



Evaluation of the economic benefits enjoyed by the company as a result of recreation and tourism activities in its operation regions

EXECUTIVE SUMMARY

Ecocataratas is the company responsible for the administration of 387.1 kilometers of the BR-277 highway, between the cities of Guarapuava and Foz do Iguaçu, being one of the main routes to the Iguaçu Falls and to the rest of Latin America. The Concessionaire *Ecovia Caminhos do Mar S/A* maintains, under its administration, 175,1 kilometers of roads between the capital and the coastal cities of Paraná, connecting Curitiba to the Paranaguá Port. Both are part of the EcoRodovias Group, an integrated logistics infrastructure company.

Considering the relation of companies with the natural tourist attractions in Paraná, *Ecocataratas* and *Ecovia* have chosen to assess the impact of the cultural ecosystem service for tourism and recreation in the region and the consequent economic benefits for the activities of the companies, in the form of toll collection. Thus, these case studies considered companies as one of the beneficiaries of ecosystem services for recreation and tourism in their respective regions.

Such scope was selected in order to understand if the portion of users who use the highway for tourism purposes is significant to invest in this public and consider the promotion of recreation and tourism activities in the companies' strategy. The quantification of the number of users traveling through the highways for recreation and tourism used the data from

the satisfaction surveys performed by the companies in their toll plazas throughout 2016. It considered only tourists using light vehicles, except motorcycles. Taking into account that satisfaction surveys do not discriminate tourist destinations, the results obtained are simplified and it is not possible to attribute which portion of the externality is referring to each tourist site.

The Travel Cost Method (TCM) - which seeks to estimate the economic value of the ecosystem service through the demand for this service - was adapted taking into account that transportation, lodging, food and ticket expenses in travel for recreation purposes, leisure and tourism reflect minimally the benefits provided by ecosystems that promote such activities. In these cases, only the share of tourist expenses related to the toll was considered, which is the portion internalized by *Ecocataratas* and *Ecovia*.

For *Ecocataratas* and *Ecovia*, the number of users in 2016 for tourism purposes was, respectively, around 3.2 and 3.8 million, with impact valued at approximately R\$ 39.7 million and R\$ 69.6 million. These results represent the contribution of the ecosystem service of recreation and tourism in question directly to the results of the companies, which demonstrates the importance of considering it in the strategic planning.



Reporting of dependencies, impacts and externalities

(Ecocataratas) Responsible for completing: Marcelo Rançan

Project drivers

Goals: Understand the business relationship with ecosystem services.

Description: The highway concession for lot 03 of the State of *Paraná* covers the section of BR 277 that connects the municipalities of *Guarapuava*, in the central region of the state, to the municipality of Foz do Iguaçu, western region of the state. The objective was to evaluate the influence of recreation and tourism ecosystem service in the Iguaçu National Park/ *Iguaçu Falls* region, as well as the attractions related to the leisure of the coastal states of *Paraná* and *Santa Catarina*, about tourism and the positive impacts on the revenue from charging fees by the company. The information will be used to analyze whether the total number of users using the highway in order to access the tourist areas is significant or not. These data will be considered in the definition of strategies in order to evaluate the ecosystem service in question.

Project scope

Object of the project analysis: Project.

Description: An analysis was made for the project related to the concession of the Integration Ring of the State of *Paraná*, corresponding to lot 03, operated by the Rodovia das Cataratas S.A./Ecocataratas (company of the Ecorodovias Group). The company considers, as a Product, the compliance with contractual guidelines, service and the provision of services guided by quality, mobility and safety of users.

Geographical area: Sections of conservation and operation of the highway:

- BR-277 – Guarapuava to Foz do Iguaçu, between the km 344 and 731,1;

Sections of conservation:

- PR-180 – Stretch linking the BR 277 to the municipality of Juvinópolis - 22 kilometers;
- PR-474 – Stretch linking the BR 277 to the municipality of Campo Bonito – 7,6 kilometers;
- PR-590 – Stretch linking the BR 277 to the municipality of Ramilândia – 13,5 kilometers;
- PR-874 – Stretch linking the BR 277 to balneário de Santa Terezinha de Itaipu – 13,4 kilometers.

Step(s) of the Value Chain Included: Own operations and downstream (clients).

Type of approach: Retroactive.

Time Horizon: 2016.

Ecosystem Services: Recreation and tourism.

Recreation and tourism

Role of ecosystems as places where people find opportunities for rest, relaxation and recreation.

Method(s) Used: Travel Cost Method (TCM).

Results

Impact: N/A

Externality: R\$ 39,7 million

Data used	Type of data
Total preserved area: N/A.	Not applicable
Alternative economic use of area: N/A.	Not applicable
Number of visitors in a year: 3.255.534.	Primary / Own
Visitor's origin and representativeness of each source in relation to the others (percentage of total visitors that was appropriate to each of these origins): considering the data obtained from the survey of user satisfaction, about 30% of the overall total of light/passengers vehicle is composed of tourists. The data indicate that this percentage comes mainly from the eastern and northern regions of the state of <i>Paraná</i> . There was no percentage breakdown by region at this time (this factor will be detailed with data for 2017, which will be tabulated at the beginning of 2018).	Primary

Further information

Assumptions adopted in valuation estimates: the general total of light vehicles that passed through the five toll plazas that are under the custody of the concessionaire in 2016 was adopted as a premise, as a basis for the percentage calculation of users who used the highway to access tourist attractions, search results of user satisfaction.

Adjustments or derivations applied to methods: considering that the focus of the study was the company as one of the beneficiaries of the impacts linked to the ecosystem service for recreation and tourism, the collected data were not perfectly applicable to the calculation tool, and, therefore, the calculations were done manually. The Travel Cost Method was adapted, considering only the tariff charged on the toll. In this case, the number of road users who declared traveling for tourism and recreation reasons, was multiplied by the cost of the tolls, considering the percentage increase in the rate that occurs in December.

Others: N/A.

Explanatory Notes: The data obtained from the *Ecocataratas* user satisfaction survey of 2016 did not discriminate in detail important data, such as tourist destination, for example: beaches of the coast of *Paraná* or *Santa Catarina*, or tourist attractions located in the central region of the state, or the exact percentage which moved to the natural attractions located on the triple border. This information, however, referred to the general total of users who used the highway for tourism, and it is not possible to specify the percentage of leisure and business tourism. This factor has already been corrected, and will be used in the satisfaction survey of 2017, clear data, such as origin, destination, detailed discrimination regarding tourism, and destination for leisure tourism in *Foz do Iguçu*, or destination for business tourism in the Paraguay, will be analyzed in more detail. With these improvements, it is intended to obtain an accurate data and to be able to develop strategies to boost the interest of the target audience, thus promoting the valuation of the Ecosystem Services, object of this study on behalf of the company.

Analysis of the results

The impact with the collection of the toll tariff on the tourist users of the road system under concession generated, in 2016, an approximate turnover of R\$ 39.7 million for the company. Considering that toll tariff collection directly influence EBTIDA (all that the company collects from its activities), this factor demonstrates the significant collaboration of the ecosystem service with the results of *Ecocataratas*. In this way, it will be considered as a relevant issue and should compose the strategic planning for 2018.

Management of ecosystem services

Use of ecosystem service valuation results: Definition of strategic goals and monitoring of progress.

Description: Considering that the flow of users who use the stretch of highway under concession to access the state's tourist attractions is influenced mainly by holidays, July and summer holidays (season that extends from November to January), these factors lead to a considerable increase in the flow of vehicles that use the highway, which contributes to the revenue increase. These factors suggest that the business strategic development, exploring the domain stretch and the installation of advertising panels and Mega Panels of the five toll plazas with incentive to tourism in the region of the triple border, will be increased. In this context, there is potential to leverage results in visits to tourist attractions - ecosystem service for recreation and tourism. In 2015/2016, the company invested in campaigns to encourage tourism in partnerships with agencies in the region of Iguazu Falls, promoting tourist attractions, thus boosting the visits. These processes will be considered, in 2018, in the planning of the company with the purpose of promoting the users interest in the road system for tourist visitation in the areas of interest in the triple border, as well as the access, by highway, to the coast of Paraná and Santa Catarina. In addition, the company maintains, through donation, the transfer of amounts to be applied on nature conservation actions in the Iguazu National Park.



Reporting of dependencies, impacts and externalities

(*Ecovia Caminhos do Mar*) Responsible for completing: Felipe Augusto Copi Guilherme

Project drivers

Goals: Understand the business relationship with ecosystem services

Description: The highway concession for Lot 06, in the state of *Paraná*, covers the section of BR 277 that connects the capital to the state's main beaches, being the main route used by tourists who want to enjoy the coast of *Paraná*.

The objective is to assess the impact influence of cultural ecosystem services (beaches and natural wonders of the mountains and coast) on tourism in the region and the consequent economic benefits of the impact on the company's activity (toll collection). Hence, it aims to understand if the portion of users that uses the highway for the purpose of tourism is significant, so to invest in this public.

Project scope

Object of the project analysis: Project

Description: It will be analyzed the project inherent to lot 06 of the *Paraná* State road concession, a concession operated by *Ecovia Caminho do Mar S/A* (company of the *Ecorodovias* Group), focusing on tourist users in light vehicles (except motorcycles).

Geographical area: The geographical area of Lot 6 is composed of a total of 175.1 kilometers of highways and respective domain stretches. The sections are detailed below:

Sections of conservation (maintenance of roads and domain strip) and operation:

- BR-277 – *Paranaguá e Curitiba* between the km 0 and 84,2;
- BR-277 – *Avenida Ayrton Senna* – 1,5 kilometer;
- PR-508 – *Alexandra to Matinhos* between the km 0 and 32;
- PR-407 – *Paranaguá to Pontal do Paraná* between the km 0 and 19.

Sections of conservation (maintenance of roads):

- PR-804 – BR-277 junction to PR 408 junction - 1.6 kilometer;
- PR-408 – Road junction from BR-277 to *Morretes* - 8.2 kilometer;
- PR-408 – *Morretes* to road junction of PR-340 – 9,6 kilometer;
- PR-411 – *Morretes* to road junction of PR-410 (*S. J. da Graciosa*) – 13 kilometer.

Step(s) of the Value Chain Included: Own operations and downstream (clients).

Type of approach: Retroactive.

Time horizon: One year (2016).

Ecosystem services: Recreation and tourism.

Recreation and tourism

Role of ecosystems as places where people find opportunities for rest, relaxation, and recreation.

Method(s) Used: Travel Cost Method (TCM).

Results

Impact: N/A

Externality: R\$ 69,6 million

Data used

Total preserved area: N/A.

Type of data

N/A

Alternative economic use of area: N/A.

N/A

Number of visitors per year: 3.851.807.

Primary/Own

Visitor's origin and representativeness of each source in relation to the others

Primary

(percentage of total visitors that was appropriate to each of these origins): Overall total of light vehicles, about 85% of the total were composed of tourists, originating mainly from Curitiba, with participation of 60.5%.

Further information

Assumptions adopted in the valuation estimates: The overall total of light vehicles that passed through the toll plaza under the custody of the concessionaire in 2016 was adopted as a premise, based on the percentage calculation of users who used the highway to access the tourist attractions, the results of user satisfaction survey, which has an error margin of 5%.

Adjustments or derivations applied to the methods: Considering that the focus of the study was the business as one of the beneficiaries of the impacts generated by the ecosystem service of recreation and tourism, the collected data were not perfectly applicable to the calculation tool, and, therefore, the calculations were performed manually. The TCM was adequate, considering only the tariff charged on the toll. The number of road users claiming to travel for tourism and recreation reasons has multiplied by the toll cost.

Others: N/A.

Explanatory Notes: The data related to the Ecovia user satisfaction survey of 2016 did not discriminate, in detail, important data such as: beaches on the coast of Paraná or Santa Catarina, or tourist attractions located in the mountain region of the state, only the direction of the user in the highway. Considering that the majority originated from Curitiba, it is understood that the predominance of tourism is for the coast of Paraná and not the opposite, from the coast to mountain region/state capital.

Analysis of the results

The impact with the collection of the toll tariff generated a turnover of approximately R\$ 69.6 million to the company's accounts. This demonstrates the expressive collaboration of the ecosystem service with the results of Ecovia, being considered a relevant issue, and should comprise the strategic planning of 2018.

Management of ecosystem services

Use of ecosystem service valuation results: Definition of strategic goals and monitoring of progress.

Description: It is understood that the promotion of tourism activities should, mainly in the low season, be contemplated in the strategic planning of Ecovia, since tourism in the mountainous and coastal region represent a significant billing for the company, thus, the opportunity reached by the externality can be better explored. In the budget for 2018, the gastronomic event "Os Sabores do Litoral" is already planned, involving restaurants and hotels in the region, with Ecovia being the main promoter.

The environment conservation actions on the coast and Atlantic Forest can be considered in the strategic planning, but respecting the context of the organization and its budget commitment.

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