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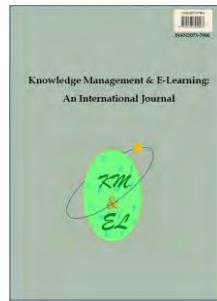
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## **Understanding knowledge creation processes among rural communities in post-conflict settings in Colombia**

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**Abstract:** The purpose of this research was to identify how the knowledge creation process (KCP) takes place among Suyusama, an organization that carries out specific extension functions and advisory services, and the rural communities in Nariño, Colombia. Specifically, the study determined how new knowledge was created, disseminated, and materialized into products, services or systems. Colombia, as a country emerging from conflict, faces considerable challenges to improve rural livelihoods in its agricultural sector. To gain productivity and food security within a sustainable management of natural resources requires a conceptual framework for planning and implementing programs to strengthen agricultural extension and advisory systems. Grounded Theory Methodology was employed in order to create theory from the systematic analysis of data, obtained from field observations and in-depth interviews with members of the local community organizations. The result was a theoretical explanation of the KCP that occurs from the autonomous work of the community with the accompaniment of a mentor organization in a multicultural and diverse meeting scenario, where the dialogue of knowledge and cooperation is promoted by integrating traditional and contemporary knowledge. This work is also an academic contribution to exemplify the distinction between tacit and explicit knowledge and the interorganizational ontological dimension in which a knowledge -creation spiral takes place in a rural context.

**Keywords:** Knowledge creation; SECI model; Dear life; Extension program, Sustainable development, Post-conflict

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## 1. Introduction

For McNamara and Moore (2017, p. xi), the emergence of internal conflicts in a country has direct links to poverty, hunger and lack of agricultural development, which leads to perceptions of injustice and social inequality and generates fertile grounds for conflict. For them, agricultural extension programs play a fundamental role in promoting agricultural development, preventing conflict and supporting post-conflict recovery. According to Swanson and Rajalahti (2010, p. 7), the goal of pluralist agricultural extension or advisory programs is to increase agricultural incomes and to improve rural livelihoods. They work on four fundamental axes: 1) Technology transfer, especially for staple food crops; 2) Agricultural income increase by encouraging the production of high value products, especially among small farmers; 3) Farmer training towards their organization in groups or associations of community producers; and 4) Sustainable management of natural resources.

McNamara (2017) contends that knowledge on effective extension programs in post-conflict settings is not necessarily based on rigorous research but on standards that deserve more rigorous testing and norms of professional development. Therefore, it is important to study the inter-organizational KCPs in the territory to detect the types of standards and norms used in these processes to achieve the objectives proposed within the programs. For this reason, this research uses as a conceptual framework the KC model proposed by Nonaka and Takeuchi (1995) and Nonaka (2007), that can be useful to explain the capacity of the territory to generate new knowledge, disseminate it among the people and materialize it in products, services and systems, which is the key to innovation. The link between organizational KC and regional KC was first established by Florida (1995) using the learning region as a concept that explains its function as collector or repository of knowledge and ideas and provider of the environment or infrastructure underlying for the flow of knowledge and learning, as well as being an important source of innovation and economic growth.

The Department of Nariño, in southern Colombia, is the scenario in which this research was carried out. It is one of the departments of Colombia affected by public order and forced displacement problems. According to the Consulting for Human Rights and Displacement (CODHES, 2014), the number of victims of displacement in Colombia from 1985 to 2013 was 5,921,229, and continued being the third in the country ranking. According to the figures in CODHES (2018), during the first 10 months, 2018, 158 multiple and massive forced displacement events were presented. In total, 45,471 people had been affected by the displacements. Of these, 10,506 were afro-descendants and 8,526 indigenous: 72% of displacement events occurred in 3 departments: North of Santander: 40 events, 13,244 displaced people; Antioquia: 36 events, 113,901 people displaced, and Nariño: 39 events, 9,298 people displaced. 140 social leaders had been killed (one woman and five men in Nariño). Poverty is another issue to be addressed: the percentage of people in poverty was 47.6% in 2013 and 42.9% in 2014 (DANE, 2015). There, since 2004 Suyusama, the organization that works under the articulation of the Society of Jesus Social Centers (IMCA - Instituto Mayor Campesino / Peasant Major

Institute, CINEP - Centro de Investigación y Educación Popular / Center for Research and Popular Education , SJR - Servicio Jesuita a Refugiados / Jesuit Refugee Service, Programa por la Paz - Programa por la Paz / Program for Peace), has as a priority to accompany families of peasants and indigenous people in the construction of their “dear life” (Vida Querida / Dear Life) in conditions of local and regional sustainability, through articulated work with local and departmental communities and institutions, the National Government and international cooperation (Conferencia de Provinciales Jesuitas de América Latina (CPAL), n.d.).

According to Programa Suyusama (2014, p. 33), the Department of Nariño historically has faced a series of social and structural problems which affect the population, these include:

- Poverty, unemployment, exclusion, and unfavorable health and education conditions.
- There are constraints affecting agriculture such as poor working capital, low levels of technical assistance, high production costs, informal trade, high informality on rural property and lack of access roads.
- Change of the traditional peasant economy giving way to illicit crops for international markets.
- High rates of violent deaths such as homicides, suicides and accidents, as factors affecting the population.
- Occurrence of other criminal or contravention modalities that harm people's patrimony, their freedom or their dignity, for example, the kidnapping, robbery, family violence and the trafficking of people, among others.
- The legal and illegal mining as an economic activity in the region, looking for precious minerals and construction materials, have a negative social impact and adverse effects on the environment.

Thus, current circumstances present challenges and opportunities for researchers in order to find out new perspectives and solutions to promote regional community work, seen here as a pivotal step to local sustainable development in post-conflict settings. This has triggered the research interest in the regional knowledge creation process (KCP) whose importance and pertinence are not only based on the regional competitive advantage, but to develop alternatives that can contribute to increase agricultural incomes and to improve rural quality of life for peasants and indigenous people located.

The unit of analysis is the major entity analyzed in a study. In this research, it included Suyusama as the social organization. The aim was to identify how the knowledge creation process (KCP) takes place among small-scale farm households composed by peasants and indigenous people and Suyusama, an organization that carries out specific extension functions and advisory services in order to improve their livelihoods -or to achieve their dear life- in the rapidly changing global economy. In other words, the KC process observed can be seen from inter-organizational relations in a rural context in the department of Nariño, in southern Colombia, where there are no clearly identified power figures, even though various organizations and institutions interact in the territory; therefore, it makes its dynamics complex compared to the processes carried out by and within single organizations.

This study adapted the SECI model, which explains the conversion between tacit knowledge and explicit knowledge through knowledge socialization (S), knowledge

externalization (E), knowledge creation (C), and knowledge internalization (I) (Nonaka & Takeuchi, 1995). Considering the SECI Model as a theoretical referent in order to comprehend the KCP, Grounded Theory Methodology (GTM) was used to build theory from the systematic analysis of data collected from July 2013 to January 2015. GTM appeared in the social sciences in 1967 with one publication called *The discovery of grounded theory strategies for qualitative research* by Glaser and Strauss (1967). Martin, Scott, Brennen, & Durham (2018, p. 11) state literally that these authors advocated for “systematically discovering and interpreting empirical data to generate theory, in contrast to testing or verifying theory derived from a priori assumptions”. GTM allows the approach of the research problem in a practical way to develop new concepts and link ideas that come from different disciplines. Glaser (2010) declares GT is the study of a concept that explains observed patterns. The core concept is built by integrating a series of abstract concepts generated through constant comparisons of data. *Mentor organization* is the concept developed through the study of the inter-organizational KCP in rural post-conflict settings. It can be evident and useful in similar conditions where communities experience the need of strategies that contribute efficiently to building local and regional economic alternatives so that they have the possibility of moving from a subsistence to a construction economy of their ‘dear life’ in a sustainable way.

### 1.1. Knowledge creation and conversion

Saito (2007) defines a model to support the education of knowledge managers in terms of four epistemological perspectives: strategy, human, information and computing. Each one of them leads to different ways to understand and manage knowledge (Table 1).

**Table 1**  
Epistemological perspectives to describe, understand and manage knowledge

Epistemological perspectives	Knowledge as...	Knowledge Management
Information-oriented	Knowledge as content and expertise.	KM is developed to facilitate access to information, expertise and "good practices".
Human-oriented	Knowledge as a social practice and collective sense making.	KM develops in order to cultivate or generate contexts and facilitate connections that improve the practice for generating sense and commitment.
Computing-oriented	Knowledge as computational method and model.	KM includes the development of systems or methods that calculate or measure knowledge. Also, it has developed to build computational models for decision-making.
Strategy-oriented	Knowledge as organizational capability and asset.	KM prioritizes valuable knowledge for the organization and the design and implementation of strategies and processes to acquire, create, use and protect it.

*Note.* Adapted from Saito (2007, pp. 60–76)

As well, Nonaka and Takeuchi (1995) define knowledge creation (KC) as an organizational capacity for innovation through generating new knowledge, disseminating it, and materializing it into products, services or systems. In the creative activities of

human beings, a spiraling process of interactions between tacit and explicit knowledge is presented and from there knowledge is created and expanded. This interaction is called knowledge conversion or SECI model, and it is characterized as an interactive social process between more than one individual which serves as an outline for knowledge creation. The four forms of knowledge conversion are: socialization (from tacit to tacit); externalization (from tacit to explicit); combination (from explicit to explicit), and internalization (from explicit to tacit). Nonaka and Takeuchi proposed a knowledge creation model assuming that organizational knowledge is created in a continuous, permanent and five non-sequential phases. The first relates to socialization, in which a person shares his tacit knowledge in order to amplify it within the organization. During the second phase, tacit knowledge becomes explicit and takes the form of a new concept, which is justified in the third phase, in order to determine whether is worthwhile to develop it or not. In the fourth phase, the new concepts are converted into an archetype: a prototype if it is the development of a physical product, or an operational mechanism innovation if it is an abstract or a new administrative system or innovative organizational structure. During the fifth phase, created knowledge is distributed inside or outside the organization. All this in a spiral-loop, and under an organizational context (*Ba*) that provides enabling conditions for the knowledge creation process to occur: Intention, autonomy, fluctuation and the creative chaos, redundancy and variety of requirements.

The “place” or the context where knowledge creation happens is called “*Ba*”, which is a Japanese term that refers to a shared space for emerging relationships or human interactions: physical, mental or virtual. *Ba* is a place of meaning since all knowledge is located within their social, historical or cultural context, and this is why this space offers the possibility of creating knowledge through the interaction between individuals, which may be changing over time. *Ba* provides the platform for advancing individual or collective knowledge where needed information is integrated and serves as a foundation for knowledge creation. Knowledge is embedded in *Ba* and acquired through one's own experience or reflections on the experiences of others. According to the authors, when knowledge is separated from *Ba* and can be communicated independently from it, it turns into information, which resides in media and networks. Information is tangible, and in contrast, knowledge is intangible, boundary less, dynamic, and it is of no value if it is not used at a specific time or place (Nonaka & Konno, 1998).

Based on Nonaka and Konno (1998), for each one of the four stages of the SECI model there is one type of *Ba* that corresponds to it, and each one of them offers platforms for specific steps in the knowledge spiral process (see Table 2). In externalization and internalization, the roles of expert individuals and mentors are mentioned by the authors, but they don't clarify specifically the definition of those concepts. According to Kram (1988), a mentor is an experienced person, who supports, guides, and counsels his protégés who are usually young adults who want to learn the world of work. He or she acts as a sponsor, coach, protector, and challenge-giver (Singh, Bains, & Vinnicombe, 2002). Allen (2003) states that mentor others deals with the prosocial personality characteristics of the mentor: helpfulness (people inclined to engage in actions that benefit others, linked to self-confidence and self-efficacy), and other-oriented empathy. Kram (1988) also presents that the mentor and his or her protégé establish a mentor relationship (mentoring) that deals with relationships between junior and senior colleagues, or between peers which enhance the individual's career development during the early, middle, and later years within organizations. These kinds of relationships, that can be formal or informal, are affected by the context in which they turn out and by the expectations, needs, and skills of the individuals. Some of the characteristics of these types of relationships are: first, they provide opportunities to gain

knowledge, skills and competence; second, they respond to current needs and concerns of the people involved; third, the organizational context where they occur influences when and how they unfold; and finally, as shown by the author, they are not easily available to most people in organizations, that is, they rarely occur even though they are greatly needed. Formal mentoring arises when the organization provides and establishes the structures needed to generate mentoring relationships that ensure the participants have clear roles and support for their successful conformation. On the other hand, informal mentoring occurs when two people without the assistance and guidance of the organization establish a voluntary development partnership. The current study assesses how an organization that carries out specific extension functions and advisory services can play a mentor role through a mentoring relationship with the communities, and it will influence the KCP specially during the externalization and internalization stages of the process.

**Table 2**  
Stages of the SECI model and the characteristics of the four types of Ba

Stages of the SECI Model	Correspondent Ba
<b>Socialization</b> (from tacit to tacit)	<b>Originating Ba:</b> The world where individuals share feelings, emotions, experiences, and mental models. From originating Ba emerge care, love, trust, and commitment.
<b>Externalization</b> (from tacit to explicit). It is supported by two key factors: <ul style="list-style-type: none"> <li>For the articulation of tacit knowledge, in order to express one's ideas or images as words, some techniques such as metaphors, analogies, or narratives and visuals are used.</li> <li>The second factor involves translating the tacit knowledge of customers or <i>experts</i> into readily understandable forms. This may require deductive/inductive reasoning or creative inference (abduction).</li> </ul>	<b>Interactive Ba:</b> It is more consciously constructed, as compared to originating Ba. Selecting people with the right mix of specific knowledge and capabilities for a project team, taskforce, or cross-functional team is critical.
<b>Combination</b> (from explicit to explicit)	<b>Cyber Ba:</b> It is a place of interaction in a virtual world instead of real space and time. The combining of new explicit knowledge with existing information and knowledge generates and systematizes explicit knowledge throughout the organization. It is most efficiently supported in collaborative environments utilizing information technology. The use of on-line networks, groupware, documentation, and database enhances this conversion.
<b>Internalization</b> (from explicit to tacit)	<b>Exercising Ba:</b> Focused training with <i>senior mentors</i> and colleagues consists primarily of continued exercises that stress certain patterns and working out of such patterns.

Given the above, this research has human and strategy-oriented approaches, and the process is interpreted here as a social practice, in which the ways to create the context (or Ba) to facilitate its connections are permanently analyzed, specifically focusing on knowledge conversion or the interaction between tacit and explicit knowledge. In addition, KC is considered as an inter-organizational process where knowledge turns into capabilities and assets for the organizations themselves, and for the territory.

The structure of the paper is as follows. Firstly, an introduction where the problem, the conceptual framework, the methodology, and the research findings are introduced. In the second section, a review of the theoretical background (KC in Regional

Innovation Networks) and the research methodology are presented. To continue, the reader finds the findings and discussions of the research work. This research relied on local sources of information during the theoretical sampling that were systematically analyzed with the use of NVivo in order to present the description of a KCP model, and the mentor organization as the core concept developed through the study of the inter-organizational KCP in rural post-conflict settings. The paper ends by drawing conclusions and presenting possibilities for future research.

### *1.2. Knowledge creation (KC) in regional innovation networks (RIN)*

A community is composed by people who interact in a territory around shared interests and needs or to set and reach common goals. According to Escobar (2015), the territory is a non-static space - at the same time biophysical and epistemic, in which a political-organizational proposal can be developed to contribute to the conservation of life. Rethinking "development" and "economy" emerges as an important task for the political ontology of the territory in the search for other alternatives that foster non-capitalist and non-liberal ways of organizing the human-natural frameworks. For some ethnic-territorial movements in Latin America, autonomy emerges as a key concept of their political practice and refers to the creation of conditions that allow changing the norms of a world from inside. Many local populations and organizations, with an inexplicable tenacity, not only struggle to defend their territories but do so in the name of another conception of development, a harmonious relationship with nature and a different form of social life, and there, the communities fight for their resources and their rights and perhaps for their autonomy.

It is in that context, where the regional knowledge creation discourse becomes pertinent, and research on regional knowledge management has become urgent and necessary (Zhao & de Pablos, 2011). Harmaakorpi and Melkas (2005, p. 644) state that "the discussion of knowledge as a regional asset often deals with the nature of knowledge and its meaning for regional development". The KCP is due to a regional innovation network (RIN) composed of various organizations that operate as network systems, which aim to increase the innovation capacity of a region. They focus their research in KC and management in RINs which are often formed from heterogeneous groups with diverse kinds of actors including representatives of different organizations. Compared to innovation networks of individual organizations or even the ones formed by several firm partners, RIN have loose structures, and therefore a particular attention has to be given to the relationships in order to develop a common language and forms of interpretation to create an atmosphere of trust that allows them to overcome the uncertainties of the process. Two distortions that can affect innovation and creative processes could appear in RINs: closure of the network and collective blindness. The first one is present when the members of a network have close, and interactive relationships within the network, but only a few open relationships with people outside it; and the collective blindness may collectively set its focus erroneously, and that will cause them to mistake their goals and the way to reach them.

It is important to add that, according to Mtenga, Dulle, and Benard (2013), the possessor of knowledge may fear losing ownership of it, because sharing it could mean reducing one's competitiveness. In these cases, the organizations that work with the communities must have strategies to promote knowledge creation and sharing. In general, rural communities are involved in KC, mainly through observations and social discussions oriented to find out problem solutions.

Kostiainen (2002) posits that even if the SECI model had originally been developed to present the KCPs of a single organization, it can also be applicable to knowledge creation in development networks made up of different actors that have in common a challenge of continuous learning, that is caused by the increasing pressure of the environment. At the same time, Harmaakorpi and Melkas (2005) affirm that the purpose of the SECI model is to produce a learning spiral where collective learning processes increase knowledge in the multi-actor networks with different backgrounds, and in order to lead that process they need a vision to synchronize their work.

The discussion of whether or not the SECI model can be applied in a post-conflict region is only one of the factors to keep in mind when observing how the KCP operates. Based on sociological studies on communities under those circumstances, researchers have found that communities have a crucial reference for all political and strategy analysis and planning supported on the following principles: 1) the right to identity; 2) the right to a space to be (the territory); 3) the right to the exercise of being (autonomy, organizational and participation in their own constructions), and 4) the right to build their own vision of the future, in terms of ecological, economic and social development, based on the cultural vision, of traditional forms of production and organization of communities (Escobar, 2015).

Then, this research work accesses the concept of Knowledge Vision given by Nonaka, Toyama, and Nagata (2000), that fits with the 4th principle - the right to build their own vision of the future-, to give direction to the KCPs by means of asking some fundamental questions: What are we? What are the characteristics of the network as a social community? What kind of knowledge the network has or need to create? What can we do about it? In the words of the rural communities that is *to reach the dear life*. In the RINs, Ba is fluid and the coherence of that constant motion is achieved through the interactions based on the knowledge vision.

'Dear life' is an assumption with a native ancestral root. In the Yala Abya<sup>1</sup>, it represents a unit of the world and also the way life is organized, based on understanding and building social relationships in an integrated world. According to Ibáñez and Aguirre (2013, pp. 12–13), these perspectives of perceiving and organizing life focus on four issues:

- *Everything is life.* It is about understanding nature as a subject or a living being; therefore, one can speak of the rights of nature.
- *Everything is all, and all is everything.* It is to consider human-nature relationship as a unit and it is a part of the sociability among living beings.
- *Construction of knowledge and learning.* Integrating knowledge, ethics, spirituality, and production within an indivisible process.
- *The deep sense of aesthetics* is related to the ability to build in harmony with nature and other human beings, so the beautiful life arises, in which "we are a unity."

In productive projects, *dear life* is a concept that takes on a special meaning, as mentioned by De Roux Rengifo (2010, p. 233), what this is about is to build collectively "the way of life that people want to live. That is to create the conditions to protect and express the greatness of human dignity, as people want with their traditions, sensitivity, environment and dreams". As an example of this, one can consider projects in rural areas

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<sup>1</sup> Term used by Tule-Kuna (Panama and western Colombia) meaning "Land at full maturity", "Land of Vital Blood", and used for the indigenous world to name the whole continent of America (López-Hernández, 2004).

where the development of "peasant farms" is fostered and therefore food for families and neighboring villages can be guaranteed. Also, if simultaneously, the production of leading agroindustry products is promoted, it could help to increase the income and be one of the ways to reach a "dear life" for the communities of the regions.

So, having a glance at the *dear life* leads people to a different paradigm in which the following aspects can be considered: 1) the unit or complementarity between human beings and nature; 2) the importance of the local over the global; 3) the recognition of the diversity in life; and 4) the possibility of building a new society from the autonomous work of the communities in their territory in order to reach their *dear life*. Thus, according to Huanacuni (2010, p. 17):

*To solve global problems, structural global solutions are needed. A wide change about the vision of life is necessary. All humans seek an answer and some indigenous people search for an answer to this crisis of life within the paradigm of the cultural life, which is naturally communitarian. The paradigm of the culture of life emerges from the view that everything is connected and integrated, and that there is an interdependence between all and together.*

## 2. Research methods

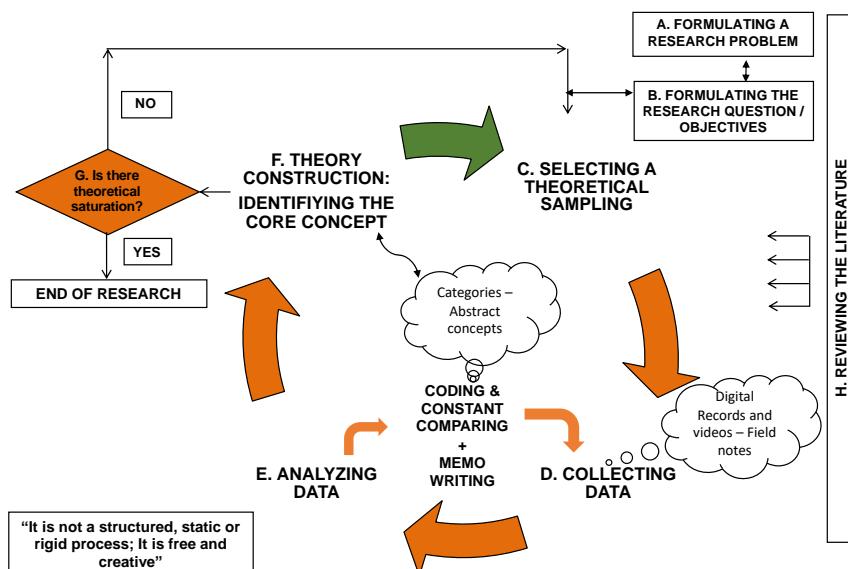
Grounded Theory Methodology (GTM) is a systematic, inductive and comparative approach for conducting a research whose purpose is to construct theory. The researcher maintains a constant interaction with data while involved with the emerging analyses. The collection of data and its analysis proceed simultaneously, and each informs and optimizes the other. It is a process of moving back and forth between empirical data and emerging analyses, while collected data becomes progressively more focused, and the analysis successively more theoretical. Through this process, the researcher examines the possible theoretical explanations for his empirical findings (Bryant, 2017). GTM is the study of a core concept that explains observed patterns, and it is built by integrating a series of abstract concepts generated through constant comparisons of data (Glaser, 2010).

GTM was developed by Glaser and Strauss in 1967, and it is now one of the most influential and widely used modes of carrying out qualitative research when the researcher's principal aim is to generate theory by the systematic analysis of qualitative data (Corbin & Strauss, 2008). According to Strauss and Corbin (2002, p. 24), theorization is the term used to designate the activity of constructing theory, which implies "not only conceiving and intuiting ideas (concepts), but also formulating them in a logical, systematic and explanatory scheme". This activity requires: a) to explore the ideas under different angles or perspectives, and at the same time to reach the implications of the theory; b) As data is collected, all assumptions should be reviewed, in order to be modified, expanded or deleted as appropriate. Behind the theorization is the interaction between making inductions and deductions: deriving concepts, their dimensions and properties from data or, on the contrary, formulating hypotheses about the relationships between the concepts, which also derive from data.

This research project was designed by including a number of steps (A to H) as outlined in Fig. 1. However, it is necessary to bear in mind that the design of the study is not linear, static or rigid. According to the criteria of the researcher or analyst, some steps can be carried out at the same time and changes are constantly being generated (Frias-Navarro & Montoya-Restrepo, 2016). The steps will be described below from points A to H.

### 2.1. Formulating a research problem and research question (Steps A & B)

Studies using GTM are generally focused on social processes or community actions in which the research question is about finding how the process occurs and how people interact. They begin with open questions and researchers may know little about the meanings and motives that drive the actions of the participants in the studied situation (Sbaraini, Carter, Evans, & Blinkhorn, 2011). Accordingly, and from the definition of Nonaka and Takeuchi's organizational KC model, in this study a concern raised to see how this model could be applied in an environment made up of regional networks of multiple and diverse actors and organizations in a post-conflict region. That is how the following question was posed: *How does the KCP occur in the context of Suyusama and the peasants and indigenous people that work with this organization in Nariño-Colombia?*



**Fig. 1.** Study design using grounded theory methodology

In this work, the unit of analysis (the major entity analyzed in the study) as well as what is looked for when collecting and analyzing data are presented in Table 3. The researchers considered the context (Ba) and the process (action or interaction) and went beyond description to develop a theoretical explanation.

For the selection of the methodological strategy that allowed reaching the objective proposed in this research work, characteristics such as the approach, the type of research problem, the unit of analysis, the collection and analysis of data and the reports were considered. Under the previous premises, Grounded Theory Methodology (GTM) was selected.

The research work was developed in two stages: first, by doing documental reviews on Suyusama's principles, strategies, and results obtained since 2004. Second, by conducting interviews to Suyusama's team members and to people from the local community organizations. All the interviews were digitally recorded, transcribed and analyzed using NVivo software. Those activities were carried out in order to describe the experiences of the participants according to their concepts, language and expressions (see

Table 3 – what is looked for in collecting data) (Frias-Navarro & Montoya-Restrepo, 2016, p. 42).

**Table 3**

Definition of the unit of analysis

<b>Research Question</b>	<b>Unit of Analysis</b>
<p><i>How does the KCP occur in the context of Suyusama and the peasants and indigenous people that work with this organization in Nariño-Colombia?</i></p> <p><b>Approach:</b> the SECI model –knowledge conversion- the theoretical approach of Nonaka &amp; Takeuchi (1995)</p> <p><b>What is looked for when collecting data? (From the individual to the social level):</b></p> <ul style="list-style-type: none"> <li>• The <b>meanings</b> or linguistic references that the actors use to refer to social life (definitions, ideologies, stereotypes).</li> <li>• Behavioral analysis units or <b>practices</b> that refer to ongoing activities defined by community members as routine.</li> <li>• The <b>meetings</b> that take place between two or more people, face-to-face. They serve to complete tasks or to exchange information and ends when people separate.</li> <li>• The <b>roles</b> that are units articulated consciously and that define the social aspects of people. People use them to organize and give meaning to their practices. In qualitative research they are very useful to develop typologies and understand the links within a group or community.</li> <li>• <b>Groups of people</b> who interact for an extended period, linked to themselves by a goal and who consider themselves as an entity.</li> <li>• <b>Organizations</b> that are units formed for collective purposes and their analysis is usually centered on origin, control, hierarchies and culture (values, rites and myths).</li> <li>• <b>Communities</b> that deal with human settlements in a socially defined territory and where organizations, groups, relationships, roles, meetings, episodes and activities arise.</li> <li>• <b>The processes</b> or sets of activities or actions that are carried out successively to achieve a specific purpose.</li> </ul>	<p>The unit of analysis is the major entity analyzed in a study. In this research, it included Suyusama as the social organization.</p>

*Note.* Adaped from Hernández Sampieri et al. (2014)

## 2.2. Sampling and data collection (Steps C & D)

After steps A and B, the researcher proceeded with the *initial purposively sampling* before the *theoretical sampling* (C) (see Table 4), consisting of *collecting data* (D) of places, people and events to develop the concept in terms of its properties and dimensions, and to identify the relationships among them.

During the initial purposively sampling, the questions for the researcher first approach to the field work were the following: What kind of organization is Suyusama? / What is the conceptual framework that guides Suyusama's work with the communities? How is Suyusama's performance in the field when working with the communities? (focus, activities, important roles, approximate times, objectives, methodologies). Which results are obtained from the KCP with the communities? To achieve this first goal, seven interviews were conducted. The participants were the five regional leaders that work in Suyusama and two peasants that were working in projects with them then (August 2013). With the obtained data, the researcher generated as many ideas as possible, identified

nodes and categories extracted from the speech and drew the first version of the KCP (open coding).

**Table 4**  
Theoretical sampling for the study

Date (mm/yy)	Type of Collected Data	Description	Data Analysis Methods
Aug/2013	Audio-interview	<b>Initial purposively sampling before the theoretical sampling:</b> as in any qualitative study, the researcher must have an approach to the region and its people. 5 from Suyusama (The team leaders) / 2 peasants	Memo writing after each interview. <b>Open coding</b> is used to read the information and identify the comments related to the primary categories. Using NVivo, the researcher-interviewer begins the identification of nodes or categories that are extracted from the speech. Mapping the first version of the KCP (drawing it)
Jul/2014	Audio-interview	9 from Suyusama (Objective: deeper approach)	Continue with the <b>Open Coding</b> , and by <b>Axial Coding</b> , categories that are the axis of analysis are defined.
Jul/2014	Video-training	Suyusama interacting with the communities (61 videos of training programs) (Objective: To find out how Suyusama works with the communities: the method)	Mapping concepts and theoretical writing by (1) constant comparing events applicable to each category or node, (2) integrating the categories and their properties, (3) delimiting the theory, and (4) writing the theory.
Aug/2014	Video-Conference	Francisco de Roux, J.P / Relevance of Science Research / The principles	Drawing the KCP
Dec/2014	Audio-interview	Interviews with 12 members of the Quillacinga Indigenous Council (Objective: researcher approach to the community).	Mapping concepts and theoretical writing by (1) constant comparing events applicable to each category or node, (2) integrating the categories and their properties, (3) <b>selective coding</b> refines the concepts (4) delimiting the theory, and (5) writing the theory.
Jan/2015	Video-project activity	The researcher-interviewer visited eight communities to observe how the VSLA meetings were carried out. Work with 8 Village Savings and Loan Associations (VSLAs).	Videos were produced in each of the visits and subsequently, a general video was edited where the objective was to show the VSLA methodology followed in the communities of peasants and indigenous people (it is presented as one of the results of a KCP). The general video, <i>Building “dear life” through community savings</i> , can be watched in this link: <a href="https://www.youtube.com/watch?v=vj0arp7zXkk">https://www.youtube.com/watch?v=vj0arp7zXkk</a>

The second visit to the region was in July 2014, and nine interviews were conducted. The participants were the rest of the members of Suyusama team. At that time, the interviewer-researcher participated in a two-day workshop planned and organized by Suyusama, with participants from the communities of the different regions of Nariño. Then, 61 videos corresponding to the training programs were recorded for later analysis. At the same time, in order to verify the conceptual guidelines of the Jesuits, the video conference Relevance of Science Research / The principles was studied.

### 2.3. Data analysis (Steps E)

With the collected data, data analysis (E) took place. That included the constant coding and comparison, which means taking the raw data to a conceptual level through a coding process.

Open coding is used to read the information and identify the comments related to the primary categories. Then by axial coding, the categories that are the axis of analysis can be defined, and finally, selective coding refines the concepts. By coding, data discover concepts, categories, themes and patterns and links between them, in order to give a sense and an explanation according to the research problem statement (Corbin & Strauss, 2008, p. 159).

In this study, for the activities of coding and comparing the researcher adopted NVivo, the specialized software used to expedite the analysis. It is important to notice that the researcher here is the person who collects, codes and analyzes data. The use of constant comparing, looking for similarities and differences permits the analyst to add information to general properties and dimensions of one code, and also gives the material to complement the construction of the theory.

### 2.4. Theoretical saturation (Steps F & G)

This cycle was carried out until the *theoretical saturation* (F, G) was found, that was, until a coding cycle was completed without receiving additional information. This was achieved during the interviewer-researcher visit in December 2014 and January 2015 when interviews with 12 members of the Quillacinga Indigenous Council were conducted. Furthermore, during a 15-day trip, eight Village Savings and Loan Associations (VSLAs) created with Suyusama support were visited with the researcher participation to their individual monthly meeting.

According to Bryant and Charmaz (2007, p. 25), "theorizing in GTM means developing abstract concepts and specifying the relations between them". As a result of this research work, the central concept raised from the theorization achieved through GTM: "mentor organization" and, 2) a detailed model of the KCP has been constructed with the description of the inter-organizational interactions in rural post-conflict settings, where Suyusama, the program that carries out specific extension functions and advisory services, performs when accompanying the communities of peasants and indigenous people in Nariño-Colombia.

## 3. Findings and discussions

Through coding, concepts or codes arise. These are analyzed as if a puzzle was being assembled. The researchers look for situations in which these codes appear, when they change and how they are performed with each other. Theoretical sampling, analysis and writing occur at the same time to the point where theoretical saturation is reached, that is, when a coding cycle was completed without receiving additional information. Matrices, diagrams and drawings were developed to cross information and re-examine data to increase understanding of concepts.

The theory, obtained as a result of the systematic analysis of the data collected in this study, is expressed as a group of concepts that are related to one another. "Mentor Organization" is the central concept that arises from the theorization achieved through the

use of GTM in the study of the inter-organizational KCP in rural post-conflict settings, and it can be evident and useful in similar conditions where communities experience the need of developing strategies that contribute efficiently to building local and regional economic alternatives so that they have the possibility of moving from a subsistence to a construction economy of their ‘dear life’ in a sustainable way.

The KCP in rural post-conflict settings occurs within the relationship among Suyusama and the rural communities -family farmers- in the territory. Region or regional refers to a physical-geographic space, and territory is a socio-geographical space (Ba), the place where knowledge creation takes place from collective work, sharing experiences, ideals and ideas. Suyusama, as a mentor organization, carries out specific extension functions and advisory services for the rural communities, and its orientation is oriented to the construction of their “dear life” in conditions of local sustainability.

### *3.1. Suyusama and the alternative of reaching the “dear life” (*la vida querida*)*

At the beginning of this research, the first approach to the region was seeking to find out “innovation” as a result of the KCP: a product, service or innovating processes that were explicitly named. Then, the first concept that emerged from the data analysis was called reaching the ‘dear life’ or the ‘good living’ (*vida querida*) as the ultimate goal of the work done by Suyusama and the people from the communities. Here are some of the statements taken from the interviews:

**Suyusama Officials:**

- *The impact of Suyusama in the region is the economic emphasis in terms of accompanying productive systems that generate income for the peasants and move them from a subsistence economy to the construction of their “dear life”, their sustainability, their development.*
- *The ‘dear life’ means greater resources, food, protected ecosystems, cohesive communities, self-management, and autonomy.*
- *The methodology that was proposed from the beginning was the prospective and strategic planning in horizons of sustainability, what many others have called the ‘dear life’.*

**Peasant (woman):**

*It's not earning a salary and relying on a boss. For us ‘dear life’ is our autonomy and being sovereign in what we dream and want. Staying just by a tree, breathe and dream new things for the community. The countryside is the ‘dear life’ (min 9:18, Building the ‘dear life’ through community savings) (Frias-Navarro & Prada, 2015).*

“*Reaching the dear life*” is considered as the ultimate goal for which local or regional economic alternatives are built as products of the regional KCP, the understanding of what people were referring to when talking about it was the key to understanding the dynamics in the territory, the first step for the construction of the KCP.

### *3.2. The KCP in rural post-conflict settings*

Suyusama follows a fundamental question that guides its actions or gives direction to the KCP. It is the Knowledge Vision:

How to contribute efficiently to building local and regional economic alternatives so that the communities we work with have the possibility of moving from a subsistence economy to a construction economy of their ‘dear life’ in a sustainable way?

The methodological route that Suyusama follows to reach this goal represents the KCP in the territory. It is presented below:

As a *mentor organization* and being a *catalyst agent*, Suyusama supports communities in their building local and regional economic alternatives in order to move from a subsistence economy to a construction economy of their ‘dear life’ in a sustainable way. This process begins with a collective work originated from the formulation of their life plans, an exercise for strategic planning done to propose common objectives based on the strengths and potentialities of the territory through the deep analysis of local resources (see Fig. 2). Subsequently, the communities formulate and carry out development projects according to the availability of resources. All this implies the encompassing of autochthonous knowledge and the dialogue and cooperation of external participants. The community members have autonomy to build their own local development proposals within a framework of regional sustainability. That includes considering food, environmental, cultural, social and economic security. The above fits the paradigm of *la vida querida* (the dear life) while the communities preserve their own memories and knowledge.

It is necessary to present parallels between the literature on organizational knowledge creation and the findings in this study in order to explain how the SECI model adapts to the context under study.

For Nonaka and Konno (1998, p. 41), “Ba is the world where the individual realizes himself as part of the environment on which his life depends. [...]. Ba means to get involved and transcend his or her own limited perspective”.

Ba is the place where knowledge creation occurs, and in the case of this study, Ba is the territory in the Department of Nariño, the villages and towns where the communities of peasants or indigenous people begin to work collectively in order to reach their “dear life”. There, they share experiences, ideals and ideas, and particular relationships emerge such as the one with Suyusama: a mentoring relationship.

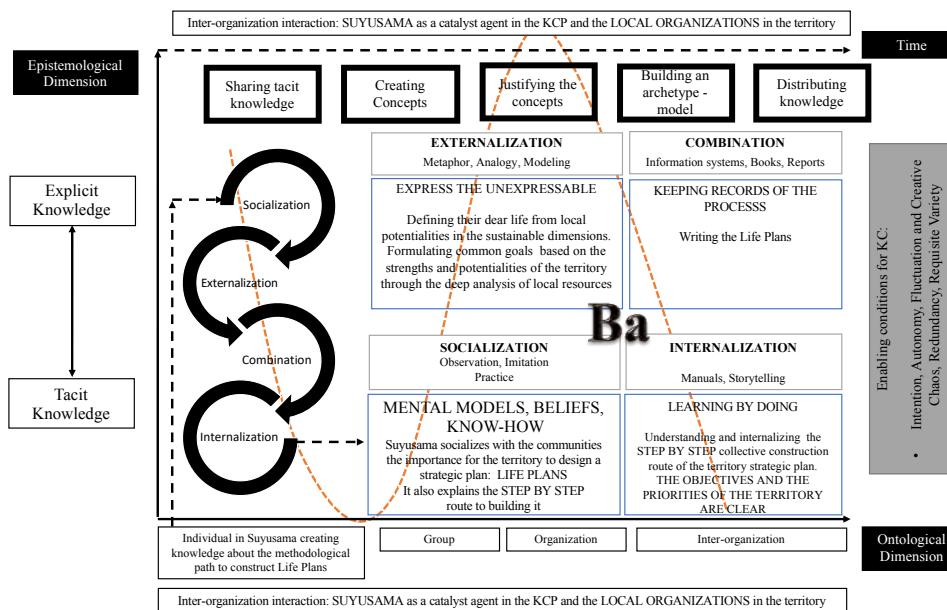
Knowledge is embedded in Ba, and then it is acquired through one’s own experience or through the reflections on the experiences of others (Nonaka & Konno, 1998).

In the territory, their reflections on the experiences is given by means of systematization of experiences, training programs, working mingas and mingas of thought.

By the systematization of experiences and the training programs, Suyusama begins with a reconstruction of what happens in the course of a process, considering the different objective and subjective elements that have intervened in it, to understand and interpret it and thus to learn from its proper practice.

Working Mingas is a collaborative work motivated by achieving an objective that generates well-being in the community. People contribute with their work and do not charge money for it. By using working mingas, people have been building churches, rural schools, aqueducts, and roads.

Mingas of Thought (Minga de Pensamiento): Term used by Quillacingas in Obonuco. The community convenes a meeting of the Assembly or the Indigenous Authorities in order to find a solution to a specific situation. These people analyze it by answering questions such as: What has been done before? What situation is currently being faced? What are the possible solutions? And after having identified several options, opt for one and act.



**Fig. 2.** Inter-organization interaction – Life plan design

According to Nonaka and Takeuchi (1995), knowledge creation is a spiraling process of interactions between tacit and explicit knowledge, which have been conceptualized as the knowledge conversion process or the SECI model. All this in a spiral-loop, and under an organizational context that provides enabling conditions for the knowledge creation process to occur: *intention, autonomy, fluctuation and the creative chaos, redundancy and variety of requirements*.

*The intention is defined as the aspiration:*

- Suyusama's intention: To contribute efficiently to building local and regional economic alternatives so that the communities they work with have the possibility of moving from a subsistence economy to a construction economy in order to realize their 'dear life' for a sustainable future.
- Communities' intention: to reach their dear life that is defined in the Life Plans.

*Autonomy:*

- The communities have the freedom and autonomy to set their own goals. Suyusama, as a mentor organization, joins local construction processes in the territory. No new things are proposed except the methodology (prospective planning) and the ethical reference (sustainability).

*Fluctuation and the creative chaos:*

- New knowledge is not received passively by people. These adjust it to their beliefs and particular situations of life. Each context assigns specific meaning to the events. The role of a mentor organization like Suyusama is to motivate people to reexamine what they take for granted. Crisis is taken as day-to-day for many of the communities with which Suyusama works due to the characteristics of the territory, and in order to reach their ‘dear life’, people must be creative in their ways of thinking and their decision making concerning the direction to take. Sometimes, new knowledge is born in chaos due to the particularities or the situations in Ba.

*Variety of requirements:*

- The variety of requirements is achieved in the following ways: access to the greatest amount of information as possible and the connection between different units of an organization. From the training programs that Suyusama gives to the communities, a reflection and connection space is created where people from different regions of the department meet and share their specific and common problems. These groups are characterized by their diversity, for example: gender, ages, level of education, and interests.

Meanwhile, with regards to access to information, written manuals are shared and distributed to the attendees when the workshops end, or by oral means through field visits from the representatives of Suyusama. Given the difficulty of accessing the Internet in some areas, Suyusama's information dissemination strategy does not focus on this medium.

### 3.3. Actors in the KCP

Many actors are involved in the KCP: Suyusama, private and public organizations, NGO's, universities or educational institutions, state institutions, international organizations, and the members of the community (peasants and indigenous people). However, for the purpose of this study the analyzed actors are Suyusama and the peasant or indigenous organizations.

The first actor, Suyusama, a nongovernmental organization, assumes the role of a *mentor organization* which accompanies the communities in their local sustainable development processes. It acts as an external expert organization which shares knowledge through the interaction with other organizations in the territory. It is part of the Society of Jesus' world network organizations seeking to build a culture that promotes the common good and the transformation of the structures that generate poverty locally and globally. It is important to note that it works under the guidelines shared with other social organizations of the Society of Jesus, with which they strengthen knowledge by belonging to networks. An example of that is COMPARTE (<https://compartedesarrollo.wordpress.com>) - Comunidad de Aprendizaje (Learning Community), a learning community, which is a project of the Conference of Jesuit Provincials in Latin America (CPAL) and the Jesuit NGOs placed in Loyola's Province – acting in development cooperation (ALBOAN), where the value of expertise and the need to create knowledge is evidenced. Their aim is to suggest alternative economic-productive proposals with regional impact, through knowledge creation and the reflection of the experience and the improvement process of the organizations involved with the community work. The ultimate goal is to qualify the theoretical, methodological and

technical instruments with which these organizations accompany the process of building productive-economic alternatives with positive regional impact, within an increasingly wide territorial coverage.

In the region of Nariño, the extension strategy of Suyusama is based in the encouragement of the regional dynamics in order to build a prospective and strategic vision of sustainability, which allows the social participants in the region to display a possible common dream in the following dimensions: economic, social, cultural, environmental and political.

The other participants of the KCP evaluated are the people in the peasant or indigenous organizations. They are absolutely aware of their own situation and can become autonomous in building their own models of development. For the people in the territory Suyusama represents a methodological option, that encourages the creation of participatory processes where the exchange of knowledge, experiences and different approaches stand out, considering the interaction and articulation between rural and urban worlds: from the region to the nation, and in a global world. A fundamental aspect of this process is that communication must occur horizontally, with no hierarchy within organizations, which ultimately produces collective actions, achieving situations to fulfil their common dreams (CPAL, n.d.).

Due to the kind of relationships detected by the means of the systematic analysis of data, there is a concept originally identified in this research: *mentor organizations*. This definition has been constructed from the performance of Suyusama within the KCP.

*Mentor organizations* are defined as preferably non-profit organizations that carry out social programs and contribute with their expertise in the sustainable development of the regions by the means of agricultural extension and advisory systems. Initially, it has been thought that the positioning of this type of organization must be based on its know-how and expertise, in a selfless way to support the community and on the successful results with previous work (previous successful cases). It is important to make clear that a *mentor organization* aims for sustainable regional development through supporting, sharing and creating knowledge by acting as a catalyst in the process. It is not a charity or a gift or money giver organization. The mentor organization responds with an empathic concern to situations in communities, and this kind of response manifests itself in altruistic behavior, which is an attempt to reduce the community suffering or to increase its quality of life. As Bierhoff and Rohmann (2004) state, empathic concern motivates altruistic behavior or response, which is performed as an attempt to reduce the other person's suffering.

On the other hand, within the communities of peasants or indigenous people, there are *mentors in training*, who are people committed voluntarily to the development of the community of which they are part of. These are the people that Suyusama trains as a strategy of support, follow-up, and control of its own processes and they become the right hand of Suyusama in their region. They should become methodology experts, for example, in the foundation and development of the Village Savings and Loan Associations (VSLA / GAAC in Spanish) and in the support of the communities when needed. The training programs are usually held at the facilities in Villa Loyola, the organic coffee production farm. There, these people who come from different municipalities of Nariño, participate in training activities such as those mentioned below:

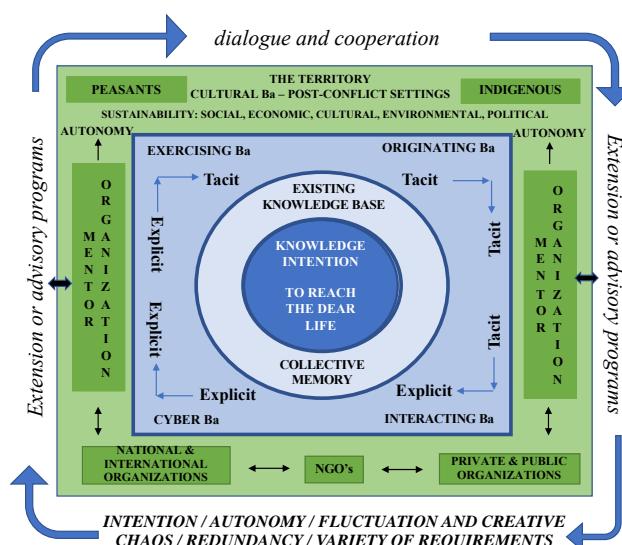
- Training of human talents in the prospective and strategic planning with the aim of sustainability (emphasis on life plans, strategic projects, municipal or departmental development plans).
- Organizational strengthening training.
- Training in organic coffee production.
- Training in sustainable management of natural resources, with a very particular focus on water and rural aqueducts.

Some of the products, services or systems produced through knowledge creation processes are mentioned below:

- The conformation of structured organizations such as groups that promote rural tourism, associations, cooperatives and farmer-based organizations (origin or organic coffee producers).
- Formulation and execution of productive strategic projects considering the potential of the territory (agricultural collection centers, post-harvest handling).
- Training and capacity development in strategic planning, management, organic coffee production, design of tourism experiences, value addition activities that can increase incomes, and sustainable management of natural resources.
- Communities with a political position and participation.
- Implementation of Village Saving and Loan Associations as a financial practice.

### 3.4. The knowledge creation model (KCM) in rural post-conflict settings

As a result of this research, the construction of a detailed model of a KCP in rural post-conflict settings that conforms a regional innovation network (RIN) is presented in Fig. 3. This model includes the relationships among the concepts and includes the mentor organization with one of the principal roles for the process to happen.



**Fig. 3.** The KCM in a RIN

The Knowledge Intention or Knowledge Vision that guides the KCP is to reach the dear life of the peasants and indigenous who live in the territory. This concept is defined autonomously by the communities through the formulation of their own Life Plans. Regional knowledge creation occurs in the Originating Ba, Interacting Ba, Cyber Ba, and Exercising Ba, through a spiraling process of interactions between tacit and explicit knowledge: the SECI model. The regional KC model presented here includes the territory and it is called the “Cultural Ba”, a multicultural and diverse scenario, where men and women of different ages, educational levels and backgrounds meet. There, a dialogue of knowledge<sup>1</sup> is promoted, and integrates traditional and contemporary forms of knowledge. This Ba is also the arena where all the actors involved in the process meet in order to establish diverse kinds of relationships. One of those is mentoring, where the mentor organizations act as catalysts in the KCPs through extension or advisory programs. These kinds of organizations have their own motivations and purposes which are linked to the knowledge intention of the communities.

KC is considered as an integral process since it includes all aspects of community life: social, economic, cultural, environmental, spiritual and political, which become an option for local sustainable development, that is understood<sup>2</sup> as a form of economic development that satisfies present needs without compromising the ability of future generations; then, regional sustainable development projects are formulated for the regions in order to introduce forms of economic development within a framework of resource preservation and respect for the environment, ensuring that future generations have the same opportunities to meet their needs as current ones have. The above implies that the people who make up this knowledge network have practical wisdom, or what Nonaka and Takeuchi (2011) express as a kind of tacit knowledge gained from the experience that allows people to make wise decisions based on a situation and guided by ethics: a virtue that leads a person to seek the common good and moral excellence as a way of life.

Finally, in order to complement the above, given that local knowledge creation can also be oriented towards technological developments integrated to strategic projects, the following are some reflections made by Aguilar (2003, p. 104), the Leader of Suyusama:

*In local scenarios, the exercise of dialogue and cooperation among different sources of knowledge favor the reintegration of science (lost by Cartesian and mechanistic concepts) and it is relocated in its role as an instrument in the service of life. Integrated approaches of participatory technology development are very relevant in this context, since different projects, challenges and concerns of local communities are strongly articulated and interrelated. In contrast, a single-issue vision of the “experts” creates much confusion and waste of resources.*

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<sup>1</sup> This term is used in Spanish as “logo de Saberes” and it generally refers to indigenous communication or knowledge exchange among diverse people.

<sup>2</sup> Defined by the United Nations in the report of the World Commission in 1987.

## 4. Conclusions

### 4.1. Conclusions from the analysis of the results

The methodological route followed by Suyusama can be used as a guide by other organizations or by educational institutions in their rural extension programs, especially when the governments want to invest resources to eradicate poverty and help vulnerable communities become more self-reliant economically. The following is highlighted:

- The follow-up of the strategic plan that has been formulated in a collaborative way among the officials of the organization.
- The systematic and orderly work that is carried out to meet the objectives; for example, the accompaniment in the formulation of life plans. The chosen methodology is followed step by step.
- The communication among people occurs horizontally, with no hierarchy within organizations, which ultimately produces collective actions that leads to achieving situations to fulfill their common dreams.
- The constant reflection on the organization's own work, on what functions and what does not. This implies an opening to constant change.
- The altruistic behavior as an organizational culture.
- Openness to work in partnership with other organizations, respecting the diversity of culture and thoughts and fostering the constant dialogue of knowledge in favor of the constant construction of new knowledge.

The organizations that accompany the communities with extension or advisory programs must have officials with a political and strategic vision of the territory, with a deep knowledge of the potentialities and challenges of the different organizations that participate in it.

- The leadership that is assumed from the organizations through the roles of "consultants" or "contractors" without a social or political vision of the processes of the organization and the territory, do not manage to contribute to significant transformations for the communities, generating stagnation in the processes (Programa Suyusama, 2014, p. 35).

Organizations like Suyusama contribute to bringing about changes in local public policy, to discovering ways to access new markets for agricultural products and rural tourism, and to reaching food security and sovereignty within a local sustainable development framework in a context of peaceful construction during the post conflict historical period that exists in the country. However, a single organization can't achieve these goals by itself, or even by working within a network with other organizations in the territory. It is important to consider that combating inequality is one of the most pressing challenges Latin American societies face in their commitment to achieving local sustainable development.

### 4.2. Conclusions from the use of GTM

The use of GTM in this study might help other researchers in engineering or in social sciences to apply and benefit from it, since it is the basis for a deep understanding of a problem, as a first step in a research agenda where other qualitative, quantitative or mixed research could even be raised.

#### *4.3. Future work*

It is worthwhile for academics to work hand by hand with small agricultural producers, since this work can contribute to improving everyone's living conditions. Rural communities open their doors to researchers as long as they respect their culture, traditions, ancestral knowledge and own conception of the world. From this premise, new knowledge, necessary to face the current ecological and social crises in the world, can be created.

The sense of working in rural extension with family farming is justified in the presentation given by the Food and Agricultural Organization of United Nations [FAO]. According to this organization, both in developed and developing countries, family farming is the predominant form of agriculture with over 500 million family farms in the world. "They run diversified agricultural systems and preserve traditional food products, contributing both to a balanced diet and the safeguarding of the world's agro-biodiversity". They work in territorial networks and cultures and the system is also important for the dynamism of local markets, whether due to local consumption or for job generation. FAO concludes that family farmers have a great potential "to move towards more productive and sustainable food systems if policy environments support them in this path" (FAO, 2017).

Extension or advisory programs in post-conflict areas play a crucial role in the recovery of these places. They promote rural development by the means of finding better incomes for the communities that have lived there. This requires many years of working, hand by hand with all the organizations in the territory, because to recover trust needs patience, and people need to trust in order to be able to conform groups, associations, cooperatives or farmer-based organizations. They need to recover from the fear they have felt living in war for many years.

According to Guereña (2016, p. 5), "this will be difficult to achieve without policies that address one of the unresolved historical problems in the region: the extreme concentration of access to and control over land, and the limited distribution of the benefits of land use".

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