

# Ecological consciousness through education

A Thesis research structuring the high school educational program  
of SOMONCA Inc.

By Laura Guthschmidt & Douwe Boerstra  
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## Glossary

Here definitions are given for terms that appear later in the report with an asterisk (\*) which need some form of explanation. In the report, each first time in a new chapter these terms are mentioned, they will be linked to the Glossary. The definitions provided here will lead to a uniform interpretation by every reader.

**Axial coding:** relating open coding labels to each other via deductive and inductive thinking.

**Co-curricular:** related but only complementary to the official curriculum, as a civic or service activity outside the classroom (dictionary.com, n.d.).

**Open coding:** Analytic process by which labels are attached to observed data and quotes, in order to describe or classify the text under consideration.

**Participatory management:** participatory process that actively engages significant stakeholders in management practice, collective enquiry and decision making (Kay & Alder, 2005).

**Potential stakeholders:** Stakeholders for the educational program that are organizations in the province of Puerto Plata that work with the target group, as well as high schools that were selected by the authors to participate in this research

**Selective coding:** The choosing of one category or theme as the core concept around which the other categories from the axial coding phase are grouped for the purpose of explaining the phenomena which has been observed (IGI-Global, n.d.).

**Stakeholders for the educational program:** People or organizations that are affected by, or affect, the educational program of SOMONCA Inc. (for example: high school teachers/headmasters, NGO's, youth organizations, Ministry of education).

**Stakeholders for this research:** Potential stakeholders that have participated in this research.

**Target group:** The target group for this research consist of students in the province of Puerto Plata that are in grade 1-2-3 of high school.

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## Executive Summary

The Dominican Republic (DR) is home to a wide variety of ecosystems and environmental assets, from flourishing tropical rainforests to arid deserts, and from the highest mountain in the Caribbean to a lake that lies 42 meters below sea level. This has caused tourism development to be of national interest. The fact that the DR has a unique combination of ecosystems combined with the unstructured growth of the tourism industry makes local inhabitants worry about ecological decline of the DR. Especially since there is also a low level of general education in the country.

In 2005 the independent non-profit ecological organization SOMONCA Inc. was established with the goal to preserve and protect the ecology on the north coast of the DR. SOMONCA Inc. sees education as the key to achieving this, which was the reason for the formation of its educational program. As a part of this education program, SOMONCA Inc. has executed multiple efforts to educate different target groups, but these efforts have been carried out unstructured and without working towards a bigger picture. In order for SOMONCA Inc. to structure its high school educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management, this qualitative research with an exploratory nature was conducted.

After distributing surveys (n=401) among the target group to determine their needs and capacity, the results showed that the majority of the target group has chosen reading and group projects as their favorite forms of learning. Biology/Natural Science, sports and languages were indicated as the target group's favorite subjects to learn about.

The identified potential stakeholders were considered by interviewing them, and asking for their level of interest in an educational program, their ideal educational program and how they could facilitate this. After coding and summarizing their answers it became clear that all stakeholders see the need for educating the students about ecology. Their executed efforts so far consist mostly of projects and excursions with an ecological theme and emphasis on protecting the environment, but they were never executed in a structured form. Despite their unfamiliarity with SOMONCA Inc. the stakeholders are all very interested in, or willing towards participation in a co-curricular program in which the role they can take is that of facilitator. Most stakeholders have no problems facilitating time, teachers and classrooms but indicated they would need permission, more information, and the ability to adjust the program to do so.

After the interviews the stakeholders were invited to an interactive meeting to collectively come up with an educational program that effectively integrates the needs and capacity of the target group by applying participatory management. This meeting yielded a structure in which all high schools in the province of Puerto Plata are provided a book about ecology that will be written by the target group (the high school students of grade 1-2-3). The book will be divided in seven themes that were chosen by the stakeholders of this research. Next to that, there is a competitive element incorporated by giving each district a different theme to complete. SOMONCA Inc. aids in the writing process by providing guidelines on how to write these themes. This reflects the needs and capacity of the target group because they are able to write the content to a level that they are familiar with, and according to a structure that they prefer (reading and group projects). This structure also integrates the possibilities and interests of the stakeholders of this research to facilitate in such a program because they are able to implement the execution of the writing process of the target group in the form that they desire and are able to facilitate for.

Despite a language barrier, this research provided SOMONCA Inc. with the structure for their high school educational program, now it is up to them to follow up and implement it. This research confirmed the interest of the stakeholders and their possibilities to facilitate, there just needs to be a strong guiding force coming from SOMONCA Inc. by following up with the recommendations from this research, to make this educational program possible so that they can achieve their goal of reaching ecological consciousness among high school students in grade 1-2-3 in the Province of Puerto Plata, Dominican Republic.



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# 1. Introduction

## 1.1 Problem description

The Dominican Republic (DR) is an interesting country from an ecological perspective. For instance, it is home to the highest and lowest points above and below sea level in the Caribbean. In the middle of the country, Duarte Peak is the highest peak within the Cordillera Central Mountain chain with a height of 3,187 meters. In contrast to this, the lake Enriquillo reaches 42 meters below sea level, which has a significant impact on the salinity of the lake. Besides the oppositions in height, there are also other extremes within the Dominican landscape such as flourishing tropical forests that coexist with arid deserts. (Holschuh, 2018) These landscapes are one of the reasons that in 1968, legislation declared tourism development to be of national interest (CIA, 2018).

On the north coast of the DR the Yasica River flows, which is one of few rivers that is not being managed by man (SOMONCA, 2018). This provides rugged nature, but it can also cause problems like floods and pollution. Plastic pollution is also a serious problem in the (northern region of the) DR due to the fact that 76% of the plastic produced in the DR is not recycled. This comes down to roughly 7600 tons of plastic annually that ends up at either one of the 354 national unmonitored and unregulated landfills, or ends up in the ocean. (Diario Libre, 2014) There have been signs of ecological decline regarding coral reef coverage, mangrove decline, and there is a threat of soil erosion present (Wielgus et al, 2010; CIA, 2018). Next to the ecological problems in the DR, there is a low quality of general education (USAID, 2013; SOMONCA Inc., 2018). The 'Program for International Students Assessment' assessed the level of knowledge of 15 year old students per country on subjects such as science, reading and mathematics from 69 countries all over the world and concluded that the students of the DR scored the lowest on almost all subjects. (OECD, 2016) The fact that the DR has a combination of ecosystems that are found on no other Caribbean island (Ministry of Tourism, n.d.), combined with the unstructured growth of the tourism industry (World Travel and Tourism Council, 2017; Baez Sarita, 2013), and the low level of education, makes local inhabitants worry about the ecology of the DR (Sosuanieus, n.d.).

Situated in the town of Sosúa, in the province of Puerto Plata, SOMONCA Inc. is an NGO that was called into life by stakeholders from three cities in the north of the DR (Sosúa, Montellano and Cabarete) (see *figure 1*), to tackle the previously described ecological problems and threats that are

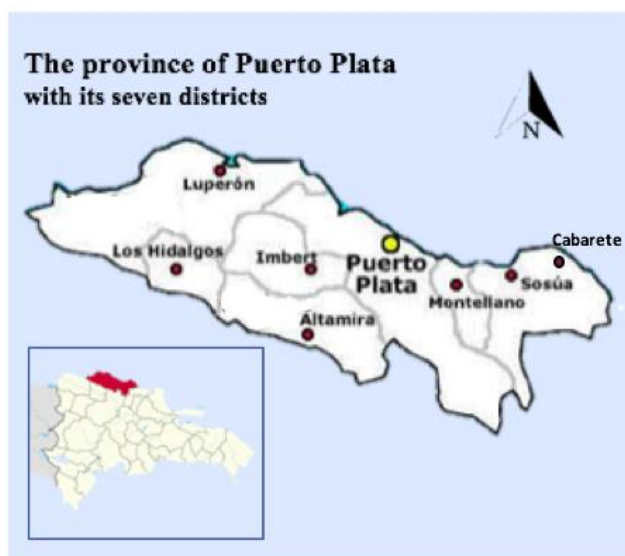


Figure 1 - Province of Puerto Plata with its seven districts, on which SOMONCA Inc. focusses its educational programs (Guthschmidt & Boerstra, 2018)

present in the DR. This small (15 members currently) independent non-profit ecological organization was established in 2005 with the goal to preserve and protect the ecology on the north coast of the DR. Next to that, The DR government has signed the Caribbean Challenge Initiative, which vowed to protect 20% of their near shore environments by 2020 (CCI, 2008). Meanwhile, 20% of the marine environment has been protected in the form of two MPA's, but the government is still working on protecting the near shore environments by initiating restoration of beaches, mangrove forests, and wetlands. To maintain the goal that the DR government has set, SOMONCA Inc. deems it necessary to create awareness about the ecology of the DR among local residents by educating them. SOMONCA Inc. believes that education is key to

creating awareness, and ultimately will lead to protection of the environment. This is the reason SOMONCA Inc. called their educational program into life in 2005. Education is most effective if targeted at the ones that are able and willing to care for the problem.

As far as is known, within their educational program, SOMONCA Inc. has given courses about the importance of ecology to high schools and government officials, and created a local television program for local inhabitants about ecology in the DR. Not much is known about the content of these efforts. Although SOMONCA Inc. sees these steps as part of one educational program, they should be regarded as three separate programs. They have been carried out unstructured, and are not part of a bigger picture. SOMONCA Inc. works very pragmatic and tries to fill gaps where it is needed, but there is no grand scheme for the educational program. There are no goals, mission or vision for the educational programs, and there is no organizational structure put to paper. Next to that, the educational program is not adapted or adaptable to the different target groups that SOMONCA Inc. has. This disables SOMONCA Inc. to effectively imbed their educational program in the DR society.

SOMONCA Inc. deems local children that are in their first years of high school (grade 1-2-3, average age 12-16) in the province of Puerto Plata as the most important target group for their educational program. The reason they are the most important target group, is because they are at an age that they have more ability for complex thoughts and develop a strong sense of right and wrong (CDC, 2017), and research shows that environmental education aimed at high school children creates awareness of the environment at an adult stage in life (Rickinson, 2001). As children go through adolescence (ages 13 to 17), they expand their abstract and conceptual reasoning about nature, and develop their ecological and moralistic perspectives of the natural world, which in turn helps them to form ethical and moral judgments about their relationship to the natural world (Kellert, 2005). The best way to target these children according to SOMONCA Inc. is to approach the high schools and provide the schools with educational materials about the ecology of the DR to implement in the curriculum.

The reasons stated above determine that this research will only target high school students in grade 1-2-3 in the province of Puerto Plata. This means that other target groups that have been taken into account by SOMONCA Inc. in the past will not be part of this research due to a limited time-frame.

Literature shows that involving stakeholders in the decision making process yields positive results (Doyle & Wells, 1996; Eger, 2015). They gain a sense of ownership of change initiatives and are positively motivated to extend support to such efforts (Melcher, 1976). Stakeholders of the educational program are people or organizations that are affected by, or affect, the educational program of SOMONCA Inc. (for example: high school teachers/headmasters, NGO's, youth organizations, Ministry of education).

Next to that, involving the target group\* in creating an educational program shows that it enhances the learning capacity of children (Evely *et al*, 2011). This goes especially for the target group that is involved in this research, but it is also expected that high school children that will become the target group in the future will also care more for the content of the educational program after this research, if it is adapted to their needs and capacities. Therefore, participatory management\* will be applied in creating and executing the educational program.

Participatory management can be implemented on several levels of participation (see *figure 2*) (Arnstein, 1969), depending on the desired result and the

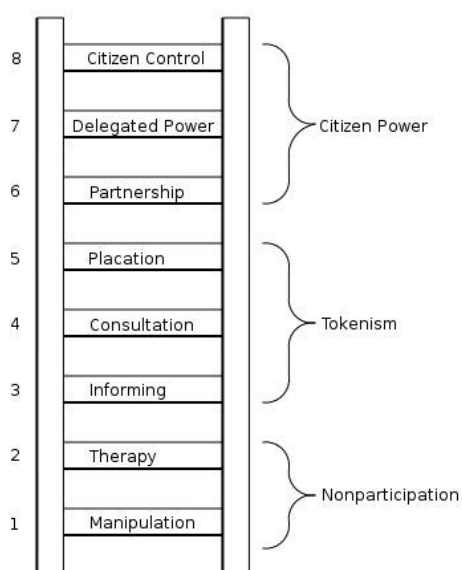


Figure 2 - Arnstein's ladder of participation (Arnstein, 1969)



boundaries of the research. The stakeholders get to advise and even plan a great deal of the educational program, but it is SOMONCA Inc. who eventually gets to decide the form of execution of the educational program. The influence that stakeholders have is not sufficient for a partnership level, but there is not so much tokenism apparent that it is considered consultation. Therefore, for this research, participation will be implemented on placation level.

All these findings lead to the following problem statement for SOMONCA Inc.'s educational program:

*It is unclear how SOMONCA Inc. can structure its high school educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management.*

## 1.2 Goals

*The goal of this research is to provide SOMONCA Inc. with advice on how it can structure its high school educational program, and how they can effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management.*

This advice is given in the form of a structural framework in which the goal for the high school educational program is defined. Next to that, it provides an overview of possible collaborating and participating stakeholders. The structure of the educational program is put together with these collaborating stakeholders with the needs and capacity of the target group integrated into the structure.

## 1.3 Research Questions

In order to give advice that SOMONCA Inc. can use in the future to build upon, this research is aimed at answering the following research question:

*How can SOMONCA Inc. structure its high school educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management?*

To answer this question, two sub questions have been developed:

1. *How can SOMONCA Inc.'s high school educational program effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management?*
2. *How can SOMONCA Inc. structure its high school educational program together with its stakeholders, by applying participatory management?*

## 2. Methodology

This chapter describes the methodology that has been used to provide an answer to the research questions that were formulated in the previous chapter. The following methodology is based on a set of ethics that are of vital importance to take in consideration. These ethics will be described in a later sub-chapter.

### 2.1 Research type

In order to successfully implement participatory management, a qualitative research was conducted with an exploratory nature (Kumar, 2014). This provided better insight in underlying motivations and ideas of both parties, both SOMONCA Inc. and stakeholders for this research\*. By identifying overlapping interests between them and inviting them to collaborate, participatory management\* was implemented and bridges were built.

### 2.2 Preparation phase

Because this research has an exploratory nature and was conducted in a developing country in which information is often not available on the internet, some preparation requirements were not possible to execute before arrival in the DR. This includes making an inventory of the current status of the educational program of SOMONCA Inc., defining target groups, determining sample sizes, and defining stakeholders.

Two weeks prior to departure to the DR were used to prepare for the data collection phase (see figure 3). Templates for interviews were made for both the target group\* and the stakeholders of the educational program\*, based on information that has been found in different literature articles about important aspects of participatory management in education. These were obtained from google scholar by looking for important aspects of participation from stakeholders in educational programs.

### 2.3 Data collection

Figure 3 explains the methodology that was used in order to answer the research questions. A bigger flowchart can be found in Appendix I.

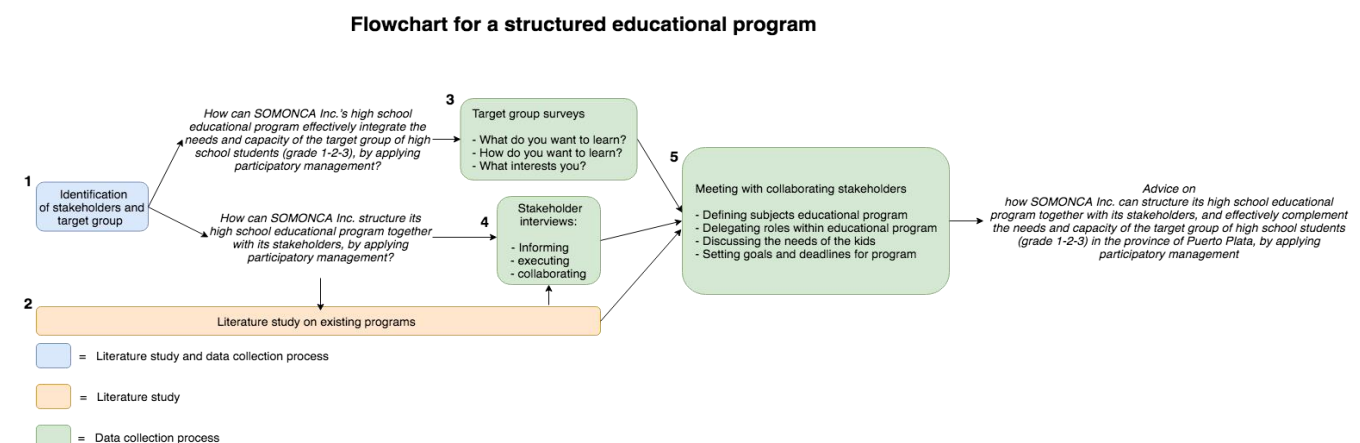


Figure 3 - Flowchart for a structured educational program

In order to visualize the methodology for this research, the flowchart above is comprised out of five processes that have been executed to answer the research questions. To properly structure these processes, they have been given numbers. The methodology for each process/number will be explained in the following paragraphs. The numbers of the processes do not indicate a certain order in execution, they are mainly used for explanatory purposes. **Processes 2, 3, and 4** were carried out parallel to each other.

### Process 1: Identification of stakeholders and target group

The stakeholders of the educational program of SOMONCA Inc. were obtained by getting permission to execute this research from the Regional Educational Office for the province of Puerto Plata, from the Ministry of education (*see appendix II*). This provided us with a list of all the seven districts in the province of Puerto Plata in which the execution of the research was permitted according to the Regional office.

The districts were approached after this to seek permission to visit the high schools in each district. Each district was also asked to provide names and addresses of all high schools and organizations that work with the target group, in the district. Of these lists, two high schools were randomly chosen to visit in each district, giving a potential total of fourteen high schools. Next to that, all organizations that work with the target group in the province of Puerto Plata were approached by email. All will hereafter be referred to as potential stakeholders of this research\*.

After this process, all identified potential stakeholders were approached to provide input for answering the two sub questions in the form of an interview with the director, and a survey for the target group (only high schools). The potential stakeholders that agreed to participate in this interview are considered the stakeholders of this research\*. To visualize the identification of the stakeholders, *see figure 4*.

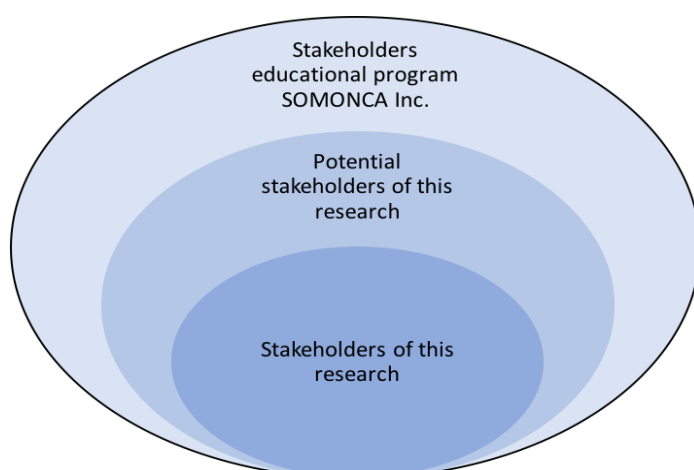


Figure 4 – Visualization of stakeholder identification.

### Process 2: Literature study on existing structures of educational programs

This process took place parallel to identifying potential stakeholders and the target group (**process 1**). To gain insight in how an educational program can be structured, it is important to look at different case studies on educational programs and their structures to see the possibilities for both SOMONCA Inc. and the stakeholders, but also what pitfalls can be expected. This means that literature was sought about educational programs in developing countries and how they are implemented and executed in different case studies. This was done by executing literature studies. Most literature was collected by using google scholar. By using search terms in the line of “education/ educational program for ecology/organizations/NGO’s” responses were gathered and filtered for what is usable for SOMONCA Inc. This usability was based on the similarities that the case study holds with the DR and SOMONCA Inc. (Similarities based on: culture, ecology, financing of the program/organization, structure of the organization). If the case study has all similarities described above, the structure of the educational program was taken into account for this research, and used in **process 5**.

Next to searching for literature about existing educational programs, it was important to look for literature about participatory management in initiatives from organizations, and how its implementation might be affected by culture. This was done by searching for case studies that have taken place in the DR and implemented participatory management.

\* = See glossary

### Process 3: Target group surveys

The first sub-question provides insight in the needs and capacity of the target group. In order to sample the opinion of the target group, it is absolutely necessary to question the target group itself. To create an overview of the needs and capacity of the target group, qualitative surveys (see *appendix III*) were created and handed out. The target group was approached based on availability. The directors of the high schools were asked to provide some time with the target group to distribute the surveys. The province of Puerto Plata is currently counting 20,603 high school students (Ministerio de Educación, 2015). To reach a representative sample size with a confidence level of 95%, and a confidence interval of 5%, 377 students needed to be questioned.

Because the research focuses on high school students from grade 1-2-3, each stakeholder that was a high school was asked to provide 30 students that fall in this category (14 high schools X 30 students = 420 sample size). This number is more than the needed sample size, because it was taken into account that there might be unforeseen circumstances that could cause problems with achieving the needed sample size.

The needs and capacity of the target group were identified by questioning the following three variables:

- What subject they would like to gain knowledge about (content)
- How they would like to learn (teaching methods)
- Personal interests of the target group

The answers from the surveys were stored per school in an excel workbook to create a database that gives a clear overview on subjects that are of high interest to the target group, and possible trends in the given answers. The answers to multiple choice questions (questions 1, 4, 5, 7, 8, 10) were easy to classify. The answers to the (partly) open questions (questions 2, 3, 6, 9) were later classified into categories to make them more presentable. These categories were created based on the answers that were given, in combination with the rationale of the authors.

The answers to the survey questions (see *appendix III*) are connected, according to the following table, to the three variables that were questioned (see table 1). This provided insight in which subjects are best received by the target group and to what extent.

The results from this overview forms the answer to sub-question 1.

Table 1 - The questioned variables in the target group surveys that answer sub-question 1

| Variable questioned                        | Answered by question |
|--|----------------------|
| The subject they would like to learn about | 1, 7, 8, 9           |
| How they would like to learn               | 4, 5, 6, 10          |
| Personal interests                         | 2, 3                 |

A combination of data from process 1 and 3 in the flowchart provides an answer to sub-question 1. The next process provides an answer to sub-question 2 together with **process 2** (literature study).

#### Process 4: Stakeholder interviews.

When stakeholders for this research were identified, semi-structured interviews were held according to a template (see *appendix IV*) and recorded to acquire the following information per stakeholder:

- Need and willingness for communication with SOMONCA Inc..
- Identify the willingness to participate in the execution of the educational program of SOMONCA Inc.
- Capacity to facilitate and collaborate with creating the structure, and the execution of the educational program of SOMONCA Inc.

The data that was gathered by the interviews was stored into an excel spreadsheet, so SOMONCA Inc. can use this as a stakeholder database in the future.

When the interviews were conducted, the recordings were viewed and full transcriptions were written (See *appendix V*).

Five categories were created to classify the nature of all quotes given by the stakeholder; Background in ecology, Relation to SOMONCA Inc., Interest to facilitate, Possibility to facilitate and Ideal ecological program.

Quotes were transferred to excel, and subjected to coding (See *appendix V*). Firstly, open coding\* provided individual quotes with a label to identify the topic that is discussed. After this, axial coding\* took place in order to discover the underlying context. The last type of coding; selective coding\*, explored overlapping selectively coded quotes, and assigned a theme to them.

In order to determine the position of each stakeholder, regarding interest in the program and the capacity to facilitate, the selective coding themes were transferred to an analysis matrix (see *table 2*). Here, for each stakeholder, all quotes that belong to the same selective coding theme, were summarized. This enabled the possibility to draw conclusions for each stakeholder separately (conclusion 2), and for each selective coding theme separately (conclusion 1). These two conclusions together will form a combined conclusion (conclusion 3).

Table 2 - Analysis matrix

|               | Background in ecology | Relation to SOMONCA Inc. | Interest to facilitate | Possibilities to facilitate |       |         | Ideal ecological program |               |
|---------------|-----------------------|--------------------------|------------------------|-----------------------------|-------|---------|--------------------------|---------------|
| Stakeholder   | Executed method       | Familiarity              | Willingness            | Role                        | Needs | Concern | Desired method           | Conclusion 2: |
|               |                       |                          |                        |                             |       |         |                          |               |
|               |                       |                          |                        |                             |       |         |                          |               |
|               |                       |                          |                        |                             |       |         |                          |               |
|               |                       |                          |                        |                             |       |         |                          |               |
| Conclusion 1: |                       |                          |                        |                             |       |         |                          | Conclusion 3: |

These individual stakeholder conclusions (conclusion 2) provided the opportunity to assign each stakeholder to a position in the stakeholder matrix (See *table 3*) according to their answers given in the analysis matrix. Their position depends on their interest to either be informed about the educational program, participate in the execution of the program, or collaborate with the program. Next to that, their capacity to facilitate decides the influence that they have in the education program.

\* = See glossary



The stakeholder matrix enables SOMONCA Inc. to visualize the possible and most likely partnerships that they could form, and on which level of participation they should work.

This process identified stakeholders that are able and willing to work with the educational program (Box A in the stakeholder matrix). The stakeholders that are positively interested towards a collaboration with the program are taken into account for answering sub-question 2.

Table 3 - Stakeholder matrix, in which stakeholders in box A are willing to collaborate within the educational program and have a high capacity to facilitate the program. Stakeholders in box B are willing to participate in the execution of the educational program, but do not have a big capacity to facilitate the program. Stakeholders in box C are informed of the educational program and have influence on structuring the educational program by providing answers in the interviews. Stakeholders in box D are not interested in the educational program and have little to no capacity to facilitate the program

|                           |                        | Interest       |                                      |                                    |   |
|---------------------------|------------------------|----------------|--------------------------------------|------------------------------------|---|
|                           |                        | Not interested | Somewhat interested<br>(inform only) | Reasonably interested<br>(Partake) | Significantly interested<br>(Collaborate) |
| Possibility to facilitate | Significantly possible | C              |                                      | A                                  |   |
|                           | Reasonably possible    |                |                                      |                                    |   |
|                           | Somewhat possible      | D              |                                      | B                                  |   |
|                           | Not possible           |                |                                      |                                    |   |

A combination of data from **process 1, 2, and 4** in the flowchart provides an answer to sub-question 2. In order to answer the research question, the answers to both sub-questions were combined in the final process.

### Process 5: Meeting with collaborating stakeholders

Once stakeholders that are willing to collaborate were identified in **process 4**, the literature study in **process 2** had given insight in possible structures, and the needs and capacity of the target group had been established in **process 3**, a design was made for the structure of the educational program of SOMONCA Inc. This was done by organizing a stakeholder meeting, for which all stakeholders that are placed in box A or box B of the stakeholder matrix (see figure 4) were invited.

In this stakeholder meeting, an overview was presented about what data has been collected so far, and possible beneficial collaborations that can be created/maintained. Next to possible collaboration, the possibilities to integrate the educational program in the curriculum of the target group was discussed.

To truly make use of participatory management, the stakeholders were asked to actively cooperate. This was done by creating multiple work forms that can be found in the meeting itinerary (See *appendix VI*). The results of the stakeholder interviews gave insight into what form this active cooperation would take. This has identified possible pitfalls, but also opportunities that they might not have thought about previously.

After the structure for the educational program had been identified, the data from the target group surveys provided insight in the needs and capacity of the target group, and an outline for a curriculum was developed.

A combination of the structure, provided by the stakeholders, and the outline for the curriculum, provided by the target group, gave an answer to the research question;

*How can SOMONCA Inc. structure its educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management?*

Besides that, this process creates a feeling of ownership for the stakeholders. The final product is something that they have actively helped create and shape, therefore they are more likely to care for the program now that the intervention period is over.

## 2.4 Ethics

When working in a foreign culture and especially with students as a target group, certain ethics are important to take into account. Lund Research (2012) describes five principles of research ethics that apply to thesis research on bachelor or masters level. According to these principles it will be described how this research implemented ethics in the Dominican Republic.

- **Minimize the risk of harm:** Because this research was aimed at future collaboration between SOMONCA Inc. and the target group, including their teachers, minimizing harm in a physical or emotional way was of essential value to build a sustaining relationship. This is why no participants were ever rushed or persuaded to answer and every interview question was scanned for its content, and how the person that was interviewed reacted to these questions. Also, survey moments were scheduled in a way that minimized harm to the participants.
- **Obtain informed consent:** Informed consent means that participants understood that they were taking part in research and what this research required of them. This was achieved by being transparent and honest at all times and clearly stating the purpose of the research before starting an interview or handing out a survey.
- **Protect anonymity and confidentiality:** Data obtained from the participants can be viewed as sensitive and personal, which required that this information was handled accordingly. All obtained data was kept within the boundaries of this research and was not used for other purposes than to provide an answer to the research questions.
- **Avoid deceptive practices:** Just as the second principle, being transparent and honest at all times about the role and value of the participants was of crucial importance to prevent situations where participants could feel deceived or treated dishonestly. The goal and purpose of every encounter with the participants was clearly stated at the beginning.
- **Give the right to withdraw from your research:** At all times, participants should feel that they deliberately are partaking in this research and that they have the option to distance themselves from it. Even though it was preferred that participants are participating out of own motivation, they should never have felt trapped or hurt in any way

Next to these five principles, other ethics were also taken into account. There are some cultural differences between The Netherlands and the DR. A major difference was the Spanish language and the customs that came along with it. When communicating with participants through translators or questionnaires it is advised to be cautious for insulting behavior, intentionally or not. Local traditions and customs were revised before communicating with participants. This also includes behavioral issues such as the level of directness in approaching people.

In a country like the DR it was also important to keep the data collection as dynamic as possible, due to these cultural differences (punctuality is not the most important aspect of daily life in the DR) (SOMONCA Inc., 2018). This means that the data collection was flexible to change, and therefore had a time-frame as broad as possible, without compromising the quality of the writing process.

## 2.5 Boundaries

Given the time-scope of this research, there were certain boundaries to the scope of this research, since only high school children in grade 1-2-3, and stakeholders for the educational program were taken in account for data collection. SOMONCA Inc. identified these children with their age group to be the most important target group for this research. It was therefore not possible to extend the outcome of this research to other demographic groups. It is however possible to follow the methodology of this research to recreate this research for other demographic groups.

This research also was subjected to intercultural communication. Precision and caution are two very important aspects that were considered while gathering data. Firstly, because data collection methods were prepared in a foreign language, which the researchers did not fluently speak. Secondly, the data collection took place in a culture that is foreign. This means that the culture of the stakeholders and target group was studied in order to avoid conflict or uncomfortable situations. It might have caused biased answers if not taken into account. Therefore, the researchers were constantly aware of their position, and had a good sense of questioning techniques in order to detect cultural differences and properly respond to those.

### 3. Theoretical framework

The goal of this chapter is to provide background information, theories, and models about the key concepts of this research, as well as scientific justification for considering them. The considered key concepts for this research are the target group, the stakeholders and participatory management.

#### 3.1 Importance of target group

One of the key concepts that has to be considered in this research is the target group, consisting of adolescents (grade 1-2-3 in high school in the Province of Puerto Plata, DR). They are considered a key concept because the goal of SOMONCA Inc.'s education program is to positively influence this target group. Next to that, literature suggests that involving the target group into the creating process of projects and programs strengthens their sense of commitment to the project or program. This would make them seem like an important stakeholder, but for this research, they will not be regarded as a stakeholder, but solely as the target group since the stakeholders for this research are the ones who are able to facilitate and execute the program. This does not mean that the target group will not be taken into account in forming the structure of the program, they will be taken into account by analyzing the surveys that they have filled out in process 3 in the methodology.

When the target group consist of adolescents, it is important to work with them through capable schools, universities, or other agencies. This will contribute to efficiency, perception, and program utilization. A participatory research project with adolescents revealed that involving them strengthened the accuracy and depth of the research (ICRW, 2003). In addition, it strengthens community capacity to respond to adolescent needs as well as promoting a feeling of ownership for the program or project. (Mathur et al., 2004). Other sources state that it also improves their critical thinking and reasoning skills, and allows them to advocate on their own behalf.

The next subchapter will cover the importance of involving stakeholders in the decision making process of a project or program, and is supported by literature.

#### 3.2 Importance of stakeholders

It is desirable and absolutely necessary for an organization to collaborate inter-organizationally in order to achieve the goals that the organization has set for themselves, and SOMONCA Inc. is no exception. This means that relevant stakeholders have to be considered for collaborations (Burt, 2004). In the case of this research, that means local youth organizations as well as high school directors. This will enhance the resource management of the organization, capitalize on complementary capabilities, achieve outreach on a higher scale, and enhance innovativeness. Positive effects on performance can be established on the long-term by creating networks with high density, so that information is exchanged optimally, and development of common norms takes place (Soda *et al*, 2004). In addition, there are two main reasons for an organization to seek such collaboration. Firstly, collaboration allows for an organization to achieve certain goals that could not be accomplished in any other way. This also means that the bigger scale of the impact is more beneficial to the goal than that of one single organization. Secondly, the collaboration might lead to an adaptive advantage. This is certainly the case in environmentally complex situations (Emery & Trist, 1965; Pfeffer & Salancik, 1978).

As can be read in the problem description chapter, this research will consider involving the stakeholders for the educational program by applying participatory management. Literature suggests that the stakeholders need to contribute in the decision-making process to make sure that changes



do not occur from the center to the outer boundary, but that constant discussion are integrated in the program and social movements, from low to high. (Savage, 2008)

There are multiple theories existing in literature that suggest models and theories on why participatory management exists in organizations. The next chapter will cover two of these theories that were selected on their relevance to this research. Participatory management can take place on multiple levels according to the ladder of participation from *Arnstein, 1969*. Each theory will try to prove that the choices made in the methodology will work towards organizational effectiveness and clarity regarding the level of participation.

### 3.3 Theories of participation

#### Social systems theory

The social systems theory as described by Getzels and Guba (1957), uses social systems theory in a descriptive way. They assume there are two different dimensions to it. The idiographic, or personal, dimension, and the nomothetic, or organizational, dimension. They aim to describe how organizations and their people working in it, work. This concept is normally applied solely to organizations, but in this case, it can also be used to describe the educational program of SOMONCA Inc. as the nomothetic dimension, and their stakeholders as the idiographic dimension. A conceptual model of this theory can be found below (see *figure 5*).

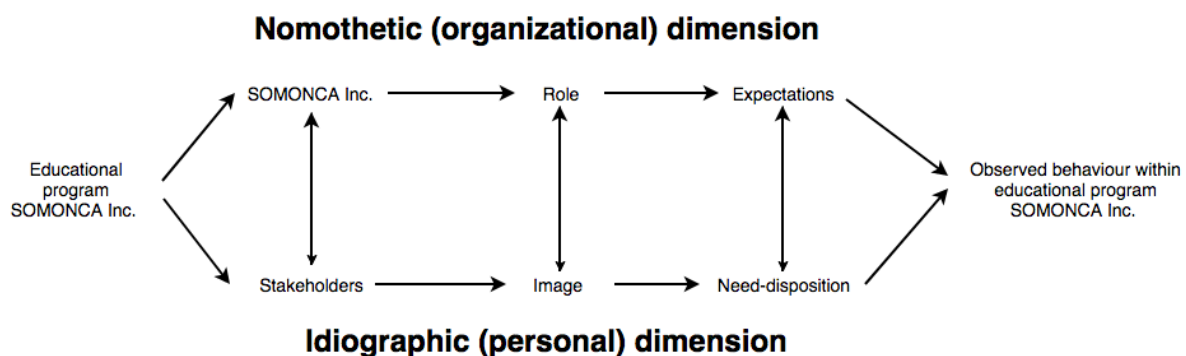


Figure 5 - Conceptual model of the Social Systems Theory

The nomothetic dimension is assigned roles, which are in turn assigned role expectations. The roles are defined to fulfill the goals that the educational program has set, and these are in turn tied to expectations formed by these roles. These roles are not designed for one individual personality, they are adaptable to each specific organization or situation. Some roles or behaviors are considered mandatory, while other are forbidden. Therefore, it is necessary to research which roles suit best to your organization or educational program.

The idiographic dimension displays individuals, in this case stakeholders, who also have certain goals that they achieve by expressing their personality or image, and pursue by their need-disposition.

This means that in the nomothetic dimension, the educational program of SOMONCA Inc. tries to socialize its stakeholders to adapt to their own image. While from the idiographic dimension, the stakeholders try to form the educational program of SOMONCA Inc. to their own image. Behavior in such an educational program is therefore a product of the interaction between the nomothetic dimension and the idiographic dimension. When the stakeholders conform to the roles and expectations of the educational program, it will lead to organizational effectiveness. When the educational program takes the image and need-disposition of the stakeholder in mind, it will lead to stakeholder efficiency and individual satisfaction with the educational program of SOMONCA Inc.

This theory therefore argues in favor of participatory management on such a level that the nomothetic dimension is in equilibrium with the idiographic dimension, and information is exchanged optimally. This proves that the methodology that was used in this research, works towards organizational effectiveness by creating the possibility for interaction between the nomothetic and idiographic dimension.

### Leader – participation theory

This theory supports the thought that every situation or relation requires a different approach. Vroom and Yetton have defined this in a model to relate leadership behavior and participation to decision making (Hellriegel *et al.*, 2003). It contains a set of questions that have to be answered to reach an outcome that is favorable to the specific situation for both parties, the leader (SOMONCA Inc. in this case), and the participants (the stakeholders in this case). The outcomes are divided in five categories that define the amount and form of participation in decision making. Leadership behavior should be adjusted according to the task structure. It is a normative model, which means that the questions should be answered sequentially in order to reach the category of leadership that should be applied to the situation. This model can be seen in the figure below (see figure 6).

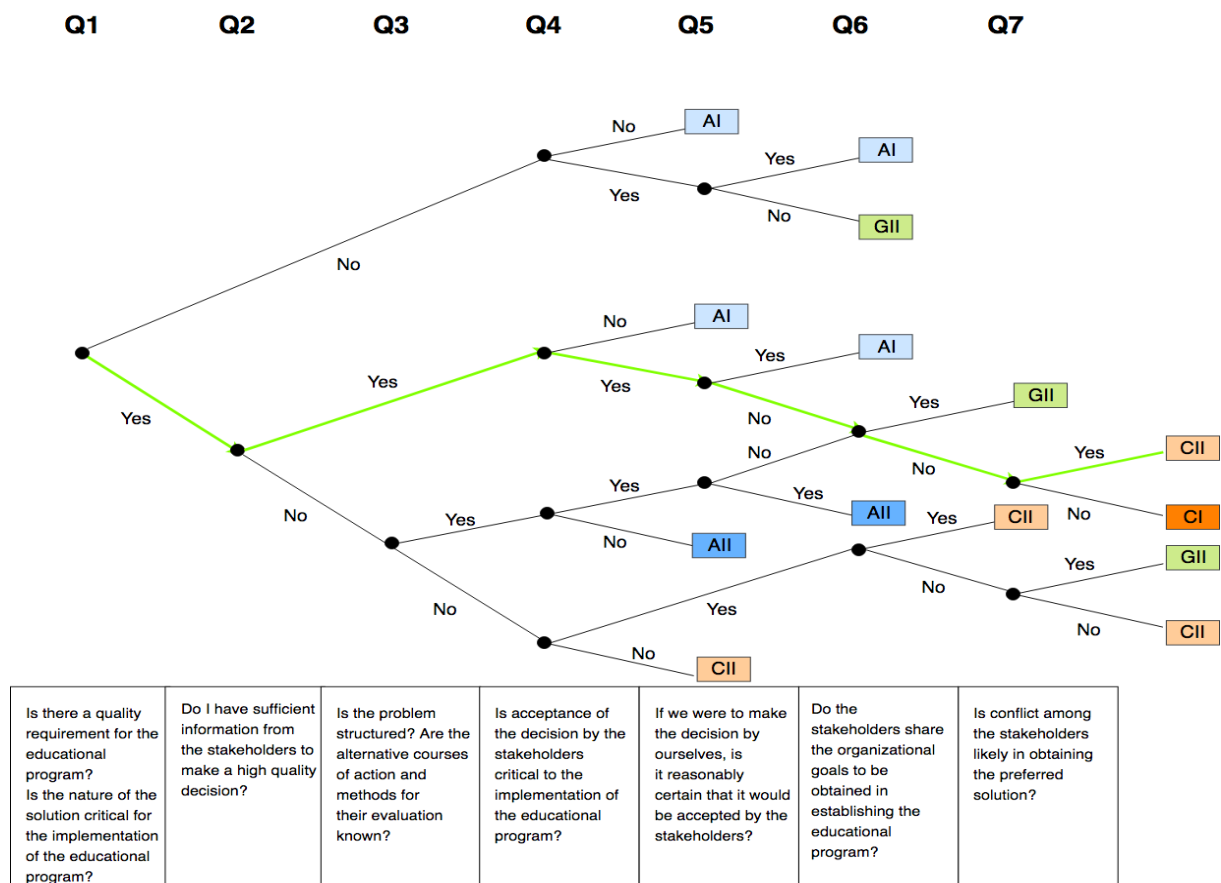


Figure 6 - Normative model leader- participation theory

Robbins et al. (2013) describes that all five outcome categories are applicable for different situations. The categories are explained as following:

Autocratic (AI): You solve the problem or make a decision yourself using information available to you at that time.

Autocratic (AII): You obtain the necessary information from subordinates, and then decide on a solution to the problem yourself. You may or may not tell subordinates what the problem is in getting the information from them. The role played by your subordinates in making the decision is clearly one of providing the necessary information to you, rather than generating or evaluating alternative solutions.

Consultative (CI): You share the problem with relevant subordinates individually, getting their ideas and suggestions without bringing them together as a group. Then you make the decision which may or may not reflect your subordinates' influence.

Consultative (CII): You share the problem with your subordinates as a group, collectively obtaining their ideas and suggestions. Then you make the decision which may or may not reflect your subordinates' influence.

Collaborative (GII): You share the problem with your subordinates as a group. Together you generate and evaluate alternatives and attempt to reach an agreement (consensus) on a solution.

The (green) line that was followed to provide a leadership- participation level for this research can be seen in *figure 6*. Answering the questions was based on the decisions that need to be made for structuring the educational program. The leadership behavior and participation level has been established as CII (Consultative). This is in line with the methodology chosen for this research, and applying participatory management. This means that the stakeholder meeting (or process 5 from the methodology flowchart) is justified by the leader- participation theory, and that a group meeting should be organized, but SOMONCA Inc. has the final power to make decisions which may or may not reflect the stakeholders' ideas.

## 4. Results

### 4.1 Process 1

The stakeholders were identified as people or organizations that are affected by, or affect, the educational program of SOMONCA Inc. (high school teachers/headmasters, NGO's, youth organizations). The target group was identified as high school students in grade 1-2-3 in the Province of Puerto Plata.

The first set of stakeholders were obtained by getting permission to execute this research from the Regional Educational Office for the province of Puerto Plata, from the Ministry of education (*see appendix II*). This provided us with a list of all the seven districts in the province of Puerto Plata. The districts were approached to seek permission to execute this research and visit the high schools in each district. Out of seven districts, permission was obtained from 5. The two other districts that did not give permission could not consent to this research due to the distance to the headquarters of SOMONCA Inc. for both the stakeholder meeting (**process 5**), as well as the execution possibilities of the educational program.

Each district office that gave permission, provided names and addresses of all high schools in the district. Of these names, 2 high schools were randomly chosen from the list of high schools that was provided by the district to visit in each district, who will hereafter be referred to as stakeholders. Since the number of high school stakeholders was not sufficient to obtain a reliable sample size, more high schools in the nearby vicinity of the SOMONCA Inc. headquarters were sought and approached.

The second set of stakeholders was sought in the form of organizations in the province of Puerto Plata that work with the target group. Each organization was approached by email and asked to participate. In total, six organizations were approached, of which two replied and participated in this research.

This has led to twelve high schools and two organizations as stakeholders for this research.

### 4.2 Process 2

The literature that was obtained during the study and qualified as useful has been integrated in **Process 4** and **process 5** (as inspiration for the stakeholder interviews and possible forms of an educational program.). Literature suggested that the form of executing the educational program is very important for the way the target group receives information. A co-curricular\* program is recommended when an organization wants to establish a program that focuses on (high school) students (Andrews, M. 2013; McLure & McLure, 2000). Furthermore, according to the Tbilisi Declaration about environmental education, all educational programs regarding the environment should be structured around the following principals:

- Consider the environment in its totality—natural and built, technological and social (economic, political, cultural- historical, ethical, aesthetic).
- Be a continuous lifelong process, beginning at the preschool level and continuing through all formal and non-formal stages.
- Be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective.
- Examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical areas.
- Focus on current and potential environmental situations while taking into account the historical perspective.
- Promote the value and necessity of local, national and international cooperation in the prevention and solution of environmental problems.
- Explicitly consider environmental aspects in plans for development and growth.

\* = See glossary

- Enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences.
- Relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years.
- Help learners discover the symptoms and real causes of environmental problems.
- Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem- solving skills.
- Utilize diverse learning environments and a broad array of educational approaches to teaching, learning about and from the environment with due stress on practical activities and firsthand experience. (UNESCO, 1977)

A case study from the Dominican Republic has found that when including local stakeholders in environmental management, it is best to have an issue-driven approach to get all the stakeholders to fully understand the scope of the problem, and have them participate more effectively (UNDP, 1999).

These findings have been used to shape the questions of the stakeholder interviews of **process 4** and the activities of the stakeholder meeting of **process 5**.

### 4.3 Process 3

From the fourteen stakeholders that were interviewed, twelve were high schools. The high schools were asked to assist in distributing surveys among their students. All students that were asked to participate filled in the survey.

A total of 401 students have answered the questions of which the following results can be presented. The open questions on the surveys were categorized to make them more presentable. This was done by using a sub-sample of three schools to look at the answers that were given for each question. For each open question, categories were made to assign each answer to. All answers were written down under the created categories. If there was an answer that did not fit the existing categories, a new one was created. If a new category was created all answers to the open questions were scanned for accurate assignment. This has led to the following categories (see *table 4*).

Table 4 - Classification categories for the open questions

| Question | Categories for classification   |
|----------|---|
| 2        | Friends, Arts, Sports, Household, Relaxing, Learning, Playing, Eating, Religion, Family, Working, Animals, Traveling, After school clubs, None  |
| 3        | Sports, Engineering, Teaching, Social work, Governmental work, Labor, Medical, Service industry, Business world, Science, Entertainment, Aviation, Tourism, No idea                   |
| 6        | Yes,<br>No, too many hours,<br>No, too many classmates,<br>No, irrelevant subjects,<br>No, needs better management  |
| 9        | All, Ecosystems, Flora & Fauna, Animals, Water (fresh and marine), Mountains, Forests, Threats/opportunities, Biology, Weather, Minerals, Survival, Endemic species, History, Nothing |



The outcomes of the surveys are not tested for significance, since the students are able to choose multiple answers, and the goal of the survey is to display their opinion, which does not need scientific significance to be taken into account.

The survey questions provided an answer the three variables which provide an answer to sub question 2:

### Variable 1: The subject they would like to learn about

This variable is answered by questions 1, 7, 8 and 9 which are presented in the following graphs:

#### Question 1

When questioned which school subjects the students like most, *Biology/Natural science* (45%), *Languages* (41%) and *Sports/Gym* (41%) were chosen most often. See figure 7.

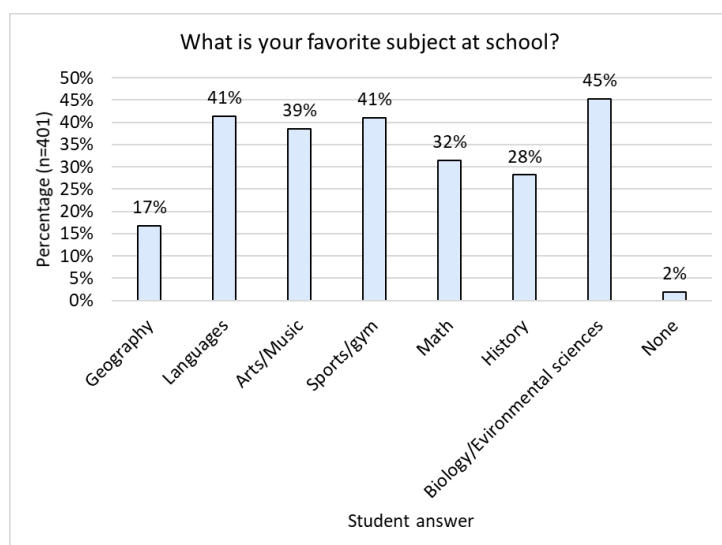


Figure 7 - Favorite school subjects of the students

#### Question 9:

When questioned what the students would like to learn about the nature of the Dominican Republic, *Everything* (26%), *Animals* (16%) and *Ecosystems* (13%) were answered most. See figure 8.

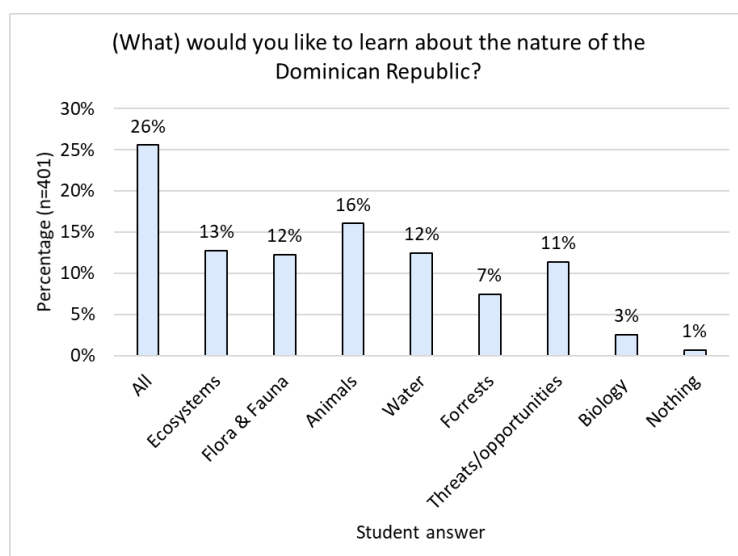


Figure 8 - What the students would like to learn about the nature of the Dominican Republic

**Question 7:**

When questioned if the students like the course Natural Science, 90% answered *Yes* and 10% answered *No*. See *figure 9*.

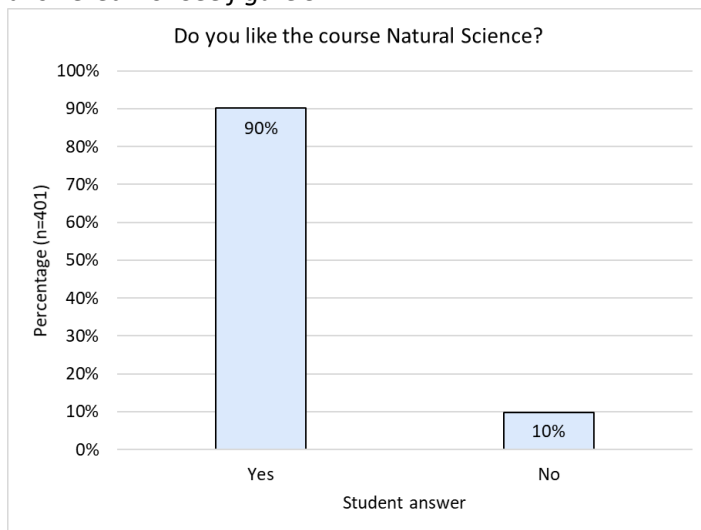


Figure 9 – Likeability of the course Natural Science

**Question 8:**

When questioned which ecological systems the students would like to learn about, 45% answered that *All three* systems interests them. See *figure 10*.

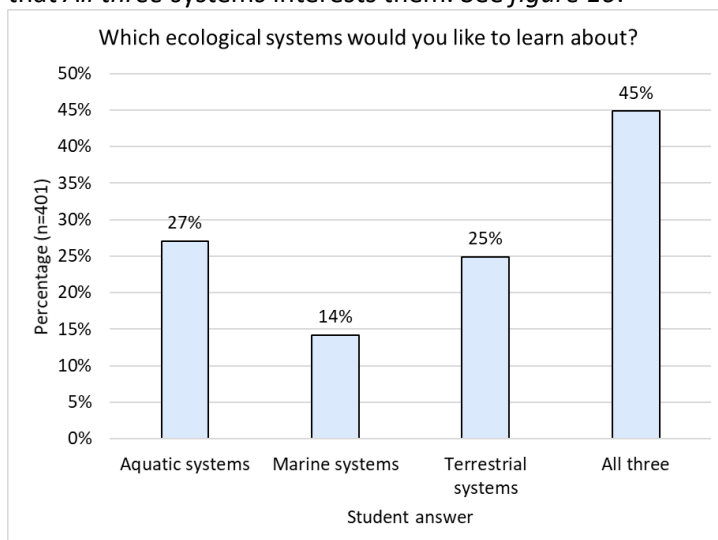


Figure 10 - Interest in ecological systems

**Conclusion variable 1:** The results show that the students like to learn about *Biology/Natural Science*, *All three* ecological systems and everything about the nature of the Dominican Republic.

## Variable 2: How they would like to learn

This variable is answered by questions 4, 5, 6, and 10 which are presented in the following graphs:

### Question 4:

When questioned how the students like learning at school, *Reading* (63%), *Group projects* (59%) and *Excursions* (51%) were answered most. See *figure 11*.

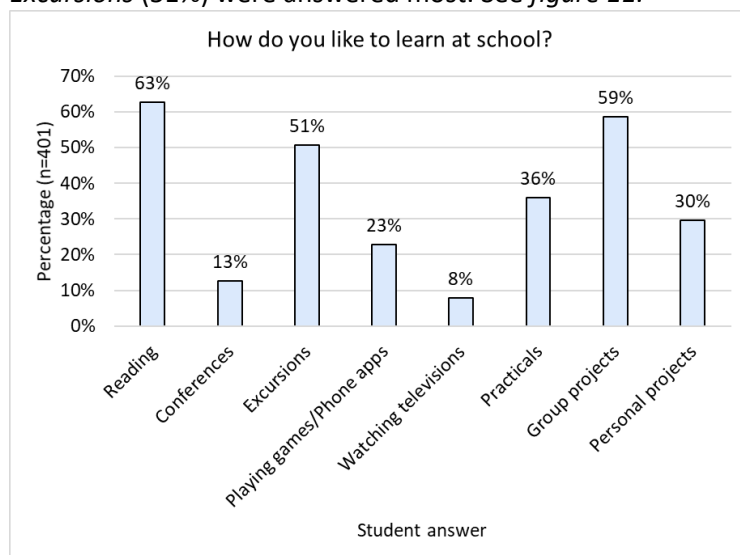


Figure 11 – Preferred learning method at school

### Question 5:

When questioned if the students think the level of education in their class is good, *Yes, it is good* (93%) was answered most. See *figure 12*.

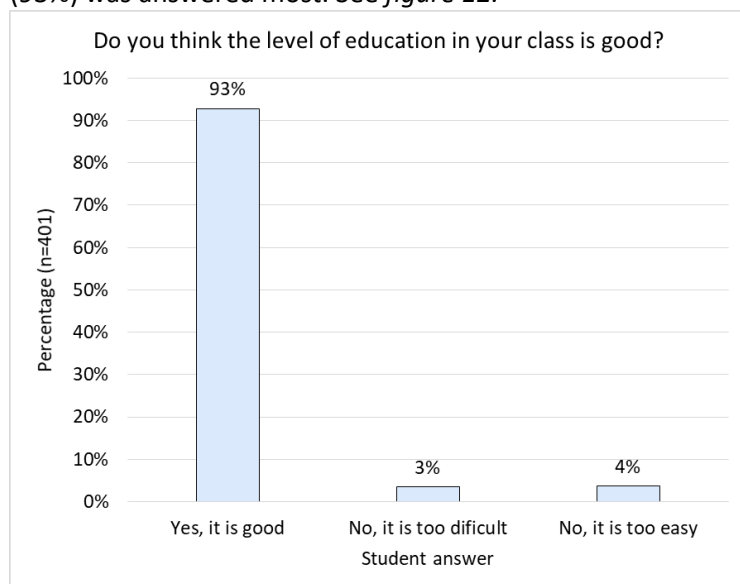


Figure 12 - Satisfaction of the education level

**Question 6:**

When questioned if the students like their classroom environment, *Yes* (83%) was answered most. When answered *No*, *too many hours* (11%) was answered most. See *figure 13*.

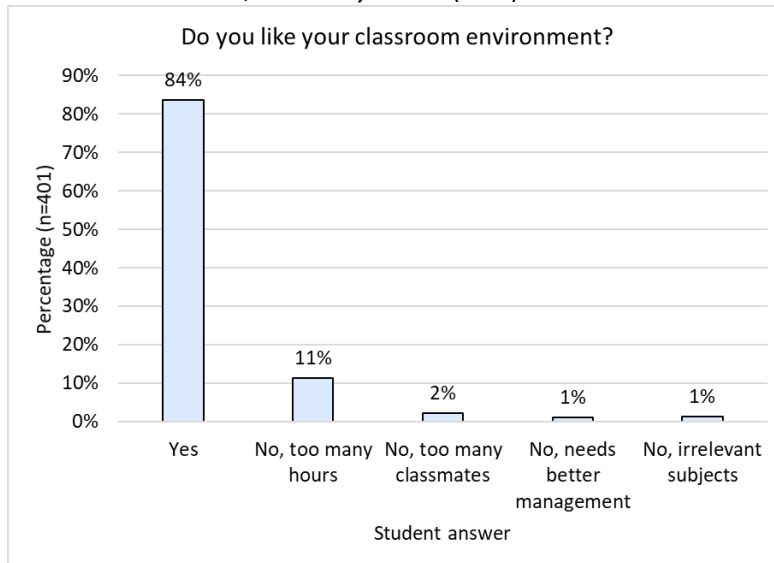


Figure 13 – Satisfaction of the classroom environment

**Question 10:**

When questioned if the students would like to learn about nature inside school or by activities outside school, *In school* was answered 50% and *outside school* was answered 50%. See *figure 14*.

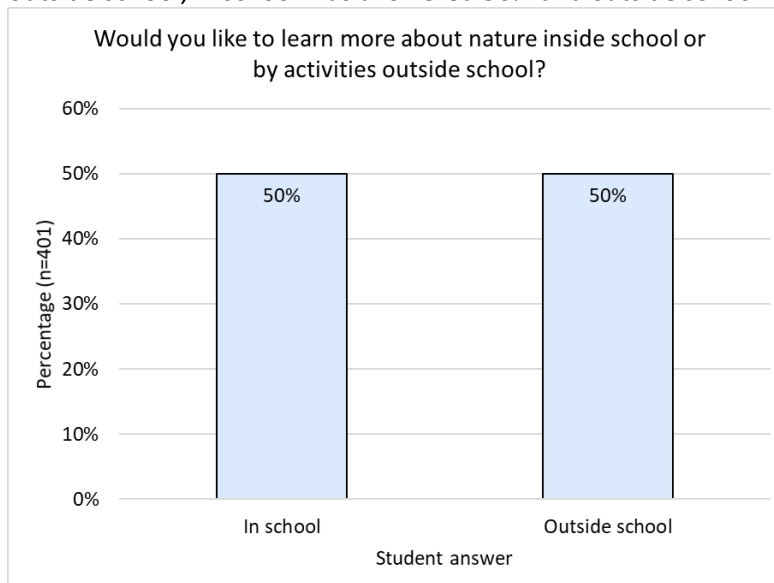


Figure 14 – Preferred learning environment

**Conclusion variable 2:** The students prefer to learn by reading, group projects and excursions, both inside and outside the school building equally. The students think the level of education is good and they like their classroom environment.

### Variable 3: Personal interests

This variable is answered by questions 2 and 3 which are presented in the following graphs:

#### Question 2:

When questioned what the hobbies of the students are outside school, *Learning* (39%), *Sports* (30%) and *Relaxing* (21%) were answered most. See *Figure 15*.

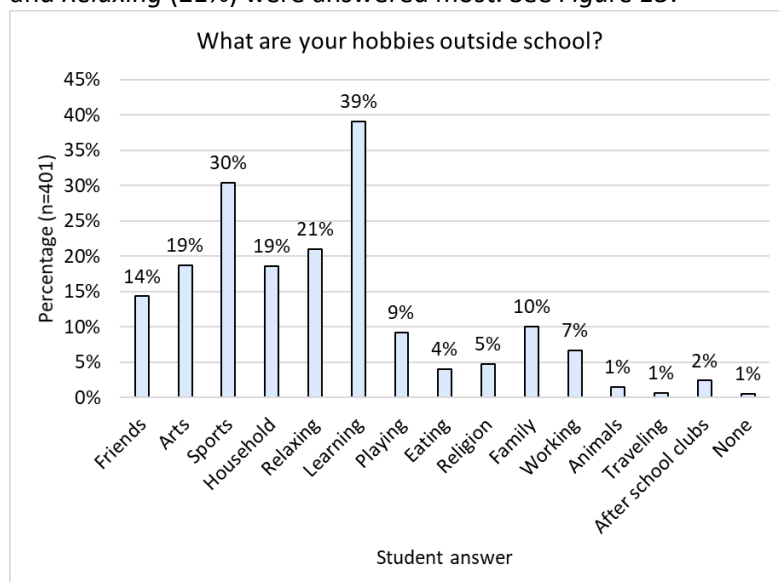


Figure 15- Hobbies of the students outside school

#### Question 3:

When questioned what the students want to be after they graduate, *Medical* (24%), *Teaching* (22%) and *Engineering* (17%) were answered most. See *figure 16*.

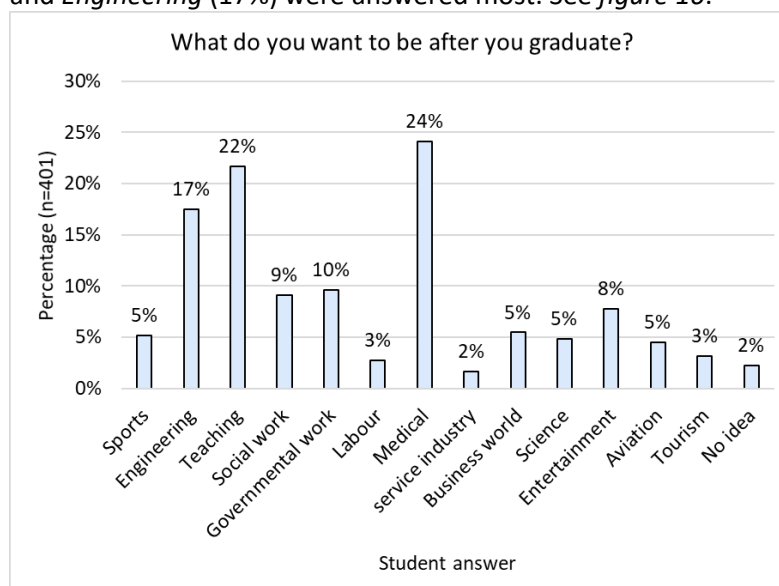


Figure 16 - What the students want to be after they graduate

**Conclusion variable 3:** The most answered hobbies of the students are learning, sports and relaxing, and after graduation most of them want to work in medical, teaching or engineering fields.



#### 4.4 Process 4

In **Process 1** (stakeholder identification) fourteen high schools were identified as potential stakeholders\*, divided over seven districts. Five districts gave permission, which led to ten high schools that the researchers were permitted to enter. Two in each of the five permitted districts. Of these ten, seven were able to provide interviews. The ones that were unable could not do so because they feel the distance to the SOMONCA Inc. headquarters (in the district Sosua) is too big to maintain an educational program. Therefore, more potential stakeholders schools were sought in the districts that are nearby the headquarters of SOMONCA Inc.. This has led to twelve high schools and two organizations that were interviewed and identified as stakeholders for this research\* (see *table 5*).

Table 5 - Identified stakeholders for this research

| Number | Name stakeholder                | Description  | District     |
|--------|---------------------------------|--|--------------|
| 1      | Liceo Madre Theresa De Calcutta | High school  | Montellano   |
| 2      | Liceo Sabaneta De Yasica        | High school  | Sosua        |
| 3      | Politécnico José Morel          | High school  | Sosua        |
| 4      | Liceo Israel Brito Bruno        | High school  | Imbert       |
| 5      | Liceo Eduardo Brito             | High school  | Puerto Plata |
| 6      | The DREAM Project               | Non-profit organization focusing on education of children of the Dominican Republic. | Sosua        |
| 7      | Liceo La Cienega                | High school  | Sosua        |
| 8      | Liceo Gregorio Luperon          | High school  | Sosua        |
| 9      | Liceo Delia Gomez               | High school  | Altamira     |
| 10     | Liceo Jose Dubeau               | High school  | Puerto Plata |
| 11     | Rugama tours                    | Ecological park with educational tours on sustainability and ecological farming.     | Sosua        |
| 12     | Liceo Antera Mota               | High school  | Puerto Plata |
| 13     | Liceo Gregorio U.G.             | High school  | Puerto Plata |
| 14     | Liceo Javier Martinez           | High school  | Puerto Plata |

The identified stakeholders for this research were interviewed according to the template (See *appendix VII*) to obtain information on the following three subjects:

- Need and willingness for communication with SOMONCA Inc..
- Identify the willingness to participate in the execution of the educational program of SOMONCA Inc.
- Capacity to facilitate and collaborate with creating the structure, and the execution of the educational program of SOMONCA Inc..

The transcriptions have been assigned selective coding (See *Appendix V*), which has led to the following themes: Executed method, familiarity, willingness, role, needs, concern, desired method. The selective coding themes have been assigned to an analysis matrix (See *Appendix VI*). Here, the selective coding themes are categorized under the categories that were created to classify the nature of all quotes given by the stakeholder for this research: background in ecology, relation to SOMONCA Inc., interest to facilitate, possibility to facilitate and ideal ecological program.

To give a clear and concise overview, the following table depicts the categories, and the themes that have been assigned to them (See *table 6*).

Table 6 - Selective coding themes that are connected to the categories

| Category                    | Theme (Selective coding) |
|-----------------------------|--------------------------|
| Background in ecology       | Executed method          |
| Relation to SOMONCA Inc.    | Familiarity              |
| Interest to facilitate      | Willingness              |
| Possibilities to facilitate | Role                     |
|                             | Needs                    |
|                             | Concern                  |
| Ideal ecological program    | Desired method           |

For each selective coding theme a conclusion has been drawn based on the summarized answers that each stakeholder has given (**conclusion 1**).

### **Executed method**

Most stakeholders have executed some activities regarding ecology. Some only inside school in the form of a project, others have executed excursions. There is only one stakeholder that has done no activities.

### **Familiarity**

Of all the stakeholders only Rugama Tours is familiar with SOMONCA Inc.

### **Willingness**

All the stakeholders stated to be interested or willing towards participating in the program.

### **Role**

All the stakeholders can play a role as facilitator, some to a bigger extent than others. Flexibility is also not a problem for most stakeholders. Only Liceo Javier Martinez has mentioned nothing about a role they see for themselves.

### **Needs**

The needs for most stakeholders come down to permission from either the district office or the regional office, more information on the content of the program, and the ability to adjust the content to the needs of the students and the capability of the stakeholders to facilitate.

### **Concern**

Although there were not many concerns from the stakeholders, the three stakeholders that have expressed concerns, describe responsibilities that come with executing excursions (time, money, danger).

### **Desired method**

The program needs to be integrated into all the schools, so that the students develop a collective responsibility to care for the environment. It is for most stakeholders very important that the program extends into the local communities by knowledge sharing by the students. This will happen if the students are capable of critical thinking with a positive attitude.

For each individual stakeholder a conclusion for the selective coding has been drawn based on the summarized answers that each stakeholder has given (**conclusion 2**). See *table 7*.

*Table 7 - Individual stakeholder conclusions (conclusion 2)*

| <b>Stakeholder</b>                     | <b>Conclusion 2</b>   |
|--|---|
| <b>Liceo Madre Theresa De Calcutta</b> | Liceo Madre Teresa de Calcutta has executed activities inside and outside the classroom. They are willing and able to facilitate everything. They would need permission and extra teachers depending on the content of the program. They are concerned about their flexibility regarding excursions. They want to teach the students about the theories behind ecology.   |
| <b>Liceo Sabaneta De Yasica</b>        | Liceo Sabaneta De Yasica has executed activities in theme weeks or months. They are willing and able to facilitate people and time. But they need money to execute excursions. They are concerned about the dangers of excursions. They want the content of the program to focus on recycling and reforestation.  |
| <b>Politécnico José Morel</b>          | Liceo Politecnico Jose Morel has executed workshops to make students care for ecology. They are very willing to participate. They can implement and promote the program but would need more information, adjustability and SOMONCA Inc. to take responsibility for the students. They want to reach consensus in all schools which would lead to more care for the environment.   |
| <b>Liceo Israel Brito Bruno</b>        | Liceo Israel Brito Bruno has not executed any concrete activities. They are willing to become a partner in the program. They are able to facilitate if they have permission and the ability to make adjustments to their needs. They want to orientate the students on taking care of the environment and local communities.  |
| <b>Liceo Eduardo Brito</b>             | Liceo Eduardo Brito has executed activities in-and outside school, also in collaboration with other high schools. They are able to facilitate, but have difficulties with executing excursions due to the danger. They need permission and the ability to adjust the content. There is concern for parental funding for extra excursions. They want to educate the students on topics that go beyond the teachers' knowledge. |
| <b>The DREAM Project</b>               | The Dream Project has executed multiple projects. They are interested in collaboration and very flexible in their ability to facilitate. They need adjustability. They want it to be fun, interactive and experiment based.   |
| <b>Liceo La Cienega</b>                | Liceo Cabarete has only taught ecology within the natural science course. They are willing to receive information because they are not able to facilitate much. They need permission, extra teachers and adjustability. They want to train children to be able of critical and positive behavior to work towards a healthy environment.   |
| <b>Liceo Gregorio Luperon</b>          | Liceo Gregorio Luperon has executed several ecological excursions. They feel the obligation towards Mother Nature to participate. They are able to facilitate classrooms and teachers. They need districtal or regional permission, more information about the content of the program and the ability to adjust it. They want to teach students about the importance of preserving their surroundings.                        |
| <b>Liceo Delia Gomez</b>               | Liceo Delia Gomez has executed some activities focused on caring for the environment. If they want to execute SOMONCA Inc.'s program, they need districtal permission to do so. They are able to facilitate with in-school necessities. With this program, they want to teach more about pollution.   |

|                              |   |
|------------------------------|---|
| <b>Liceo Jose Dubeau</b>     | Liceo Jose Dubeau has executed extracurricular projects. They are willing and very flexible in their schedule. They need adjustability to acknowledge the individual student, and more information. They want to create morals for the students that will lead to consciousness that can be passed on.  |
| <b>Rugama tours</b>          | Rugama Tours has executed multiple initiatives with SOMONCA Inc.. They are very willing to participate and are able to facilitate. They want to start an organic vegetable plantation for the children to see the processes and help in caring for nature.  |
| <b>Liceo Antera Mota</b>     | Liceo Antera Mota has executed activities in-and outside school. They are willing and flexible in participation, and are able to facilitate time and teachers. They do need more information, districtal or regional permission, and adaptability to meet the curricular standards. They want to teach students about ecology from a young age. |
| <b>Liceo Gregorio U.G.</b>   | Liceo Gregorio U.G. has executed projects within school that focus on conservation. They are willing to participate because they feel the obligation towards Mother Nature to do so. They need districtal and regional permission and adaptability. They want to teach the students about ecological consciousness and critical behaviour.      |
| <b>Liceo Javier Martinez</b> | Liceo Javier Martinez has executed multiple activities regarding nature preservation. They are very willing to participate and only need adjustability. They want to implement it in all school areas and cover all aspects of ecology.   |

A combination of conclusions 1 and 2 aids in providing the answer to sub-question 2 (conclusion 3): All stakeholders for this research see the need for educating the students about ecology. This can be seen by the efforts that they have executed, in varying degrees, in the form of projects and excursions with an ecological theme. None of them are familiar with SOMONCA Inc. (except Rugama Tours), but despite this, they are all very interested in, or willing towards participation in the program. The role they can take is that of facilitator, with most stakeholders having no problems facilitating time, teachers and classrooms. The stakeholders for this research indicated there are various needs before being able to implement the program; most being permission, more information, and the ability to adjust the program to their needs and that of the target group. Some concerns were given regarding execution of excursions. If the program is able to integrate into all schools, the target group can develop a collective responsibility to care for the environment, and develop the capability for critical thinking with a positive attitude, which will lead to knowledge spreading to the local communities.

The individual stakeholder conclusions (**conclusion 2** of the analysis matrix) have given insight in the position that each stakeholder for this research has regarding interest in the program and possibility to facilitate this program. (See *table 8*)

The position of each stakeholder for interest in the program was based on the answer they provided for the following selective coding themes: willingness and desired method. The position of each stakeholder for possibilities to facilitate for the program was based on the following selective coding themes: needs, role and concerns. Each answer was scaled from 'nothing' to 'everything' according to the rational of the authors. The nature of the selective coding theme decides which end of the scale leads to a higher position in the stakeholder matrix (For instance: All selective coding themes, except for needs and concerns, lead to a higher stakeholder position if answered closer to 'everything' than 'nothing'. Selective coding themes needs and concerns are the other way around).

Table 8 - stakeholder matrix

|                           |                        | Interest In Participating |                                   |                                 |  |
|---------------------------|------------------------|---------------------------|-----------------------------------|---------------------------------|--|
|                           |                        | Not interested            | Somewhat interested (inform only) | Reasonably interested (partake) | Significantly interested (collaborate) |
| Possibility To Facilitate | Significantly possible |                           |                                   | • 4                             | • 1<br>• 11                            |
|                           | Reasonably possible    |                           |                                   | • 6<br>• 9<br>• 2               | • 12<br>• 13<br>• 3                    |
|                           | Somewhat possible      | • 7                       |                                   | • 5<br>• 10                     | • 14<br>• 8                            |
|                           | Not possible           |                           |                                   |                                 |  |

The numbers of the stakeholders for this research are connected to the names of the stakeholder for this research in *table 5*.

## 4.5 Process 5

The stakeholder meeting was attended by 5 stakeholders for this research (4 from box A, and 1 from box B of the stakeholder matrix), of which 2 organizations (The DREAM Project, Rugama Tours), and 3 high school representatives (Liceo Jose Morel, Liceo Madre Teresa Calcutta, Liceo Jose Dubeau). Hereafter they will be called the attending stakeholders.

With the help of the previously made itinerary and program (*See Appendixes VII*), the following results were achieved.

### Workshop: Choose you battles

**Process 2** described the importance of an issue-driven approach, therefore this workshop gives the attending stakeholders a sense of ownership by letting them choose the issues that are most important, for the target group to learn about, according to them.

The desired content for the educational program was established in the form of themes, ranked based on importance according to all the attending stakeholders. (*See table 9*)

Table 9 - Desired themes for the educational program according to the attending stakeholders

| Rank | Theme               |
|------|---------------------|
| 1    | Ecosystems          |
| 2    | Organisms           |
| 3    | Influential factors |
| 4    | Threats             |
| 5    | Solutions           |

### Activity: What are you able to facilitate?

This activity has given an overview of each attending stakeholders' ability to facilitate items that might be needed for an additional education program (*See table 10*). The green boxes are the items that the attending stakeholders are able to facilitate. When the box is not green, this means that the attending stakeholder is not in possession of this item, or is not able to facilitate this item for this educational program.

Table 10 - An overview of each attending stakeholders' ability to facilitate

| Item                           | Madre Teresa | Jose Dubeau | Jose Morel | DREAM project | Rugama Tours |
|--------------------------------|--------------|-------------|------------|---------------|--------------|
| Time                           |              |             |            |               |              |
| Teachers (Natural Science)     |              |             |            |               |              |
| Time to train teachers         |              |             |            |               |              |
| Knowledge to train teachers    |              |             |            |               |              |
| Permission (district/regional) |              |             |            |               |              |
| Transport                      |              |             |            |               |              |
| Garden                         |              |             |            |               |              |
| Funds                          |              |             |            |               |              |
| Laboratory                     |              |             |            |               |              |
| Microscopes                    |              |             |            |               |              |
| Classrooms                     |              |             |            |               |              |
| Beamer                         |              |             |            |               |              |
| Copy machine                   |              |             |            |               |              |
| Computer room                  |              |             |            |               |              |

### Workshop: Golden ratio

This workshop provided insight in the likely structure that the educational program will take, holding into account the needs and capacity of the target group in the form of their preferred work forms (reading and group projects), as well as the possibilities to facilitate from the stakeholders from this research.

This was achieved by providing two possible structures (*See Appendix VIII*) that are based on the literature that was found in **process 2** and the answers of the students on the surveys of **process 3**.

The attending stakeholders had to name the positive- and negative aspects.

The positive aspects that were mentioned were for both options the same: Motivational, incentive for investigation, collectivity, competitiveness, creativity.

The negative aspects that were given for option 1: not enough knowledge about the themes, no funds for printing the book, no gratification for students.

The negative aspects that were given for option 2: disposition, no funds.

By asking the attending stakeholders what they need in order to remove the negative aspects (funds and teachers with knowledge), the positive aspects were highlighted and an ultimate structure (*See figure 17*) was developed by the attending stakeholders by working with the positive aspects of the two structures.

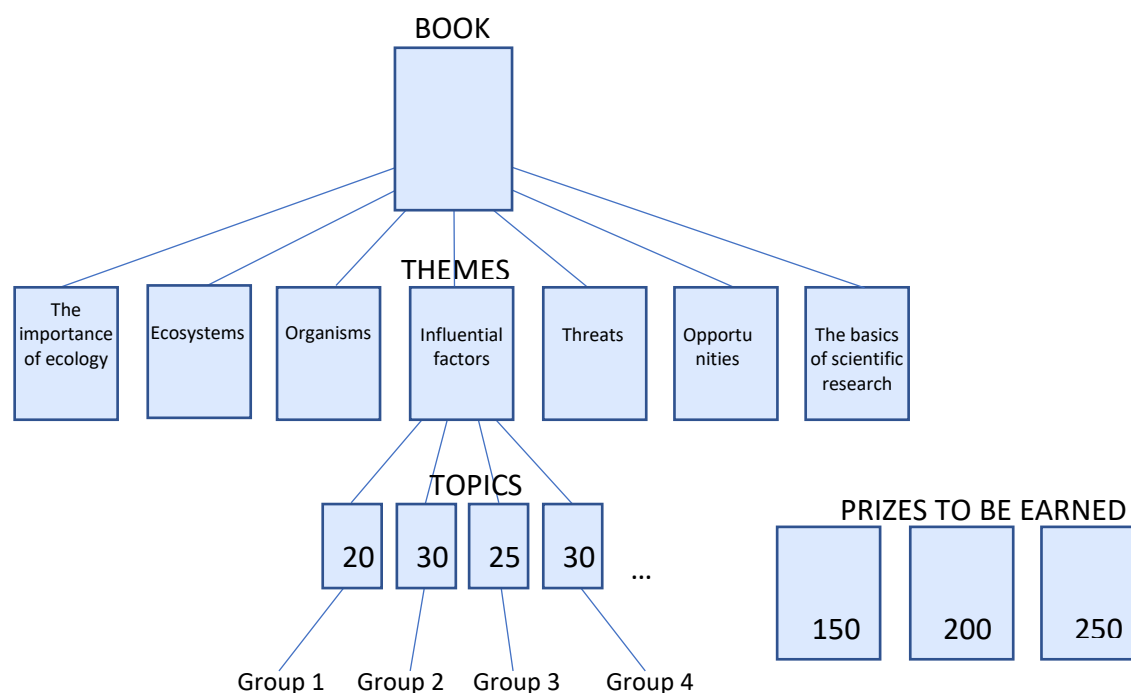


Figure 17 - Ultimate structure for the educational program

This schematic form works the following way:

There will be a book about ecology distributed among all high schools in the Province of Puerto Plata. The book will not be written yet, this will be done by the target group.

The book contains seven predetermined chapters with a theme, there are seven district in the province of Puerto Plata. Each district will receive a theme to complete. Within each district, all high schools receive the same theme to complete. The high schools do not cooperate with each other, but the target group within each high school writes the theme individually.

SOMONCA Inc. provides the themes, and topics for each theme, as well as guidelines and support on how to write about such topics.



The target group within each high school is divided into small groups (around 10 students) and each group will be given a topic to write about according to the guidelines. The amount of topics for each theme will be determined by SOMONCA Inc. The topics can contain different work forms to stimulate the critical thinking of the target group and introduce them to research design.

Because the target group writes the content for the book themselves, they can adapt it to their own needs and capacity. Next to that, it can be combined with other classes to provide for instance the artwork, or maybe they want to add a second language so they can learn that in the meanwhile, or write about the medical issues that are caused by pollution (these subjects were chosen as favorite in the surveys).

The book can be as creative and multidisciplinary as the stakeholders want.

To keep the writing process for the book interactive and competitive, each topic, when written correctly, is assigned a certain amount of points. There are prizes to be earned (like excursions provided by potential stakeholders\* that are organizations) by collecting the right amount of points. This eliminates the facilitation capability difference between stakeholders. E.g. if you are not able to facilitate a lot for each topic (different work forms, etc.), you still have the capability to earn enough points by executing more topics that suit you and gather points by working more hours. Or if you are not very flexible in time, you can choose to write about topics that gather a lot of points, so you get to the reward quicker.

So each high school is able to earn prizes, regardless of their ability to facilitate.

Next to this, it also adds a competitive element to the program. The students will want to learn as much as possible and as quickly as possible to earn the reward.

After the writing process has been completed, in each district a high school will be chosen that has written the theme the best, and this high schools' theme will be published in the book. The winning schools from each district receive a prize in the form of an excursion.

By combining all the themes from all the districts SOMONCA Inc. has a true collaboration project that the students feel responsible for, and it reflects the capacity and creativity of the whole Province of Puerto Plata.

## 5. Discussion

This research has been executed to the best capability of the authors, but as in any research, there are always discussion points to the methodology and the execution. This chapter will cover these points.

SOMONCA Inc., as the problem owner of this research are unclear on how they can structure their educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group, by applying participatory management.

By dividing the research in two sub-questions, the needs and capacity of the target group was investigated, as well as the possibilities for SOMONCA Inc. to structure its educational program together with the stakeholders.

### Major findings.

The goal of this research is to give advice on a structure for an educational program in which the goal, mission and vision for SOMONCA Inc.'s high school educational program will be defined. The presented outcome is more of a project than a program since it will not be possible to execute it year-round. However, this outcome is a better choice for both the stakeholders of the educational program as well as SOMONCA Inc., since it has been chosen by the stakeholders of this research to be their preferred structure. It is therefore a reflection of their capabilities to facilitate, while the needs and capacity of the target group are integrated. This means that they are more likely to participate in this project than they would have participated in a program due to their facilitation capabilities.

It is very possible to define the goal, mission and vision for this project, based on the information that was received through all executed processes.

The methodology that has been used in this research is also supported by literature, and described in the Theoretical Framework chapter.

However, the results that have been obtained are subject to interpretation of the authors, therefore an explanation will be given here.

**Process 3** (target group surveys) has provided insight in the needs and capacity of the target group, and although the sample size is representative for the target group, remarks must be made.

Firstly, due to the limited time frame of the research, each stakeholder was asked to provide 30 students to partake in the target group surveys. This has led to some schools providing only students that were interested in the research, and other schools provided students at random.

This might be an influential factor to the distribution of the answers on the surveys, as in some schools observations indicated that students formed groups of friends that all filled in the same results. It is not known if their answers are a reflection of their personal opinion or they have filled in the results collectively. In future research, this could be taken into account by distributing each survey separately to each student in a controlled and separated setting, to ensure personal answers, although this would cost a lot more time.

Secondly, results have indicated the sexuality ratio among the target group to be 66% feminine and 34% masculine. In the province of Puerto Plata the sexuality ratio among the high school students is equally divided (Ministerio de education, 2015), therefore the masculine members of the target group are underrepresented. This might have influenced the results of process 3. It can be prevented in further research by taking into account the sexuality ratio among the respondents.

Thirdly, the surveys were not optimally adapted to the culture of the target group which might have been an influencing factor. Before the distribution of the surveys, the level of Spanish language of the authors was not sufficient, which had caused that some words were not translated properly

which caused confusion among the respondents. In addition to this, the authors obtained a copy of the national curriculum just after the surveys were printed. Because time was of short supply, there was not sufficient time to adjust the surveys accordingly and print a new version.

**Process 4** (stakeholder interviews) was executed according to the previously described methodology. Each interview was accompanied by a representative of SOMONCA Inc. due to the fact that in Dominican culture, a person is more willing to be of assistance when asked by a familiar face, or a person that they both know. This familiarity has to be taken in consideration when interpreting the results. The stakeholders might have felt the need to answer more positively and willing than they would have when being interviewed by only the researchers, in order to maintain a good image among their acquaintances. This also applies to the next process.

The stakeholder matrix of **process 4** provides insight in the position that each stakeholder for this research has regarding interest in the program and possibility to facilitate this program. Due to the fact that the position of each stakeholder in the matrix was selected with the rational of the authors, a repeat of this research by other authors would not yield exactly the same positions. But the differences won't be that big since the quotes and codes of the stakeholders for this research can not be interpreted in a very different way.

**Process 5** (The stakeholder meeting) was attended by five of the fourteen interviewed stakeholders (of which thirteen had stated to be interested in attending). The result that this process yielded might therefore not reflect the opinion of the stakeholders that did not attend **process 5**. This factor was tried to be eliminated by distributing the result of the stakeholder meeting to the other stakeholders for them to provide feedback, but this action did not receive a response. This might reflect their approval, but it also might reflect their disinterest in the educational program. The results are therefore subjected to interpretation of the authors to reflect the opinion of the stakeholders and the target group to the best of their abilities. However, this does not mean that the results are invalid, since all different needs and capabilities that the stakeholders have mentioned in **process 4** (stakeholder interview), are integrated in the final structure of the educational program.

### Limitations of the study.

This research focusses on a target group of high school students in grade 1-2-3. Due to the fact that the stakeholder provided the students for the surveys, the participating grades (grade 7-8-1-2-3-4-5-6) of the students ranged much larger than that of the target group. In the Dominican Republic, both primary school and high schools are situated in the same building, and are divided according to the following grade system; Primary school: class 1-2-3-4-5-6-7-8, high school: 1-2-3-4-5-6. Therefore, grade 7&8 of primary school and grade 4-5-6 of high school were also taken into account in addition to the target group, although the target group comprised 83% of the sample size.

A big limiting factor to this study was the cultural difference which also entails a language barrier. The authors spoke sufficient Spanish to develop the surveys for **process 3** and the interviews in **process 4**, but not enough to fully understand the answers provided by the stakeholders in those interviews. Therefore, all interviews were recorded in order to translate the answers of the stakeholders later on, with the help of a native speaker, and write down their true opinion. The language barrier was not only an influential factor during **process 4**, but also during the stakeholder meeting of **process 5**. During this meeting, the services of a translator were used to translate answers of the stakeholders that the authors did not fully understand or to summarize conversations that had taken place among the stakeholders.

Another limiting factor that can be credited to cultural aspects is the overall necessity for external authorization. Personal observations have indicated that in the Dominican system, it is customary to obtain permission from the regional and district offices of the Ministry of Education before entering

school buildings. In order to reach the target group of this research in the seven districts of the province of Puerto Plata, a total of eight (one for each district, and one from the regional office) permissions were needed.

Five of the seven districts granted these permissions which led to the fact that the needs and capacity of the target group, as well as the stakeholder opinions for the other two districts could not be taken into account for this research.

Permission is also a limiting factor for the execution of the educational program, since most of the high schools that were identified as stakeholders indicated that they would need permission from either the district office or the regional office of the Ministry Of Education in order to be able to facilitate anything.

### Reflection on theoretical framework

In chapter 3, multiple theories have been reviewed and linked to the methodology. In the following section these theories will be reviewed another time and discussed whether they have been just. The theoretical framework states that involving the target group (students in grade 1-2-3 of high schools in the Province of Puerto Plata, DR) in the creating process of educational programs, strengthens the accuracy and depth of the research as well as promoting a feeling of ownership and community responsibility. In addition to this it would improve their critical thinking and reasoning skills. The results of **process 4** show that the stakeholders for this research agree to the importance of these values and indicated that in their ideal educational program, most of them want to implement these. This confirms the importance of involving the target group in the creation of the educational program.

The 'Social Systems Theory' claims that when the stakeholders conform to the roles and expectations of the educational program, while the program takes the image and need-disposition of the stakeholder in mind, this will reach organizational effectiveness within SOMONCA Inc. and satisfaction of the stakeholder with the educational program. Such an interaction between the nomothetic and idiographic dimension was eventually reached with **process 5** by interactively discussing these aspects until an equilibrium was reached and information was exchanged optimally. When following the 'Leader-participation theory' the conclusion was drawn that the appropriate level of leadership behavior and participation was 'CII' (consultative) which justified the methods of **process 5**. This process eventually confirmed this justification by realizing a situation where ideas and suggested were obtained collectively while SOMONCA Inc. still holds the final decision.

## 6. Recommendations

The previous chapter describes the points of discussion for this research. These can be transferred to recommendations for both further research, and for executing the educational program.

### Further research.

For similar future research, it is advised that among its target group, respondents for a survey are selected based on their interest in participating, and to have them fill in the survey in a controlled and separated setting. In addition to this, it is also advised to divide the sexuality ratio among the respondents according to their actual division.

In order to get an overview of all the high schools present in the province of Puerto Plata, and permission to enter these high schools, a lot of time has been spent waiting. Because of this inconvenience, it is advised that for further research these permissions are obtained before the data collections begins. Additionally, if the lists of high schools are obtained beforehand, an identification of relevant stakeholders can be made more efficiently.

Familiarity with the stakeholders is of important here, so it is advised that new stakeholders are also approached in the company of a familiar face.

The methodology of this research provides the opportunity to extrapolate to other provinces of the Dominican Republic. When the processes of this research are repeated, a new or similar educational program can be established that integrates the needs and capacities of the stakeholders and target group in that province.

### Execution of the educational program

The goal of this research was to provide SOMONCA Inc. with advice on how it can structure its high school educational program, and how they can effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management. To reach this goal, an advice has been written in the form of a structural framework in which the goal for the high school educational program has been defined, and a planning has been created. This framework can be found in *Appendix IX*. In order for SOMONCA Inc. to execute this educational program as effectively as possible it is highly advised they conform to this framework.

## 7. Conclusion

SOMONCA Inc. was established with the goal to preserve and protect the ecology on the north coast of the Dominican Republic. They deem raising awareness about ecology to be the most important. SOMONCA Inc. sees education as the key to achieving awareness, which was the reason for the formation of SOMONCA Inc.'s educational programs. Unfortunately their programs have been carried out unstructured and without working towards a bigger picture. This research was conducted to reach the goal of SOMONCA Inc. to structure its high school educational program together with its stakeholders, and effectively integrate the needs and capacity of the target group of high school students of grade 1-2-3, by applying participatory management.

To determine the needs and capacity of the target group, surveys were distributed among 401 students. The results showed that the majority of the target group has chosen reading and group projects as their favorite forms of learning. Biology/Natural Science, sports and languages were indicated as the target group's favorite subjects to learn about.

The stakeholders of this research were considered by interviewing them in Spanish, and asking for their level of interest in an educational program, their ideal educational program and how they could facilitate in this. After coding and summarizing their answers (together with a native Spanish speaker) it became clear that all stakeholders see the need for educating the target group about ecology. The efforts to teach about ecology they have executed so far, consist mostly of projects and excursions with an ecological theme and emphasis on protecting the environment. Despite their unfamiliarity with SOMONCA Inc. the stakeholders are all very interested in, or willing towards participation in a co-curricular program in which the role they can take is that of facilitator. Most stakeholders have no problems facilitating time, teachers and classrooms but indicated they would need permission, more information, and the ability to adjust the program to the target group, to do so.

In order to come to a collective decision, the stakeholders were invited to an interactive meeting to come up with the structure of an educational program by applying participatory management. This meeting yielded a structure in which the stakeholders of the educational program are provided a book about ecology that will be written by the target group according to guidelines provided by SOMONCA Inc.. This provides the chance to integrate the needs and capacity of the target group because they are able to write the content on a level that they are familiar with according to a work form that they prefer (reading and group projects). Next to the preferred work forms, the target group is able to add elements from other classes that they prefer (biology, languages, and sports) while writing the topics. An interactive element is added by letting the students gather point for each written topic, and earning rewards in the form of ecological prizes. This structure also integrates the possibilities and interests of the stakeholders to facilitate such a program because they are able to implement the execution of the writing process of the target group in the form that they desire and are able to facilitate for.

The presented outcome is more of a project than a program since it will not be possible to execute it year-round. However, this outcome is a better choice for both the stakeholders of the educational program as well as SOMONCA Inc., since it has been chosen by the stakeholders of this research to be their preferred structure. It is therefore a reflection of their capabilities to facilitate, while the needs and capacity of the target group are integrated.

This research provided SOMONCA Inc. with the structure for their high school educational program, now it is up to them to follow up and implement it. This research confirmed the interest of the stakeholders and recorded their possibilities to facilitate, there just needs to be a strong guiding force coming from SOMONCA Inc. by following up with the recommendations from this research, to make this educational program possible so that they can achieve their goal of reaching ecological consciousness among high school students in grade 1-2-3 in the Province of Puerto Plata, Dominican Republic.

## Literature

Andrews, M. (2013). Why our students need co-curricular, not extra-curricular, activities. Retrieved on April 3, 2018 at: <https://www.theguardian.com/higher-education-network/blog/2013/jan/22/student-development-university-curriculum-design>

Arnstein, R. (1969) 'A Ladder Of Citizen Participation', Journal of the American Planning Association, 35: 4, 216 — 224

Baez Sarita, A. (2013). Regional Planning Initiative for the Province of Puerto Plata in the Dominican Republic: A Tourism Planning Framework for the Towns of San Felipe de Puerto Plata and Sosúa. All Graduate Plan B and other Reports.

Burt, R. S. (2004). Structural holes and good ideas. The American Journal of Sociology, 110(2), 349–399.

CCI. (2008). *Phase 1 of the CCI*. Retrieved on February 17, 2018 at: <http://www.caribbeanchallengeinitiative.org/about/phase-1>

CDC. (2017). *Developmental milestones*. Retrieved on May 12, 2018 at: Young teens: <https://www.cdc.gov/ncbddd/childdevelopment/positiveparenting/adolescence.html>

CIA. (2018). *The World Factbook*. Retrieved on February 4, 2018 at: [www.cia.gov](http://www.cia.gov): <https://www.cia.gov/library/publications/the-world-factbook/geos/dr.html>

Diario Libre. (2014). Why do projects at Duquesa fail? Retrieved on March 20, 2018 at: <https://www.diariolibre.com/noticias/why-do-projects-at-duquesa-faila-FIDL440621>

Dictionary.com. (n.d.). cocurricular. Retrieved on May 2, 2018 at: <http://www.dictionary.com/browse/cocurricular>

Doyle, J. L., & Wells, S. (1996). LMS: the managerial climate and its effects on the interpersonal climate of the school. International Journal of Educational Management, 10(6), 3241.

Eger, S. (2015). Multi- Stakeholder Perspectives on Coastal and Marine (Connectivity) Management in Dominican Republic. Waterloo.

Emery, F., & Trist, E. (1965). The casual texture of organizational environments. Human Relations, 18, 21–32.

Evely, A. C., Pinard, M., Reed, M. S. & Fazey, I. (2011), High levels of participation in conservation projects enhance learning. Conservation Letters, 4: 116–126. doi:10.1111/j.1755-263X.2010.00152.

Hargreaves, D. H., & Hopkins, D. (1991). The Empowered School: The management and practice of development planning. London: Cassell Educational Limited.



Hellriegel, D., Jackson, S.E., & Slocum, J.W. Jr. (2003). *Management*. Cincinnati: South-Western College Publications.

Holschuh, A. (2018). DOMINICAN REPUBLIC REDEFINES WINTER GETAWAY. Retrieved on February 4, 2018 at: <http://www.godominicanrepublic.com/news-posts/current/dominican-republic-redefines-winter-getaway/>

IGI-Global. (n.d.). *What is selective coding*. Retrieved on April 3, 2018 at <https://www.igi-global.com/dictionary/selective-coding/26166>

ICRW. (2003). The Intergenerational Approach to Development: Bridging the Generation Gap. ICRW: Washington, DC. Retrieved on April 3, 2018 at April 14, 2018 at: [www.icrw.org](http://www.icrw.org).

Getzels J. W. & Guba E. G. (1957). Social Behavior and the Administrative Process. The School Review, Vol. 65, No. 4 (Winter, 1957), pp. 423-441

Kay, R.C. & Alder, J. (2005). Coastal planning and management. London, E&F Spon. 380 pp.

Kellert, S. R. (2005). *Building for Life: Designing and Understanding the Human-Nature Connection*. Washington: Island Press.

Kumar, R. (2014). Research Methodology, a step-by-step guide for beginners. London.

Lund Research. (2012). *Principles of Research Ethics*. Retrieved on February 12, 2018 at: <http://dissertation.laerd.com/principles-of-research-ethics.php>

Mathur, S., Mehta, M. & Malhotra, A. (2004) Youth Reproductive Health in Nepal: Is Participation the Answer? ICRW: Washington, DC.

McLure, G., & McLure, J. (2000). *Science course taking, out-of-class science accomplishments, and achievement in the high school graduating class of 1998*. (ACT Research Report Series No. 2000-5)

Melcher, A. J. (1976). Participation: a critical review of research findings. Human Resource Management, 15(2), 12-21.

Ministerio de Educación. (2015). Perfiles Estadísticos Provinciales Provincia Puerto Plata

Ministry of Tourism. (n.d.). *Landscapes*. Retrieved on February 2, 2018 at: <http://www.godominicanrepublic.com/about-dr/landscapes/>

OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD Publishing, Paris.

Pfeffer, J., & Salancik, G. (1978). The external control of organizations. New York, NY: Harper & Row.

Rickinson, M. (2001). Learners and learning in environmental education: A critical review of the evidence. *Environmental Education Research* 7, no. 3: 207–320.

Robbins, S.P., Judge, T.A., Odendaal, A. & Roodt, G. (2013). *Organisational behaviour*. Cape Town: Pearson.

Savage, G. (2008). Stakeholder Collaboration: Implications for Stakeholder Theory and Practice. *Journal of Business Ethics*

Soda, G., Usai, A., & Zaheer, A. (2004). Network memory: The influence of past and current networks on performance. *Academy of Management Journal*, 47(6), 893.

SOMONCA Inc.. (2018). SoMonCa plans to do something about it. Retrieved on February 2, 2018 at: <http://www.sosuanieuws.com/index.php>

Sosuanieuws. (n.d.) SOMONCA strijdt tegen milieuvervuiling. Retrieved on February 2, 2018 at: <http://www.sosuanieuws.com/index.php?id=537&article=1>

UNDP. (1999). Project Implementation Review 1996. Retrieved on February 2, 2018 at: [https://issuu.com/gefio/docs/1996\\_apr](https://issuu.com/gefio/docs/1996_apr)

UNESCO. (1977). *Final Report: Intergovernmental Conference on Environmental Education organized by UNESCO in cooperation with UNEP, Tbilisi, USSR, 14-26 October 1977*. Paris: UNESCO, 1977.

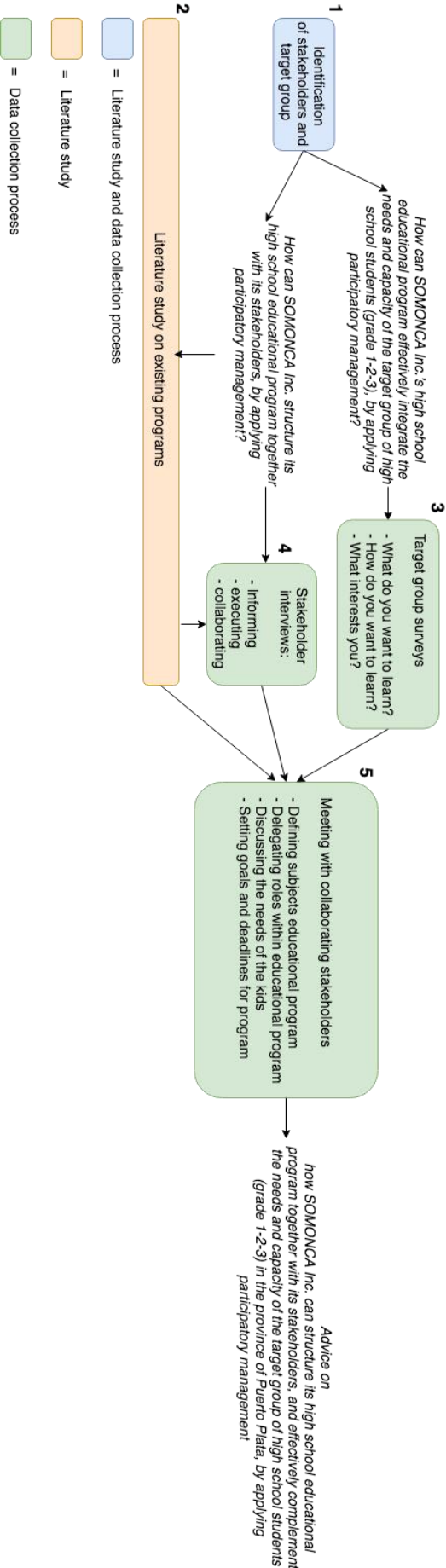
USAID. (2013). Dominican Republic country development cooperation strategy.

Wielgus, J., Cooper E., Torres R. & Burke L. (2010). *Coastal Capital: Dominican Republic. Case studies on the economic value of coastal ecosystems in the Dominican Republic*. Working Paper. Washington, DC: World Resources Institute. Available online at <http://www.wri.org/coastal-capital>.

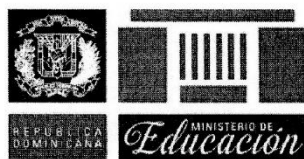
World Travel and Tourism Council. (2017). TRAVEL & TOURISM ECONOMIC IMPACT 2017 DOMINICAN REPUBLIC

Appendix I - Flowchart methodology research processes

Flowchart for a structured educational program



## Appendix II - Permission Regional office Ministry of Education Province of Puerto Plata



REGIONAL DE EDUCACION 11, PUERTO PLATA  
"Año del Fomento de Las Exportaciones"

Puerto Plata, Rep. Dom.  
05 de abril de 2017.

Señores:

**Directores Distritos Educativos**

Distinguidos Señores:

Cortésmente, luego de saludarles, les estamos solicitando permitir el acceso a los centros educativos bajo su jurisdicción a los estudiantes de Gestion Costera y Marina de la Universidad de Ciencias Aplicadas, de Países Bajos, para así poder recolectar información para la presentación de su tesis, para evaluar como SOMONCA Inc., siendo una ONG puede estructurar su programa educativo de la escuela secundaria y sus necesidades de manera efectiva.

Les estarán visitando los ciudadanos de origen Holandés, Laura Guthschmidt y Douwe Boerstra.. Anexamos identificación.

Agradeciendo de antemano su acostumbrada colaboración, se despide,

Atentamente,

  
**Adamilca E. Rodriguez Martinez, M.A.**

Directora Regional de Educación 11  
Puerto Plata

## Appendix III - Target group surveys

### SOMONCA Inc. educational program survey

SOMONCA Inc. is an organization that aims to improve the ecology in the Dominican Republic. They want to do this by educating young people on ecology in the province of Puerto Plata, Dominican Republic. For this education to be as effective as possible, we would like to know how you feel about receiving education on ecology.

There can be no wrong answers, because we are interested in your opinion on how to improve education, so do not hesitate to say anything!

Name (optional): \_\_\_\_\_

Class: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: (M / F)

**1. What is your favorite subject in school? You can choose more than one. If these subjects are not taught in your school, but still you like them, you can also choose them.**

- ☐ Geography
- ☐ Languages
- ☐ Arts / Music
- ☐ Sports / Fitness
- ☐ Mathematics
- ☐ History
- ☐ Biology / Natural Science
- ☐ All of the above

**2. What hobbies do you have outside of school?**

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**3. What do you want to be after you graduate?**

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**4. How do you like to learn in school? You can choose more than one.**

- ☐ Read
- ☐ Conferences
- ☐ Excursions
- ☐ Play games / Phone applications
- ☐ Watch TV
- ☐ Practical work
- ☐ Group projects
- ☐ Personal projects

**5. Do you think the level of education in your class is good?**

- ☐ Yes, it's good
- ☐ No, it is too difficult
- ☐ No, it's too easy

**6. Do you like the atmosphere in your class? (The number of students, the number of hours in school, the number of teachers)**

- ☐ Yes
- ☐ No. If not, what do not you like and why?

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**7. Do you like Natural Sciences?**

- ☐ Yes
- ☐ No

**8. What ecological topic do you want to learn about? You can choose multiple.**

- ☐ Aquatic systems (rivers, lakes, freshwater fish)
- ☐ Marine systems (currents, fish, marine mammals)
- ☐ Terrestrial systems (forests, rain, land animals)
- ☐ All of the above

**9. What would you like to learn about the nature of the Dominican Republic?**

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**10. Would you like to learn more about nature at school or outside of school activities?**

- ☐ In school
- ☐ Outside of school. If you choose this, could you explain what your favorite way to learn?

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Thanks for your cooperation! This will help us to improve the educational program of SOMONCA Inc.

## Appendix IV - Interview template stakeholders for this research

To answer sub question 2 of this research, which aims to structure the educational program of SOMONCA Inc., aimed at high school children (age 12-16), interviews will be held to question relevant stakeholders on the level of participation they are interested in within the educational program.

### Questions Stakeholders – High school directors:

1. Are you familiar with SOMONCA Inc. and their work as an NGO?
2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?
3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?
4. In your current curriculum, grade 1-2-3 , what role does biology and other science related subjects play?
5. Would you be interested in educating the children on ecology and its role in conservation?
6. Do you think ecology could/should have a role in the school's curriculum?
7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?
8. How flexible is your school in its schedule regarding classes and excursions?
9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?

“SOMONCA Inc. is currently exploring the possibilities to set up an educational program directed towards high school children in or around grade 1-2-3 to educate them on the importance of ecology and its role within conservation efforts.”

10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?
11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?
12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?
13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?
14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs and that of the target group?
15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?
16. In what way could your school facilitate an extracurricular educational program?



### **Questions Stakeholders – Youth organizations/NGO's:**

1. Are you familiar with SOMONCA Inc. and their work as an NGO?
2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?
3. So far, what efforts have you or your organization made to educate the children on ecology and its role in conservation?
4. In your current program, what role does biology and other science related subjects play?
5. Would you be interested in educating the children on ecology and its role in conservation?
6. Do you think ecology could/should have a role in your organization's program?
7. How flexible is your organization in its schedule regarding its activities?

“SOMONCA Inc. is currently exploring the possibilities to set up an educational program directed towards high school children in or around grade 1-2-3 to educate them on the importance of ecology and its role within conservation efforts.”

9. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?
10. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?
11. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?
12. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?
13. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?
14. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?
15. In what way could your organization facilitate an additional educational program?

## Appendix V - Full transcriptions of the stakeholder interviews and coding

In this Appendix, the full transcriptions of the interviews with the stakeholders for this research are presented, accompanied by their coding.

### Appendix V.I Liceo Madre Theresa - Adalgisa Balbuena (sub-director)

- 1. Are you familiar with SOMONCA Inc. and their work as an NGO?**  
"No, this is your first visit."
- 2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
"No."
- 3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
"At our school we have a laboratory and 5 teachers for natural sciences." "In these classes we focus on protecting the environment and the effect of dumping our garbage in it and the need for cleaning, such as on our beaches." "Next to that we teach about plastic and why we should recycle it."
- 4. In your current curriculum, grade 1-2-3, what role does biology and other science related subjects play?**  
"In a creative and dynamic way." "We are not obligated to teach about it, but we see that amongst the students there is a passion for these topics and we let the students work on them in groups."
- 5. Would you be interested in educating the children on ecology and its role in conservation?**  
"We are very interested in working with it."
- 6. Do you think ecology could/should have a role in the school's curriculum?**  
"We should have it in the curriculum." "It would be very important in addition the natural sciences classes and its practical's."
- 7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**  
"We are working with these competencies." "In this school we are implementing the four subjects of the curriculum for the secondary school." "We also do concrete things such as going outside and taking care of our environment such as cleaning our neighborhoods and beaches" "But these activities are not according to the competencies."
- 8. How flexible is your school in its schedule regarding classes and excursions?**  
"For excursions we are not very flexible." "For every project or excursion we do outside of the school we need permission from the district." "They need to approve everything." "Besides permission, we would also need some extra teachers to assist with them."
- 9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**  
"In the past we have had a recycling workshop where we let the children make something from plastic and present it afterwards." "We have had similar smaller projects also in our lab with plastic."

- 10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
"Yes."
- 11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
"Yes."
- 12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
"I would like to, but I need to ask permission from the director because I am only the sub director."
- 13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
"Yes but if that will be me or the director, the director will decide."
- 14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs and that of the target group?**  
"That depends on the content of the program and also the time it will take."
- 15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
"You guys have a specialty in these topics and I would like it to have a program for the secundaria." "I would like to teach the kids on the theories behind ecology and its practicums."
- 16. In what way could your school facilitate an extracurricular educational program?**  
"Everything."

| Liceo Madre Theresa Calcuta- Adalgisa Balbuena- 17-04-2018 |  |                                    |                     |                  |
|--|--|------------------------------------|---------------------|------------------|
| Number   | Quote  | Open coding                        | Axial Coding        | Selective Coding |
| Background in ecology                                      |  |                                    |                     |                  |
| 1  | "At our school we have a laboratory and 5 teachers for natural sciences."  | Laboratory/teachers                | Facilitator         | Role             |
| 2  | "In these classes we focus on protecting the environment and the effect of dumping our garbage in it and the need for cleaning, such as on our beaches."           | Protecting environment             | Natural science     | Executed method  |
| 3  | "Next to that we teach about plastic and why we should recycle it."  | Recycling plastic                  | Teaching to protect | Executed method  |
| 4  | "In a creative and dynamic way."   | Creative and dynamic               | Work form           | Executed method  |
| 5  | "We are not obligated to teach about it, but we see that amongst the students there is a passion for these topics and we let the students work on them in groups." | Passion among students/ group work | Regular activity    | Executed method  |
| 6  | "We are working with these competencies."  | Competencies                       | Competencies        | Executed method  |
| 7  | "In this school we are implementing the four subjects of the curriculum for the secondary school."   | Four curricular subjects           | Implementing        | Executed method  |
| 8  | "We also do concrete things such as going outside and taking care of our environment such as cleaning our neighborhoods and beaches"                               | Concrete actions                   | Regular activity    | Executed method  |
| 9  | "But these activities are not according to the competencies."  | Not according to competencies      | Regular activity    | Executed method  |
| 10   | "In the past we have had a recycling workshop where we let the children make something from plastic and present it afterwards."                                    | Recycling workshop                 | Work form           | Executed method  |
| 11   | "we have had similar smaller projects also in our lab with plastic."   | Laboratory projects                | Work form           | Executed method  |
| Relation to SOMONCA Inc.                                   |  |                                    |                     |                  |
| 12   | "No, this is your first visit."  | Unfamiliar                         | Unfamiliar          | Familiarity      |
| Interest to facilitate                                     |  |                                    |                     |                  |
| 13   | "We are very interested in working with it."   | Teaching ecology                   | Teaching to protect | Desired method   |
| 14   | "we should have it in the curriculum."   | Integrated in curriculum           | Integrated          | Desired method   |
| 15   | "It would be very important in addition the natural sciences classes and its practical's."   | Natural Science                    | Integrated          | Desired method   |
| 16   | "yes."   | Receive information                | Receive information | Willingness      |
| 17   | "yes."   | Partake                            | Partake             | Willingness      |
| 18   | "I would like to, but I need to ask permission from the director because I am only the sub director."  | Partnership                        | Permission          | Needs            |
| Possibilities to facilitate                                |  |                                    |                     |                  |
| 19   | "For excursions we are not very flexible."   | Not flexible excursions            | Flexibility         | Concern          |
| 20   | "For every project or excursion we do outside of the school we need permission from the district."   | District permission                | Permission          | Needs            |
| 21   | "they need to approve everything."   | Approval                           | Permission          | Needs            |
| 22   | "Besides permission, we would also need some extra teachers to assist with them."  | Extra teachers                     | Teachers            | Needs            |
| 23   | "That depends on the content of the program and also the time it will take."   | Program content/time               | Information program | Needs            |
| 24   | "Everything."  | Possibility to facilitate          | Facilitator         | Role             |
| Ideal ecological program                                   |  |                                    |                     |                  |
| 25   | "you guys have a specialty in these topics and I would like it to have a program for the secundaria."  | Program secundaria                 | Program secundaria  | Desired method   |
| 26   | "I would like to teach the kids on the theories behind ecology and its practicals."  | Theories ecology/practical         | Work form           | Desired method   |

## Appendix V.II Liceo Sabaneta de Yasica – Cecilio Vargaz

- **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“This is the first time I have heard of them.”
- **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“no.”
- **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“The teachers of Natural Sciences always work with different themes like geography week, or reforestation. Next week for instance, we spend the entire week on themes like recycling, the importance of trees, water, etc.”
- **In your current program, what role does biology and other science related subjects play?**  
“In the curriculum of the national ministry of education, they divide it into timeslots. They months March and April are always focused on the environment. The teachers work a lot with members of the city hall for implementing clean-ups and decorating the neighborhoods.”
- **Would you be interested in educating the children on ecology and its role in conservation?**  
“Yes, we have a music teacher from Brazil that puts music and taking care of the environment together. That is a nice way of putting two different themes together.”
- **Do you think ecology could/should have a role in your school’s program?**  
“yes, it already is, we don’t do it all year round, but only in March and April.”
- **The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret these?**  
“The children know how to take care of the environment, and why.” “In Islabon there are a lot of crabs, and the people in the community eat them and there are not many left. The people cut down trees and the river gets flooded. When they see a snake, they cut off the head, but it should be left alone, and our students know that.” “We try to teach them from a young age to recycle.” “We are confronted with the environmental problems all around us, like the Catalina River.”
- **How flexible is your organization in its schedule regarding its activities?**  
“Excursions do not occur often at this school, because of the danger that they contain.”  
“Next to that, much schools and directors seek for money for excursions.” “Therefore, in our school, we have many years that we only visit a museum once. But when the money is there we can go there. We do not go far, because of the danger.”
- **In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**  
“We have had some workshops and lessons about other themes, but no real programs.”
- **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Yes.”

- **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation**  
 "Of course."
- **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
 "Of course."
- **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
 "Yes if I have time."
- **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**  
 "I would definitely need to make adjustments."
- **Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
 "I think the most important work is recycling, because there are a lot of floods in this country, especially in the north, creating giant piles of plastic." "Next to that, we need reforestation, because when the rivers have high water, it is important to have a lot of trees on the riverbanks to hold the sediment."
- **In what way could your organization facilitate an additional educational program?**  
 "If we have the people that can provide courses, and we have the time, there is no problem."  
 "We can work with kids for one day of a certain level, and the week after another level of kids."

| Liceo Sabaneta De Yasica- Cecilio Vargaz- 11-04-2018 |  |                        |                     |                  |
|--|--|------------------------|---------------------|------------------|
| Number   | Quote  | Open coding            | Axial Coding        | Selective Coding |
| <b>Background in ecology</b>                         |  |                        |                     |                  |
| 1  | "The teachers of Natural Sciences always work with different themes like geography week, or reforestation. Next week for instance, we spend the entire week on themes like recycling, the importance of trees, water, etc."  | Different themes       | Regular activity    | Executed method  |
| 2  | "In the curriculum of the national ministry of education, they divide it into timeslots. The months March and April are always focused on the environment. The teachers work a lot with members of the city hall for implementing clean-ups and decorating the neighborhoods." | March and April        | Regular activity    | Executed method  |
| 3  | "yes, it already is, we don't do it all year round, but only in March and April."  | March and April        | Regular activity    | Executed method  |
| 4  | "The children know how to take care of the environment, and why."  | Care for environment   | Teaching to protect | Executed method  |
| 5  | "In Islabon there are a lot of crabs, and the people in the community eat them and there are not many left. The people cut down trees and the river gets flooded. When they see a snake, they cut off the head, but it should be left alone, and our students know that."      | Students know          | Teaching to protect | Executed method  |
| 6  | "We try to teach them from a young age to recycle."  | Start recycling young  | Teaching to protect | Executed method  |
| 7  | "We are confronted with the environmental problems all around us, like the Catalina river."  | Environmental problems | Confrontation       | Concern          |
| 8  | "We have had some workshops and lessons about other themes, but no real programs."   | workshops and lessons  | Work form           | Executed method  |
| <b>Relation to SOMONCA Inc.</b>                      |  |                        |                     |                  |
| 9  | "This is the first time I have heard of them."   | Unfamiliar             | Unfamiliar          | Familiarity      |
| <b>Interest to facilitate</b>                        |  |                        |                     |                  |
| 10   | "Yes, we have a music teacher from Brazil that puts music and taking care of the environment together. That is a nice way of putting two different themes together."   | Combining themes       | Collective activity | Executed method  |
| 11   | "Yes."   | Receive information    | Very willing        | Willingness      |
| 12   | "Of course."   | Partnership            | Very willing        | Willingness      |
| <b>Possibilities to facilitate</b>                   |  |                        |                     |                  |
| 13   | "Next to that, many schools and directors seek for money for excursions."  | Money excursions       | Limiting factor     | Needs            |
| 14   | "Excursions do not occur often at this school, because of the danger that they contain."   | Danger excursions      | Limiting factor     | Concern          |
| 15   | "Therefore, in our school, we have many years that we only visit a museum once. But when the money is there we can go there. We do not go far, because of the danger."   | Limited money          | Limiting factor     | Executed method  |
| 16   | "If we have the people that can provide courses, and we have the time, there is no problem."   | People/time            | Facilitator         | Role             |
| 17   | "We can work with kids for one day of a certain level, and the week after another level of kids."  | Different levels       | Facilitator         | Role             |
| <b>Ideal ecological program</b>                      |  |                        |                     |                  |
| 18   | "I think the most important work is recycling, because there are a lot of floods in this country, especially in the north, creating giant piles of plastic."   | Recycling              | Work form           | Desired method   |
| 19   | "Next to that, we need reforestation, because when the rivers have high water, it is important to have a lot of trees on the riverbanks to hold the sediment."   | Reforestation          | Work form           | Desired method   |



## Appendix V.III Liceo Jose Morel – Olga Lidia Guzman

- **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
"No."
- **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
"No."
- **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
"We have the responsibility to create consciousness among the children and transform their minds so that they take care of the ecology, we do this in the form of workshops."
- **In your current program, what role does biology and other science related subjects play?**  
"We need to preserve the environment."
- **Would you be interested in educating the children on ecology and its role in conservation?**  
"Of course yes."
- **Do you think ecology could/should have a role in your school's program?**  
"It can have a role in our curriculum in the schools." "This will create a better sense of protecting the environment among the students."
- **The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret these?**  
"We have these competencies to make the children better individuals regarding the environment." "We also implement these competencies in the Social Science area, because they teach the students to behave better."
- **How flexible is your organization in its schedule regarding its activities?**  
"We work with a limited time period, in which we have to implement the notional curriculum." "Plus, we also do not have permission to work with all extracurricular activities." "If we had permission, we would still have limited time, therefore we are very limited to implementing other activities compared to other schools." "We have a very busy schedule."
- **In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**  
"No."
- **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
"Of Course."
- **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
"Of Course, because it is a learning process about understanding difficult processes, so we need to participate."
- **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
"We would really need to see the whole program." "We can not decide on just a framework whether we are interested and able to work with you." "If we see the program we can decide yes or no."

- **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
 “Yes, why not.”
  
- **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**  
 “I would like to be able to adapt the program, because every level has different needs.”
  
- **Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
 “It would be implemented by all schools, which would provide a different mentality for the children so that they would care for the environment.” “It would need to reach consensus among the students to care for the future generations much more than they do now.” “It would be in the form of workshops, excursions in the communities, scientific experiments, and other things, because they need to learn everything.”
  
- **In what way could your organization facilitate an additional educational program?**  
 “We can implement the workshops, and carry out promotion outside the schools, so people know about the program.” “We have limited time, but if SOMONCA can take the time and responsibility for the students to take them on excursions, that would be possible as well.”

| Liceo Jose Morel- Olga Lidia Guzman -09-04-2018 |   |   |                     |                  |
|---|---|---|---------------------|------------------|
| Number  | Quote   | Open coding                                 | Axial Coding        | Selective Coding |
| Background in ecology                           |   |   |                     |                  |
| 1   | "We have the responsibility to create consciousness among the children and transform their minds so that they take care of the ecology, we do this in the form of workshops."       | Create consciousness                        | Workshops           | Executed method  |
| 2   | "We need to preserve the environment."  | Preserve environment                        | Teaching to protect | Needs            |
| 3   | "We have these competencies to make the children better individuals regarding the environment."   | Better individuals                          | Attitude            | Executed method  |
| 4   | "We also implement these competencies in the Social Science area, because they teach the students to behave better."  | Better behaviour                            | Natural science     | Executed method  |
| Relation to SOMONCA Inc.                        |   |   |                     |                  |
| 5   | "No."   | Unfamiliar                                  | Unfamiliar          | Familiarity      |
| Interest to facilitate                          |   |   |                     |                  |
| 6   | "Of course yes."  | Interested in teaching                      | Very willing        | Willingness      |
| 7   | "This will create a better sense of protecting the environment among the students."   | Protecting environment                      | Teaching to protect | Desired method   |
| 8   | "Of Course, because it is a learning process about understanding difficult processes, so we need to participate."   | Interested participation                    | Very willing        | Willingness      |
| 9   | "We would really need to see the whole program."  | Whole program                               | Whole program       | Needs            |
| 10  | "We can not decide on just a framework whether we are interested and able to work with you."  | Whole program                               | Whole program       | Needs            |
| 11  | "if we see the program we can decide yes or no."  | Whole program                               | Whole program       | Needs            |
| Possibilities to facilitate                     |   |   |                     |                  |
| 12  | "We work with a limited time period, in which we have to implement the national curriculum."  | Limited time                                | Limited factor      | Executed method  |
| 13  | "Plus, we also do not have permission to work with all extracurricular activities."   | Permission                                  | Permission          | Needs            |
| 14  | "If we had permission, we would still have limited time, therefore we are very limited to implementing other activities compared to other schools." "We have a very busy schedule." | Limited time                                | Limited factor      | Executed method  |
| 15  | "We can implement the workshops, and carry out promotion outside the schools, so people know about the program."  | Workshops / promotion                       | Facilitator         | Role             |
| 16  | "We have limited time, but if SOMONCA Inc. can take the time and responsibility for the students to take them on excursions, that would be possible as well."                       | Responsibility SOMONCA Inc.                 | Responsibility      | Needs            |
| Ideal ecological program                        |   |   |                     |                  |
| 17  | "It can have a role in our curriculum in the schools."  | In school                                   | Curriculum          | Role             |
| 18  | "I would like to be able to adapt the program, because every level has different needs."  | Adaptable                                   | Adaptability        | Needs            |
| 19  | "It would be implemented by all schools, which would provide a different mentality for the children so that they would care for the environment."                                   | Implemented by all schools                  | Attitude            | Desired method   |
| 20  | "It would need to reach consensus among the students to care for the future generations much more than they do now."  | Reach consensus                             | Attitude            | Desired method   |
| 21  | "It would be in the form of workshops, excursions in the communities, scientific experiments, and other things, because they need to learn everything."                             | Workshops/excursions/experiments/Everything | Work form           | Desired method   |

## Appendix V.IV Liceo Israel Brito Bruno – Gabina Ortiz Castillo

- 1. Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“No, I am not familiar because this is the first time.”
- 2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“No.”
- 3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“So far we have only talked about it but have not done anything concrete.” “Our plan is to teach about to be careful of the environment and our trash.” “Because what we are doing is not healthy and we need to recycle.” “We have an environmental problem, but we have three schools here and we all have problems with trash and the environment and we only talk about it.”
- 4. In your current curriculum, grade 1-2-3, what role does biology and other science related subjects play?**  
“We do not teach about biology or ecology, only what’s in the curriculum.”
- 5. Would you be interested in educating the children on ecology and its role in conservation?**  
“Very!” “Very, take for example your organization, for orientation of the students to go out help the environment.”
- 6. Do you think ecology could/should have a role in the school’s curriculum?**  
“It should play a more fundamental role in the ministry of education.” “But topics such as ecology, physics or chemistry are currently only covered in environmental science classes.”  
“But ecology on its own should be introduced first.”
- 7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**  
“We only talk about them, but we don’t do anything concrete.”
- 8. How flexible is your school in its schedule regarding classes and excursions?**  
“Excursions for us is a problem because we don’t have permission.” “But when we have permission we can go out.” “Time is not a problem, but we need a plan.” “On the 27<sup>th</sup> we have an environmental day in the whole district were we do all kinds of activities concerning the environment.”
- 9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**  
“We have had a tree planting program once a month for a couple of months.”
- 10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Yes, very welcome.”
- 11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
“Yes.”
- 12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
“Yes, very much.”

- 13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
“Yes when I have time.”
- 14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs and that of the target group?**  
“I would like to be able to adapt it to different levels.” “I would prefer if SOMONCA would make the adaption.”
- 15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
“I like the idea that I previously mentioned that you guys help us with orienting the students on taking care of the environment.” “And that will also affect the local communities.” “But not only about ecology but also about plants and fruits and other things in nature.”
- 16. In what way could your school facilitate an extracurricular educational program?**  
“We can facilitate in everything, including time.” “Because this project is very important for our planet and environment.”

| Liceo Israel Brito Bruno- Gabina Ortiz Castillo- 12-04-2018 |   |                            |                              |                  |
|---|---|----------------------------|------------------------------|------------------|
| Number  | Quote   | Open coding                | Axial Coding                 | Selective Coding |
| Background in ecology                                       |   |                            |                              |                  |
| 1   | "So far we have only talked about it but have not done anything concrete."  | Only talking               | Solely theoretical           | Executed method  |
| 2   | "Our plan is to teach about to be careful of the environment and our trash."  | Care for environment       | Teaching to protect          | Desired method   |
| 3   | "Because what we are doing is not healthy and we need to recycle."  | Poor health                | Recycle for health           | Desired method   |
| 4   | "We have an environmental problem, but we have three schools here and we all have problems with trash and the environment and we only talk about it." | Environmental problem      | Solely theoretical           | Executed method  |
| 5   | "We do not teach about biology or ecology, only what's in the curriculum."  | Only curricular teaching   | Solely theoretical           | Executed method  |
| 6   | "We only talk about them, but we don't do anything concrete."   | Only talking               | Solely theoretical           | Executed method  |
| 7   | "On the 27 <sup>th</sup> we have a environmental day in the whole district were we do all kinds of activities concerning the environment."            | Environmental day          | District activity            | Executed method  |
| 8   | "We have had a tree planting program once a month for a couple of months."  | Tree planting program      | Regular activity             | Executed method  |
| 9   | But topics such as ecology, physics or chemistry are currently only covered in environmental science classes."  | Collective coverage        | Natural sciences             | Executed method  |
| Relation to SOMONCA Inc.                                    |   |                            |                              |                  |
| 9   | "No, I am not familiar because this is the first time."   | Unfamiliar                 | Unfamiliar                   | Familiarity      |
| Interest to facilitate                                      |   |                            |                              |                  |
| 10  | "Very, Take for example your organization, for orientation of the students to go out help the environment."   | Orientation of students    | Teaching to protect          | Desired method   |
| 11  | "It should play a more fundamental role in the ministry of education."  | Role in ministry           | Responsibility               | Role             |
| 13  | "But ecology on its own should be introduced first."  | Introduced first           | Extracurricular introduction | Desired method   |
| 14  | "Because this project is very important for our planet and environment."  | Important for environment  | Extracurricular introduction | Desired method   |
| 15  | "yes, very much."   | Partnership                | Very willing                 | Willingness      |
| 16  | "Yes, please."  | Receive information        | Very willing                 | Willingness      |
| Possibilities to facilitate                                 |   |                            |                              |                  |
| 17  | "Excursions for us is a problem because we don't have permission."  | No permission              | Need for permission          | Needs            |
| 18  | "but when we have permission we can go out."  | Need permission            | Need for permission          | Needs            |
| 19  | "Time is not a problem, but we need a plan."  | Need a plan                | Need for program             | Needs            |
| 20  | "We can facilitate in everything, including time."  | Time                       | Facilitator                  | Role             |
| Ideal ecological program                                    |   |                            |                              |                  |
| 21  | "I like the idea that I previously mentioned that you guys help us with orienting the students on taking care of the environment."                    | Orientation of students    | Teaching to protect          | Desired method   |
| 22  | "And that will also affect the local communities."  | Local communities          | Including communities        | Desired method   |
| 23  | "but not only about ecology but also about plants and fruits and other things in nature."   | Plants fruits/other things | Teaching to protect          | Desired method   |
| 24  | "I would like to be able to adapt it to different levels."  | Adapt to different levels  | Adaptability                 | Needs            |
| 25  | "I would prefer if SOMONCA Inc. would make the adaptation."   | Adaptation by SOMONCA      | Responsibility               | Needs            |

## Appendix V.V Liceo Eduardo Brito – Scarlet Martinez

**1. Are you familiar with SOMONCA Inc. and their work as an NGO?**

"No."

**2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**

"No."

**3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**

"Good, we have the course Natural Sciences which contains subjects similar to the work what you guys are doing and ecology." "In this course we try to raise awareness among the students about taking care of the environment and preserving it." "In addition, on Friday the 27<sup>th</sup> we're hosting a day for our students where they will present their creative works on topics such as evaporation and the flow of rivers." "The teachers of the relevant courses will assess their works."

**4. In your current curriculum, grade 1-2-3, what role does biology and other science related subjects play?**

"In this school, we work on subjects such as recycling, reforestation and the preserving of the environment." "They also learn about the importance of cleaning up the beach." "Only inside our school." "But we are trying to make these efforts more constant in collaboration with other liceo's in town." "For example we work together with another school nearby which name is 'Liceo Javier Martinez' and they are very good and constant on working on recycling." "Their students work frequently on workshops and tasks regarding recycling and conservation."

**5. Would you be interested in educating the children on ecology and its role in conservation?**

"Yes, clearly." "We would like it very much to educate the students on these topics that are outside the skills of our teachers."

**6. Do you think ecology could/should have a role in the school's curriculum?**

"A little more, yes." "We already have natural sciences which covers some aspects of ecology and biology but a bit more of those topics would make it better I think."

**7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**

"Good, we teach the children about their behavior and the positive and negative effects of them on the environment." "For example we make the students aware about the waste in the aula and classrooms and have them clean it up regularly." "Next to that we teach them about water and the effects of their behavior on water, both positively and negatively."

"Water is very important to survive and for our communities and the students need to be able to think critically of their behavior and of other with the effects that come with them."

"The rest of these points we also implement by the efforts I described earlier." "We want the students to be able of logical, critical and creative thinking to be able of finding solutions to our environmental problems in investigations."

**8. How flexible is your school in its schedule regarding classes and excursions?**

"For all years, we organize two excursions per year." "We have certain guidelines and regulations at our school for these excursions that enable us to provide them two times per year." "The destinations for these excursions range from all sorts of places that are important for our environment and the courses we give at school." "Such as museums, natural parks, universities, dunes and salt marshes and environmental attractions."

"Normally we only have time and permission for two excursions per year." "Because we also

need time for our regular school activities.” “Next to that most of our students won’t be able to pay for another excursion because their parent normally don’t make as much money as the parents from private schools.”

**9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**

“Once a year we have a project where the teachers teach the students on topics such as environmental protection.” “Such as reforestation.” “But additional programs are difficult to implement because we need authorization.”

**10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**

“Yes.”

**11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**

“Yes, it would be a good addition to our natural sciences courses.”

**12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**

“Yes when I am available and can combine it with our work.”

**13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

“Yes when I am available from work and do not have other commitments.”

**14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs and that of the target group?**

“We think that teaching the students about ecology is very important and preserving the environment.” “But each school is different.” “We need to be able to adapt and adjust the content of the program to the situation that is possible for us.”

**15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“Ideal for us would be to have a program that implements everything that we need.” “It is complete in any way.” “And it gives us the results we need.” “It should be hands on as well as visually.” “And that is beneficial for the environment and the animals and insects in it.”

“When we face a problem, we want the program to solve it.” “It needs to be visual and interactive in a way that it attracts the attention of the students.” “It would be interesting if it would also focus on plants and trees.” “It must be accessible for many students and be in a pleasant environment with for example the possibility to escape from the sun.”

**16. In what way could your school facilitate an extracurricular educational program?**

“When you come to our school with your program we will be able to help you with our teachers and rooms, when available.” “We can always be creative.”



| Liceo Eduardo Brito- Scarlet Martinez -16-042018 |   |                                  |                            |                  |
|--|---|----------------------------------|----------------------------|------------------|
| Number   | Quote   | Open coding                      | Axial Coding               | Selective Coding |
| Background in ecology                            |   |                                  |                            |                  |
| 1  | "Good, we have the course Natural Sciences which contains subjects similar to the work what you guys are doing and ecology."  | Natural Sciences                 | Natural science            | Executed method  |
| 2  | "In this course we try to raise awareness among the students about taking care of the environment and preserving it."   | Raise awareness                  | Teaching to protect        | Executed method  |
| 3  | "In addition, on Friday the 27 <sup>th</sup> we're hosting a day for our students where they will present their creative works on topics such as evaporation and the flow of rivers." "The teachers of the relevant courses will assess their works."   | Creative day                     | School activity            | Executed method  |
| 4  | "In this school, we work on subjects such as recycling, reforestation and the preserving of the environment. They also learn about the importance of cleaning the beach. Only inside our school."   | Only in school                   | Location bound             | Executed method  |
| 5  | "But we are trying to make these efforts more constant in collaboration with other liceo's in town." "For example we work together with another school nearby which name is 'Liceo Javier Martinez' and they are very good and constant on working on recycling." "Their students work frequently on workshops and tasks regarding recycling and conservation." | Collaborations                   | Collective activity        | Executed method  |
| 6  | "Good, we teach the children about their behaviour and the positive and negative effects of them on the environment. For example we make the students aware about the waste in the aula and classrooms and have them clean it up regularly."  | Behaviour students               | Teaching to protect        | Executed method  |
| 7  | "Next to that we teach them about water and the effects of their behaviour on water, both positively and negatively." "Water is very important to survive and for our communities and the students need to be able to think critically of their behaviour and of other with the effects that come with them."   | Critical thinking                | Teaching to protect        | Executed method  |
| 8  | "The destinations for these excursions range from all sorts of places that are important for our environment and the courses we give at school. Such as museums, natural parks, universities, dunes and salt marshes and environmental attractions."  | Excursion destinations           | Teaching to protect        | Executed method  |
| 9  | "Once a year we have a project where the teachers teach the students on topics such as environmental protection. Such as reforestation."  | Teaching environmental topics    | Teaching to protect        | Executed method  |
| Relation to SOMONCA Inc.                         |   |                                  |                            |                  |
| 10   | No I am not   | Unfamiliar                       | Unfamiliar                 | Familiarity      |
| Interest to facilitate                           |   |                                  |                            |                  |
| 11   | "yes, clearly."   | Interest                         | Very willing               | Willingness      |
| 12   | "We would like it very much to educate the students on these topics that are outside the skills of our teachers."   | Complimentary skills             | Complimentary skills       | Desired method   |
| 13   | "We already have natural sciences which covers some aspects of ecology and biology but a bit more of those topics would make it better I think."  | More topics                      | Complimentary skills       | Desired method   |
| 14   | "We want the students to be able of logical, critical and creative thinking to be able of finding solutions to our environmental problems in investigations."   | Critical thinking                | Attitude                   | Desired method   |
| 15   | "Yes, it would be a good addition to our natural sciences courses."   | Addition Natural Science         | Natural science            | Desired method   |
| Possibilities to facilitate                      |   |                                  |                            |                  |
| 16   | "For all years, we organize two excursions per year." "We have certain guidelines and regulations at our school for these excursions that enable us to provide them two times per year."  | Two excursions annually          | Guidelines and regulations | Executed method  |
| 17   | "Normally we only have time and permission for two excursions per year. Because we also need time for our regular school activities."   | Two excursions annually          | Limiting factor            | Executed method  |
| 18   | "Next to that most of our students won't be able to pay for another excursion because their parent normally don't make as much money as the parents from private schools."  | Parental financing               | Limiting factor            | Concern          |
| 19   | "But additional programs are difficult to implement because we need authorization."   | Authorization                    | Permission                 | Needs            |
| 20   | "When you come to our school with your program we will be able to help you with our teachers and rooms, when available."  | Teachers/classrooms              | Facilitator                | Role             |
| 21   | "We can always be creative."  | Creative                         | Facilitator                | Role             |
| Ideal ecological program                         |   |                                  |                            |                  |
| 22   | "But each school is different, we need to be able to adapt and adjust the content of the program to the situation that is possible for us."   | Adapt and adjust                 | Adaptability               | Needs            |
| 23   | "It must be accessible for many students and be in a pleasant environment with for example the possibility to escape from the sun."   | Accessible/ pleasant environment | Execution                  | Needs            |
| 24   | "Ideal for us would be to have a program that implements everything that we need."  | Everything                       | Implementation             | Needs            |
| 25   | "It should be hands on as well as visually."  | Hands on/visually                | Execution                  | Desired method   |
| 26   | "And that is beneficial for the environment and the animals and insects in it."   | Beneficial for environment       | Execution                  | Desired method   |
| 27   | "When we face a problem, we want the program to solve it."  | Problem solving                  | Nature of program          | Desired method   |

## Appendix V.VI DREAM Project – Catherine DeLaura

1. **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“As of today I am.”
2. **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“No.”
3. **So far, what efforts have you or your organization made to educate the children on ecology and its role in conservation?**  
“Yes, we focus a lot on what we call environment.” “It also was the main theme on the summer camp last summer and we focused a lot on the pollution of water.” “I don’t know how deep they went in the science of it, but more on how does it affect the environment if you throw trash on the ground and how does that come back to you.” “Earlier this year we had some older students come and involve the younger children in a project called ‘Water Conservation’ in which they went out and tested the water of the lagoons and of their tabs.”
4. **In your current program, what role does biology and other science related subjects play?**  
“In our curriculum as well we have assignments to let the children read about the environment.” “We also have girls and boys groups where they discuss a lot of topics that concerns them and they also write articles about it in our magazine ‘El Mundo’, and the environment is a topic which they talk about a lot.”
5. **Would you be interested in educating the children on ecology and its role in conservation?**  
“Sure, yes.”
6. **Do you think ecology could/should have a role in your organization’s program?**  
“Yes.”
7. **How flexible is your organization in its schedule regarding its activities?**  
“Very flexible.”
9. **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Yes.”
10. **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
“Depends on what way.”
11. **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
“I do not know very much on ecology and our organization is stretched very thin and we do so much.” “We are fine hosting, we have the kids, and we could train our teachers on the content.”
12. **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
“I will probably send my academic director.”
13. **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**

“Yeah, adjust it, everybody is going to adjust it.” “Especially us because our kids are younger.” “We have the time to adjust it and to train our teachers, they are very good.”

**14. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“It has to be fun, interactive, experiment based and student centered.” “It would be nice if the children could pick the issues they work on.” “That the children go into the communities and pick up trash.” “And if SOMONCA could develop a rich curriculum that is easy to implement and activity based, that would be very interesting.” “Doing something like the art projects at the schools would be very cool.”

**15. In what way could your organization facilitate an additional educational program?**

“We are very flexible, and in the weekends we have a lot of children coming here and partaking in various classes and a program like would fit in very well with that.” “If we have your curriculum we would probably implement it in our summer camps and activities.”

| DREAM project- Catherine DeLaura- 17-04-2018 |   |                                    |                     |                  |
|--|---|------------------------------------|---------------------|------------------|
| Number                                       | Quote   | Open coding                        | Axial Coding        | Selective Coding |
| Background in ecology                        |   |                                    |                     |                  |
| 1  | "Yes, we focus a lot on what we call environment."  | Environmental focus                | Teaching to protect | Executed method  |
| 2  | "It also was the main theme on the summer camp last summer and we focused a lot on the pollution of water."   | Summer camp                        | Regular activity    | Executed method  |
| 3  | "I don't know how deep they went in the science of it, but more on how does it affect the environment if you throw trash on the ground and how does that come back to you."   | Affecting environment              | Teaching to protect | Executed method  |
| 4  | "Earlier this year we had some older students come and involve the younger children in a project called 'Water Conservation' in which they went out and tested the water of the lagoons and of their taps."           | Water conservation                 | Teaching to protect | Executed method  |
| 5  | "In our curriculum as well we have assignments to let the children read about the environment."   | Reading assignments                | Regular activity    | Executed method  |
| 6  | "We also have girl and boy groups where they discuss a lot of topics that concern them and they also write articles about it in our magazine 'El Mundo', and the environment is a topic which they talk about a lot." | Magazine                           | Work form           | Executed method  |
| Relation to SOMONCA Inc.                     |   |                                    |                     |                  |
| 7  | "As of today I am."   | Unfamiliar                         | Unfamiliar          | Familiarity      |
| Interest to facilitate                       |   |                                    |                     |                  |
| 8  | "Sure, yes."  | educating on ecology               | Very willing        | Willingness      |
| 9  | "Yes."  | Receive information                | Very willing        | Willingness      |
| 10   | "depends on in what way."   | partake                            | More information    | Needs            |
| Possibilities to facilitate                  |   |                                    |                     |                  |
| 13   | "Very flexible."  | Flexibility                        | Facilitator         | Role             |
| 14   | "I do not know very much about ecology and our organization is stretched very thin and we do so much."  | Stretched thin                     | Facilitator         | Role             |
| 15   | "We are fine with hosting, we have the kids, and we could train our teachers on the content."   | Hosting                            | Facilitator         | Role             |
| 16   | "Yeah, adjust it, everybody is going to adjust it."   | Adjustable                         | Adjustability       | Needs            |
| 17   | "Especially us because our kids are younger."   | Younger kids                       | Adjustability       | Needs            |
| 18   | "We have the time to adjust it and to train our teachers, they are very good."  | Time to adjust                     | Facilitator         | Role             |
| 19   | "We are very flexible, and in the weekends we have a lot of children coming here and partaking in various classes and a program like yours would fit in very well with that."   | Flexibility weekends               | Facilitator         | Role             |
| 20   | "If we have your curriculum we would probably implement it in our summer camps and activities."   | Summer camps/activities            | Facilitator         | Role             |
| Ideal ecological program                     |   |                                    |                     |                  |
| 21   | "It has to be fun, interactive, experiment based and student centered."   | Fun/interactive/experiment/student | Work form           | Desired method   |
| 22   | "It would be nice if the children could pick the issues they work on."  | Choose issues                      | Work form           | Desired method   |
| 23   | "that the children go into the communities and pick up trash."  | Community service                  | Include community   | Desired method   |
| 24   | "And if SOMONCA could develop a rich curriculum that is easy to implement and activity based, that would be very interesting."  | SOMONCA develops curriculum        | Responsibility      | Needs            |
| 25   | "Doing something like the art projects at the schools would be very cool."  | Art projects                       | Work form           | Desired method   |

## Appendix V.VII Liceo La Cienega – Feliciano Delgado de la Cruz

### **1. Are you familiar with SOMONCA Inc. and their work as an NGO?**

"I am not familiar with this institution"

### **2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**

"No I have not."

### **3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**

"All year round we have participatory projects in the classrooms with an orientation on working with the environment, and how to take care of the environment" "They consist of students volunteering in the projects, in the primary investigation within the community and voluntarily looking for information; what is the problem that is affecting a big part of the community, how can we at the educational center help them?"

"The same students return in December to work on another project that focusses on the economically, and have a very low education level." "They produce a lot of waste like plastic, that environment specifically." "We live in a very poor community, who are less fortunate ends up in the water. Including animals that live in the community with us. We have to recognize that we problems. "Our role in the educational centers is to teach the children how to practice conservation, recycle, and preserve the environment, so that they have a better future."

### **4. In your current program, what role does biology and other science related subjects play?**

"We do not teach Biology as a separate course, but as part of Natural Sciences. It is a basic subject in our curriculum, but it is not a subject that is on a national basic level." It is a part of our educational center by working with our hands, by preserving our environment, it is not the same as a second language, like English. It is a tertiary subject in our basic program. That is the reason why we collaborate with other institutes like the army, tourism, etc. to involve the students in beach clean-ups, etc."

### **5. Would you be interested in educating the children on ecology and its role in conservation?**

"Yes, all educational centers and all countries, especially all countries that want to preserve their environment, always are interested." "We live in a tourism based environment, and we have to help where we are able to help."

### **6. Do you think ecology could/should have a role in your organization's program?**

"In reality we have a role, but it is not an active one, because Natural Sciences is a broad course, but we do have a role, because in natural Sciences we have a moment in which we discuss environmental problems, which we do have." "Ecology is watching out for natural resources."

### **7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**

"Yes, we do implement these." "And we have marine resources, as well as aquatic systems such as the rivers and the lagoon we live nearby." "We also have other important areas like forests." "In this school we teach the children of all levels what kind of stressors these systems and areas face and how we should address these factors." "Hereby we take into account that we are living in a poor country which plays a big role in the factors affecting our environment." "But if you want to make a difference in this problem, education plays a fundamental role." "And not only educating the children in the schools, but also in the houses of our community." "Next to that it is important to have a positive approach towards these communities if you want them to partake in the solution for this problem." "The same goes for the children." "When we teach them inside

or outside the classroom, we want them to be able of critical thinking while remaining positive.”  
 “If you look at Cabarete, where we live, we see that there are a lot of people, but not many people are able of this mentality that is needed.” “And at this school we want to train the children to later on become working members of our society that know what is needed to make a difference and will inspire others to act alike and work towards a healthy environment.” “But you know that we are living in a poor country, that achieving this is very difficult.”

**8. How flexible is your organization in its schedule regarding its activities?**

“In our school we don’t do very much, because we need to get permission to do so.” “But we are aware of the importance and responsibility to implement it in our school.” “We apply the environmental curriculum and work towards competencies that understand the fundamental parts of this area.” “We need approval of the province as well as the district.” “We the have teachers needed to execute the curriculum” “But, when we want to realize an activity extracurricular we still need teachers to keep doing the same work here.”

**9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**

“In the past, additions were made both outside the province of Puerto Plata as well as excursions here in Cabarete for the younger and older students.” “In these excursions, that is participatory the students have conversations about what attracts them to the environment and how to cure it, but the information to teach them in the field how to do that correctly is not in the curriculum.” “But this is important.” “You guys are here learning in the field while your professors are in the Netherlands.” “And with these efforts we also want to teach the children about the field by letting them hike through their community and environment with maps and information sheets so that they can learn in the field as well.”

**10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**

“Yes I would like to receive information on what SOMONCA Inc. is working on and how we and the children can apply.”

**11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**

“This depends on the time, because we know a school is an institution with traditional working hours.” “But for me as a person if I have time I could see you.” “I work from 7:30 until 17:15 from Monday until Friday.”

**12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**

“Yes, if my schedule allows it.”

**13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

“Yes, but I will only be available for that on Saturday.”

**14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**

“Look, as it is extracurricular, a program should adapt the curricular part.” “We can host workshops, for example on mathematics, environmental sciences or languages.” “But for us it is not possible to do activities outside of the school if they are not a part of the curriculum.” “So for a possible additional program, we could host a workshop for 1 day, during one or two hours

depending on how much time you guys need.” “But our school won’t be able to do it three or four days for a week.” “But therefore it is a program extracurricular.”

**15. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“The role I want such a program to have is an informative role, because we can not do much activities.” “We also have to get permission from our superiors.” “But I do understand the necessity of such a program.” “My ideal program would be that SOMONCA Inc. would write a program about different subject that need conservation such as our rivers and forests, and that we could adopt that into our school with the option of making some adjustments.” “For this case we do not have much time or materials, but in theory we are very interested.”

**16. In what way could your organization facilitate an additional educational program?**

“Because this is an additional program, I would have to ask permission from my boss, the director, in order to say yes.” “We do not have much time available here so for everything else we need permission.”

| Liceo La Cienega- Feliciano Delgado de la Cruz- 11-04-2018 |   |  |                           |                  |
|--|---|--|---------------------------|------------------|
| Number   | Quote   | Open coding  | Axial Coding              | Selective Coding |
|  |   | Background in ecology                                  |                           |                  |
| 1  | "All year round we have participatory projects in the classrooms with an orientation on working with the environment, and how to take care of the environment."   | Participatory projects/ taking care of environment     | Regular activity          | Executed method  |
| 2  | "They consist of students volunteering in the projects, in the primary investigation within the community and voluntarily looking for information; what is the problem that is affecting a big part of the community, how can we at the educational center help them?"  | Community investigation                                | Regular activity          | Executed method  |
| 3  | "The same students return in December to work on another project that focusses on the environment specifically."  | Focus on environment                                   | Regular activity          | Executed method  |
| 4  | "We live in a very poor community, who are less fortunate economically, and have a very low education level."   | Poor community   | Education level           | Concern          |
| 5  | "We do not teach Biology as a separate course, but as part of Natural Sciences. It is a basic subject in our curriculum, but it is not a subject that is on a national basic level."  | Integrated in natural sciences                         | Natural sciences          | Executed method  |
| 6  | "It is a part of our educational center by working with our hands, by preserving our environment, it is not the same as a second language, like English. It is a tertiary subject in our basic program. That is the reason why we collaborate with other institutes like the army, tourism, etc. to involve the students in beach clean-ups, etc."  | Working with hands                                     | Collective activity       | Executed method  |
| 7  | "Ecology is watching out for natural resources."  | Natural resources                                      | Teaching to protect       | Desired method   |
| 8  | "And we have marine resources, as well as aquatic systems such as the rivers and the lagoon we live nearby. We also have other important areas like forests. In this school we teach the children of all levels what kind of stressors these systems and areas face and how we should address these factors."   | Environmental stressors                                | Natural sciences          | Executed method  |
| 9  | "And at this school we want to train the children to later on become working members of our society that know what is needed to make a difference and will inspire others to act alike and work towards a healthy environment." "But you know that we are living in a poor country, that achieving this is very difficult."   | Inspiring others/ poor country                         | Teaching to protect       | Role             |
| 10   | "In the past, additions to the curriculum were made both outside the province of Puerto Plata as well as excursions here in Cabarete for the younger and older students." "In these excursions, that are participatory, the students have conversations about what attracts them to the environment and how to cure it, but the information to teach them in the field how to do that correctly is not in the curriculum." "But this is important."         | Excursion environmental attraction/information missing | Regular activity          | Executed method  |
| 11   | "We apply the environmental curriculum and work towards competencies that understand the fundamental parts of this area."   | Environmental competencies                             | Implementing competencies | Executed method  |
|  |   | Relation to SOMONCA Inc.                               |                           |                  |
| 12   | "I am not familiar with this institution."  | Unfamiliar   | Unfamiliar                | Familiarity      |
|  |   | Interest to facilitate                                 |                           |                  |
| 13   | "Yes, I would like to receive information on what SOMONCA Inc. is working on and how we and the children can apply."  | Receive information                                    | Very willing              | Willingness      |
| 14   | "But I do understand the necessity of such a program."  | Understanding necessity                                | Program                   | Willingness      |
| 15   | "But we are aware of the importance and responsibility to implement it in our school."  | Importance and responsibility                          | Responsibility            | Role             |
| 16   | "Yes, all educational centers and all countries, especially all countries that want to preserve their environment, always are interested."  | Everyone always interested                             | Very willing              | Willingness      |
| 17   | "We live in a tourism based environment, and we have to help where we are able to help."  | Have to help   | Helping                   | Role             |
|  |   | Possibilities to facilitate                            |                           |                  |
| 18   | "Because this is an additional program, I would have to ask permission from my boss, the director, in order to say yes."  | Ask my boss  | Permission                | Needs            |
| 19   | "In our school we don't do very much, because we need to get permission to do so."  | Don't do much  | Permission                | Needs            |
| 20   | "Our role in the educational centers is to teach the children how to practice conservation, recycle, and preserve the environment, so that they have a better future."  | Teaching practicing conservation                       | Teaching to protect       | Role             |
| 21   | "We the have teachers needed to execute the curriculum, but, when we want to realize an activity extracurricular we still need teachers to keep doing the same work here."  | Sufficient teachers for curriculum                     | Extracurricular teachers  | Needs            |
| 22   | "We can host workshops, for example on mathematics, environmental sciences or languages."   | Host workshops   | Facilitator               | Role             |
| 23   | "But for us it is not possible to do activities outside of the school if they are not a part of the curriculum. So for a possible additional program, we could host a workshop for 1 day, during one or two hours depending on how much time you guys need. But our school won't be able to do it three or four days for a week. But therefore it is a program extracurricular."  | Day activities/inside school                           | Facilitator               | Role             |
| 24   | "We also have to get permission from our superiors."  | Need permission  | Permission                | Needs            |
| 25   | "In reality we have a role, but it is not an active one, because Natural Sciences is a broad course, But we do have a role, because in natural Sciences we have a moment in which we discuss environmental problems, which we do have."   | We have one  | Small role                | Role             |
| 26   | "For this case we do not have much time or materials, but in theory we are very interested."  | Not much time/materials                                | Theoretically interested  | Willingness      |
|  |   | Ideal ecological program                               |                           |                  |
| 27   | "They produce a lot of waste like plastic, that ends up in the water. Including animals that live in the community with us. We have to recognize that we have to help them voluntarily. And how we can help them unlimited with their environmental problems."  | Helping community voluntarily                          | Including community       | Role             |
| 28   | "Hereby we take into account that we are living in a poor country which plays a big role in the factors affecting our environment." "But if you want make a difference in this problem, education plays a fundamental role." "An not only educating the children in the schools, but also in the houses of our community."  | Importance of education                                | Including community       | Desired method   |
| 29   | "Next to that it is important to have a positive approach towards these communities if you want them to partake in the solution for this problem. The same goes for the children. When we teach them inside or outside the classroom, we want them to be able of critical thinking while remaining positive. If you look at Cabarete, where we live, we see that there are a lot of people, but not many people are able of this mentality that is needed." | Positive and critical approach                         | Attitude                  | Desired method   |
| 30   | "You guys are here learning in the field while your professors are in the Netherlands." "And with these efforts we also want to teach the children about the field by letting them hike through their community and environment with maps and information sheets so that they can learn in the field as well."  | Field experience                                       | Field experience          | Desired method   |
| 31   | "Look, As it is extracurricular, a program should adapt to the curriculum."   | Adapt to curriculum                                    | Adaptability              | Needs            |
| 32   | "The role I want such a program to have is an informative role, because we can not do much activities."   | Informative role                                       | Mostly theoretical        | Role             |
| 33   | "My ideal program would be that SOMONCA Inc. would write a program about different themes that need conservation such as our rivers and forests, and that we could adopt that into our school with the option of making some adjustments."  | Adopting only  | Adaptability              | Needs            |



**1. Are you familiar with SOMONCA Inc. and their work as an NGO?**

“No”

**2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**

“No”

**3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**

“We have not worked together with SOMONCA, but with other organizations.” “We have participated in regional projects on climate change in Santo Domingo.” We don’t do enough, we need to work more regarding ecology. We have institutes here that work with the children for one day, or two days. We need a program that keeps them working and thinking about this subject all year round.”

**4. In your current program, what role does biology and other science related subjects play?**

“It plays a role in the sense that we organize activities on special days. For instance, we have a day for the forests, a day for the water, a day for the planet, etc. On these days, we organize special activities with the professors, like reforestation. These are extracurricular activities.”

**5. Would you be interested in educating the children on ecology and its role in conservation?**

“Of course. It is very important because we have many environmental problems, like climate change. We have to perform better to keep the natural surroundings that we like. We have to teach the children why their water is important, why their forests are important.”

**6. Do you think ecology could/should have a role in your organization’s program?**

“Yes, we have an obligation to care for the environment”

**7. The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret this?**

“In the course Natural Sciences, we try to identify with all of these competencies, and teach about factors that affect the environment. We want to make them aware of consequences, and teach them the solutions for those consequences.”

**8. How flexible is your organization in its schedule regarding its activities?**

“We need permission from the district or regional office, but we do not have troubles with working with themes regarding ecology.” “It is not possible for us to have activities in the school without authorization.” “This has to do with responsibility for the students”

**9. In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**

“No, just excursions, but not whole programs.”

- 10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**

"Yes."

- 11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**

"Of course, that would be good for the children."

- 12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**

"Yes, of course."

- 13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

"Yes."

- 14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**

"We need to be able to look at the content of the program to see if it fits the children."

"Next to that, it is important that it is adapted to the right target group, this means that different areas in the province have different communities with different environmental problems. We have to look at the needs of the community and teach the children about those."

- 15. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

"An ideal plan would mean to me that SOMONCA works within the communities and schools, and adjusts their content to each different zone with their own environmental and health problems. This would ideally be with cooperation with the ministry of education. They could be responsible for the content to be integrated in the national curriculum, and strengthen the students' knowledge about these problems and their solutions." "So ideally, the program would extend further than just the classrooms, because the students can transfer the knowledge to the rest of the community." "It depends on SOMONCA if they would execute this program just with the schools or other organizations. Maybe if you need help for information on the different communities or zones, it would be wise to ask other organizations, international or ministries."

- 16. In what way could your organization facilitate an additional educational program?**

"We could play an active role in motivating the children to partake in this program, and integrate it into our Natural Science classes. This means that we would provide classrooms and teachers." "We could provide the same assets that we would use for a curricular class. Only extra materials and transportation and other things need to be arranged by SOMONCA." "If you provide a program with a planning that fits ours, the possibilities are big."

| Polytechnico Gregorio Luperon- Lucia Burgos- 09-04-2018 |   |  |                       |                  |
|---|---|--|-----------------------|------------------|
| Number  | Quote   | Open coding                            | Axial Coding          | Selective Coding |
| Background in ecology                                   |   |  |                       |                  |
| 1   | "We have participated in regional projects on climate change in Santo Domingo."   | Regional projects                      | Collective activity   | Executed method  |
| 2   | "We don't do enough, we need to work more regarding ecology. We have institutes here that work with the children for one day, or two days."   | Need more                              | Collective activity   | Needs            |
| 3   | "It plays a role in the sense that we organize activities on special days"  | Special days                           | Regular activities    | Executed method  |
| 4   | "For instance, we have a day for the forests, a day for the water, a day for the planet, etc. On these days, we organize special activities with the professors, like reforestation. These are extracurricular activities."   | Extracurricular activities             | Regular activities    | Executed method  |
| 5   | "In the course Natural Sciences, we try to identify with all of these competencies, and teach about factors that affect the environment. We want to make them aware of consequences, and teach them the solutions for those consequences."  | Awareness consequences                 | Natural science       | Executed method  |
| 6   | "No, just excursions, but not whole programs."  | Excursions                             | Excursions            | Executed method  |
| Relation to SOMONCA Inc.                                |   |  |                       |                  |
| 7   | "No."   | Unfamiliar                             | Unfamiliar            | Familiarity      |
| 8   | "We have not worked together with SOMONCA Inc., but with other organizations."  | Unfamiliar                             | Unfamiliar            | Familiarity      |
| Interest to facilitate                                  |   |  |                       |                  |
| 9   | "Of course. It is very important because we have many environmental problems, like climate change."   | Very important                         | Very willing          | Willingness      |
| 10  | "Yes, we have an obligation to care for the environment."   | Obligation                             | Very willing          | Willingness      |
| 11  | "Of course, that would be good for the children."   | Partake                                | Very willing          | Willingness      |
| 12  | "Yes, of course."   | Partnership                            | Very willing          | Willingness      |
| Possibilities to facilitate                             |   |  |                       |                  |
| 13  | "We need permission from the district or regional office, but we do not have troubles with working with themes regarding ecology."  | Need permission                        | Permission            | Needs            |
| 14  | "It is not possible for us to have activities in the school without authorization."   | Need permission                        | Permission            | Needs            |
| 15  | "This has to do with responsibility for the students."  | Responsibility                         | Responsibility        | Needs            |
| 16  | "We need to be able to look at the content of the program to see if it fits the children."  | Program content                        | More information      | Needs            |
| 17  | "Next to that, it is important that it is adapted to the right target group, this means that different areas in the province have different communities with different environmental problems. We have to look at the needs of the community and teach the children about those." | Adapted to community needs             | Adaptability          | Needs            |
| 18  | "It depends on SOMONCA Inc. if they would execute this program just with the schools or other organizations. Maybe if you need help for information on the different communities or zones, it would be wise to ask other organizations, international or ministries."             | Shared information                     | Collective activities | Desired method   |
| 19  | "We could play an active role in motivating the children to partake in this program, and integrate it into our Natural Science classes."  | Motivating role                        | Facilitator           | Role             |
| 20  | "This means that we would provide classrooms and teachers."   | Classrooms/teachers                    | Facilitator           | Role             |
| 21  | "We could provide the same assets that we would use for a curricular class. Only extra materials and transportation and other things need to be arranged by SOMONCA Inc."   | Curricular assets                      | Facilitator           | Role             |
| 22  | "If you provide a program with a planning that fits ours, the possibilities are big."   | Planning                               | Planning              | Needs            |
| Ideal ecological program                                |   |  |                       |                  |
| 23  | "We need a program that keeps them working and thinking about this subject all year round."   | All year round                         | Program               | Desired method   |
| 24  | "We have to perform better to keep the natural surroundings that we like. We have to teach the children why their water is important, why their forests are important."   | Teaching importance environment        | Teaching to protect   | Desired method   |
| 25  | "An ideal plan would mean to me that SOMONCA works within the communities and schools, and adjusts their content to each different zone with their own environmental and health problems."  | Content adjustable to zones            | Adaptability          | Needs            |
| 26  | "This would ideally be with cooperation with the ministry of education. They could be responsible for the content to be integrated in the national curriculum, and strengthen the students' knowledge about these problems and their solutions."                                  | Cooperation with Ministry of Education | Collective activity   | Desired method   |
| 27  | "So ideally, the program would extend further than just the classrooms, because the students can transfer the knowledge to the rest of the community."  | Transfer knowledge                     | Include community     | Desired method   |

## Appendix V.IV Liceo Delia Gomez – Maria Parra Alvarez

- **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“No, but we are familiar with other organizations.”
- **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“No.”
- **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“We do not have much places to go, we do not have much facilities like bushes to repopulate the forest. And that is important to keep the temperature here stable.” “Every two weeks we visit the environment in Puerto Plata, we have a program there with other organizations to reforest the riverbanks in Jabonico.”
- **In your current program, what role does biology and other science related subjects play?**  
“We teach the children to care for the environment, so that we have better food, less diseases.”
- **Would you be interested in educating the children on ecology and its role in conservation?**  
“Yes, sometimes do things to our nature that will eventually kill you, like polluting our environment with our trash. And when we educate the children about these topics we can ensure better health for us and our environment.”
- **Do you think ecology could/should have a role in your school’s program?**  
“Yes, you should help the University ISA in Santiago, which are currently developing a program for the environment.”
- **The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret these?**  
“When it comes to the environmental subjects like these competencies, the career of the students begins from kindergarten until high school. And we have the means to execute these subjects” ““You guys know we have to be careful with our environment, plastic is in our nature for hundreds of years because it is not biodegradable. It is also getting hotter because of climate change. And we take our students to these areas under stress so that they can see for themselves what is affecting them.” “We also bring the environment to our classrooms and we teach the children how to take care of the environment and what factors do harm to it.” “Many times.” “We have rich biodiversity with various plants and trees, also in our forests. In these areas, such as in Jarabacoa, are living many insects which play vital roles to its preservation.” “We learn about all things related to this and combine them with excursions, for example to Jarabacoa.” “But every time we go out we are confronted with the situation that we are living in a country with much poverty and unhappiness.”
- **How flexible is your organization in its schedule regarding its activities?**  
“Yes, we visit libraries, museums, castles.” “When we want to do a new excursion we need permission from the district.” “Yes, we always have enough teachers for excursions or related activities.”
- **In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**  
“No.”

- **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
 “Yes, we always want to receive information on how we can stop the contamination of our environment.”
- **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation**  
 “Yes, clearly.”
- **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
 “Yes, why not.”
- **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
 “Yes, clearly.”
- **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**  
 “When we participate in such a program, we want to talk to the student before we go to a meeting, so we can adjust things accordingly afterwards.”
- **Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
 “I would like to participate in a project like yours and provide the students with an opportunity to learn more about the environment.”
- **In what way could your organization facilitate an additional educational program?**  
 “We have the students, the teachers and the material to facilitate such a program.”

| Liceo Delia Gomez- Maria Parra Alvarez- 12-04-2018 |   |                                  |                     |                  |
|--|---|----------------------------------|---------------------|------------------|
| Number   | Quote   | Open coding                      | Axial Coding        | Selective Coding |
| Background in ecology                              |   |                                  |                     |                  |
| 1  | "We do not have much places to go, we do not have much facilities like bushes to repopulate the forest. Which is important to keep the temperature here stable."  | Not much facilities              | Limiting factors    | Concern          |
| 2  | "Every two weeks we visit the environment in Puerto Plata, we have a program there with other organizations to reforest the riverbanks in Jabonico."  | Reforest riverbanks              | Collective activity | Executed method  |
| 3  | "We teach the children to care for the environment, so that we have better food, less diseases."  | Teach care for environment       | Teaching to protect | Executed method  |
| 4  | "When it comes to the environmental subjects like these competencies, the career of the students begins from kindergarten until high school. And we have the means to execute these subjects"   | Career students                  | Facilitator         | Role             |
| 5  | We also bring the environment to our classrooms and we teach the children how to take care of the environment and what factors do harm to it."  | Environment to classroom         | Teaching to protect | Executed method  |
| 6  | "We have rich biodiversity with various plants and trees, also in our forests. In these areas, such as in Jarabacoa, are living many insects which play vital roles to its preservation."   | Rich biodiversity                | Teaching to protect | Executed method  |
| 7  | "We learn about all things related to this and combine them with excursions, for example to Jarabacoa."   | Excursions                       | Excursions          | Executed method  |
| 8  | "But every time we go out we are confronted with the situation that we are living in a country with much poverty and unhappiness."  | Confrontational                  | Poverty             | Concern          |
| Relation to SOMONCA Inc.                           |   |                                  |                     |                  |
| 9  | "No, but we are familiar with other organizations."   | Unfamiliar                       | Unfamiliar          | Familiarity      |
| Interest to facilitate                             |   |                                  |                     |                  |
| 11   | "Yes, clearly."   | Partaking                        | Very willing        | Willingness      |
| 12   | "Yes, we always want to receive information on how we can stop the contamination of our environment."   | Receive information              | Very willing        | Willingness      |
| 13   | "Yes, why not."   | Partnership                      | Very willing        | Willingness      |
| 14   | "I would like to participate in a project like yours and provide the students with an opportunity to learn more about the environment."   | Participate                      | Very willing        | Willingness      |
| Possibilities to facilitate                        |   |                                  |                     |                  |
| 15   | "When we want to do a new excursion we need permission from the district."  | Need permission                  | Permission          | Needs            |
| 16   | "Yes, we always have enough teachers for excursions or related activities."   | Sufficient teachers              | Facilitator         | Role             |
| 17   | "Yes, we visit libraries, museums, castles."  | Flexibility                      | Facilitator         | Role             |
| 18   | "We have the students, the teachers and the material to facilitate such a program."   | Students/teachers/material       | Facilitator         | Role             |
| Ideal ecological program                           |   |                                  |                     |                  |
| 19   | " Yes, we sometimes do things to our nature that will eventually kill you, like polluting our environment with our trash. And when we educate the children about these topics we can ensure better health for us and our environment."  | Educate for better health        | Teaching to protect | Desired Method   |
| 20   | "Yes, you should help the University ISA in Santiago, which are currently developing a program for the environment."  | Developing environmental program | Collective activity | Desired Method   |
| 21   | "You guys know we have to be careful with our environment, plastic is in our nature for hundreds of years because it is not biodegradable. It is also getting more hot because of climate change. And we take our students to these areas under stress so that they can see for themselves what is affecting them." | See effects                      | Regular activities  | Executed method  |
| 22   | "When we participate in such a program, we want to talk to the student before we go to a meeting, so we can adjust things accordingly afterwards."  | Discuss with students            | Adjustability       | Needs            |

## Appendix V.X Liceo Jose Dubeau – Noelia Vasquez

- **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“No, this is the first time I have heard of them.”
- **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“No.”
- **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“We have done some projects on recycling and research, as well as preserving the environment. Although these are good steps, they are on the long term. We have a standard curriculum, but for Dominicans, it is very important to have direct contact with a subject to learn about it.”
- **In your current program, what role does biology and other science related subjects play?**  
“We have the standard curriculum, but next to that we try to bring it into practice, by introducing themes like environmental care, and recycling. They are continuous themes in our school. We want the children to understand why it is important to recycle and care for the environment. That they feel the need to implement it into the culture here.”
- **Would you be interested in educating the children on ecology and its role in conservation?**  
“Yes of course. It is not only important for here, but also when they get home, they can pass on the knowledge to their families and educate them.”
- **Do you think ecology could/should have a role in your school’s program?**  
“Yes.”
- **The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret this?**  
“We hope to create morals for the children that makes them care for nature.” “We try to do this in a way that interests them, be it by chatting, or other things, as long as they orient themselves. They can socialize themselves in the classes that we provide. They experience both positive and negative feelings and need to learn what is right.” “It is also important that they learn about their surroundings, for example, they need to recognize local contaminations and diseases, and know why they are there. This will lead to prevention.”  
“We try to make them see connections between cause and effect.”
- **How flexible is your organization in its schedule regarding its activities?**  
“We are not very flexible because we are stuck to certain resources, we need for instance people that can accompany the children. But also permission from the regional office and in many cases the district.” “We do have flexibility in our time and class schedule.” “But it has to be taken into account that not all the children have the opportunity to partake in the excursions, so there need to be other projects too.”
- **In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**  
“We have associations that we work with. They are international organizations, like the Mormon church that supports our neighborhoods and cares for the reforestation.”

- **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
 "Yes."
- **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
 "Yes"
- **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
 "Yes."
- **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
 "Yes."
- **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**  
 "Generally, it is better to have the ability to adjust, because if you have a general program, you don't acknowledge the individual. Everyone has different needs, you need to be able adjust it to the needs that they have too. We need to see what perspectives you propose, and have it on a basic level but need to show it to the schools to see what they have to add for it to fit the curriculum."
- **Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**  
 "Preservation and the importance of ecology. Classes and excursions should complement each other. The theory should be brought into practice by giving the students contact with the environment to make them conscious of their surroundings. Then they will preserve the ecology and all its elements."
- **In what way could your organization facilitate an additional educational program?**  
 "When we have permission we can facilitate students and classrooms."



| Liceo Jose Dubeau- Noelia Vasquez- 10-04-2018 |   |                                 |                     |                  |
|---|---|---------------------------------|---------------------|------------------|
| Number  | Quote   | Open coding                     | Axial Coding        | Selective Coding |
| Background in ecology                         |   |                                 |                     |                  |
| 1   | "We have done some projects on recycling and research, as well as preserving the environment."  | Projects                        | Regular activities  | Executed method  |
| 2   | "Although these are good steps, they are on the long term. We have a standard curriculum, but for Dominicans, it is very important to have direct contact with a subject to learn about   | Direct contact                  | Workform            | Desired method   |
| 3   | "We have the standard curriculum, but next to that we try to bring it into practice, by introducing themes like environmental care, and recycling. They are continuous themes in our school."   | Practicing continuous themes    | Regular activities  | Executed method  |
| 4   | "We want the children to understand why it is important to recycle and care for the environment. That they feel the need to implement it into the culture here."  | Understand importance           | Teaching to protect | Executed method  |
| 5   | "We hope to create morals for the children that makes them care for nature."  | Create morals                   | Attitude            | Desired method   |
| 6   | "We try to do this in a way that interests them, be it by chatting, or other things, as long as they orient themselves. They can socialize themselves in the classes that we provide. They experience both positive and negative feelings and need to         | Orientation by socializing      | Workform            | Executed method  |
| 7   | "It is also important that they learn about their surroundings, for example, they need to recognize local contaminations and diseases, and know why they are there. This will lead to prevention."  | Recognition leads to prevention | Teaching to protect | Executed method  |
| 8   | "We try to make them see connections between cause and effect   | Connections                     | Attitude            | Executed method  |
|   | "We have associations that we work with. They are international organizations, like the Mormon church that supports our neighborhoods and cares for the reforestation."   | Work with associations          | Collective efforts  | Executed method  |
| Relation to SOMONCA Inc.                      |   |                                 |                     |                  |
| 9   | "No, this is the first time I have heard of them."  | Unfamiliar                      | Unfamiliar          | Familiarity      |
| Interest to facilitate                        |   |                                 |                     |                  |
| 10  | "Yes of course. It is not only important for here, but also when they get home, they can pass on the knowledge to their families and educate them."   | Pass on knowledge               | Including community | Desired method   |
| 11  | "Yes."  | Partnership                     | Very willing        | Willingness      |
| Posibilities to facilitate                    |   |                                 |                     |                  |
| 12  | "We are not very flexible because we are stuck to certain resources, we need for instance people that can accompany the children. But also permission from the regional office and in many cases the district."   | Limited by resources            | Permission          | Needs            |
| 13  | "We do have flexibility in our time and class schedule."  | Flexible shedule                | Facilitator         | Role             |
| 14  | "But it has to be taken into account that not all the children have the opportunity to partake in the excursions, so there need to be other projects too."  | Opportunity to partake          | Other projects      | Needs            |
| 15  | "Generally, it is better to have the ability to adjust, because if you have a general program, you don't acknowledge the individual. Everyone has different needs, you need to be able adjust it to the needs that they have too."                            | Ability to adjust               | Adjustability       | Needs            |
| 16  | "We need to see what perspectives you propose, and have it on a basic level but need to show it to the schools to see what they have to add for it to fit the curriculum."  | Perspective                     | More information    | Needs            |
| Ideal ecological program                      |   |                                 |                     |                  |
| 17  | "Preservation and the importance of ecology."   | Importance ecology              | Teaching to protect | Desired method   |
| 18  | "Classes and excursions should complement each other. The theory should be brought into practice by giving the students contact with the environment to make them conscious of their surroundings. Then they will preserve the ecology and all its elements." | Theory brought into practice    | Teaching to protect | Desired method   |

## Appendix V.XI Rugama Tours – Ruddy Martinez

- 1. Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“We have worked together for ten years. I am also a member. I have an ecological park in Cabarete.”
- 2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“Initiated by the city council there is a city street clean up a couple times a year, in which I have participated together with SOMONCA Inc. They are asked to organize the event, and together with the army and the Red Cross, we clean the town of Cabarete.”  
“We have also renovated houses together for poor people in Callejon de la loma in 2017. We have ordered wood with the town and nature preservation and renovated the houses.”
- 3. So far, what efforts have you or your organization made to educate the children on ecology and its role in conservation?**  
“Children are the future, and my role is to teach the children about the nature of the Dominican. It is so important to teach them about the importance of nature preservation. How important the animals are. For example, the snakes here are killed, while these people don’t have an idea what that snake does. The only thing Dominican snakes do is eat rats. They keep the houses clean from rats. They are harmless. And with that in mind, I want to teach the kids that we need to protect these animals in Dominicana, and do not kill them. Plants, trees, and more, that is my role. Every person that comes here, international, doesn’t know how it works here. They see fruits from the trees, but they don’t know what the plant looks like. So, it is interesting for many people, not just for children.”
- 4. In your current program, what role does biology and other science related subjects play?**  
“My whole organization is focused on ecology. My park is focused on teaching Dominicans for instance, but also other visitors, about ecology. We have to learn from nature, since we have the best nature here.”
- 5. Would you be interested in educating the children on ecology and its role in conservation?**  
“Yes.”
- 6. Do you think ecology could/should have a role in your organization’s program?**  
“Yes, very much.”
- 7. How flexible is your organization in its schedule regarding its activities?**  
“That is my dream, to be able to be flexible for students. Many students don’t have money or opportunities to do these things, but money is not important to me. To teach or learn these students is my dream, and to be flexible in it.”
- 8. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Yes, even more than that.”
- 9. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
“Yes, even more than that.”
- 10. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
“You have my cooperation 100%. It is very important for everybody to make progress.”

SOMONCA Inc. is also the only organization that I know of in this line of work. It is not easy to begin a new path, but I want to be there, I need to do it."

- 11. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

"Yes, they already have meetings in my backyard."

- 12. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**

"This would depend on the content of the program."

- 13. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

"For instance, we have a big problem with all farmers; Pesticides. In the whole production of vegetables, and fruit plantations. But that is wrong, because a lot of people die from it and become ill. The pesticides get into the compost and spread further. Therefore, I want to build a vegetable plantation so that the visitors can get everything organic. It will not grow as fast as the normal vegetables, and it is more work intensive. But the children can help in the plantation and learn about it and nature protection at the same time. But also, how to plant plants, and transport plants, because that is just as important. That is my dream."

- 14. In what way could your organization facilitate an additional educational program?**

"I can offer my ecological park with all its facilities to the children, and my knowledge."

| Rugama Tours- Rudy Martinez- 24-03-2018 |  |                                    |                      |                  |
|---|--|------------------------------------|----------------------|------------------|
| Number                                  | Quote  | Open coding                        | Axial Coding         | Selective Coding |
| Background in ecology                   |  |                                    |                      |                  |
| 1                                       | "For example, the snakes here are killed, while these people don't have an idea what that snake does. The only thing Dominican snakes do is eat rats. They keep the houses clean from rats. They are harmless. And with that in mind, I want to teach the kids that we need to protect these animals in Dominicana, and do not kill them."   | Teaching to protect                | Teaching to protect  | Desired method   |
| 2                                       | "Plants, trees, and more, that is my role. Every person that comes here, international, doesn't know how it works here. They see fruits from the trees, but they don't know what the plant looks like. So, it is interesting for many people, not just for children."  | Fruits from trees                  | Teaching to protect  | Desired method   |
| 3                                       | "My whole organization is focused on ecology. My park is focused on teaching Dominicans for instance, but also other visitors, about ecology."   | Teaching ecology                   | Teaching to protect  | Desired method   |
| 4                                       | "We have to learn from nature, since we have the best nature here."  | Learn from nature                  | Learn from nature    | Desired method   |
| Relation to SOMONCA Inc.                |  |                                    |                      |                  |
| 5                                       | "We have worked together for ten years. I am also a member. I have an ecological park in Cabarete."  | Member                             | Relationship         | Familiarity      |
| 6                                       | "Initiated by the city council there is a city street clean up a couple times a year, in which I have participated together with SOMONCA Inc. They are asked to organize the event, and together with the army and the red cross, we clean the town of Cabarete."  | City Clean Up                      | Collective activity  | Executed method  |
| 7                                       | "We have also renovated houses together for poor people in Callejon de la loma in 2017. We have ordered wood with the town and nature preservation and renovated the houses."  | Renovated houses                   | Collective activity  | Executed method  |
| 8                                       | "Yes, they already have meetings in my backyard."  | Meetings                           | Facilitator          | Role             |
| Interest to facilitate                  |  |                                    |                      |                  |
| 9                                       | "Yes, even more than that."  | More                               | Willing to cooperate | Willingness      |
| 10                                      | "You have my cooperation 100%. It is very important for everybody to make progress. SOMONCA Inc. is also the only organization that I know of in this line of work. It is not easy to begin a new path, but I want to be there, I need to do it."  | Cooperation for progress           | Willing to cooperate | Willingness      |
| Possibilities to facilitate             |  |                                    |                      |                  |
| 11                                      | "That is my dream, to be able to be flexible for students. Many students don't have money or opportunities to do these things, but money is not important to me. To teach or learn these students is my dream, and to be flexible in it."  | Teaching more important than money | Flexible teaching    | Desired method   |
| 12                                      | "I can offer my ecological park with all its facilities to the children, and my knowledge."  | Ecological park with facilities    | Facilitator          | Role             |
| Ideal ecological program                |  |                                    |                      |                  |
| 13                                      | "Children are the future, and my role is to teach the children about the nature of the Dominican. It is so important to teach them about the importance of nature preservation. How important the animals are."  | Teaching to protect                | Teaching role        | Role             |
| 14                                      | "For instance, we have a big problem with all farmers; Pesticides. In the whole production of vegetables, and fruit plantations. But that is wrong, because a lot of people die from it and become ill. The pesticides get into the compost and spread further. Therefore, I want to build a vegetable plantation so that the visitors can get everything organic. It will not grow as fast as the normal vegetables, and it is more work intensive. But the children can help in the plantation and learn about it and nature protection at the same time. But also, how to plant plants, and transport plants, because that is just as important. That is my dream." | Organic vegetable farm             | Facilitator          | Role             |

## Appendix V.XII Liceo Antera Mota – Amaurys Garcia Murray

- **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“No, I have not heard of them.”
- **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
“No”
- **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“We have projects in favor of environmental protection, and a course called Natural Science.”
- **In your current program, what role does biology and other science related subjects play?**  
“It is very important, not only for students, but for life itself.”
- **Would you be interested in educating the children on ecology and its role in conservation?**  
“100 percent.”
- **Do you think ecology could/should have a role in your organization’s program?**  
“It needs to play a role. It should be a part of the curriculum, not just as a theme, but as an integrated part of Natural Science.”
- **The national curriculum describes the following competencies that students must meet in the field of environmental awareness. How does your school interpret this?**  
“We make the students conform to these competencies by teaching them in class, but also with excursions. For example, by organizing beach clean-ups. In this way they will be able to see the environmental problems themselves.”
- **How flexible is your organization in its schedule regarding its activities?**  
“We have flexibility.” “In this month we have some excursions, we have an agenda in which the excursions are written. If there is a date available and we have the funds we can organize an excursion, we are very flexible in that.” “What we do need is permission from the district or regional office.”
- **In the past, have there been additional programs to educate children about issues other than the curriculum? And if so, what kind?**  
“Not a specific program no. we have had some projects here and there that had extracurricular activities in them, but not one that was year-round.”
- **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Yes.”
- **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
“Yes, but I do need some more information about the organization, then we can decide yes, no or maybe.”
- **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a**

**partner?**

“Yes.”

- **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

“Yes.”

- 14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs?**

“The second part.” “It needs to be adapted to different situations.”

- 15. Could you describe shortly how your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“It has to be an extracurricular program, but it has to meet the standards of the curriculum.” “It has to focus on orientation of ecology and serve as an initial acquaintance with the subject, that is complimented by the schools.” “It is very important to teach them the importance of our planet, and to protect it.” “Ideally it would be directed towards small children, because they can be taught that caring for the world is no more than normal. Once the children are older, it will be more difficult to teach them because they already have certain manners.”

- 16. In what way could your organization facilitate an additional educational program?**

“We always have teachers available to support these kinds of projects. We can explain the program to them and have them integrate it into the classes. They can motivate the students to cooperate.”

| Liceo Antera Mota- Amaury Garcia Murray -10-04-2018 |   |                             |                            |                  |
|---|---|-----------------------------|----------------------------|------------------|
| Number  | Quote   | Open coding                 | Axial Coding               | Selective Coding |
| Background in ecology                               |   |                             |                            |                  |
| 1   | "We have projects in favor of environmental protection, and a course called Natural Science."   | Environmental protection    | Natural science            | Executed method  |
| 2   | "We make the students conform to these competencies by teaching them in class, but also with excursions. For example, by organizing beach clean-ups. In this way they will be able to see the environmental problems themselves."                   | In class/excursions         | Complementary skills       | Executed method  |
| 3   | "Not a specific program no. we have had some projects here and there that had extracurricular activities in them, but not one that was year-round."   | Extracurricular activities  | Extracurricular activities | Executed method  |
| Relation to SOMONCA Inc.                            |   |                             |                            |                  |
| 4   | "No, I have not heard of them."   | Unfamiliar                  | Unfamiliar                 | Familiarity      |
| Interest to facilitate                              |   |                             |                            |                  |
| 5   | "It is very important, not only for students, but for life itself."   | Important for life          | Very willing               | Willingness      |
| 6   | "100 percent."  | Interested teaching ecology | Very willing               | Willingness      |
| 7   | "Yes, but I do need some more information about the organization, then we can decide yes, no or maybe."   | Interest collaboration      | More information           | Needs            |
| 8   | "It is very important to teach them the importance of our planet, and to protect it."   | Importance teaching         | Teaching to protect        | Desired method   |
| Possibilities to facilitate                         |   |                             |                            |                  |
| 9   | "We have flexibility."  | Flexibility                 | Facilitator                | Role             |
| 10  | "In this month we have some excursions, we have an agenda in which the excursions are written. If there is a date available and we have the funds we can organize an excursion, we are very flexible in that."                                      | Flexibility excursions      | Facilitator                | Role             |
| 11  | "What we do need is permission from the district or regional office."   | Need permission             | Permission                 | Needs            |
| 12  | "We always have teachers available to support these kinds of projects. We can explain the program to them and have them integrate it into the classes. They can motivate the students to cooperate."  | Available support           | Facilitator                | Role             |
| Ideal ecological program                            |   |                             |                            |                  |
| 13  | "It needs to play a role. It should be a part of the curriculum, not just as a theme, but as an integrated part of Natural Science."  | Integrated role             | Natural science            | Role             |
| 14  | "The second part." "It needs to be adapted to different situations."  | Adaptable                   | Adaptability               | Needs            |
| 15  | "It has to be an extracurricular program, but it has to meet the standards of the curriculum."  | Meeting standards           | Meeting standards          | Needs            |
| 16  | "It has to focus on orientation of ecology and serve as an initial acquaintance with the subject, that is complimented by the schools."   | Initial acquaintance        | Teaching to protect        | Desired method   |
| 17  | "Ideally it would be directed towards small children, because they can be taught that caring for the world is no more than normal. Once the children are older, it will be more difficult to teach them because they already have certain manners." | Directed at young children  | Attitude                   | Desired method   |

## Appendix V.XIII Liceo Gregorio U G – Teodoro Melo

**1. Are you familiar with SOMONCA Inc. and their work as an NGO?**

“No, this is the first time we meet each other.”

**2. Have you ever worked together or partaken in any activities with SOMONCA Inc.?**

“No I have not.”

**3. So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**

“At the moment we are working on orienting the students on taking care of the environment and the importance of reforestation.” “In the past we have had a tree planting day where we planted different types of fruit trees together with groups of students and local communities. This day was organized for the course Natural Science and supervised by its teacher, not the whole school.”

**4. In your current curriculum, grade 1-2-3, what role does biology and other science related subjects play?**

“In reality, it plays a big role. In the current plan we have we focus a lot on the conservation and protection of Mother Nature.” “In the course Natural Science we also have excursions where the students playfully learn about plants and trees and the importance of them.” “We also have had a ‘Day of the earth’ where we discussed for example how we handle our garbage and the toxic effects of them to our nature when we aren’t careful.”

**5. Would you be interested in educating the children on ecology and its role in conservation?**

“Yes clearly, we are working towards that. For example we are living in a country with a lot of trees and forests and we cut a lot these which reduces the amount of carbon that is taken in by them. And we have the obligation for Mother Nature to do something about this so we teach the children to be careful with their environment and trees so that they will be able to make a difference when they are older.”

**6. Do you think ecology could/should have a role in the school’s curriculum?**

“Yes very much, it has to be in the curriculum if we really want to protect the environment.”

**7. The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**

“We implement all these competencies and use them to achieve our goal of teaching the students on the importance of taking care of Mother Nature.” “During excursions and activities we provide the students with the opportunity to develop critical thinking.” “To be critical on our behavior and its effect on the environment such as contaminations, deforestation and overfishing.”

**8. How flexible is your school in its schedule regarding classes and excursions?**

“In our school, excursions are extracurricular activities and from the ministry of education we get a certain amount of days per year that we can use for these activities.” “We need permission from the region and district for extra activities such as this one.” “Next to that when we go outside of the school we need to know at what time we leave and at what time we come back.” “We also need to know how much it will cost for the students because the fathers need to give permission as well.”

**9. In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**

“Inside the school we do everything according to the curriculum and everything outside has



to be an educational addition.” “For these activities we use the teachers we have for different areas of interest.”

- 10. Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**

“Yes, such a program will strengthen us.”

- 11. Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**

“We are already working on this, but yes it is always good to do more and connect with other organizations.”

- 12. Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**

“Of course, we have our own programs but if this one fits with them it would be great.”

- 13. If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**

“Yes I would like to partake when I have time next my work on this school.” “I would have to ask the director, who is not much here because his wife is very sick.” “If I have time I can go.”

- 14. If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt it to your own needs and that of the target group?**

“I would like it to be able to adapt. I will do this together with the teacher of natural science.” “So far what you have told me I like very much, but I have to make sure my teachers also like it.”

- 15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“Firstly, I would need to know your organization a little better. How it works, how it gets funded what kind of activities it does.” “When I know that I can give an estimation of what I would like.” “I would like to do more with excursions and investigations. We have a lot of materials and teachers for such a program.” “We have time for an extra-curricular activity when we have permission.”

- 16. In what way could your school facilitate an extracurricular educational program?**

“You have to take into account that we work here from 8 in the morning until 4 in the afternoon.”

| Liceo Gregorio U.G.-Teodoro Relo- 27-04-2018 |  |                                    |                     |                  |
|--|--|------------------------------------|---------------------|------------------|
| Number                                       | Quote  | Open coding                        | Axial Coding        | Selective Coding |
| Background in ecology                        |  |                                    |                     |                  |
| 1  | "At the moment we are working on orienting the students on taking care of the environment and the importance of reforestation."  | Orienting students                 | Teaching to protect | Executed method  |
| 2  | "In the past we have had a tree planting day where we planted different types of fruit trees together with groups of students and local communities. This day was organized for the course Natural Science and supervised by its teacher, not the whole school."   | Tree planting day                  | Work form           | Executed method  |
| 3  | "In reality, it plays a big role. In the current plan we have we focus a lot on the conservation and protection of mother nature."   | Conservation                       | Teaching to protect | Executed method  |
| 4  | "In the course Natural Science we also have excursions where the students playfully learn about plants and trees and the importance of them."  | Importance of plants               | Teaching to protect | Executed method  |
| 5  | "We also have had a 'Day of the earth' where we discussed for example how we handle our garbage and the toxic effects of them to our nature when we aren't careful."   | Toxic effects                      | Teaching to protect | Executed method  |
| 6  | "We implement all these competencies and use them to achieve our goal of teaching the students on the importance of taking care of Mother Nature."   | Taking care of Mother nature       | Teaching to protect | Executed method  |
| 7  | "During excursions and activities we provide the students with the opportunity to develop critical thinking."  | Critical Thinking                  | Attitude            | Desired method   |
| 8  | "To be critical on our behaviour and its effect on the environment such as contaminations, deforestation and overfishing."   | Critical behaviour                 | Attitude            | Desired method   |
| 9  | "For these activities we use the teachers we have for different areas of interest."  | Use teachers                       | Work form           | Executed method  |
| Relation to SOMONCA Inc.                     |  |                                    |                     |                  |
| 10   | "No, this is the first time we meet each other."   | Unfamiliar                         | Unfamiliar          | Familiarity      |
| Interest to facilitate                       |  |                                    |                     |                  |
| 11   | "Yes clearly, we are working towards that. For example we are living in a country with a lot of trees and forests and we cut a lot these which reduces the amount of carbon that is taken in by them. And we have the obligation for mother nature to do something about this so we teach the children to be careful with their environment and trees so that they will be able to make a difference when they are older." | Obligation to be careful           | Facilitator         | Role             |
| 12   | "Yes very much, it has to be in the curriculum if we really want to protect the environment."  | In the curriculum                  | Integrated          | Desired method   |
| 13   | "We are already working on this, but yes it is always good to do more and connect with other organizations."   | Other organizations                | Collective activity | Desired method   |
| 14   | "Yes, such a program will strengthen us."  | Strengthen us                      | Facilitator         | Role             |
| 15   | "Of course, we have our own programs but if this one fits with them it would be great."  | Own projects                       | Very willing        | Willingness      |
| Possibilities to facilitate                  |  |                                    |                     |                  |
| 16   | "In our school, excursions are extracurricular activities and from the ministry of education we get a certain amount of days per year that we can use for these activities."   | Use certain days                   | Work form           | Executed method  |
| 17   | "We need permission from the region and district for extra activities such as this one."   | Permission from district           | Permission          | Needs            |
| 18   | "Next to that when we go outside of the school we need to know at what time we leave and at what time we come back."   | Know the time                      | More information    | Needs            |
| 19   | "We also need to know how much it will cost for the students because the fathers need to give permission as well."   | Costs                              | More information    | Needs            |
| 20   | "You have to take into account that we work here from 8 in the morning until 4 in the afternoon."  | Work hours                         | Work form           | Executed method  |
| Ideal ecological program                     |  |                                    |                     |                  |
| 21   | "Inside the school we do everything according to the curriculum and everything outside has to be an educational addition."   | Educational addition               | Work form           | Desired method   |
| 22   | "I would like it to be able to adapt. I will do this together with the teacher of natural science."  | Able to adapt                      | Adaptability        | Needs            |
| 23   | "So far what you have told me I like very much, but I have to make sure my teachers also like it."   | Teacher approval                   | Permission          | Needs            |
| 24   | "Firstly, I would need to know your organization a little better. How it works, how it gets funded what kind of activities it does."   | Know SOMONCA Inc. better           | More information    | Needs            |
| 25   | "When I know that I can give an estimation of what I would like." "I would like to do more with excursions and investigations. We have a lot of materials and teachers for such a program."  | More excursions and investigations | Work form           | Desired method   |
| 26   | "We have time for an extra-curricular activity when we have permission."   | Have time                          | Permission          | Needs            |

## Appendix V.XIV Interview Liceo Javier Martinez – Pablo Rezario

1. **Are you familiar with SOMONCA Inc. and their work as an NGO?**  
“No.”
2. **Have you ever worked together or partaken in any activities with SOMONCA Inc.?**  
No.”
3. **So far, what efforts have you or your school made to educate the children on ecology and its role in conservation?**  
“We have projects that teach the students to be careful with their environment inside our school and also in our evening school.”
4. **In your current curriculum, grade 1-2-3, what role does biology and other science related subjects play?**  
“We currently have a project on pesticides which is very important because we want to preserve our nature and the aquatic systems such as the sea. In this project we look at which persons use pesticides and their effects.”
5. **Would you be interested in educating the children on ecology and its role in conservation?**  
“Clearly, it is important that the students know to preserve the planet.”
6. **Do you think ecology could/should have a role in the school’s curriculum?**  
“It is very important for all the areas within our school.”
7. **The national curriculum describes the following competencies that students must need in the field of environmental awareness. How does your school interpret these?**  
“We implement all of these.”
8. **How flexible is your school in its schedule regarding classes and excursions?**  
“Moderately.”
9. **In the past, have there been additional programs to educate the children on topics aside from the school curriculum? And if yes, what kind?**  
“We have had multiple activities on how to preserve the environment with other schools and organizations.” “For example, the municipality currently has a project on rats and how to deal with them while taking care of our environment.”
10. **Would you like to be informed on the progress of this program and being notified when it is ready to be executed?**  
“Clearly.”
11. **Would you like to partake in an educational program from SOMONCA Inc. when it is finished and educate the children on ecology and its role within conservation?**  
“Totally, yes”
12. **Would you be willing to play an active role within the educational program and be involved with creating the content and structure of the educational program by becoming a partner?**  
“Totally, yes”
13. **If yes, would you be willing to partake in a meeting with other stakeholders that are also willing to become a partner in the educational program?**  
“When I have time, yes.”
14. **If SOMONCA Inc. facilitated the outline of such a program, would you prefer that this outline is completely fixed or would you like the possibility to make adjustments to adapt**

**it to your own needs and that of the target group?**

“If there are parts that I do not like, I want to adjust them.”

- 15. Could you describe shortly what your ideal educational program on ecology would look like and what role SOMONCA Inc. could play in both the designing process and the execution of it?**

“In such a program I would like to see all aspects of ecology to be covered and the importance of preserving our planet.” “It would be best if we do this all together.”

- 16. In what way could your school facilitate an extracurricular educational program?**

“Because this is a program extracurricular it depends on which part of the curriculum it will adapt and that everything strictly goes according to the national curriculum as well.”

| Liceo Javier Martinez- Pablo Resario- 27-04-2018 |  |                          |                          |                  |
|--|--|--------------------------|--------------------------|------------------|
| Number   | Quote  | Open coding              | Axial Coding             | Selective Coding |
| Background in ecology                            |  |                          |                          |                  |
| 1  | "We have projects that teach the students to be careful with their environment inside our school and also in our evening school."  | Careful with environment | Teaching to protect      | Executed method  |
| 2  | "We currently have a project on pesticides which is very important because we want to preserve our nature and the aquatic systems such as the sea. In this project we look at which persons use pesticides and their effects." | Projects on pesticides   | Teaching to protect      | Executed method  |
| 3  | "We implement all of these."   | Implement all            | Curriculum               | Executed method  |
| 4  | "We have had multiple activities on how to preserve the environment with other schools and organizations."   | Preserve the environment | Teaching to protect      | Executed method  |
| 5  | "For example, the municipality currently has a project on rats and how to deal with them while taking care of our environment."  | Deal with rats           | Teaching to protect      | Collaboration    |
| Relation to SOMONCA Inc.                         |  |                          |                          |                  |
| 6  | "No."  | Unfamiliar               | Unfamiliar               | Unfamiliar       |
| Interest to facilitate                           |  |                          |                          |                  |
| 7  | "Clearly, it is important that the students know to preserve the planet."  | Preserve the planet      | Teaching to protect      | Desired method   |
| 8  | "It is very important for all the areas within our school."  | All areas                | Importance of teaching   | Desired method   |
| 9  | "Totally, yes"   | Partnership              | Very willing             | Willingness      |
| Possibilities to facilitate                      |  |                          |                          |                  |
| 10   | "Because this is a program extracurricular it depends on which part of the curriculum it will adapt and that everything strictly goes according to the national curriculum as well."   | Which part of curriculum | Importance of curriculum | Desired method   |
| Ideal ecological program                         |  |                          |                          |                  |
| 11   | "If there are parts that I do not like, I want to adjust them."  | Adjustments              | Adjustability            | Needs            |
| 12   | "In such a program I would like to see all aspects of ecology to be covered and the importance of preserving our planet."  | All aspects of ecology   | Teaching to protect      | Desired method   |
| 13   | "It would be best if we do this all together."   | Together                 | Collective activity      | Desired method   |

# Appendix VI - Analysis matrix

The following analysis matrix is difficult to read due to its size properties. Therefore a clear copy can be requested by email (see title page).

| Stakeholder                      | Stakeholder category  | Relation to SOMONCA Inc.  | Interest in nature  | Role  | Needs   | Concerns   | Desired ecological program  | Conclusion 1:  |
|----------------------------------|---|---|---|---|---|--|---|--|
| 1. Liceo Madre Teresa de Calcuta | We work with the competencies of the curriculum and in addition to that we have projects and activities inside and outside of the classroom focusing on taking care of the environment in a creative and dynamic way.   | No, this is your first visit.   | We are very interested in working with ecology and it should be in the curriculum because it is a great addition to the natural science course. Therefore we would like it very much to receive information and become a partner. | We can facilitate everything.   | We would need permission and extra teachers, which depends on the content of the program.   | For excursions we are not very flexible.   | I would like to teach the kids on the theories behind ecology and its practical's.  | Liceo Madre Teresa de Calcuta has executed activities inside and outside the classroom. They are willing and able to facilitate everything. They would need permission on extra teachers depending on the content of the program. They are concerned about their flexibility regarding excursions. They want to teach the students about the theories behind ecology.  |
| 2. Liceo Sabaneta De Yasicá      | Our activities are based on different themes that take place during different weeks or months of the year, which focus on teaching to taking care of the environment such as recycling.   | This is the first time I have heard of SOMONCA Inc.   | Yes, of course we want to participate, when the money is there. We have a music teacher from Brazil that puts music and taking care of the environment together. That is a nice way of putting two different themes together.     | If we have the people that can provide courses, and we have the time, there is no problem.  | Many schools and directors look for money for excursions.   | Excursions do not occur often at this school, because of the danger that they contain.   | It is important to focus on recycling and reforestation and time. But they needs money to execute excursions. They are concerned about the dangers of excursions. They want the content of the program to focus on recycling and reforestation.   | Liceo Sabaneta De Yasicá has executed activities in theme weeks or months. They are willing and able to facilitate people and time. But they needs money to execute excursions. They are concerned about the dangers of excursions. They want the content of the program to focus on recycling and reforestation.  |
| 3. Politécnico José Morel        | We have to make the children care for ecology by implementing the consequences. We do this by organizing workshops that also apply to the social science classes.   | We are not familiar with SOMONCA Inc.   | We are very willing because it is about understanding difficult processes so we need to participate.  | We can implement the workshops and carry out promotion outside the schools so people know about the program, it can also have role in our curriculum.   | We would need to see the whole program because we can not decide on a framework. We need to be able to adapt to different levels. Excursions are possible when SOMONCA Inc. takes the time and responsibility for the students.   |  | It is very important that the program reaches consensus among students in all schools which would lead to more care for the environment. The execution of the program would be in different work forms.   | Liceo Politécnico José Morel has executed workshops to make students care for ecology. They are very willing to participate. They can implement and promote the program but would need more information, adjustability and SOMONCA Inc. to take responsibility for the students. They want to reach consensus in all schools which would lead to more care for the environment.  |
| 4. Liceo Israel Brito Bruno      | So far we have only talked about environmental problems and the curriculum but have done nothing concrete besides a tree planting day.  | No, I am not familiar with SOMONCA Inc. because this is the first time we have met.           | Yes, we would like to receive information and become a partner.   | We can facilitate everything including time.  | We can only do something if we have the people that are able to make adjustments.   |  | We want to orientate the students on taking care of the environment for our planet and the local communities.   | Liceo Israel Brito Bruno has not executed any concrete activities. They are willing to become a partner in the program. They are able to facilitate if they have permission and the ability to make adjustments to their needs. They want to orientate the students on taking care of the environment and local communities.   |
| 5. Liceo Eduardo Brito           | In the course natural science we discuss a lot of topics regarding the environment and taking care of it which inspire critical thinking. In collaboration with other liceo's. We also complement these with small excursions but these are not all year round.               | I am not familiar with SOMONCA Inc.   | Yes I am interested.  | We have certain guidelines and regulations at our school for these excursions that enable us to provide them two times per year. We will be able to help you with our teachers and rooms, when available, we can be creative.             | We need authorization to do something and the ability to adjust the content.  | Most of our students won't be able to pay for another excursion because their parent normally don't make as much money as the parents from private schools.  | We want to educate the students on topics that are outside the skills of our teachers and inspire critical and positive thinking as an addition to natural science. It should be hands on, visually and beneficial to the environment.  | Liceo Eduardo Brito has executed activities in-and outside school, also in collaboration with other high schools. They are able to facilitate, but have difficulties with executing excursions due to the danger. They need permission and the ability to adjust the content. There is concern for parental fundings for extra excursions. They want to educate the students on topics that go beyond the teachers' knowledge.   |
| 6. The Dream Project             | Our efforts are projects based. We have done for example summer camp, project groups and literature groups.   | As of today I am familiar with SOMONCA Inc.   | Sure I am interested, it depends if I can collaborate in what way.  | We are very flexible in time, so we are fine with hosting the program as well as training the teachers so that we can implement it in our activities.   | Everything is going to adjust it, so we have to adjust it as well.  |  | It needs to be fun, interactive, student based and experience based.  | The Dream Project has executed multiple projects. They are interested in collaboration and very flexible in their ability to facilitate. They need adjustability. They want it to be fun, interactive and experience based.  |
| 7. Liceo La Ciénega              | We have a hands on approach towards taking care of our environment as part of the natural science course in which we identify environmental stressors and try to resolve them with the local communities.   | I am not familiar with this institution.  | We understand the necessity of such a program and would like to receive information on its progress. Although we do not have much time or materials.  | We can host workshops, for example on mathematics, environmental sciences or languages. The role I want such a program to have is an informative role, because we can not do much activities.   | We need permission and extra teachers for an extracurricular program. We need to be able to make adjustments.   |  | We want to train the children to later on become working members of our society that know what's needed to make a difference and will inspire others to act alike and work towards a healthy environment by being able of positive and critical thinking.   | Liceo Cabaneta has only taught ecology within the natural science course. They are willing to receive information because they are not able to facilitate much. They need permission, extra teachers and adjustability. They want to train children to be able of critical and positive behavior to work towards a healthy environment.  |
| 8. Liceo Gregorio Luperson       | Besides the course natural science we have had several excursions on the climate and other ecological topics.   | I do not know and have not worked together with SOMONCA, but I have with other organizations. | Yes I would like to participate, we have an obligation to care for the environment.   | We could play an active role in motivating the children and need to that we can deliver classrooms and teachers.  | We need permission from the district or regional office, a bit more information on the content of the program and to be able to make adjustments to the content of each different zone with their own environmental and health problems.  |  | Ideally it would be in cooperation with the ministry of education and educates the children in the importance of preserving their surroundings as an extension of the classroom.  | Liceo Gregorio Luperson has executed several ecological excursions. They feel the obligation towards Mother Nature to preserve the planet and to know how to do that. They need district or regional permission, more information about the content of the program and the ability to adjust it. They want to teach students about the importance of preserving their surroundings.  |
| 9. Liceo Della Gomez             | We have activities inside and outside of the classroom that focus on taking care of the environment by looking at biodiversity and reforestation.   | I am not familiar with SOMONCA Inc. but I am with other organizations.                        | We would like it very much to receive information and become a partner so we can teach our students more about their environment.   | We have the students, the teachers and the material to facilitate such a program.   | When we want to organize a program, we need permission from the district or regional office. We need to talk to our students so that we can make adjustments in the program accordingly.  | We do not have much places to go, we do not have much facilities like bushes to repopulate the forest. Which is important to keep the temperature here stable.   | We want to educate the students on topics as pollution to ensure better health for our children and environment.  | Liceo Della Gomez has executed some activities focused on caring for the environment. If they want to execute SOMONCA Inc.'s program, they need districtal permission to do so. They are able to facilitate with in-school necessities. With this program they want to teach more about pollution.   |
| 10. Liceo Jose Dubeau            | Next to the standard curriculum we have done some extra projects for putting environmental care in practice. This way the children of the students orientate and socialize themselves. Recognition leads to prevention. We have also worked with international organizations. | No this is the first time I have heard of SOMONCA Inc.  | We are willing towards working with SOMONCA Inc.  | We have flexibility in our class schedule and are also flexible in time.  | We need to be able to acknowledge the individual in the program, therefore we need to be able to adjust. Also, in the execution because not every child has the opportunity to partake. Furthermore we need some more information.  |  | We want to create morals for the children that will lead to preservation so that they can pass on the knowledge. Theory should be brought into practice to make them more conscious which is very important for Dominican people.   | Liceo Jose Dubeau has executed extracurricular projects. They are willing and very flexible in their schedule. They need adjustability to acknowledge the individual student, and more information. They want to create morals for the students that will lead to consciousness that can be passed on.   |
| 11. Rugama Tours                 | I have participated in multiple initiatives with SOMONCA Inc. and I have taught local people about ecology and the importance of protecting local animals.  | We have worked together for ten years and am also a member.                                   | You have my cooperation a 100%, I need to do this, it is very important for everybody to make progress.   | Facilitate the escape for meetings with SOMONCA Inc. and I can do the same for the children as well as provide my knowledge on ecology.   |   |  | My dream is to be able to have flexibility to facilitate students that do not have many opportunities. I also want to start an organic vegetable plantation so that the children can see the whole process and help with that.  | Rugama Tours has executed multiple initiatives with SOMONCA Inc. They are very willing to participate and are able to facilitate. They want to start an organic vegetable plantation for the children to see the processes and help in caring for nature.  |
| 12. Liceo Antera Mota            | We have had projects in school with the course natural science but also outside school with beach clean-ups and similar projects.   | No I have never heard of SOMONCA Inc.   | It is very important, not only for students, but for life itself.   | We are flexible in our schedule and have sufficient teachers to implement such a program. It should play a role in the national curriculum as a part of the natural science course.   | We need more information about SOMONCA Inc., permission from the district or regional office, and it has to be adaptable and meet the standards of the curriculum.  |  | It has to have a focus on ecology and teaching young children because they can be taught that caring for the world is no more than normal.  | Liceo Antera Mota has executed activities in-and outside school. They are willing and flexible in participation, and are able to facilitate time and teachers. They do need more information, districtal or regional permission, and adaptability to meet the curricular standards. They want to teach students about ecology from a young age.  |
| 13. Liceo Gregorio U.G           | Our focus is orienting the students on taking care of the environment, we have done this by organizing different days within the school that focuses on conservation.   | No this is the first we meet each other.  | Of course we have our own programs but if these one fits with them it would be excellent.   | Such a program will empower us to teach the children better about ecological consciousness because we have a obligation for mother nature to take care of her.  | We need permission from the district and the regional office as well as the parents. Next to that we need to be able to adapt the program together with our teachers and some more information about SOMONCA Inc.   |  | We want the students to be critical on their behaviour and its effect on the environment. It is important that this is done with other organizations as well so we can have more excursions.  | Liceo Gregorio U.G. has executed projects within school that focus on conservation. They are willing to participate because they feel the obligation towards Mother Nature to do so. They need districtal and regional permission and adaptability. They want to teach the students about ecological consciousness and critical behaviour.   |
| 14. Liceo Javier Martínez        | We have had multiple activities on how to preserve the environment of which most are focused on student projects and nature preservation.   | No, I am not familiar with SOMONCA Inc.   | Yes, we are totally willing.  |   | If there are parts that I do not like I want to adjust them.  |  | It is very important for all areas within all schools to preserve the planet and to know how to do that. The program could aid in this by covering all aspects of ecology.  | Liceo Javier Martínez has executed multiple activities regarding nature preservation. They are very willing to participate and only need adjustability. They want to implement it in all school areas and cover all aspects of ecology.  |
| Conclusion 2:                    | Most stakeholders have executed some activities regarding ecology. Some only inside school in the form of a project, others have executed excursions. There is only one stakeholder that has done no activities.  | Of all the stakeholders only Rugama Tours is familiar with SOMONCA Inc.                       | All the stakeholders stated to be interested or willing towards participating in the program.   | All the stakeholders can play a role as facilitator, some to a bigger extent than others. Flexibility is also not a problem for most stakeholders. Only Liceo Javier Martínez has mentioned nothing about a role they see for themselves. | The needs for most stakeholders come down to permission from either the district office or the regional office, more information on the content of the program, and the ability to adjust the content to the needs of the students by the capability of the stakeholders to facilitate. | Although there were not many concerns from the stakeholders, the three stakeholders that have expressed concerns, describe responsibilities that come with executing excursions (time, money, danger). | The program needs to be integrated into all the schools, so that the students develop a collective responsibility to care for the environment. It is for most stakeholders very important that the program extends into the local communities by knowledge sharing by the students. This will happen if the students are capable of critical thinking with a positive attitude. | Conclusion 3: All stakeholders see the need for educating the students about ecology. This can be seen through their efforts that have been executed, in varying degrees, in the form of projects and excursions with an ecological theme. None of them are familiar with SOMONCA Inc (except Rugama Tours), but despite this, they are all very interested in, or willing towards participation in the program. The role they can take is that of facilitator, with most stakeholders having no problems facilitating time, teachers and classrooms. The stakeholders indicated there are various needs before being able to implement the program, most being permission, more information, and the ability to adjust the program to their needs and that of the students. Some concerns were given regarding execution of excursions. If the program is able to integrate into all schools, the students can develop a collective responsibility to care for the environment, and develop the capability for critical thinking with a positive attitude, which will lead to the knowledge spreading to the local communities. |

## Appendix VII - Itinerary for stakeholder meeting

**Goal:** To structure SOMONCA Inc.'s educational program together with its stakeholders for this research, and effectively integrate the needs and capacity of the target group of high school children (grade 1-2-3), by applying participatory management

**Attended by:** Stakeholders consisting out of two organizations and X directors

**Duration:** 1 day (approximately from 10:00 until 15:00)

**Objectives:**

- Come to an equal understanding of the term 'ecology' among the stakeholders for this research.
- Create a list of the most important subjects that should be taught.
- Create an overview of the facilitation capabilities of the stakeholders.
- Create a feeling of ownership for the stakeholders
- Determine possible collaborations between stakeholders
- Come to an agreement among the attendants on a structure for the educational program

**Parts:**

**Opening: (00:30)**

- Have the results of the student surveys displayed per school, so that the directors are able to walk around and look at them whenever they feel like it.
- Make them feel comfortable and introduce them to each other.
- Provide coffee and a snack.

**Opening chat: (00:15)**

- About our thesis research, and how it is coming along, and what we plan to do with it.
- Explain the program for this day, and the objectives for it. (Visualize the need for this program by showing gear wheels turning in one direction (the stakeholders are the gear wheels, the educational program is the running machine towards the goal of ecological consciousness.

**Workshop: Pick your battles (00:30)**

Needs: Flipchart, markers, attendants

Objective: Create a list of the most important subjects that should be taught.

- Every attendant has the opportunity for 10 minutes to say the first thing that comes to mind when it comes to ecology. Make sure everybody has said at least two things.
- Write them down on the flipchart, and divide them into themes.
- Ask if this is everything, or more themes are needed. Add themes yourself if needed.
- Divide the group into teams of (...) and provide them with a paper on which they categorize the themes written on the flipchart, based on their importance according to the group members.
- Have them write the order of importance, the reason why they think it is important, and the reason why they have placed it in that specific rank.
- Compare the groups and start a short discussion on how the rest of the attendants feels about the order.

**Flash presentation: Ecology for dummies (00:30)**

Needs: Beamer, PowerPoint presentation

Objective: Come to an equal understanding of the term 'ecology' among the stakeholders for this research.

- Explain what ecology is, and why it is important for everybody to know about it.
- How to make it tangible inside the schools.

**Lunch break: (00:45)****Activity: What are you able to facilitate? (00:30)**

Needs: Flipchart, marker

Objective: Create an overview of the facilitation capabilities of the stakeholders.

- Hang up an A3 paper with categories that describe items that can be facilitative to the educational program.
- Have each stakeholder mark all categories that they are able to facilitate.
- Compare them to each other and discuss the gradation to which each stakeholder is able to facilitate each category.
- Summarize the findings

**Workshop: Golden ratio (00:30)**

Needs: Flipchart, markers

Come to an agreement among the attendants on a structure for the educational program

- Provide the stakeholders with two possible outcomes of the educational program structure on the flipchart.
- Divide them in groups of (...) and divide the outcomes among them.
- Have them debate their given outcome with the other group.
- Write down all pro's and con's that are mentioned by both groups for both programs.
- Form a better version by using the pro's from both outcomes, or eliminate the con's.
- Have the stakeholders discuss the possibility of this upgraded version and have them come to an agreement.

**Closure: (00:30)**

- Summarize the findings of the day, ask the stakeholders about their experience of the meeting.
- Close with a nice word and thank them.
- Let them know how SOMONCA Inc. will stay in contact about the program.
- Provide some drinks.



# Appendix VIII - Two options for structuring the educational program

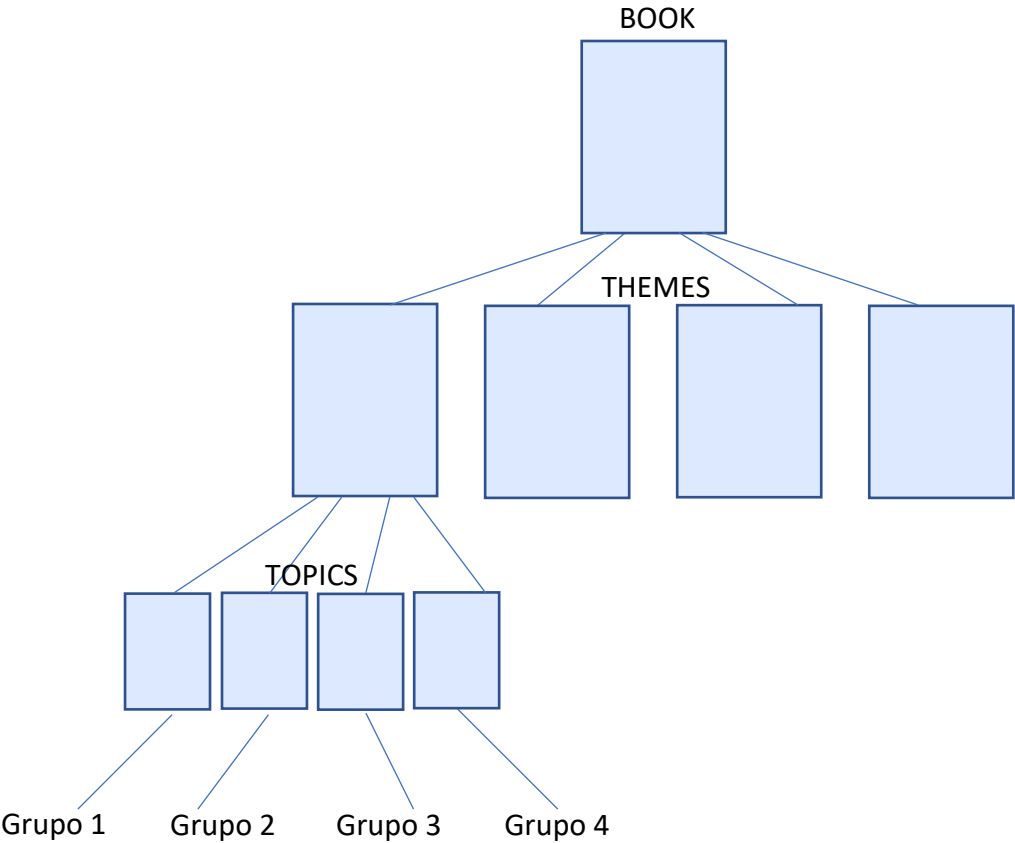
## Option 1

A majority of the children have said in the surveys that they like to learn by reading and group projects. This gave us the idea to make a book about ecology that can be used in Natural science classes. Each chapter has a different theme (different ecosystems, taking care of nature, recycling, etc.). We will not provide the content, the students will do this. SOMONCA Inc. only provides the guidelines, themes and topics for the themes. By giving each cooperating stakeholder with a chapter that they need to fill, they will provide the students with a chance to research the topic in-depth, and add their own needs and capacity. This can be achieved by dividing the students into groups of around 10 students, and provide each group with a topic that they need to complete according to certain guidelines.

Next to that, it can be combined with other classes to provide for instance the art work, or maybe they want to add a different language so they can learn that in the meanwhile.

The book can be as creative and multidisciplinary as you wish.

By combining all the chapters from all the schools you have a truly collaboration project that the students feel responsible for, and it reflects the capacity and creativity of the whole Province of Puerto Plata.

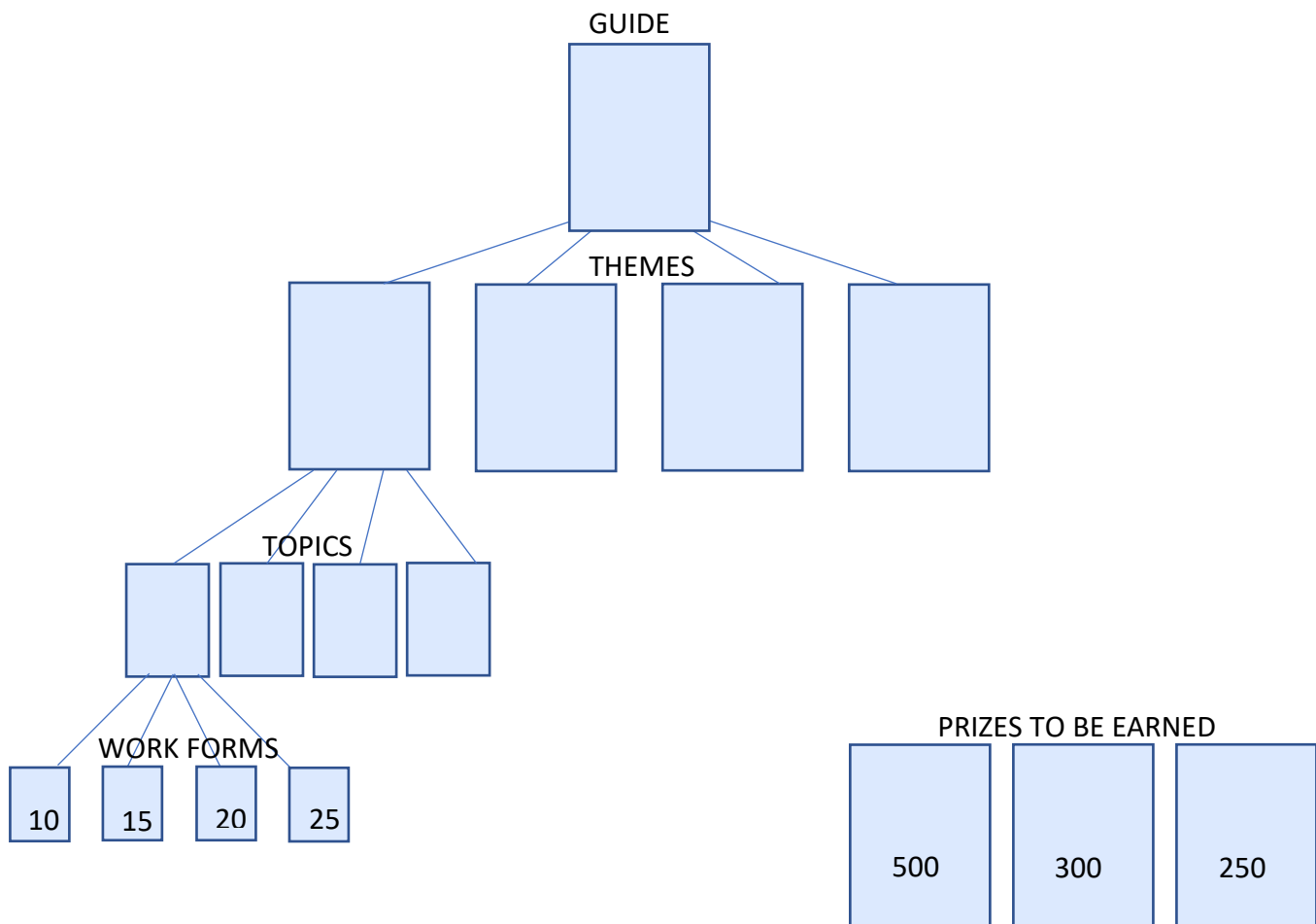


## Option 2

This option is especially focused on capacity to facilitate between different stakeholders. It is in the form of a guide. The guide is divided into different themes (different ecosystems, taking care of nature, recycling, etc.). Within each theme, there will be topics that need to be covered. These topics will be divided into different work forms (for example: workshop, group discussion, game, etc.). Each work form has a description of how to execute them and reach the goal of the topic. To keep the guide interactive and competitive, each work form, when executed correctly, is assigned a certain amount of points. In the back of the guide there are prizes to be earned (like excursions) by collecting the right amount of points. This eliminates the facilitation capability difference between stakeholders. If you are not able to facilitate, you still have the capability to earn enough points by executing other work forms that suit you. Or if you are not very flexible in time, you can choose to execute work forms that gather a lot of points, so you get to the reward quicker.

This does not directly integrate the needs and capacity of the students, but you can choose to do so by choosing work forms that suit them.

Next to this, it also adds a competitive element to the program. The students will want to learn as much as possible and as quickly as possible to earn the reward.



## Appendix IX - Educational program SOMONCA Inc.

### 1. Program definition

#### 1.1 Motive

On the north coast of the Dominican Republic the Yasica river flows, which is one of few rivers that is not being managed by man (SOMONCA, 2018). This provides rugged nature, but it can also cause problems like floods and pollution. Plastic pollution is also a serious problem in the northern region of the DR due to the fact that 76% of their produced plastic is not recycled. This comes down to roughly 7600 tons of plastic annually that ends up at either one of the 354 unmonitored and unregulated landfills, or ends up in the ocean. (Diario Libre, 2014) There have been signs of ecological decline regarding coral reef coverage, mangrove decline, and there is a threat of soil erosion present (Wielgus *et al*, 2010; CIA, 2018). Next to the ecological problems in the DR, there is a low quality of general education (USAID, 2013; SOMONCA, 2018). The 'Program for International Students Assessment' assessed the level of knowledge of 15-year-old students per country on subjects such as science, reading and mathematics from 69 countries all over the world, and concluded that the students of the DR scored the lowest on almost all subjects. (OECD, 2016) The fact that the DR has a combination of ecosystems that are found on no other Caribbean island (Ministry of Tourism, n.d.), combined with the unstructured growth of the tourism industry (World Travel and Tourism Council, 2017; Baez Sarita, 2013), and the low level of education, makes local inhabitants worry about the ecology of the DR (Sosuanieus, n.d.).

Situated in the town of Sosúa, in the province of Puerto Plata, SOMONCA Inc. is an NGO that was called into life by stakeholders from three cities in the north of the DR (Sosúa, Montellano and Cabarete), to tackle the previously described ecological problems and threats that are present in the DR. This small (15 members currently) independent non-profit ecological organization was established in 2005 with the goal to preserve and protect the ecology on the north coast of the DR. Next to that, The DR government has signed the Caribbean Challenge Initiative, which vowed to protect 20% of their near shore environments by 2020 (CCI, 2008). Meanwhile, 20% of the marine environment has been protected in the form of two MPA's, but the government is still working on protecting the near shore environments by initiating restoration of beaches, mangrove forests, and wetlands. To maintain the goal that the DR government has set, SOMONCA Inc. deems it necessary to create awareness about the ecology of the DR among local residents by educating them. SOMONCA Inc. believes that education is key to creating awareness, and ultimately will lead to protection of the environment. This is the reason SOMONCA Inc. called their educational program into life in 2005. Education is most effective if targeted at the ones that are able and willing to care for the problem.

SOMONCA Inc. deems local children that are in their first years of high school (grade 1-2-3, average age 12-16) in the province of Puerto Plata as the most important target group for their educational program. The reason they are the target group, is because they are at an age that they have more ability for complex thoughts and develop a strong sense of right and wrong (CDC, 2017), and research shows that environmental education aimed at high school children creates awareness of the environment at an adult stage in life (Rickinson, 2001). As children go through adolescence (ages 13 to 17), they expand their abstract and conceptual reasoning about nature, and develop their ecological and moralistic perspectives of the natural world, which in turn helps them to form ethical and moral judgments about their relationship to the natural world (Kellert, 2005). The best way to target these children according to SOMONCA Inc. is to approach the schools and provide them with educational

materials about ecology of the DR to use as an addition to the curriculum. The following project is therefore described as a co-curricular program.

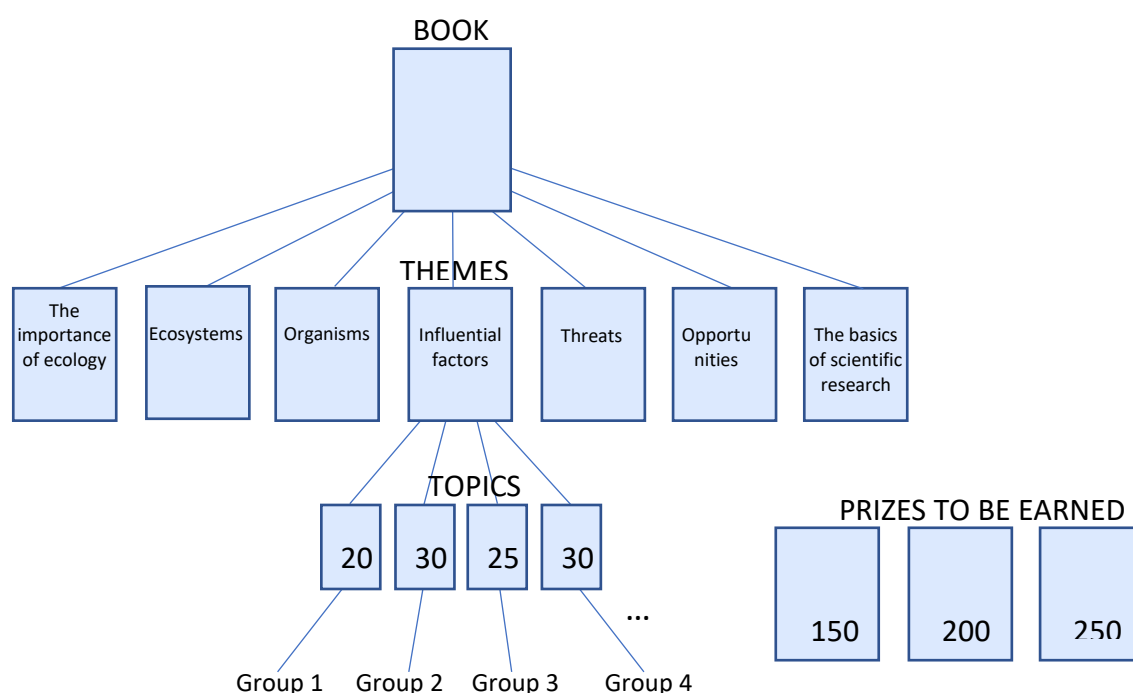
## 1.2 Goal

*The goal of the educational program of SOMONCA Inc. is to reach ecological consciousness among the target group of high school children (grade 1-2-3), by applying participatory management.*

In general terms the ecological consciousness is understood as a reflection of the psyche of a variety of people's relationship with nature, which mediate its behavior in the "natural world", and express axiological position of the subject of consciousness in relation to the natural world. Studies show that environmental consciousness is a complex mental education, which includes cognitive, regulatory, emotional, ethical, and other aspects. Despite the variety of approaches to the definition and study of environmental consciousness, they are united by their common methodological position. Specifically, the environmental consciousness initially explicated or as givens of individual consciousness (i.e., the product of the individual), or in the form of consciousness, as it should be in accordance with ecological concepts. And then, depending on the preferences of a copyright examination and diagnosis of environmental consciousness are the some of the functions of consciousness (reflectivity, regulatory, reflective, productive), or its components, or the ratio of the conscious and the unconscious, etc. (Panov et al, 2013)

## 1. Project product

The following program was designed in collaboration with high school directors of the Province of Puerto Plata after a sample size of the target group (n=401) was questioned about what they would like to learn, and how (in what form) they would like to learn.



This schematic form works the following way:

There will be a framework distributed among all high schools in the Province of Puerto Plata. This framework will be translated into a book about ecology by the target group.

The framework contains seven predetermined chapters (determined by the stakeholders; The importance of ecology, ecosystems, organisms, influential factors, threats, opportunities, the basics of scientific research) with a theme, there are seven district in the province of Puerto Plata. Each district will receive a theme to complete. Within each district, all high schools receive the same theme to complete. The high schools do not cooperate with each other, but the target group within each high school writes the theme individually.

SOMONCA Inc. provides the themes and topics for each theme, as well as guidelines and support on how to write about such topics.

The target group is divided into small groups (around 10 students) and each group will be given a topic to write about according to the guidelines. The amount of topics for each theme will be determined by SOMONCA Inc. The topics can contain different work forms to stimulate their critical thinking and introduce them to research design.

Because the target group writes the content for the book themselves, they can adapt it to their own needs and capacity. Next to that, it can be combined with other classes to provide for instance the artwork, or maybe they want to add a second language so they can learn that in the meanwhile.

The book can be as creative and multidisciplinary as the stakeholders want.

To keep the writing process for the book interactive and competitive, each topic, when written correctly, is assigned a certain amount of points. There are prizes to be earned (like excursions provided by potential stakeholders\* that are organizations) by collecting the right amount of points. This eliminates the facilitation capability difference between stakeholders. E.g. if you are not able to facilitate a lot for each topic (different work forms, etc.), you still have the capability to earn enough points by executing more topics that suit you and gather points by working more hours. Or if you are not very flexible in time, you can choose to write about topics that gather a lot of points, so you get to the reward quicker.

So each high school is able to earn prizes, regardless of their ability to facilitate.

Next to this, it also adds a competitive element to the program. The students will want to learn as much as possible and as quickly as possible to earn the reward.

After the writing process has been completed, in each district a high school will be chosen that has written the theme the best, and this high schools' theme will be published in the book. The winning schools from each district receive a prize in the form of an excursion.

By combining all the themes from all the districts you have a true collaboration project that the students feel responsible for, and it reflects the capacity and creativity of the whole Province of Puerto Plata.

#### 1.4 Product demands

There are certain demands that come with a product like this. Because it entails a product that will be made by the target group, the standards must be very strict.

SOMONCA Inc. must write guidelines and examples about how to write about ecological topics according to scientific standards.

When the target group is finished with the writing process, SOMONCA Inc. must check all work and be very precise. No errors should be left behind before the book is published.

#### 1.5 Project risks

The biggest risk factors have to do with the capabilities of SOMONCA Inc. It will depend on their preparations whether this program will succeed or not. If they do not prepare well, the program will fail. This might not be a problem if they delegate the tasks that they can not facilitate, but the planning for this needs to be very tightly followed.

## 2. Program approach

### 2.1 Activities

**Definition phase:** The project group does research about the product and its demands, and describes them in the project plan.

**Preparation phase:** This framework proposes the structure of an educational program. This means it is not ready to execute yet. In order to do this, there are certain tasks that need to be elaborated on in the future. This chapter will provide an overview of these tasks and what should be done to get the educational program ready for execution.

#### **1. Seeking governmental aid.**

The Regional office of the Ministry of educational in the Province of Puerto Plata has permitted the execution of this research, and could be approached for helping with the implementation of this research in all seven districts in the Province of Puerto Plata. Next to that, they might be able to coordinate collaborations between SOMONCA Inc. and other organizations to execute the program as recommended below.

#### **2. Gather knowledge about the content of the themes.**

Because the target group will be writing about the provided themes, it is very important that SOMONCA Inc. also has knowledge about these subjects, since they will be writing the guidelines for the themes and topics, and judge the work of the target group. This means that they will need to train multiple persons about these subjects, or hire ones that already have this knowledge.

#### **3. Assign staff to the positions.**

The right person should be placed in the right position in order for this program to function. This means SOMONCA Inc. has to look at the positions that need to be filled, and who has the qualities to fill these positions. If there remain open positions, external people should be hired.

#### **4. Writing the guidelines for the themes and topics.**

The content for the themes and topics will be written by the target group, but this should be done according to certain guidelines. SOMONCA Inc. should provide these. If they do not possess the qualities to do so, they should delegate this task to other organizations or persons of interest who are able to do so.

**Realization phase:** The book (with the guidelines and tips from SOMONCA Inc.) will be divided among the high schools in the province of Puerto Plata. The target group in each district will receive an introduction about the program, and they will commence to write. The writing process can take up to two months. SOMONCA Inc. wants to visit each district consecutive due to transportation reasons. Therefore, the total writing process will last seven months. After this, all written themes are to be checked and judges by SOMONCA Inc. This process takes six months.

When the themes are finalized, and the winning schools are chosen, SOMONCA Inc. need to publish the books and distribute them among all high schools in the province of Puerto Plata. Hereafter, the book should be used during the Natural Science classes as an addition to the existing curriculum.

**Evaluation phase:** Due to the properties of education in the Dominican Republic, a broad timeframe should be taken into account between distributing the books, and evaluating and testing whether the program has achieved the desired goal. This is due to the fact that not each student of the target group will receive a book to read. Stakeholders for this research have indicated that it is more likely that one in five students receive a book. Therefore, it will take the target group more time than normal before all students have read the book and the program can be evaluated.

Once the program is ready (after approximately a year) to be evaluated, it is best to submit the target group (or sample size hereof) to a test about their ecological knowledge and their behavior towards the environment. To prevent biased results, this test should be distributed unannounced, and separately to each student.

## 2.2 Projectplanning

| Activities  | Start          | Outcome   |
|---|----------------|---|
| Presenting program plan to Regional office of Ministry of education   | June 2018      | Seeking governmental aid in finances as well as collaboration with other organizations that could provide prizes for the program  |
| Gather knowledge about the content of the themes<br>- Design course<br>- All (program)members follow the course | July 2018      | Design a course in which all themes are represented, and all members are able to follow this course to gather knowledge   |
| Assign staff to positions   | July 2018      | Organogram + an activity plan (who executes what) based on qualities of the members that should be tested beforehand  |
| Writing the guidelines for the themes and topics  | August 2018    | The assigned persons write the guidelines for each theme and topic  |
| Start visiting first district to distribute book and present the program  | September 2018 | Print the framework for the themes for all stakeholders and visit the first district with a presentation in which the program will be explained. Each district gets two months to write their theme |
| Visit second district   | October 2018   | The second district will be put to work   |
| Visit third district  | November 2018  | The third district will be put to work+ results first district will be collected  |
| Visit fourth district   | December 2018  | The fourth district will be put to work + results second district will be collected   |
| Visit fifth district  | January 2019   | The fifth district will be put to work + results third district will be collected   |
| Visit sixth district  | February 2019  | The sixth district will be put to work + results fourth district will be collected  |
| Visit seventh district  | March 2019     | The seventh district will be put to work + Results fifth district will be collected   |
| Collect results   | April 2019     | Results sixth district will be collected  |
| Collect results   | May 2019       | Results seventh district will be collected  |
| Analyze results   | June 2019      | Check all written themes and decide a winner for each district  |

|                  |                |  |
|------------------|----------------|--|
| Announce winners | June 2019      |  |
| Publish book     | July 2019      | Print the book   |
| Distribute book  | September 2019 | Distribute book among all high schools in the province of Puerto Plata                           |
| Evaluate program | September 2020 | Distribute a test to the target group to determine if the goal of the program has been achieved. |

### 2.3 Task division

The following task division gives an overview of whom will arrange what. The name of the person to fulfill the function shall be determined by SOMONCA Inc.

| Function          | Tasks  | Name |
|-------------------|--|------|
| Program manager   | <ul style="list-style-type: none"> <li>- Keeping overview of the program</li> <li>- Delegate tasks</li> <li>- Arranging visits to the districts and their high schools</li> <li>- Act as a spokesperson for the program</li> <li>- Publish the book</li> </ul>                                   |      |
| Assistant manager | <ul style="list-style-type: none"> <li>- Assist program manager</li> </ul>   |      |
| Program analyst   | <ul style="list-style-type: none"> <li>- Develop ecology course for the (program) members</li> <li>- Write guidelines and tips for the framework</li> <li>- Analyze results of the written themes</li> <li>- Store results of progress in database</li> <li>- Develop evaluation test</li> </ul> |      |
| Ecology expert    | <ul style="list-style-type: none"> <li>- Provide information for the ecology course for the (program) members</li> <li>- Provide information to the program analyst for writing the guidelines for the framework</li> <li>- Develop evaluation test</li> </ul>                                   |      |
| Public Relations  | <ul style="list-style-type: none"> <li>- Arranging and maintaining contact with all high schools</li> <li>- Arranging and maintaining contact with organizations</li> <li>- Maintain contact with Ministry of education</li> </ul>   |      |
| Treasurer         | <ul style="list-style-type: none"> <li>- Maintain overview for the budget</li> <li>- Seek new ways to obtain funds</li> </ul>  |      |



## 2.5 Communication

In order for the program to succeed, it is very important that SOMONCA Inc. keeps their program staff in close contact with each other, especially in the preparation and realization phases. This means that it is advised to have a staff meeting each week to keep all staff members updated on the progress of the program.

Next to that, the high schools should also be regularly contacted to keep them involved in the program. In the preparation phase, the schools should be approached to establish first contact. In the realization phase, the high schools will be visited by SOMONCA Inc. to distribute the framework for the ecology book. To check the progress that the target group made in the writing process, two contact moments should be planned per high school. The date and time for these contact moments should be decided together with the high schools. They may take place in person or by telephone, as long as there are two contact moments.

For the evaluation phase, it is important that SOMONCA Inc. is regularly (once every three months) updated on the progress of the target group with reading the book, not only for the sake of SOMONCA Inc., but also to keep the attention of the high schools focused on the program. It is the task of the public relations person to plan these moments, and the task of the program analyst to store the results in a database.

## Literature

Baez Sarita, A. (2013). Regional Planning Initiative for the Province of Puerto Plata in the Dominican Republic: A Tourism Planning Framework for the Towns of San Felipe de Puerto Plata and Sosúa. All Graduate Plan B and other Reports.

CCI. (2008). *Phase 1 of the CCI*. Retrieved on February 17, 2018 at:  
<http://www.caribbeanchallengeinitiative.org>:  
<http://www.caribbeanchallengeinitiative.org/about/phase-1>

CDC. (2017). *Developmental milestones*. Retrieved on May 12, 2018 at: Young teens:  
<https://www.cdc.gov/ncbddd/childdevelopment/positiveparenting/adolescence.html>

CIA. (2018). *The World Factbook*. Retrieved on February 4, 2018 at: [www.cia.gov](http://www.cia.gov):  
<https://www.cia.gov/library/publications/the-world-factbook/geos/dr.html>

OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD Publishing, Paris.

Kellert, S. R. (2005). *Building for Life: Designing and Understanding the Human-Nature Connection*. Washington: Island Press.

Ministry of Tourism. (n.d.). *Landscapes*. Retrieved on February 2, 2018 at:  
<http://www.godominicanrepublic.com/about-dr/landscapes/>

Panov, V. (2013). Ecological Thinking, Consciousness, Responsibility. *Elsevier*, 379-383.

Rickinson, M. (2001). Learners and learning in environmental education: A critical review of the evidence. *Environmental Education Research* 7, no. 3: 207–320.

SOMONCA. (2018). Retrieved on February 2, 2018 at:  
<http://www.sosuanieuws.com/index.php>

Sosuanieuws. (n.d.) Retrieved on February 2, 2018 at:  
<http://www.sosuanieuws.com/index.php?id=537&article=1>

USAID. (2013). Dominican Republic country development cooperation strategy.

Wielgus, J. & E. Cooper, R. Torres and L. Burke. (2010). *Coastal Capital: Dominican Republic. Case studies on the economic value of coastal ecosystems in the Dominican Republic*. Working Paper. Washington, DC: World Resources Institute. Available online at  
<http://www.wri.org/coastal-capital>.

World Travel and Tourism Council. (2017). TRAVEL & TOURISM ECONOMIC IMPACT 2017 DOMINICAN REPUBLIC