



Provision of Marine Bioactive Compounds, Risk Management and Loyalty in the Supply Chain

EXECUTIVE SUMMARY

Assessa is a small/medium-sized Brazilian business specialized in the development and production of highly effective bioactive ingredients for the cosmetics industry. The company activities are tightly related with the natural capital, and many of its raw products are extracted from natural areas.

From this perspective, it is relevant to understand the relationship its raw material suppliers have with ecosystems, in order to ensure provisioning of inputs in the long term, as well as income generation to communities.

Thus, Assessa selected the raw material provision ecosystem service related to the *Sargassum* and *Hypnea* algae, which are used as raw materials to produce marine bioactive compounds, items of great relevance in the business portfolio. Those algae are supplied in a partnership with COOPAMAB, a cooperative located on Baleia Beach, in the town of Itaipoca, State of Ceará.

With the purpose of valuating the business dependency, the methods adopted were both the Replacement Cost Method (RCM) in case of purchase of raw material from a different supplier, and the Marginal Productivity Method (MPM), simulating unavailability of the raw material and subsequent loss of revenue. Impact scenarios were also calculated: for MPM,

a 50% unavailability of both raw materials (*Sargassum* and *Hypnea*) was considered throughout 2015. For RCM, the scenario considered was 75% unavailability for *Hypnea* only, since there is no possibility of another supplier replacing *Sargassum*.

If the company were not able to replace the raw material, revenue losses would be about BRL 4 million per year for both algae. In case the supplier needed to be replaced, the analysis pointed to a positive impact, because the substitute supplier offered better price and freight, which would make the supplier raw material cheaper. Although the method determined a better offer, it is worth noting that Assessa prefers to use the algae provided by COOPAMAB cooperative, because they offer enhanced tracking of the algae origin and, therefore, better control of the raw material quality when it comes to the process to obtain it and to the labor conditions adopted to collect the algae.

Through the results obtained, it was possible to assess the financial risks due to raw material scarcity, as well as to justify price policies and practices with selected suppliers – as in the example of COOPAMAB – as a way to mitigate risks. The results give an idea of how Assessa can benefit from loyalty actions in the chain and supplier management, generating shared benefits.



Reporting of Dependencies, Impacts and Externalities

Responsible for completing: Raissa Tavares

Project drivers

Goals: Assess risks and opportunities; Compare options; Assess impacts on stakeholders; Estimate total value and/or net impact; Communicate internally or externally; Understand the business relationship with ecosystem services.

Description: Assessa understands that the sustainable use of natural resources is an integral part of its corporate strategy, and the natural resources are the source of inspiration and support of its production processes. As *Sargassum* and *Hypnea* algae are vital components for the top-selling products in the company, there was great interest to understand its relationship with those raw materials, identifying associated risks and opportunities so as to support strategic decisions.

Project scope

Object of the Project Analysis: Product.

Description: Supply of algae as raw material.

Geographic Area: Baleia Beach, in the town of Itapipoca, Ceará

Step(s) of the Value Chain Included: Upstream (suppliers)

Type of Approach: Retroactive

Time Horizon: 2015

Ecosystem Services: Other provision services.

Other provision services

Provision ecosystem services result from ecologic processes (or ecologic functions) that produce tangible/material assets, which are somehow useful and generate well-being.

Method(s) Used: Replacement Cost Method (RCM) and Marginal Productivity Method (MPM).

Results:

Dependency: MPM: BRL 4 million /
RCM: BRL -2.9 million

Impact: MPM: BRL 2 million /
RCM: BRL -1.7 million

Externality: Not calculated

Data Used:

Type of Data:

Target Ecosystem Good (TEG): *Sargassum Filipendula* and *Hypnea Musciformis* (algae) supplied by COOPAMAB cooperative.

Primary

Dependency on the TEG demanded: 0.03 kg TEG / kg of product

Alternate good: To calculate RCM, the *Hypnea* provided by a different supplier was considered the alternate good. There is no alternate good for *Sargassum*, that is why its value is not taken into account in RCM.

Environmental quality metric used for the analysis: Externality not calculated.

Collateral Information

Results from physical metrics:

MPM: To analyze the impact, 467.5 kg of *Hypnea* and 115.3 kg of *Sargassum* were considered unavailable.

RCM: To analyze the impact, 705 kg of *Hypnea* were considered unavailable, and the whole amount of *Sargassum* was considered available.

Assumptions made in valuation estimates:

MPM: To calculate the impact, the scenario used was 50% of TEG unavailable.

RCM: As there is no other *Sargassum* supplier, for RCM the TEG considered is only *Hypnea*. To calculate the impact, the scenario considered was 75% of TEG unavailable (quantity of TEG currently unavailable/quantity of total TEG = 75%).

Adjustments or derivation applied to the methods and tools used: —

Others: This analysis was conducted taking into account the total use of both algae in production, considering all products that use either one or the other, and the products that use both. All data used refers to production in 2015.

Explanatory notes: To calculate the dependency, the total amount of product (kg) produced in 2015 containing *Sargassum* and/or *Hypnea* was compared with the total amount of raw TEG (kg) used for annual production.

Analysis of the results

Because we use the Target Ecosystem Good (TEG) as the basis for most of our products, the amount of algae used is distributed among different products, thus the amount used is not the same as the amount of finished products. So, apparently, our dependency on this raw material seems to be low, but actually algae are a critical input to manufacture a number of products at Assessa. By conducting the valuation we could see that, in spite of the low dependency rate, Assessa would lose at least BRL 3-4 million per year without the TEG.

When we conduct the valuation adopting the Marginal Productivity Method (MPM), we can see that the impact would be proportional to the dependency, according to the percentage of unavailable TEG simulated in the scenario. When using the Cost Replacement Method (CRM), we can see a negative cost, which means there would be a gain in value if we used algae from another supplier. Negative values for dependency and impact when adopting the CRM method, in other words, when changing *Hypnea* suppliers, are the result of a better offer for price and freight, meaning the raw material sold by the other supplier is cheaper. However, Assessa prefers to use the algae provided by COOPAMAB cooperative, because they offer enhanced tracking of the algae origin and, therefore, better control of the raw material quality when it comes to the process to obtain it and to the labor conditions adopted to collect the algae. Therefore, as the tool only uses monetary values, the real value obtained from using the algae bought at COOPAMAB is not accounted for.

Management of ecosystem services

Use of ecosystem service valuation results: Definition of strategic goals and progress monitoring; Social and environmental impact assessment; Risk assessment; Reporting; Product portfolio.

Description: This study was very important for us to start understanding the relationship Assessa has with the environmental preservation of two of our most relevant raw materials, and, also, for us to start thinking of the social impact on the Cooperative community.

One of the actions taken as a way to manage ecosystem services was to participate in the pilot project to apply the Corporate Guidelines for the Noneconomic Valuation of Cultural Ecosystem Services (DESEC, its Portuguese acronym), along with GVces and GIZ, using our case as a pilot to sit down with the algae supplier community and list the cultural ecosystem services.

Realização



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