Non-economic Valuation of Cultural Ecosystem Services: A Business Case

The relationship of Assessa and the Baleia Beach Community with marine algae
GVces and the Business Initiatives

The Center for Sustainability Studies (GVces) of the Business Administration School at Getulio Vargas Foundation (FGV-EAESP) is an open arena for study, learning, insights, innovation, and knowledge production, formed by people with a multidisciplinary background, engaged and committed, with an authentic desire to transform society. GVces activities are based on the development of public and private management strategies, policies and tools to promote sustainability for local, national and international scenarios, driven by four major pillars: (i) training activities; (ii) research and knowledge production; (iii) debates and exchange of information; and (iv) mobilization and communication. Under this context, GVces Business Initiatives make up a network with the purpose of transforming the sustainability challenges into an opportunity to create value for the business and its stakeholders. This purpose has been achieved through the co-creation of strategies, tools and proposals for public and business policies; support for implementation through pilot projects; knowledge systematization and dissemination through publications and events; and articulation with various government and civil society actors.

There are five Business Initiatives: Business for the Climate Platform (EPC), Innovation and Sustainability in the Value Chain (ISCV), Local Development and Large Projects (Local ID), Trends in Ecosystem Services (TeSE) and Applied Life Cycle (CiViA). In addition to working on the agendas of local development, ecosystem services, climate, value chain and product life cycle, the Business Initiatives also work together, bringing knowledge and content, on the integrated agenda of water resources.
The Applied Life Cycle initiative seeks to incorporate life cycle thinking into the strategic management of companies based on Life Cycle Assessment (LCA) of products - goods and services. In addition, it is discussed, in workshops and working groups, subjects such as product communication and labeling, as well as competitiveness issues. Since 2015, companies have been trained in the methods and tools of two categories of environmental impact: climate change and water use. From this, they have been developing pilot projects of carbon footprint and water footprint of their products.

The Business for the Climate Platform aims to contribute to the advancement in the corporate management of greenhouse gas emissions (GHG) and the risks and impacts derived from climate change. Since 2009, the initiative has been working on the co-creation of guidelines and tools for business management - such as the tool for the elaboration of climate change adaptation plans and the Business Guidelines for Internal Carbon Pricing –, public policies proposals and support of pilot projects implementation of the tools and guidelines.

The Innovation and Sustainability in the Value Chain initiative develops methods and tools, such as protocols for the supply chain management, for integrating sustainability into the processes and policies of companies’ purchases. In 2015 and 2016, the initiative developed Risk Matrix and Materiality Analysis Protocols in the Supplier Chain, in order to assist companies in mapping risks and opportunities in their chains.

The Trends in Ecosystem Services initiative develops strategies and tools for corporate management of impacts, dependencies, risks and opportunities related to ecosystem services. In the previous cycles, guidelines and tools were developed for valuing vulnerabilities and impacts of the business activity on natural capital. The initiative has been applying training in valuation and management of ecosystem services and developing business cases with its member companies.

The Local Development and Large Projects initiative aims to articulate the business sector for reflection, experiences exchange and construction of proposals and business guidelines for local development, through dialogue, study and co-creation of methodologies and tools. Since 2013, the themes already covered are: Comprehensive Protection of Children and Adolescents, Innovation in Local Development, Impact Monitoring and Evaluation, and Local Institutional Capabilities.

The Innovation and Sustainability in the Value Chain initiative develops methods and tools, such as protocols for the supply chain management, for integrating sustainability into the processes and policies of companies’ purchases.
26 p.


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The business initiative “Trends in Ecosystem Services (TeSE)” was launched in 2013 by the Center of Sustainability Studies from the Getulio Vargas Foundation (GVces-FGV), and had the objective of developing strategies and tools that target corporate management of impacts, dependencies, risks and opportunities related to ecosystem services. Since then, the project has been dedicated to the construction of guidelines for the monetary valuation of nine ecosystem services, along with guidelines for reporting environmental externalities. This has also been accompanied by the development of thirty business valuation cases.

In 2015, the TeSE team and the team from the Initiative of Local Developments and Large Enterprises (IDLocal) explored different aspects of non-economic valuation of cultural ecosystem services (CES), which produced the content of the Corporate Guidelines for Non-Economic Valuation of Cultural Ecosystem Services (DESEC in the Portuguese acronym). These guidelines propose participatory methods to diagnose CES in specific territories, as a support in the decision making process of enterprises.

The construction of DESEC is based on the fact that local parties and stakeholders will evaluate the benefits generated by ecosystems with varying levels of importance. We believe that the attribution of importance to these

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1 Cultural Ecosystem Services (CES) can be understood as the direct and indirect contributions of ecosystems to the culture and social relationships of a particular social group or as the “non-material benefits people derive from ecosystems” (TEEB, 2010).

The objectives of this pilot project were to test the applicability of the method, to support the improvement of the guidelines and, mainly, to generate new business references in the use of CES, contributing to future applications and the advancement of this agenda within the scope of businesses and enterprises.

This business case, therefore, is anchored by DESEC, and seeks to illustrate their purpose through describing the experiences of how they were used in a step-by-step basis, highlighting the challenges and lessons learned in the process, along with partial results and reflections. This case has the intention to serve as a source of inspiration, taking into account that different contexts require specific analyses, applications and reflections.
The company and the community: the partnership between Assessa and the Baleia Beach Community

Assessa

Assessa is a Brazilian company which uses nature as its source of inspiration and opportunity. Being a pioneer in the use of tropical seaweed in cosmetics through the development of an extraction process which uses water as a solvent, along with the use of bio-transformation processes to obtain effective and innovative products, Assessa holds several patents in natural products technology.

In 1965, a group of scientists decided to investigate the commercial applications of marine algae found along the Brazilian coast, and founded two companies dedicated to the research, development and production of algae for both the food and drug industries. A fortuitous discovery, however, provoked a new cycle of research, aimed at the cosmetic applications of seaweed. This research was inspired by observing that the hands of algae-handlers were exceptionally smooth and soft, different from what might be expected from the hands of people who are accustomed to hard manual labor. This discovery, coupled with the first experiences of the use of natural ingredients in cosmetics, inspired this group of scientists to create Assessa, which was founded in 1976.

Given that in most of Assessa’s main products the active ingredients were based on Brazilian marine algae, which were obtained from different suppliers, in the late 1990s the company decided to approach the communities that were responsible for algae collection, in order to participate more effectively in the process of collection and pre-processing, and to be more involved in the care of the whole supply chain. Since there was a relatively low amount of algal biomass in demand, the company decided to select a single community with which to establish this relationship. After an eight-year long search, due to different factors, the decision was taken to work together with the Baleia Beach Community.

The Baleia Beach Community (Whale Beach)

Located in the district of Baleia, in the municipality of Itapipoca in Ceará, the Community of Baleia Beach is home to around 3 thousand inhabitants. For the most part, their homes are located in a cluster that can be considered a semi-urban area, surrounded by the homes of other residents distributed through larger properties and ranches. There are many houses that are only used during the summer season (SILVIA, no data). Along the coast, the Baleia district region was also occupied by the Tremembé Indigenous people, along with others (FUNAI, 2012). Currently, the inhabitants are a mixed group of Brazilian and foreign vacationers, indigenous people, fishermen and cattle raisers.

With a human development index (HDI) below the state and national average, its population faces several challenging situations in education, health and economic development. One of the local dynamics seems to be governed by networks of relationships that involve the ocean and the “Sertão” or backlands (name given to arid inland region of the northeast of Brazil). Another dynamic is governed through the relations that come from the supply of jobs and income. Examples of this would be employment relations with the city hall, with local tourism enterprises (beach huts, hotels) and with the Brazilian and foreign vacationers and their summer homes. Young people find few job opportunities in the region, which causes them to go on a constant search for work. They usually find work in sporadic services, such as looking after summer houses and offering general services of repair as electricians or construction workers.
The main economic activity is fishing various types of fish, lobsters and other species, all of which are becoming more and more scarce (SILVA, no data). However, trade is limited, and meets only the most basic needs of the population.

Although the local tourist movement is small and focused on specific niches, such as Kitesurfing, for example, there are prospects for future expansion, given its proximity to more well-known attractions such as Jericoacoara. In addition, there is the constant threat of large tourist and/or real estate ventures, such as the Nova Atlântida Enterprise, which began to be constructed but is halted for the time being. Local entrepreneurs have made an effort to promote Baleia Beach as a tourist route, with initiatives such as the creation of a web-based Portal that brings together information about the region, tourism services offered, culture, and nature.

Collecting algae

The collection of algae (that arrive at beaches through the tides) is an activity that is part of the local culture, especially for women, who are also known as algae or shellfish/algae collectors. This activity represents an important source of complementary income for the community, especially in the closed fishing season (prohibition of lobster fishing), despite the insurance that is paid by the federal government.

Currently, each algae collector, as an individual or as a family, collects 50 to 500 kg of algae per month. This is a positive particularity of the region that presents one of the richest and most diverse conditions of the Brazilian coast for the development of marine algae activities.

In order to take advantage of this potential in the Northeastern coast, the Project entitled “Development of Coastal Communities (DCC)” was implemented in 2008. It is funded by the Special Secretariat of the Presidency of the Republic for Aquaculture and Fisheries (SEAP), along with technical cooperation from the Food and Agriculture Organization of the United Nations (FAO) and has the goal of promoting social inclusion, increasing the income of families in coastal communities, and ensuring a more sustainable use of marine resources. The “project”, as it is known by the community, was finalized in 2011. Its legacy
has empowered communities through the sustainable collection and management of marine resources, and has involved the community in the co-management of resources. Within this context, the Cooperative of Fisheries, Aquaculture and Whale Agriculture (Coopamab) was set up in the Community of Baleia Beach, which currently has a small number of members that operate under precarious operational conditions.

The supply chain of the different seaweed species in Baleia Beach is structured mainly by the demand of a single company that is intermediated by some community members. Besides this, there is a smaller demand coming from Assessa.

The partnership

The partnership between Assessa and the Baleia Beach Community was born in 2010, and was motivated by the company’s efforts to promote the research, development and production of highly-effective bio-active ingredients from marine algae for the cosmetic industry. Besides, the effort also sought to provide alternatives to increase the income of the Baleia Beach Community, mainly for the shellfish/algae collectors.

The company purchases the algae via Coopamab. The cooperative, which supplies only to Assessa, has a special form of treatment that benefits the raw material: after it is collected, the algae is washed with fresh water and placed in rudimentary dryers to dry in the sun. The Hypnea and Sargassum species are grinded and then sent to Assessa’s industrial plant in Rio de Janeiro.

Assessa is a company that voluntarily redistributes its benefits, through directly supporting the formal organization of Coopamab, assisting in regulatory, fiscal and accounting matters, transferring technology and knowledge and providing material support in specific projects. In addition, the company seeks to make the business more attractive to Coopamab by using special prices for the benefited product.

In 2016 the company bought from the community approximately 300kg, which, however, was not enough to supply the total demand from the company in that year. The amount demanded is small and therefore represents a low financial impact on the community.

3 The amount paid by Assessa for the dry and shredded product is about 10 times greater than the raw product. Coopamab, which benefits the product, earns the highest percentage of the value of the marketed products, paying the shellfish collectors twice the value of other players working in the region.

Identification and non-economic valuation of Cultural Ecosystem Services: the case of the Baleia Beach Community

In 2016, the pilot project for the application of DESEC came as an opportunity for Assessa to identify and scale the importance of non-material benefits promoted by ecosystems to the community as a way to broaden the understanding of the reality of the Baleia Beach Community, to potentially strengthen the bonds between the company and the community and generate benefits for both.

Assessa’s specific objectives were: i) to understand local stakeholders perception of the company’s impact, as a consumer of algae, on ecosystems and the community; ii) to subsidize a plan that can support Assessa’s activities in this community, guaranteeing the environmental, economic and social sustainability of the algae collection activity, taking into account the local stakeholders; iii) strengthen the community structure and the relationship with Assessa; and iv) to gain local knowledge and proximity to communities in order to tackle bottlenecks related to the supply of Hypnea and Sargassum, to potentially stabilize the production.

The implementation of DESEC in this pilot project had the fundamental support of specialists through participatory processes. The collection and revitalization of the necessary elements to support this analysis were articulated through the distribution of the method’s phases into four separate moments, as seen in Figure 2.
1. Preparation of the perception diagnosis

The first step was the survey and analysis of secondary data, selected from conversations between Assessa representatives and a local agent, who had close ties with the community, and was indicated by the company.

The profile of the municipality and population of Itapipoca was determined based on IBGE (Brazilian Geographic and Statistics Institute) data, from documents such as the Ecological-Economic Zoning Project and studies on the region, including the report from the Coastal Communities Development project, mentioned previously.

Taking into account these documents and the company's objectives with the project, potential levels were elaborated for establishing the scope of, for example, limit area and target audience. Potentially, three levels could be analyzed: (i) shellfish/algae collectors connected to Coopamab; (ii) shellfish/algae collectors from the community in general; or (iii) the Baleia Beach Community as a whole.

The observations from the preliminary visit were fundamental to this definition because they brought more clarity on community dynamics and Coopamab’s sale of algae and relationship with the company, making it clear that other economic activities are more relevant than algae collection itself. In this context, a broader scope was chosen that could comprehend the community as a whole.

About the preliminary visit

The preliminary visit to the community was considered to be essential, not only to check and complement the scarce available data, but mainly to get to know the local dynamics, to contact leaders and key players, to understand the community’s level of interest in participating in the meetings, to observe the available resources for workshops and to articulate the time frame.

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5 IBGE CITIES. Available at: http://cidades.ibge.gov.br/xtras/perfil.php?codmun=230640
When preparing for the visit, it is always important to define and align the nature of the work and its objectives in the field with those involved. In the case of this pilot, the preliminary visit sought to introduce this work to the community, through accessible language, as a research to understand how the community perceives and values the environment in which it lives, mainly related to seaweed; and based on their reaction, understand whether the community would be interested in participating.

Also, it was fundamental to have a clear idea of which aspects of this study could benefit the community, as a strategy of engagement and to encourage community participation. Some aspects that were elaborated are: self-recognition and reinforcing the feeling of belonging to the local ecosystem; value of the resources and activities such as algae collection; strengthen and generate social and cultural recognition; engage the community in actions that prioritize conservation of the local ecosystem and work and income activities such as algae collection; foster events; expand communication and networks of internal and external relations to the community.

In this context, it is essential to manage the community’s expectations by making it clear that the concrete product of the work, in this case, is the application of DESEC and the development of the Assessa case.

Furthermore, it was understood that the team that participated in the preliminary visit should be smaller to facilitate reception and interaction with the community. This visit had the presence of an Assessa representative and a participatory process specialist, who were presented to key members of the community by a local agent with close ties to the company.

The preliminary visit was carried out during seven days and was dedicated to the observation of the community life and conversations with key people of the community, following the guidance and premises of DESEC. This first contact with the community, within the scope of this pilot, sought to observe the dynamics of economic activities, in relation to the relevance of each one of them in the daily community activities; the importance of tourism, as well as its relation with the economic activities like fishing and algae collection; conflict situations; and, current operation dynamics of Coopamab and its relation to Assessa, since these were not mentioned in the secondary sources.

The strategic players interviewed were the residents of the Baleia / Pedrinhas Beach community, mainly the algae collectors, the fishermen and tourism entrepreneurs, as well as Tremembé natives. In this context, it was not necessary to include public administration representatives or the actors from the municipal city hall.

### Starting the conversation...

- Some questions were written for the establishment and the advancement of open and subjective dialogues with community members, without, however, composing a questionnaire or interview script. The dialogue should naturally flow into subjects such as work and income activities, starting with some initial questions, such as:

  - Who are you?
  - What brought you here?
  - Where did you come from?
  - Where were you born?
  - Who is your family?
  - Questions about the relationship with the environment and the location:

The conversations took place primarily with people that represented the relationship between Assessa and the Baleia Beach Community and, through their help, other key people were indicated, such as leaders and new contacts of strategic players.

### This first step resulted in:

- Better understanding of the territory, the community, Coopamab, the relationship with marine algae and Assessa;
- Reflections on the benefits of this study for the company and for the community;
- A map which indicated and interviewed players, that was later used as a basis for the list of actors to be mobilized for the workshop;

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6 See Annex 1 of DESEC for methods on the participatory approach
- Definition and characterization of the study area and the target audience;
- Planning the workshop to access the value perception assigned by the public on their interest about CES.

2. Access to public perception on the value of CES

Supported by DESEC and the information gathered so far, the second step for diagnosis was the community workshop entitled “The coexistence of the community, the sea and the ‘sertão’ (northeastern backlands)”, held in the Baleia Beach Community, in Itapipoca, 20 days after the end of the preliminary visit. This can be considered the most important moment of this pilot, as it seeks to unveil, understand and deepen the benefits of the ecosystem for the Baleia Beach Community, especially in regards to culture and social relations, in order to contribute to Assessa’s planning for the improvement of the commercial partnership in the marine algae chain.

The workshop took place at the headquarters of the Baleia Beach’s Residents Association, between 3 p.m. and 10 p.m. (including a dinner supplied by the organization) and had about 20 representatives throughout the process, mainly fishermen, shellfish/algae collectors, tourism entrepreneurs, active public servants in the community and local residents.

We sought to create a relaxed environment that encouraged collaborative participation through pair work dynamics, larger groups and plenary sessions. The workshop was divided into five main sessions: 1. Opening and welcoming participants with an introduction of the objectives and theme; 2. Deeper exploration into Cultural Ecosystem Services according to the perception of the community; 3. Community mapping; 4. Prioritization, hierarchy and value classification to the mapped elements; 5. Evaluation, follow-up and closing.

Opening and welcoming of participants

Introduction of participants and facilitators, as well as the objectives of the workshop and the pilot project as a whole, including Assessa’s corporate presentation. The dynamic of this introduction was organized through pairs of locals and people attracted to living in Baleia Beach having a conversation and then introducing each other to the rest of the circle.

Extending and deepening of the discussions on CES, according to the perception of the community

The dynamic took place in three groups with up to six participants divided into i) fishermen and shellfish collectors; ii) tourism entrepreneurs; iii) society and local residents. There were two rounds of parallel conversations.
TABLE 1 - QUESTIONS AND ELEMENTS OF THE ANSWERS TO THE DISCUSSIONS ON CULTURAL ECOSYSTEM SERVICES

<table>
<thead>
<tr>
<th>Aspects of community coexistence</th>
<th>Direct and indirect influences on the quality of the work environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your day-to-day routine like? How does your daily life depend on nature? What is your interaction with the community like? What do you like doing for fun at Baleia Beach?</td>
<td>Has anything ever happened with the sea or the ‘sertão’ backlands that interfered with your work? In regards to your work depending on nature, what has improved or what can improve? And what has worsened or can worsen? What would you do if you could no longer do your job because of some major change in the sea or in the backlands?</td>
</tr>
</tbody>
</table>

- Canoe Festival and Raft Regatta;
- Sports Association of the Baleia Beach;
- Food (fish, vegetable garden);
- Enjoy the beaches, dunes, lakes;
- Preserve the local ecosystem (remove garbage from the Baleia Beach, take care of the animals);
- The sea as a space of healing and tranquility;
- Fishing, algae collection, tourism;
- Parties, barbecue with friends;
- Dance: Forró, Zumba, Pê de Serra;
- Watching TV
- Internet / Reading;
- Sports: hiking, capoeira, yoga, Kitesurf, Swimming, meditation;
- Hanging out with family / friends;
- Buggy rides;
- Participate in meetings;
- Collect seaweed / selling fish / making income;
- Cooking;

- Creation of the Tremembé Indigenous Land, which prevents the advance of the Nova Atlântida project;
- Get rid of the garbage at the beach;
- Improve the use of technology for fishermen and shellfish/algae collectors;
- Techniques to cultivate algae / moss;
- Add value in the algae price;
- Improve access to fair trade for lace makers;
- Closed period of algae extraction;
- Training in fishing alternatives and technologies (to guarantee lifelong fishing);
- Kitesurf: New public tourism;

- Aesthetics of buildings;
- Construction on the shoreline sandstones and rocks;
- Constructions on ocean / beach area;
- Fences on the dunes;
- Port of PECEM changed the dynamics of the tides;
- Fishing has dwindled;
- There is too much trash on the beach;
- Dead turtles on the beach;
- There is not enough fisherman, children no longer want to learn the professions of their parents;
- Small fisherman can’t compete against the larger boats;
- Extraction of mangroves;

Community mapping of CES

In the participatory mapping, described in step 2.1 of DESEC, the participants worked together in a single group visualizing, brainstorming and drawing out on paper the aspects that interfere with and positively and negatively impact community life.

The reflection enabled them to broaden the collective vision about situations and challenges that the community currently faces, such as:
- Real estate speculation on the beach;
- Risks of fishing and shellfish/algae collection activities due to non-compliance with the closure season/period;
- Differences of opinion in relation to activities that attract tourists and in which to invest in the community (some seeking to promote the peace and tranquility of the environment as a specific attribute and others encouraging practices such as paredões “trucks or cars with large sound systems” for street parties);
- Lack of public services and infrastructure; among others.

Prioritize, rank, and assign values to the mapped out CES

This moment was dedicated to assigning values to the identified CES, according to step 2.2 in DESEC. Separated into the
same previous working groups (1. fishermen and shellfish/algae gatherers, 2. tourism entrepreneurs, 3. society and local residents), participants were invited to evaluate and elect the importance of the different CES aspects on a scale of 1 to 5 (5 - very important; 4 - important; 3 - more or less important; 2 - not important; 1 - not important).

**FIGURE 3 - CULTURAL ECOSYSTEM SERVICES PARTICIPATORY MAP**

**TABLE 2 - RESULTS FROM ASSESSMENT TO ASSIGN VALUE TO CES ELEMENTS**

<table>
<thead>
<tr>
<th></th>
<th>Algae</th>
<th>Fishing</th>
<th>Beach</th>
<th>Dunes/Lakes</th>
<th>Wind (kitesurf)</th>
<th>Lace makers/handicrafts</th>
<th>Tranquility, scenery, landscape, safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishermen and shellfish/algae gatherers</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Tourism Enterprises</td>
<td>5</td>
<td>5</td>
<td></td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Society and local residents</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>
Evaluation, follow-up and closing

Moment of the workshop for the participants to make their evaluation. It was also the opportunity to present the next steps, as well as to open up a channel for dialogue and better knowledge of the community.

The second step resulted in:

- Broadening the concept of CES within the community context;
- Community map representing the most relevant CES elements and their dimensions of value to the community, as well as community observations and perceptions on each element;
- Participants collective reflections on current situations and conflicts;
- Approaching and expanding the possibility of dialogue between the company and the community;
- Definition of the next meeting’s date, along with the commitment from participants, especially the chairperson of the Residents’ Association, to communicate and disseminate the results of the workshop with those who did not participate as part of the effort to mobilize more people for the next meeting.
As important as the graphic elements represented or the dimension of assigned values, are the group’s observations and conversations during the activity...

The algae
“The crops didn’t work out. We need technical advice.”
“What possibilities exist for us to develop other local activities with seaweed, besides just collecting them, that can add value to the local production of algae?”
“What causes degradation is the way food is extracted from the fish, from the octopus, and even from the algae on the stones.”

Fishing
“Predatory fishing happens on the coral reefs.”
“Shellfish/algae gatherers need salaries and we need to organize the management of algae.”
“The fishermen’s work place is on the beach. It attracts tourists to eat the fish directly from the fishermen…”

Tourism
“The lagoons and the lakes are very important for tourism.”
“The dune road is being occupied by buildings. We need to secure access to the dunes and lagoons.”
“There is a real Zen energy here, people get here stressed out and then leave much more at peace.”
“Tourists come here because of the peaceful environment.”

Community life
“Best place in the world to live in!”
“I go to the village to listen to the sea.”

Cultural manifestations
“Here at Baleia Beach, we don’t even have an accordion player anymore.”
“It is non-existent, there are a lot of women who are lace makers, but we do not know where they are or how it is done because they are hidden in their houses. We need to encourage it more so that the art comes back to life. Crafts, artisanal crafts and cuisine are important, but it doesn’t exist here.”
“Lacework is a local tradition that is still resisting the test of time and is a complement to the family income… when she can’t collect shellfish or algae, she sells lacework. It attracts tourists’ attention too…”.

Wind
“When it’s windy it’s good for sports, but it’s bad for the fisherman who go out into the sea and have a hard time getting back.”

Next steps
“We need to get public power involved and make the master plan for Baleia Beach. And the outcome of this meeting can be a starting point for that.”

Phrases of the participants during the workshop

3. Systematization, analysis and communication of the outcomes

The systematization and analysis of the outcomes from the process were organized into reports that described each one of the stages. In addition, meetings were held with representatives of Assessa to discuss the outcomes, how and when to give feedback to the community and how to use the results in business management. Communication to the general public is, in part, represented by this document, as well as company presentations.

The follow-up meeting for the Baleia Beach Community had the objective of sharing the outcomes of the collective work on the identified and validated CES elements, generating reflections and possible next steps on the use of the produced content. The one-hour long meeting took place at the Baleia Beach Residents Association’s headquarters, 23 days after the participatory mapping activity. It was facilitated by a participatory process specialist who covered the whole process with six community members, among them shellfish/algae collectors and fishermen, people from the Residents’ Association, residents and local and foreign business owners.

The results of the process were organized into a report specifically destined for the community and five copies were delivered to the representatives who would present them to institutions such as the cooperative and the school. In the absence of an audiovisual resource, the meeting was based on a participatory discussion in which participants reflected on and brought up possible functions for community use. Some of the ideas which were brought out are: consultation material presenting the position and self-vision of the community, uses in political forums such as a meeting with the mayor of Itapipoca, SEBRAE (Brazilian Micro and Small
Business Support Service) and SENAC (National Service of Commercial Learning) representatives, or even with banks.

Finally, they asked the facilitating team to provide constructive observations about the community, such as deeper exchanges and conversations to define a desired common vision for the Baleia Beach community, including between different sectors of local society, since what is a problem for one category can be the other’s solution. An example of this is the algae case: what is seen by tourism enterprises as developmental obstacles can be a source of income for the shellfish/algae collectors.

Results and reflections

The results of the diagnosis are systematized in Annex 1. Some Results: Community vision on the sea and the algae that nature supplies. The process, as well as the results, clarified some aspects about the dynamics of the community, the players involved in the supply chain, and the current impact of the company on the territory, which generated these possible reflections:

- Greater knowledge and proximity of the company with the community is the first step to develop strategies according to the reality of the cooperative and to create a real communication channel. In addition, it contributes to the understanding and management of production bottlenecks;
- As Assessa’s contact is directly with Coopamab, and since the company demands a relatively small volume of raw material, the financial, community, and environmental impacts to the ecosystem are relatively low. For this reason, most of the community members knew very little or nothing of Assessa as an algae buyer;
- One of the main challenges of the community related to algae collection is connected to the need of creating better opportunities that can raise the value of shellfish/algae collectors’ work and the value of the raw material itself.

The third step resulted in:

- Reports for the company, systematizing the process and results;
- Reports on results using language that is accessible to the community;
- Community and company reflections on the strategic use of the material;
- Feedback from the facilitation team to the community.

4. Support in decision making

In this last step, based on the results of the diagnosis, we sought to reflect on the perspectives of action both by the community and by the company, feeding those reflections into the Question Diagram to aid decision making (page 35 of DESEC), according to Figure 4.

For Assessa, awareness of their responsibilities and future perspectives, can be summarized in:

- Opening of a dialogue channel with the community in general, as well as with Coopamab;
- Potential to support decision-making in relation to the partnership with Coopamab, aimed at increasing demand, with the potential of using algae collected on the beach and on stones, and the dissemination of techniques for the best algae management practices;
- Based on the analysis of the results, the company plans to set up a cooperative revitalization project, bringing potential innovation to algae use, articulating partnerships for training and expanding the range of options for algae use and increasing the value of shellfish/algae collectors’ work. Some examples would be the use of algae in food, in natural fertilizers and in aesthetic procedures. The capacity building for community members, for example, from institutions such as SEBRAE or local entities, is considered important so that community members themselves can organize the activities. Partnerships with local hotels and SPAs that use selected algae were also envisioned, as another way to add value to the raw material (algae) and generate employment.

For the Baleia Beach Community, the application of the DESEC method was useful as a reflection and to point out its strengths and vulnerabilities. The perspectives are:

- To subsidize the development of articulation strategies to foster local social organization and to develop alternatives based on a shared vision of the future;
- To strengthen the dialogue with the government, especially in the process of building a Master Plan for the Community;
- To promote the restructuring of productive activities, especially algae collection and cultivation, with proposals for the partnership with Assessa;
However, the application of the DESEC method depends on the parties involved appropriating the results, strengthening critical reflection capacities, and dialogue and consensus-building of future perspectives, both for the local community and for partnership with Assessa. The effective definition and implementation of the strategies are complex processes with medium and long-term consequences.

**FIGURE 5 - QUESTION-AND-ANSWER DIAGRAM TO AID IN THE DEFINITION OF STRATEGIES**

- **Were CES detected in the territory of interest?**
  - Beautiful scenery, Peaceful ocean, Fishing and Seaweed Collection, Recreation and Tourism

- **Check other aspects of interventions in the territory:**
  - Provision of raw material

- **Will the company’s intervention impact CES?**
  - The company’s impact is low given the low demand. Shellfish/algae collection has a positive impact, is valued positively and contributes to tourism, as tourists do not like seaweed on the beach

- **What are the (most) vulnerable CES?**
  - The beauty of the scenery is very threatened by constructions of hotels and houses in the mangrove and on the beach, garbage on the beach. Fishing is threatened by big fishing boats trash, young people who do not want to be fishermen, degraded mangroves, PECEM port.

- **Which CES are indentified as most relevant?**
  - Very important: scenery, landscape, tranquility, algae, fishing, beach.
  - Important: wind (kitesurf), dunes, lagoons, lacework

- **What are the means to ensure the maintenance of vulnerable and relevant CES?**
  - Scenery, landscape, sights – master plan could stipulate the construction rules (number of floors, size in m²) and the appropriate areas. Use the participatory map for this purpose. Residents’ Association foster beach/sea/dune cleaning efforts to remove garbage from the beach.
  - Fishing – awareness and training on sustainable means for the extraction of mangroves and also for fishing activities, to guarantee the maintenance of the fishin stock. Empowerment can help increase young people’s interest in the activity. Fishermen’s Association for sale of fish to other regions/customers.
  - Tranquility – Association of residents and fishermen (with their influences) could organize meetings to define it, where and when the paredões (cars and trucks with large sound systems) would be allowed and put up signs stating when it is not, in order to retrain the practice.

- **Is it possible to leverage/improve this CES?**
  - Algae collection is an activity that can be more valued
  - Wind (kitesurf) – portal to promote kite surfing tourism in this region

- **Are there intervention alternatives to avoid negative impacts?**
  - Training on good practices of algae collection and fishing. Price premiums could be awarded to those who demonstrate good practices of algae collection

- **Think of opportunities!**
  - Algae collection – the use algae in food, in natural fertilizers and also in aesthetics. These food and fertilizer activities can be done by community members. In the case of aesthetics, the idea would be to form a partnership with hotels interested in having a selected seaweed SPA, which can generate jobs for beauticians or masseurs, who can trained by SEBRAE or local entities.

Source: Adapted from GVces, 2016
Main challenges and lessons learned

The challenges identified in the method’s application in this pilot are often common to participatory processes and are listed here for the purpose of giving a clear account of this experience.

Regarding the process:

- The simple possibility of interaction between the company and the community already generates, on its own, expectations from the community. Preliminary contact with local players has already shown this, and in this sense, any interaction should be cautious. Clearly and realistically defining and communicating the benefits of the process to the community is extremely relevant.
- Support from a local agent can facilitate the presentation and interaction process with the community, although it may be important to keep a distance and seek more than one local agent, in order to represent potential different points of view within the community.
- The concept of CES is abstract and the process captures CES and other ecosystem services jointly, and it is not necessary to separate both of these categories. What is important is to ensure that CES are not forgotten or underestimated because they are intangible and difficult to represent.
- The diagnostic process and even a plan of action can be very robust, but it is necessary to consider its governance and continuity. In the case of this community, the previous project financed by FAO was quite robust, however, there were problems with the continuity of the practices within the community.

With regard to Coopamab:

- Ignorance of Coopamab’s actual existence by the Baleia Beach Community, generating disbelief in its potential for action and engagement with the community.
- Tendency to reduce the number of shellfish gatherers in the cooperative and a weak sense of cooperation;
- Passive relationship with the market, dependent and restricted to Assessa’s demands.
- Lack of articulation of the shellfish/algae collectors who participated in the founding of the cooperative, in which work is dispersed into different groups that no longer have relations, among them the small group that still works as Coopamab.

With regard to the Baleia Beach Community:

- Apparent low level of interest and engagement of local residents for events and collective decision-making movements that demand meetings, conversations and individuals and families’ proactive involvement.
- Community lacks a shared vision of the future for Baleia Beach, a factor that is worsened by the disorderly growth of tourism.
- Strong local bipartisanship that generates economic imbalance and local power conflicts through the distribution of public positions based on personal preferences.
- Large number of outsiders (national and international) properties on the shore of Baleia Beach, influencing the work relations and the dynamics of the economic activities that are developed at the seaside, that is, construction of hotels, beach huts, restaurants.
- Scarce opportunities for local youth, with a strong tendency of young people migrating to other localities, cities and regions.
- The community is heavily accessed for licensing or study processes and rarely sees the benefit of these "surveys".
- The community is timid, so the approach for collecting the impressions is better done in small groups with a light approach, without addressing controversial issues.
With regard to Assessa:

- There is a challenge for the company to communicate and verify the cooperative good practices of algae collection, mainly because of distance.
- Assessa’s low product demand (marine algae) to Coopamab, which generates low economic impact, compared to other commercial agents that present annual demands up to 50 times larger.
- Relationship of the company with the community is concentrated and dependent on one person, who acts on behalf of the cooperative.
- Baleia Beach Community is unaware of Assessa.
References


SILVA, Z. B. (Sem data.). Diagnóstico e o referencial estratégico para o desenvolvimento da comunidade de Baleia/Pedrinhas. Documento gentilmente cedido pelo consultor Marcelo Torres em fevereiro de 2017 via e-mail.

Annex 1 - Some results: community perspectives on what the sea, algae and nature supplies

Below is an overview of the community’s view of social dynamics and community interactions with the environment and the ecosystem’s resources, products and services offered. It is also important to emphasize the importance or value assigned by the communities to these dynamics and interactions.

The algae:

For the algae / shellfish/algae collectors, the fishermen and also for the group of tourism business, algae are assigned the value: VERY IMPORTANT.

- Importance in the maintenance of the environment that exists on the beach, as it is a source of food for shrimps, lobsters, octopus, shellfish, among others, and also to guarantee environmental and climatic balance;
- Importance as a source of income for the families of the community;
- Concern about how algae are extracted from rocks;
- Questions about possibilities to add value to the local production of algae, need for technical advice, among others;
- Need for the shellfish/algae collectors to organize the management of algae.

Fishing:

For both the fishermen and the tourism business, fishing is considered VERY IMPORTANT.

- Source of fundamental income for the community;
- Risks of predatory fishing on reefs;
- The need for shellfish/algae collectors to also receive salaries, as well as the fishermen;
- The positive attribute of Baleia Beach being able to offer fresh fish to tourists at any time.

The beach:

All residents, regardless of their activity, consider the beach VERY IMPORTANT.

- Despite the land occupation at the edge of the beach, there is no friction between the owners and the fisherman, who has his work space on the beach;
- The beach, besides being the main attraction of the community, is broad, and has enough room for all and represents security for adults and children to bathe and enjoy moments of leisure.

The dunes and lagoons:

The residents, fishermen and shellfish/algae collectors all assign the value IMPORTANT to the dunes and lagoons, while the group of tourism entrepreneurs consider it VERY IMPORTANT.

- Immense tourism potential presented by this ecosystem;
- Important environmental service provider for the absorption and retention of fresh water;
- Importance of lagoons for tourism;
- Access of residents and tourists has been restricted with the fencing of the dunes and occupation of the roads that lead to the lagoons by disorganized constructions;
- Threats due to disorderly occupation and destruction of dunes and sandstone;
- Risks to an important potential tourist attraction: the scenery viewpoint of Baleia Beach, located on the top of the dunes.
- A unanimous opinion about the fact that the mangrove swamp was extinct in Baleia Beach due to the beaches being occupied by constructions.

The wind and kitesurf:

The fishermen and shellfish/algae collectors assign the value **MORE OR LESS IMPORTANT**, while the residents consider it **IMPORTANT**.

- The fishermen have a relationship of respect for the wind as it is a force that can turn over boats;
- Concern with the safety of kitesurfers and bathers with the increase of kitesurfing practice, which exploits an important local resource - the winds;
- Evaluation on the Kitesurfing is that it selects the tourist that arrives in Baleia Beach, so there must be areas that are reserved for kitesurfers, separated from areas for bathers;
- References to a cultural center situated at the edge of a lagoon that is basically abandoned, that could turn into a center of water sports like kitesurfing.

Cultural manifestations:

Everyone considers the activity of lacemakers and the production of artisan crafts in general as **IMPORTANT**.

- Expressions of regret for the cultural losses verified, with the absence of accordionists, traditional folklore dance groups, among others;
- The work of the lacemakers and their products are understood as an important local cultural manifestation, but they are not valued and are being forgotten by the community, although many lacemakers maintain the practice as a relevant income alternative.

The tranquility:

All residents, entrepreneurs, fishermen and shellfish/algae collectors consider that this attribute of Baleia Beach is **VERY IMPORTANT**.

- The tranquility of Baleia Beach is unanimously highlighted as one of the most valued attributes of the place, both for residents and tourists, including the scenery, landscape and safety;
- Concern about events that interfere with tranquility of the environment, especially due to noise pollution caused by the “paredões” (cars or trucks with powerful speakers), which has generated controversy and discord in the community.