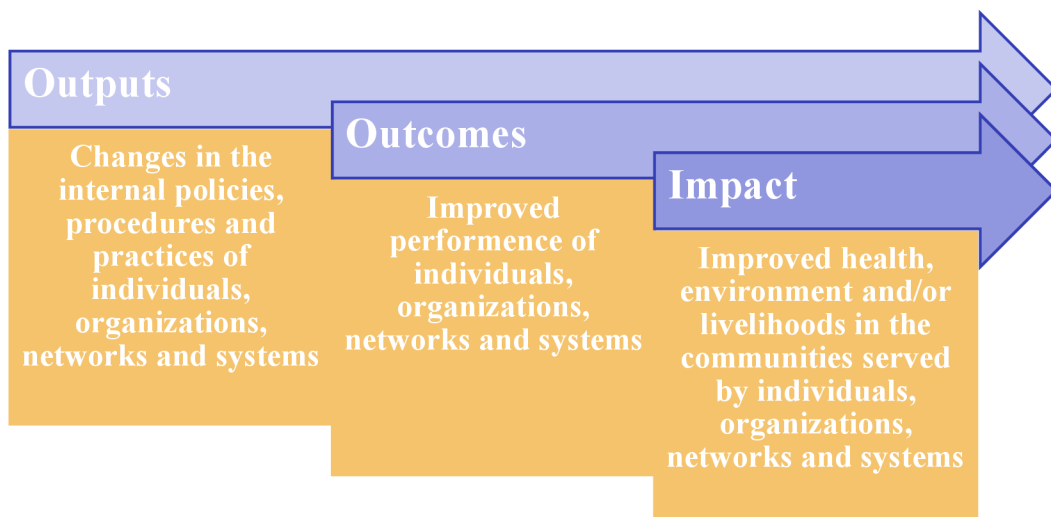


Figure 7 - PACT's theory of change for capacity development, adapted from PACT (n.d., p. 6)

There are predefined indicators that are created as part of strategies in results reporting. Such an example is the Global Impact Investing Network (GIIN). The GIIN is a non-profit organization that is dedicated to increasing its scale and effectiveness around the

world in everything that represents impact investing. The IRIS+ is “a unified, easy-to-navigate system for defining, measuring, managing, and reporting social and environmental performance that enables data comparisons and provide the transparency and credibility investors need” (Global Impact Investing Network, 2022, p. 2). In summary, it supports the practice of impact investing and promote transparency, credibility, and accountability. It provides the means for each user to create his/her own framework based on a choice of selection between predefined themes and strategic goals. Its core metric sets are aligned with standards of the SDGs, and it offers indicators that could apply for measuring capacity sharing at different levels of a result chain within an agricultural cooperative context. It presents predefined impact themes and strategic goals related to SDGs and subsequently indicators that could serve at the outcome level. Below, in Figure 8, is an example of a visual representation of how the IRIS+ works.

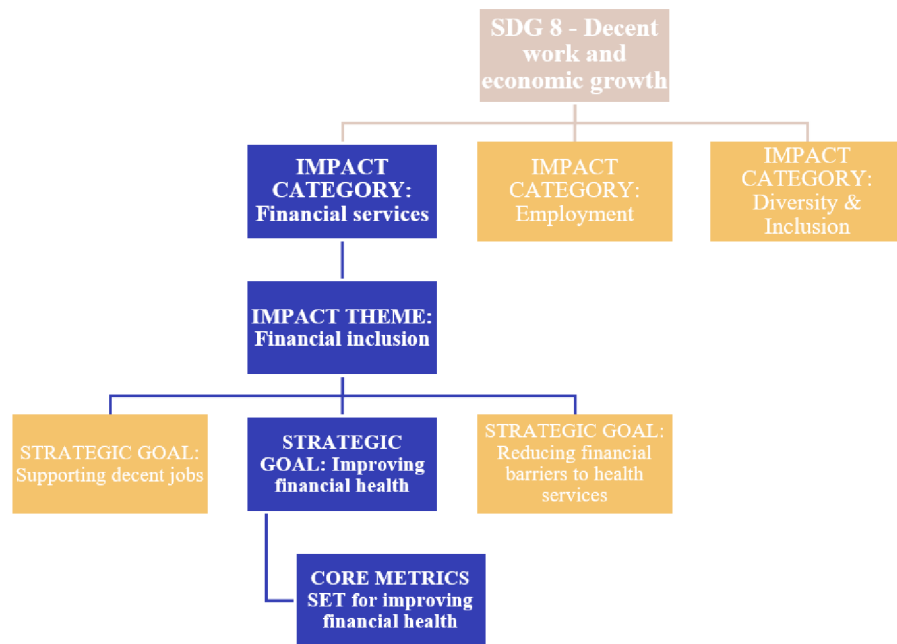


Figure 8 - Example IRIS+ Strategic Goals and Core Metrics Sets based on SDGs at the Goal level, from Global Impact Investing Network (2022, p. 5)

Even though its core metric sets are at an outcome level, it can provide ideas in what indicators to create at the activities and output chain to reach the outcome level. It also provides calculation guidance, who is affected by indicators, how much change is it happening, and who contributes to that change.

#### **Section IV - Agriterra’s theory of change and indicators used for capacity sharing strategy**



## Section IV.1 – Definitions of theory of change and results-based management

Before describing the ToC that Agriterra uses within its organization, I will first introduce a brief definition of what a theory of change is, what elements are part of it, and describe the results-based management (RBM) strategy under which it will be briefly used within this research paper. Kusek and Rist (2004) as part of a World Bank publication on how to implement a results-based management framework, define results-based monitoring as “...a continuous process of collecting and analyzing information to compare how well a project, program, or policy is being implemented against expected results” (p. 16). The elements of an RBM model can be visualized in Table 2 below.

<b>Elements of results monitoring (used for a range of interventions and strategies)</b>
<ul style="list-style-type: none"><li>• Baseline data to describe the problem or situation before the intervention.</li><li>• Indicators for outcomes.</li><li>• Data collection on outputs and how and whether they contribute toward achievement of outcomes.</li><li>• More focus on perceptions of change among stakeholders.</li><li>• Systematic reporting with more qualitative and quantitative information on the progress toward outcomes.</li><li>• Done in conjunction with strategic partners.</li><li>• Captures information on success or failure of partnership strategy on achieving desired outcomes.</li></ul>

*Table 2 - Elements of results monitoring, from Fukuda-Parr, Lopes, & Malik (2002, p. 11)*

The Organisation for Economic Co-operation and Development (OECD) define results management as a “management strategy focusing on performance and achievement of outputs, outcomes and impacts” (Organisation for Economic Co-Operation and Development, 2014, p. 14).

A theory of change explains “how activities are understood to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a programme, a policy, a strategy, or an organization” (Rogers, 2014, p. 1). It shows a series of boxes that contains the inputs, outputs, outcomes, and impacts (see Figure 9). A theory of change framework is an integral part of an RBM process. One of the interviewees described evaluation as an abstraction of reality and called for a system in place to best extract the pertinent information for indicators. The abstraction refers to the idea that information is lost in the process because not every indicator can be monitored. A system provides sufficient information to take relevant decisions, so in this case, what is called the abstract (G. Guerra, personal communication, April 25, 2023). That system is precisely what a ToC entails.

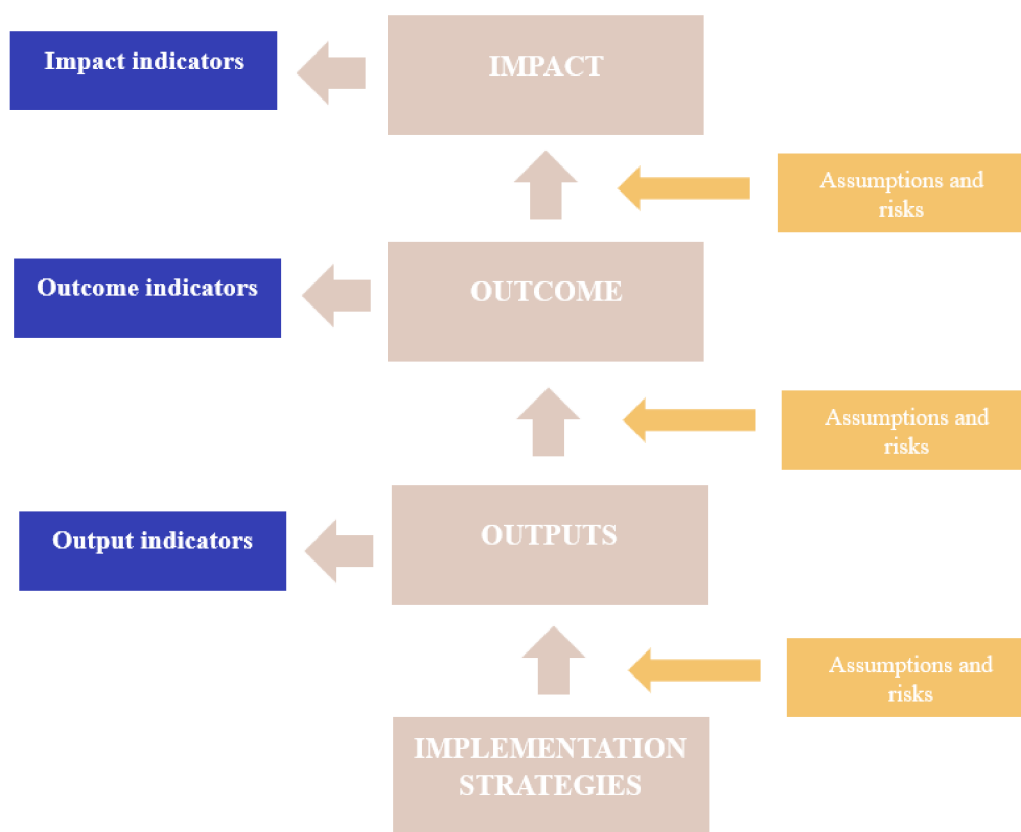


Figure 9 - Visual representation of a theory of change model, from Rogers (2014, p. 1)

This research paper will also consider activities as an integral part into creating the output in the result chain process of a theory of change. This thesis does not distinguish between ToC of different projects that might have different objectives. The work presented here refers to any ToC that presents activities and output indicators that relate to capacity sharing for agricultural cooperatives. It will not distinguish between who implements this ToC; it just refers to the criteria previously mentioned. ToC are applied to a variety of development projects or organizational structures that have different objectives. Usually, an organisation, for example an NGO, will have an organisational ToC that clearly articulates its mission and then might have several ToC aligned to the goals of individual projects that it implements. The work done on the individual project should connect to the mission of the organization as well as any additional indicators chosen based on project scope. There are instances where donor or funding requirements might require the use of additional indicators that are tied to essential aspects of the SDGs such as youth, gender, equality, climate change. In this case, NGOs working in development projects, might adapt and create new metrics to satisfy donor requirement if it does not have experience in these fields. A lack of a ToC as part of an

intervention can result in the absence of identified knowledge, motivation and opportunity to produce change and thus affect the integrity of a project (Rogers, 2014).

RBM is used in measuring capacity for a lot of international organisations (Global Affairs Canada, 2022; Organisation for Economic Co-Operation and Development, 2014; Otoo et al., 2009; United Nations Development Programme, 2010). The similarities with international organisations in measuring capacity sharing stems that they provide country level analysis and frameworks, often focusing on outcomes and not providing sufficient details on activities and outputs.

While traditional RBM practices outlined linearity, proportionality, and predictability, alternative approaches are defined by multiple human interactions, local learning from participatory monitoring, a bottom-up approach as well as understanding that different actors have a different understanding of problems and solutions, have emerged as important aspects (Vähämäki & Verger, 2019). This is important in the context of this research paper, as capacity sharing initiatives to agricultural cooperatives done through the frame of an alternative model of RBM, must take into consideration the voices of the participants in a project context. It must understand collective action as part of a constructive RBM process that involves trust and facilitation between donors that use RBM and actors of agricultural cooperatives. Creating a concise and rational theory of change, together with achievable, need-based goals should be a priority for every project that involve agricultural cooperatives. Additionally, establishing causal links between particular capacity sharing activities, improvements in organizational performance, and the target development impact should be of high importance. It is one of the main reasons why indicator design, clearly articulated definitions of indicators, and method of measurement are crucial for a theory of change model to clearly explain its intended impact.

Theory of change models have also been incorporated in the SDG agenda. Organizations such as ILO and the UN have adopted theory of change models as part of collective efforts that strive to achieve the SDG goal and target agenda. Miyaguchi's (2022) research on the importance and utilization of theory-based evaluations in the context of sustainable development suggests that the theory of change approach can be used to construct and analyse a ToC for each SDG, which can help evaluate progress toward achieving the goals. Therefore, the SDGs and the theory of change approach are related in that the latter can be used to evaluate progress toward achieving the former. At the project level, international donors that provide financing to development projects related to various targets of the SDGs have been increasingly demanding that an M&E plan containing a theory of change is present

at the project level. It allows the design, measurement, tracking, and evaluation of results to understand how the results impacted the participants as well as be more accountable. The theory of change approach can be used to construct and analyze a ToC for each SDG, which can help evaluate progress toward achieving the goals.

#### **Section IV.2 – Agriterra’s theory of change**

Agriterra’s ToC model measures performance indicators at several levels of the result chain, from input to impact, following international standards from the International Fund for Agricultural Development (IFAD) in order to determine the effectiveness and efficiency of its activities. The organization’s theory of change is applied to all projects at a project level. Accumulated data serves to fill the indicators on the result chain that the organization monitors. The organizational ToC related the idea that without economic growth, progress on other dimensions cannot advance, because poverty and inequality can produce a lack of democracy in agricultural cooperatives.

The organizational ToC is meant to provide solutions to the following three critical issues:

- (1) lobby and advocacy interventions to public and private institutions led by farmers to improve the rural and agricultural ecosystem and empower farmers, (2) businesses led by farmers that add value to the crops produced by farmers, industrialize rural areas and generate rural employment, and (3) sustainable services offered to farmers that increase agricultural productivity and food supply. (Agriterra, 2021, p. 4)

Agriterra’s conceptual framework can be visualized in Appendix 2 where the three main trajectories are mentioned.

As can be noticed in Figure 2, this research will focus on providing additional information related to Agriterra’s activities and its outputs. A lot of the work for these result chains are done on the field by business advisors, external consultants, Agripoolers<sup>11</sup>, or sometimes interns. The data gathered is at an organizational level for each agricultural cooperative. It uses an online system called AIN<sup>12</sup> where the above-mentioned information has to be entered by Agriterra staff, mostly the business advisors working on the field, for a specific country/region together with the status of the activity (application, finished, closed). There is also a variable that is text-based and provides additional information about the activity, amongst other variables present in the system. Agriterra also collects financial

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<sup>11</sup> An individual already a member of an agricultural cooperative who will engage in capacity sharing activities as part of Agriterra’s activities.

<sup>12</sup> Access Information Network.

information that serves to create financial audits for the agricultural cooperatives. Between 2012 and 2017, Agriterra collaborated, along with ILO in the creation of a training package for farmers cooperatives worldwide called My.Coop. The training package is founded on the notion that better management enables cooperatives to provide high quality, effective services to its members and to address management difficulties faced by agricultural cooperatives. (Agriterra & ILO, 2017). The following content was delivered in the training package: basics of an agricultural cooperative, cooperative service provision, supply of farm inputs, and cooperative marketing.

Agriterra chooses indicators that are practical and monitored in terms of priorities defined through the assessments done with cooperatives. They apply to the local context of the smallholder farmers and are not aspirational indicators that are not realistically set and monitored. They take into account the culture surrounding data reporting, information uniformity within the organization, resources at the disposal, and manpower available (G. Guerra, personal communication, April 25, 2023). Depending on the overall impact of the project they are undertaking, the organization has access to an extensive set of indicators from all three types of used trajectories (see Figure 2) that they can select from.

## Section V – Results and Findings

This section will explain the quantitative technical and organizational capacities indicators, the two identified dimensions mentioned in the research questions, that Agriterra takes into account when using indicators for capacity sharing at the activities and output levels. The metrics for capacity sharing used by other NGOs that carry out similar work with smallholder farmers and agricultural cooperatives will then be compared.

In order to capture the salient indicators discussed in this section, please see Table 3 for a list of those indicators.

Dimension of capacity sharing	Example of indicators used (activities level) <sup>13</sup>	Example of Indicators used (output level) <sup>14</sup>	Organization, project, literature that uses the indicator
Technical	# of trainings, advice, exchange visits, consultancies, peer-to-	# of smallholder farmers trained	Agriterra, FORMAGRO, SNV

<sup>13</sup> The list is not fully comprehensive.

<sup>14</sup> The list is not fully comprehensive.

Dimension of capacity sharing	Example of indicators used (activities level) <sup>13</sup>	Example of Indicators used (output level) <sup>14</sup>	Organization, project, literature that uses the indicator
Technical	peer given, scopings, assessments	Degree of satisfaction of smallholder farmers with the activities received	FORMAGRO, SNV
Technical		# new/improved agricultural techniques applied by smallholder farmers	LSGT, FORMAGRO
Technical		# of smallholder farmers that apply agricultural technique/knowledge	FORMAGRO, SNV
Technical		# hectares of farmland managed sustainability by smallholder farmers	Agriterra, LSGT, SNV
Technical		Level of diversification of products <sup>15</sup> offered by smallholder farmers	Agriterra, FORMAGRO
Organizational	# of trainings, exchange visits, consultancies, peer-to-peer given, scopings, assessments	# of new/improved services provided by the cooperative	Agriterra, Solidaridad, LSGT
Organizational		Degree of satisfaction of smallholder farmers, members of cooperatives, with services offered	FORMAGRO, Solidaridad
Organizational		# new/improved internal governance documents <sup>16</sup> created and used	Agriterra, LSGT, PACT
Organizational		# of organizations trained in governance/financial management	Agriterra, LSGT
Organizational		# new/improved internal financial management documents <sup>17</sup> created and used	Agriterra, FORMAGRO, SNV
Organizational		# new/improved internal business management <sup>18</sup> documents created and used	Agriterra, FORMAGRO

<sup>15</sup> Can be either new, improved, or transformed products.

<sup>16</sup> These can include but are not limited to the creation/improvement of board minutes, strategic plan, certificate of cooperative registration, internal board and general assembly functioning procedures, organizational chart, operational manual, accountability mechanisms.

<sup>17</sup> These can include but are not limited to the creation/improvement of an accounting system, bookkeeping, financial statements, and audits.

<sup>18</sup> These can include but are not limited to the creation/improvement of a business or commercial plan, value chain analysis, product certification, or new customer / product acquired.

Dimension of capacity sharing	Example of indicators used (activities level) <sup>13</sup>	Example of Indicators used (output level) <sup>14</sup>	Organization, project, literature that uses the indicator
Organizational		# of organizations supported to advocate/participate in activities related to policy improvements	Agriterra, Solidaridad

*Table 3 - List of activities/output indicators in capacity sharing used by different organizations*

Referring to technical capacities, Agriterra focuses on traditional methods such as trainings and consultancies based on cooperative's needs, but the organization also provides peer-to-peer learning. It allows the transfer of knowledge from an individual either working directly with an agricultural cooperative or that has an active relationship with that cooperative. Agriterra acknowledges that in order to be an expert and give advice in the field, you need to be in the field (G. Guerra, personal communication, April 25, 2023). The same idea is shared by Castillo (2020), who systematized the education component for the FORMAGRO project. The project designed educational modules offered at local technical institutes in Peru to smallholder farmers, some part of agricultural cooperatives and other not. Some elements of these modules employed a learning by doing strategy in which participants studied directly on their farms or parcel of lands to solve challenges that were related to agricultural technicalities. These sessions were usually taught by technical advisors that had direct knowledge of these technicalities and who worked closely with the communities. As such, indicator at the output level in FORMAGRO took into account the number of agricultural techniques adopted or improved, the number of technical advisors who enhanced their knowledge and shared it with participants, or the number of youth farmers that apply newly learned knowledge/techniques on their farms. These were additional indicators compared to traditional ones such as number of people trained, and number of technical modules developed. The LSGT project used output indicators related to technical abilities to operationalize the concept of capacity. The indicators were tied with the number of hectares of land sustainably managed, integration and use of sustainable farming practices, and integration of innovative methods (JFL Consultants, 2023). SNV measures capacity sharing on two levels: at the cooperative level and at the smallholder farmer level. At the smallholder farmer level, the output is measured quantitatively in terms of reach, specifically how many smallholder farmers have been trained in good agricultural practices, financial aspects or how



many smallholder farmers apply the knowledge or good agricultural practices they receive (L. Hoijtink, personal communication, May 5, 2023).

In terms of organizational capacities, two of Agriterra's priorities are to enhance agricultural cooperatives from a financial and governance standpoint, or, to put it simply, to make them bankable. This was a sentiment shared by both Agriterra and Solidaridad, that resulted from the interview process. SNV refers to it as business as an enterprise (L. Hoijtink, personal communication, May 5, 2023). Solidaridad supports a constructive business ecosystem through improving the bankability of cooperatives or other organizations that they work with, so they can increase their access to finance. Solidaridad gives them access to many networks, including farmers' networks and technology providers (V. Graham, personal communication, April 26, 2023). The number and quality of services offered by the cooperative are considered output indicators by Solidaridad in this regard. Additionally, the organization monitors how many farmers access new or improved services offered by the cooperative and how many organizations access aggregation of supply (V. Graham, personal communication, April 26, 2023). In addition, the organization uses a system called the Net Promoter Score that asks farmers to rate the offered service from 1 to 10. This acts as a proxy for Solidaridad to see how offered services performed. A similar choice of indicators is observed by JFL Consultants (2023), who evaluated the LSGT project implemented by UPA DI. Management and governance of family-owned businesses of smallholder farmers were analyzed at the output level by the number of services offered, number of service users, and satisfaction with the services. All these components placed an emphasis on gender equality as a cross-cutting theme. At the cooperative level, SNV measures output type indicators that deal mostly with sustainable farm practices and lobbying with local government officials (L. Hoijtink, personal communication, May 5, 2023). Similar to Solidaridad, SNV uses score cards where smallholder farmers are able to self-report any experienced change in the capacity sharing activities, although this is done at an outcome level.

From the financial standpoint, Agriterra works with capacitating organizations in terms of providing financial management health checks and creation or improvement of financial statements through improved accountancy, registration, and reporting systems (Agriterra, 2021). These, together with governance, make sure that the internal organizational system is functioning well, and it impacts how the cooperative does business, how the cooperative provide services to the members, and how the cooperative raises the voice of members united through lobby and advocacy with other stakeholders (G. Guerra, personal communication, April 25, 2023). While Solidaridad has some output indicators that it



monitors and evaluates, the emphasis is put on the outcome level indicators that help achieve organizational impact. The organization works across four intervention areas: good practices, supportive business ecosystems, enabling policy environment and market uptake.

What stands out in both the dimensions of capacity sharing are the scoping and assessment that are essential activities that contribute to contextualizing the needs of smallholder farmers and cooperative organizations. These metrics are the foundations for the creation of output indicators, the scoping and assessment usually being considered activity level indicators. Agriterra (2021) defines scoping as a one-day assessment of the objectives of a farmers' organization's capabilities (assets, personnel, and financial resources), as well as the reactivity and openness of the board, management, and members. Afterwards, if the scoping is successful, an assessment, usually consisting of a one-week evaluation, examines a number of areas including the organization's history, business model, financial structure and risks, governance system, human resources, gender and youth inclusion, climate challenges, external reputation, advocacy outreach, and, most importantly, the willingness to change. Both Solidaridad and Agriterra practice capacity sharing by planning an initial assessment of the organizational context which is deemed important in carrying out the next steps to reinforce capacities. An interesting observation was mentioned by Agriterra which considers the polyhydric role of cooperative's members a challenge to the governance structure of a cooperative (G. Guerra, personal communication, April 25, 2023). Doing an initial scoping and assessment can allow an NGO to plan good context related interventions that relate to output indicators which allow a balance between member needs of an agricultural cooperative. It also serves to determine the ESG score (see Figure 6), as part of the due diligence process, of an organization that helps with assessing organizational strengths and weaknesses and determine their eligibility to access financing for example.

A remark will be mentioned describing the relationship between output indicators that help achieve impacts in the results chain of a ToC for a project or organization and the advancement of the SDGs. It is common practice for organizational or donor strategies to have a focus on indicators that contribute to achieving the targets of the SDGs. All the contacted organizations, directly or indirectly, state this in their work contributions. Unfortunately, after consultation of revised documents from the literature review and from the semi-structured interviews, this is not explicitly stated by Solidaridad and SNV for output indicators specifically; rather, it is more for the outcome indicators that include those output metrics. Agriterra (2021), includes a list of indicators at the different levels of the result chain for its contribution to one of its projects and provides explanation on each of these indicators

and how they tie to the SDGs. From the output result chain level, they indicate the number of lobby and advocacy proposals, and the number of entrepreneurial plans created. These metrics have been the subject of a participatory consultations process with various stakeholders such as Agriterra's business advisors and management teams, farmers' organizations, specialized consultants, and other strategic partners. These indicators for this specific project have been created to complement metrics monitored by the project's funder, the Directorate-General for International Cooperation of the Netherlands, which has metrics that contribute to the SDGs.

## **Recommendations**

This section will outline some of my recommendations to Agriterra on how activities and output numerical indicators design for capacity sharing at the agricultural cooperative level should be structured. This will further complement the work that Agriterra is doing related to activities and output indicators. Overall, Agriterra uses a variety of output indicators that assess the technical and organizational dimensions of capacity sharing. As I have argued in section V, output indicators are designed for short term progress, and thus they need to be realistic and measurable. They should also be adapted to the local context, thus involving a participatory approach in M&E with various stakeholders. As has been stated in the interview with Agriterra, they should not be aspirational and be designed to be adaptable to a real-world system which takes into account manpower, resources, and local contexts in development interventions. They should also take into account practical constraints when implementing them through data collection methods. Agriterra already implements the above-mentioned aspects in its output indicators related to capacity sharing. Indicators should also have the correct level of disaggregation reflecting the project's objectives and transversal themes that are implemented. Governance and financial management of cooperatives should remain a high priority, as has been already argued section V, when designing output indicators. The literature review presented in section III also outline this idea, even though it focuses mostly on outcome level indicators.

Agriterra already has an extensive list of output indicators related to transversal themes such as gender, youth, and the environment as I have discussed in section II. These are already part to some extent in the projects that the organization implements. Additionally, they are implemented in a participative consultation process with various stakeholders and are adaptable to a project's context, objectives, and available resources. As was mentioned in section II, follow-up activities should make sure that the agricultural cooperatives understand

and use the skills, knowledge, or tools developed in the results to increase their organizational performance.

As part of the activity level indicators, strong emphasis should be put on a collaborative approach with various stakeholders. In section V, I argued that the different type of activities created consist of a blend of participatory and hands-on learning approach together with classic training courses or modules. The collaboration of a multitude of stakeholders such as representatives of cooperatives from different geographical locations, NGO consultants or experts and from public or private institutions is key in creating good indicator design to monitor and evaluate. Agriterra already does this through its vast network of Agripoolers, consultants, business advisors from different backgrounds and sometimes geographical locations with expertise on cooperatives. It also offers three types of learning environments: in-person, remote, and blended. FORMAGRO project did this through technical facilitators and educators well versed in the themes implemented by the project. The LSGT project did this through a horizontal cooperation approach between FOs and UPA DI.

One recommendation which is not discussed in the document analysis, and not extensively in the interview process, is related to the flexibility that should be part of indicator design. Unexpected changes arrive all the time with new assumptions that can appear in the ToC, specifically related to external factors. From the interview process, Agriterra mentions the importance to focus on output indicators because they are more or less under the direct control of the organisation. Tools such as improving metrics related to financial statements are just under the sphere of influence and they take longer to achieve results. This could imply that external variables like civil unrest, cooperative insolvency, or bankruptcy could easily have an impact on the organization that does the intervention, thus affecting their attribution (G. Guerra, personal communication, April 25, 2023). A further recommendation to the above-mentioned point is having several options of indicators related to a project's objectives is useful because in development projects, interventions are not always, not that they should be, under the control of the organisation that does the intervention. As I have argued in section III, it is best to avoid that the list for these indicators be long or complex; only a few indicators that are related to a project's ToC should be selected as backup.

Another recommendation for Agriterra can also specifically be related to include numerical output indicator that are related to quality. According to Agriterra (2021), output indicators currently being used across all three-trajectory type (see Figure 2) do not take into account the perspectives of frequency or quality in indicator measurement. As described in

section III, frequency (how often), intensity (quality and duration) can be important numerical measurements that could show output indicators in a different perspective depending upon what is measured. Agriterra could take the necessary measures to implement these types of output indicators in its trajectories. I presented in section III some projects that took into account frequency or intensity in their output indicator design. A specific attention should be given to the quality of services offered by agricultural cooperatives. This can be tracked through satisfaction metrics. As discussed in section III and V, some of the interviewed organisations such as SNV and also project documentation related to FORMAGRO and LSGT projects have covered indicators related to satisfaction metrics related to services offered by agricultural cooperatives.

My last recommendation is related to how output indicators can better integrate with IRIS+ system (see example in Figure 8) as I have argued in section III. The system was designed for monitoring the performance and impact of an investment, but it is fully compatible with SDG goals and targets and can be applied also to a ToC analysis. Output indicators developed during a project implementation can supplement or even explain pre-identified core metrics from IRIS + related to pre-established themes and categories associated to the SDGs. As was mentioned in section IV.2, Agriterra had already done this for one of its projects, but this could be further extended to other project ToCs or within an organizational framework, all through a participatory approach framework lens.

Even though it was not the subject of this research, I believe qualitative based indicators are not necessary at the output level of the result chain. They deal more with behaviour change, motivations, commitment, active engagement, or sharing expertise depending on the project structure which are more related to outcome level indicators. If implemented, they should be planned and monitored in accordance with sound measurement and design principles.

## **Limitations**

As the researcher, I considered it important to mention some limitations that address the impact of probable biases in the current research methodology employed. By using mostly document analysis method, I was limited to a lot of secondary data that might not specifically address my research question in particular. These had implications in the information I could extract from those documents and linking it to my research goal. International organizations and governmental agencies provide an organizational strategy of capacity sharing, but a list of indicators at the activities and output level in an annex was

usually not made available to the public. Such documents probably exist, but for internal use only. The double barrier was that they usually did not deal with agricultural cooperatives, even if such a list or examples were provided. For example, UNDP provides a brief capacity sharing framework, but it is done for institutional level. As a result, the findings and result section had almost non-existent information extracted from document analysis. Only documents related to PACT were found, and even then, the output indicator contained a generic output indicator related to governance (see Figure 7). As such, the results section contained mostly data gathered from supporting project documents and interviews with other NGOs with the additional reference made to literature in the field, when available.

To offset for some of the limitations specified in the paragraph above, specifically the ones related to not having a list of activities and output indicators related to capacity sharing, triangulation was used to add credibility and validity in the findings. Due to the lack of time specifically and resources, only three informal semi-structured interviews were conducted with NGOs only that work either directly or partially with agricultural cooperatives or with smallholder farmers.

No coding was done for the analyzed documents and neither for the semi-structured interviews; only the use of inductive reasoning was applied to answer the research question. This in turn affected a weak grounded theory approach as grounded theory calls for a broader data collection as well as coding amongst other important steps. Coding allows for transparency and replicability in research, as other researchers can review the coding process and verify the findings (Morgan, 2022). Implementing the indicators as part of an M&E strategy as well as data collection methods were not discussed. These are important steps and usually represent important challenges because they allow to see if the chosen indicators are representative of local context of agricultural cooperatives, take into account the necessary variables, and involve various stakeholders in the process. A study on the implementation of indicators could provide important insight into how to adapt training and data collection strategies in local contexts in development interventions.

One last limitation is associated with the recommendations section. I acknowledge that the suggestions outlined in this section are based on my current knowledge and conducted research objectives of how Agriterra functions. There may have been suggestions mentioned in the recommendation section which Agriterra already takes into account, but due to the short length and scope of my internship, I did not have the opportunity to discover if they were implemented or not.

## **Further Research**

Further investigations that could benefit the research questions raised in this study can provide some interesting complementary information. This research was done with the focus on agricultural cooperatives only. It would be interesting to look at financial institutions or microfinance institutions that provide loans and other sources of funding to smallholder farmers that are part of agricultural cooperatives. Financing cooperatives represents a key step into improving smallholder farmers' livelihoods as members of a cooperative. Access to finance for these cooperatives can increase organizational performance, improving logistics, purchasing of necessary equipment, and can even complement climate change mitigation and organizational governance structures. It would be an idea to examine capacity sharing indicators for those. Another possible research could be to examine composite indicators or indexes for measuring capacity sharing for agricultural cooperatives.

This research examined quantity-based activities and output indicators used by NGOs when they implement projects related to capacity sharing in their work with agricultural cooperatives and smallholder farmers. It would also be interesting to look at qualitative indicators used in projects with similar participants and context. SNV strongly mentioned that qualitative indicators, specifically at the outcome level, allow of a better understanding of how change actually happens across projects and better identify the organizational attribution (L. Hoijsink, personal communication, May 5, 2023).

A last point that was identified for possible further research would include the discussion of outcomes and impact level indicators for agricultural cooperatives. This research discussed only indicators at the activities and output level of the result chain related to capacity sharing intervention. Cross-cutting themes related to gender equality, youth, environment could add more context to output indicators, thus capturing a constructive theory of change in the case of agricultural cooperatives. International donors and financing organizations are increasingly looking to see projects that have indicators with a clear strategy to define and measure the aspects mentioned above.

## **Conclusion**

This study attempted to fill a knowledge gap about the characteristics of a useful quantity-based indicator design for assessing capacity sharing at the activities and output level of a ToC for agricultural cooperatives. To do so, it separated capacity sharing into the organizational and technical dimensions.

Regarding the general research question, good quantity-based indicators for measuring capacity sharing at the activities and output level should relate to an established definition of capacity sharing in the context of the intervention of a project as I have argued in section II. As it has been discussed in section IV.1, output indicators related to capacity sharing for agricultural cooperatives should be part of a strong ToC model that must comprehend a good design for activities and output indicators because they serve as the cornerstones of the desired outcomes and impact of an intervention. They can boost organizational effectiveness for agricultural cooperatives and give them access to new markets and funding which can play a vital role in increasing an agricultural cooperative's organizational performance. Additionally, the consulted literature in this research shows the importance of integrating an RBM approach in ToC design. As previously discussed in section III, output indicator design as part of a ToC needs to be linked to examining the local context in terms of creating assumptions. Another point that I have argued in section III is related to a possible integration of activities and output indicators with the IRIS+ framework. The framework is fully integrated with SDG goals and targets and can offer ideas for indicator design with its predefined themes and categories. A last and important point is that a good indicator design should integrate cross-cutting themes such as gender, youth, and the environment as was discussed in section III. Output indicators for both dimensions can also be measured in terms of frequency (how often) and intensity (quality and duration) as argued in some examples given in section III.

Output indicators related to technical capacities should emphasize metrics related to knowledge or skill acquisition and application as it was discussed in section V. Traditionally measured output indicators such as the number of smallholder farmers trained should be complemented by measuring the frequency (how often) and intensity (quality and duration) of the trainings given or even for the new and applied agricultural techniques related to agricultural production. Other ideas include production diversification and the number of hectares of farmland managed sustainably by smallholder farmers.

Output indicators related to organizational capacities are concentrated on the cooperative as a whole and present indicators related to training and development of documents pertaining to internal governance, business, financial management, and advocating/participating in activities connected to policy improvements as was discussed in Section V. There is an important emphasis that is put on the governance and financial training and documents created as part of cooperative performance because as it can facilitate new market access or accessing new finance sources for these organizations. These aspects have

been part of the literature review that was discussed in section III as well as section V. A last important element also includes the degree of satisfaction from smallholder farmers members of agricultural cooperatives with the quality of offered activities as it was discussed in sections III and V.

Related to the indicators at the activities level of the result chain for both previously mentioned dimensions of capacity sharing, the study discovered that the majority of indicators design for both dimensions are presented in the form of one or more of the following elements: trainings, guidance, advice, exchange visits, consultancies, or peer-to-peer interactions. Additionally, as it was talked about in section V, scoping and assessments represent an integral part of the process.

## **Evaluation of Professional Experience**

During my role as an intern in impact analysis for the ABC fund project at Agriterra, I have learned the importance of adaptability and flexibility that some of my responsibilities required. I had to be flexible in order to address shortcoming for example when gathering collected data and assessing its credibility from multiple sources. Enlarging my professional networking circle was probably the most important aspect of this internship experience. Through Agriterra and my tasks, I have interacted with individuals from at least three other organizations and learned about their work and they also became aware of my professional experience. I will mention one last interpersonal skill that I believe it is valuable for my future professional endeavours. It is the ability to understand the environment before reacting. This was more than evident at the start of my internship experience where there was a lot of information to learn about my tasks and the organizational culture. I had to pause and reflect to understand specifically what was expected of me, analyze the situation, and build an action plan to solve the challenges.

My thesis work is also important to the organization because I have written my research about capacity sharing in agricultural cooperatives, which is at the heart of Agriterra's priorities. Even though the organization has vast experience with this type of work, the literature review alone coupled with the comparison section of output indicators used in capacity sharing can further help to support Agriterra's work.



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## Appendix 1 – Interview structure

Voluntary participation: participation is voluntary; please feel free to withdraw at any moment.

Verbal informed consent: all information used in this interview will be paraphrased, properly cited and used in my thesis work. Knowing this, do you agree to participate in this interview?

Anonymity, confidentiality: Besides the parties involved (Agriterria, Palacky university, myself) that will have access to this research work, information will be anonymous and will remain confidential. At the end of my studies, the thesis will be published in the Palacky university database and will be available for consultation for the students and staff of Palacky university.

Results communication: You will be able to verify that the paraphrased information from this interview is correct, if you wish to do so. After the thesis is submitted, it can be shared with [The organization].

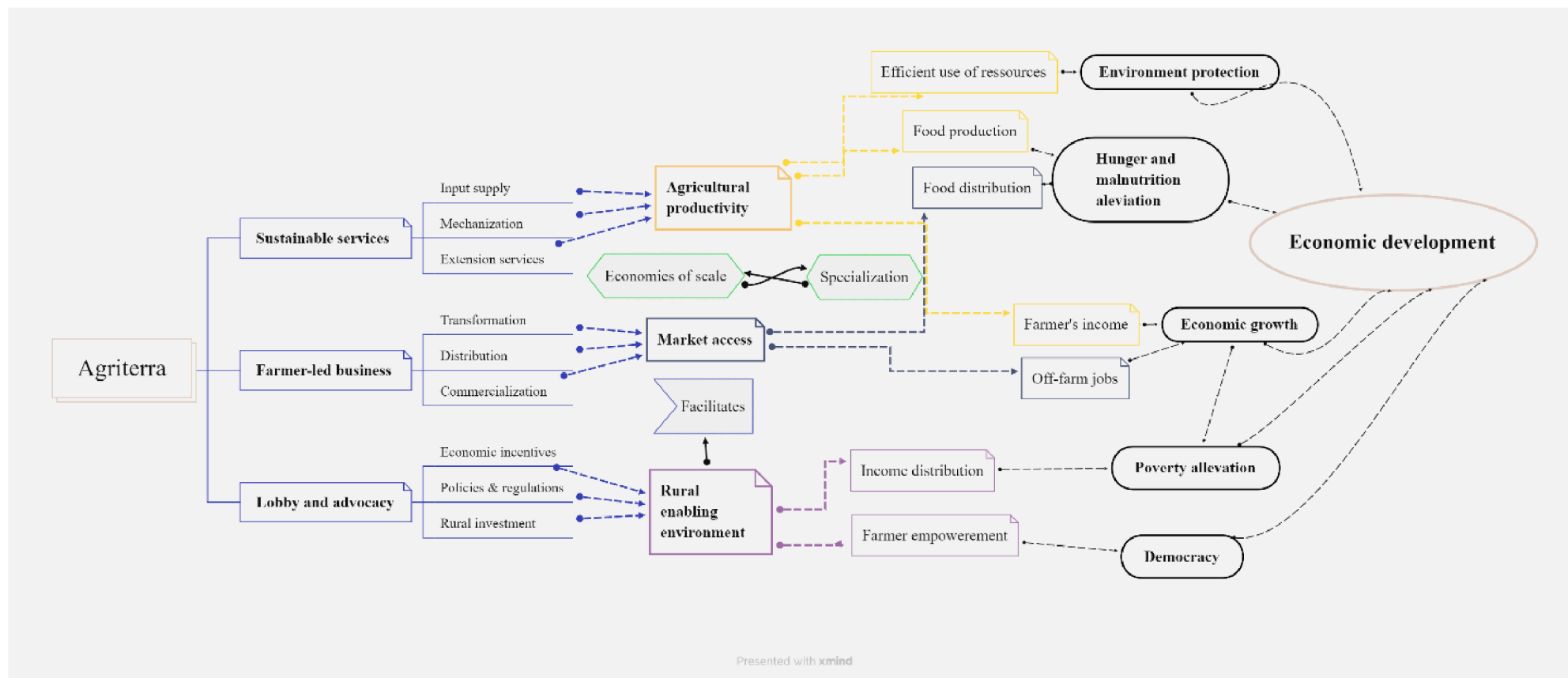
Purpose of thesis: The objective of this research is to provide clarity on quantitative, number-based indicator structure used in measuring capacity sharing for smallholders' farmers part of member based agricultural cooperatives. The research on indicators is done from an organizational level perspective and draws upon a comparison on what indicators related to capacity sharing exist at the activities and output level of a ToC and how are they measured.

Questions:

1. Please introduce yourself and tell me a little bit about the work you do at [The organization].
2. In your perspective, how does [The organization] define member-based cooperatives and why are they important in the work that [The organization] does?
3. How does [The organization] define capacity building in its work with agricultural cooperative?
4. How does [The organization] measure capacity building for member based agricultural cooperatives?
5. Is a list available for the activities and output indicators monitored? How are these indicators monitored?

6. Do you believe that these indicators best reflect [The organization] main objectives at the activities or output level?
7. Do you have recommendations on other activities or output indicators that would better reflect the main objectives that [The organization] should monitor?
8. Please feel free to add any additional comments or information.

## Appendix 2 – Agriterra's conceptual framework<sup>19</sup> for farmers' organizations and economic development



<sup>19</sup> Agriterra's conceptual framework for farmers' organizations and economic development, adapted from Agriterra (2021, p. 14)



### Appendix 3 – Work plan (thesis)

Activities	Total days	Mar, 2023				Apr, 2023				May, 2023				Jun, 2023			
		W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Define topic, host organization and supervisor	8																
Adjust topic of interest	2																
Discuss collaboration agreement with host organization and thesis supervisor	3																
Write draft of thesis proposal (revised)	2																
Edit/change final thesis proposal in STAG system	1																
<b>I Phase: desk research</b>	<b>23</b>																
Desk review of papers and organization	20																

Activities	Total days	Mar, 2023				Apr, 2023				May, 2023				Jun, 2023			
		W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
nal documents																	
Establish research methods	3																
<b>II Phase: data analysis</b>	<b>5.5</b>																
Structure analysis of organizational data and secondary data	4																
Semi-structured interview: Agriterra	0.4																
Semi-structured interview: Solidaridad	0.4																
Contact UPA DI about documentat ion	0.2																
Semi-structured interview: SNV	0.5																
<b>III Phase: writing findings</b>	<b>7</b>																
Write discussion chapter	3																

Activities	Total days	Mar, 2023				Apr, 2023				May, 2023				Jun, 2023			
		W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
providing main arguments																	
Write conclusion	1																
Address inconsistencies in final version (Compilation)	3																
<b>Submission &amp; Defense</b>	<b>4</b>																
Submit the thesis in Area Riservata at UNIPV with plagiarism protocol	1											22.05					
Submit final thesis in STAG at UPOL (send hard copy after)	2												31.05	02.06			
Final defense	1															20.06	