

Whale Watching on Reunion Island: the socio-economic challenges of a booming blue-economy activity

Summary note

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Photo credit: Sylvain Delaspre, CEDTM

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Introduction

Whale Watching, defined as the commercial and recreational observation of whales, dolphins and porpoises in their natural environment, has been growing intensely on Reunion Island since 2008, becoming a potential driver of the local tourism economy. Whale watching includes excursions at sea, sightings from the coast as well as aerial overflights. Humpback whales (*Megaptera novaeangliae*), seasonally present on Réunion Island between June and October, are the main targets of this activity during this period. Other year-round cetacean species, such as bottlenose dolphins (*Stenella longirostris*), Indo-Pacific bottlenose dolphins (*Tursiops aduncus*) and common bottlenose dolphins (*Tursiops truncatus*) are also targeted throughout the year.

The development of Whale Watching on the island is taking place in an economic context where tourism remains a small part of the overall economy. Despite the island's undeniable tourism potential, only 2.2% of Reunion's GDP was generated by tourism in 2022. The majority of tourists are locals or affinity tourists. Maritime activities, including Whale Watching, are still marginal among this tourism. In 2022, of the 495 473 tourists recorded, only 2% of local tourists and 17% of external visitors took part in marine activities, including whale watching.

Whale Watching generates an economic value for cetaceans that goes beyond mere consumption, and thus contributes to their conservation. However, sustainable management is essential to prevent any negative impact on cetaceans and on the industry itself. Understanding the socio-economic stakes and impacts is a crucial aspect of Whale Watching that must be taken into account to ensure consistent and sustainable management, in favor of cetaceans, who are the true resource of this activity. On the scale of the Indian Ocean, several studies have addressed these socio-economic issues by taking a closer look at the structuring of the activity in a given territory, its evolution and its social perception (Gannon., 2014; Gannon., 2015; Buultjens., 2016; Rocha, 2022; Saisho., 2022).

In 2009, O'Connor's study estimated global sales of \$2 billion for Whale Watching. On Reunion Island, no study has yet determined the precise contribution of this activity to the local economy, and more specifically to the blue economy. The Centre d'Étude et de Découverte des Tortue Marines (CEDTM), in partnership with the IRD (Institut de Recherche pour le Développement), felt necessary to carry out an in-depth economic analysis of Whale Watching to assess its real impact on the island's economic development. This initiative also responds to a request from the IORA (Indian Ocean Rim Association), which gather 23 countries in Africa, Asia and Oceania, and of which France is a member since 2020 on behalf of Reunion Island. CEDTM's Quiétude team, responsible for improving Whale Watching conditions on Reunion Island, coordinates IORA's SWWN (Sustainable Whale and dolphin Watching Network), who partially focuses on the blue economy. This study aims to understand the socio-economic stakes involved in Whale Watching, as a contribution to IORA's work.

Whale Watching at sea includes several authorized practices on Reunion Island: observation from a boat and underwater observation. Since 2019, these practices have been governed by a prefectural decree, which has undergone several changes in 2020 and 2021. The particularity of

Whale Watching on Reunion Island also lies in the diversity of its practitioners, who range from professionals to private individuals.

Despite a clear identification of the stakeholders involved, Whale Watching remains an economic activity that is difficult to quantify. Indeed, the irregularity of whale sightings from year to year, the variability of the services offered by operators, and the fact that Whale Watching is often part of a “*bundling*” package (i.e. a package that includes multiple services) make it difficult to assess the sales generated directly by this business.

In order to provide answers on the economic share of Whale Watching in Reunion Island, this study aims to list the various stakeholders, analyze operators' practices and perceptions, assess the evolution of the activity and finally calculate the overall sales generated by the activity in 2023.

Methods

I. Stakeholders targeted

Operators are defined as those who offer Whale Watching for profit. In addition to these operators, there are other stakeholders involved in this activity, particularly professionals or individuals who organize outings aboard rental boats, as well as individuals who own their own boats. These types of stakeholders are not included in this study.

Among the operators identified, three different categories can be observed: operators at sea, operators from the air and operators from land. At sea, five sub-categories are differentiated:

- Carriers offering “on-board” observation, i.e. on board their vessel.
- Carriers who also offer snorkeling trips, using the services of a diving instructor.
- Dive centers that offer snorkeling trips to observe cetaceans.
- Freediving or diving associations offering whale-watching snorkeling trips to their members.
- Boat rental companies offering simple boat rental services to individuals.

From the air, two types of stakeholders are involved in the activity: air transport companies (ULM, helicopter) and sporting activities (paragliding). The observation from the ground, on the other hand, is promoted by various associations and the hotel industry. “Direct” operators are defined as those structures explicitly offering cetacean-watching excursions or the possibility of observing cetaceans during excursions. “Indirect” operators are those who do not explicitly mention cetacean-watching in their communications, but could practice the activity on an occasional basis.

For the purposes of this study, only the sales of at-sea operators have been estimated, as this category represents the majority of the Whale Watching activity. However, the absence of a specific economic codes such as NAF (Nomenclature d'Activités Française) or APE (Activité Principale Exercée) for Whale Watching on La Réunion made it difficult to estimate sales. Indeed,

these codes, which organize the various economic activities (NAF) and enable them to be classified according to their main activity (APE), are essential for obtaining accurate statistical data. To overcome this issue, a methodological approach combining the creation of a database and interviews was designed.

II. Creation of a database

1. **Merging of existing databases:** Whale Watching stakeholder data were gathered from two main sources (the database of former IRD student Moeha Saisho and the one of the Quiétude team), supplemented by online searches and information from fieldwork.
2. **Inclusion criteria:** Stakeholders were included in the database if they participated in or potentially benefited from Whale Watching. Their practice was verified and classified (existing, suspected, undeterminable, non-existent).
3. **Information collected:** Elements such as boarding capacities, rates, and communication tools (social networks, website) were listed from websites, social networks as well as company legal information (Siret, NAF code, year of creation, etc.)

This initial analysis identified missing information and targeted the stakeholders to be interviewed.

III. Interviews

The interviews targeted Whale Watching operators of various sizes and over the entire island, including those with no explicit communication on cetaceans. The aim was to ensure the representativeness by varying the types and sizes of operators.

These interviews were semi-directive and aimed to understand the evolution of the activity, economic strategies and to estimate the share of Whale Watching in overall sales. Two surveys were used: the first for operators directly involved in Whale Watching, and the second for indirect operators whose activity is influenced by the presence of cetaceans. To facilitate exchanges and preserve confidentiality, the interviews were not recorded, but summarized in writing.

IV. Analysis of qualitative and quantitative data

For the purposes of the study, two complementary analyses were carried out, the first qualitative and the second quantitative.

1. **Qualitative analysis:** The trends observed helped to understand the evolution of the Whale Watching business and the perceptions and strategies used by operators.
2. **Quantitative analysis:**
 - *Calculation of sales:* To estimate sales, various data from 2023 were taken into account: sales generated by Whale Watching (if known), the exact number of trips carried out or the average number of trips per week, the estimated average number of passengers per trip and the fare per person, all distinguished between the in-season and out-of-season periods. We also had to take into account the approximate nature of the data collected, in part due to the accuracy of the numbers given by the operators and due to the variations caused by weather conditions. A specific methodology was applied to define the in-season (July 15th - October 15th 2023) and out-of-season whale-watching periods, and to estimate the number of outings not carried out during the in-season period due to weather conditions.

Total sales for the whole year were either calculated by adding together in-season and out-of-season sales or given by operators during interviews.

Sales during the whale season (*CAs*) were calculated as follows:

$$CA s = \frac{Smoy \times Cmoy \times Pu}{7} \times ((14 \times 7) - 16)$$

Average number of trips per week: *Smoy*; Average number of clients per trip: *Cmoy*; Price per person: *Pu*; Number of weeks in season: 14; Estimated number of non-operational days (weather conditions): 16

Off-season sales were calculated either from the total sales number obtained from interviews and the part of in-season sales, or in the same way as in-season sales.

- *Estimating the share of Whale Watching*: An evaluation method based on four criteria (communication, activity, public motivation and the importance of cetaceans in the trip) was used to estimate the real share of Whale Watching in the services offered.

Results

From the operators at sea identified, 64 practice Whale Watching: 55 of them practice it directly, and 9 of them may practice the activity without offering a dedicated service. Out of the 36 aerial companies identified, 11 of them offer Whale Watching trips, either by clearly proposing a dedicated service, or by simply mentioning the possibility of observing cetaceans. Among land-based facilities, including hotels and restaurants, 5 of them advertise Whale Watching, 4 of them having dedicated areas.

Out of the 80 companies identified as offering Whale Watching activities, 66 were surveyed either during face-to-face interviews or by telephone. These include 53 sea-based operators, 11 air-based operators and 2 land-based operators.

I. Observation of cetacean by operators at sea

In 2023, of the 64 existing companies offering an activity at sea, Reunion Island have 55 operators offering the activity directly, including 11 passengers' carriers, 27 scuba-diving structures, 8 scuba-diving or freediving associations and 9 boat rentals companies. There are also independent professionals who organize profit-making trips from rental boats but are not included in this study.

- **Passengers' carriers**: Whale Watching has taken on a central role in the services offered by marine passengers' carriers. Despite a various range of different services offered, they all faced a growing demand. As a result, they developed various strategies (communicating the position of cetaceans via VHF, increasing the number of rotations per day) to find

cetaceans and satisfy customers. However, the issue of human based pressure on cetaceans is a widespread concern. Recently, new operators have emerged, often from new, shorter and less costly training courses such as the certificate of competence in small boat operation (BACPN), offering specialized services, such as Whale Watching.

- **In water activity operators (scuba-diving operators, scuba-diving and freediving associations):** In water trips, although more recent, are now well organized. They generally last between 2 and 4 hours, with an initial briefing to manage customers' expectations and prevent inappropriate behavior. This activity tends to increase, with seasonal hiring of independent instructors. Some companies are temporarily reorienting their activities to focus on in-water Whale Watching during the high season. In the off-season, however, this activity declines considerably.
- **Boat rentals:** For boat rental companies, the whale season is the busiest of the year. Outside this period, Whale Watching accounts for a small proportion of rentals. Some operators make their customers aware of the regulations and recommend or even require them to undergo specific training for approaching cetaceans, such as the OMEGA e-learning platform offered by the Quiétude team, to ensure their knowledge.
- **Indirect operators:** Indirect operators, such as those involved in deep-sea fishing, sailing or kayaking, have also seen a growing demand for Whale Watching trips.

II. Observation from the air

Out of the 36 air operators identified on the island, 11 communicate about cetaceans, 5 of them specifically promoting Whale Watching. These are mainly ULM companies. They see Whale Watching as a way of differentiating themselves in the market, often as a complement to traditional trips. Paragliders, on the other hand, mention cetaceans as an occasional bonus, but do not offer dedicated services, as safety and landing zones limit extended overflights over the sea. Whale Watching activities are therefore not well settled in the aerial observation sector and the observation of a cetacean is most of the time seen as a bonus to the initial service offered.

III. Observation from the ground

Whale Watching from the shore is a free activity. Four hotels have set up dedicated areas offering optimal sea views. Although these facilities don't bring any direct economic value, they do enhance the customer experience, as part of an eco-responsible approach from the hotel to attract more visitors. Some restaurants also mention Whale Watching opportunities, mainly for advertising purposes. Besides, online platforms (Facebook groups) and the Balèn Terla application, launched by the GLOBICE association in 2024, encourage responsible Whale Watching from the coast.

IV. Revenue generated by the activity

The quantitative data collected were organized in a spreadsheet to facilitate reading and processing. Averages relating to the number of trips per week, the number of rotations per day, the average price per person of a service, and the average number of passengers were recorded, differentiating between types of operators and different periods (in-season and off-season). This approach preserves the confidentiality of information while providing an overview of business trends. However, in the absence of centralized data, the method used has a part of interpretation. Thus,

from an economic point of view and based on the method described above, the amounts of sales generated by the Whale Watching business are as follow:

Table 1: Results of revenue calculations by type of operators (CA: Revenue, WW: Whale Watching, MAE: In water activity).

Type of operator	CA in-season WW	CA off-season WW	CA total WW
Passagers carriers	2 611 108 €	1 556 941 €	4 168 049 €
MAE	2 018 452 €	779 199 €	2 797 651 €
Boat rentals	654 627 €	391 573 €	1 046 200 €
Total	5 284 187 €	2 727 713 €	8 011 900 €

Discussion

The Whale Watching business in Reunion Island is expanding rapidly, with 64 operators at sea in 2023, a number that continues to grow and generate a significant economic value. The Whale Watching season is the most lucrative time of the year and accounts for almost 66% of total sales (Table 1). Some operators, initially engaged in other activities, take advantage of this period to increase their sales. For dive centers and independent instructors, Whale Watching becomes an additional source of income, which can be significant depending on the level of involvement in the activity. Off- season, Whale Watching is less lucrative than in-season, but still accounts for 34% of total sales (Table 1). However, Whale Watching is a complex activity, subject to strict regulations and dependent on weather conditions and animal migration. As a result, operators have to find a tricky balance between profitability and environmental preservation, particularly as the number of operators increases but also become more aware of the impacts of cetaceans over-solicitation. This environmental awareness leads to the emergence of premium offers, aiming to be more respectful of animal welfare, therefore attracting a tourism more aware and prepared to pay a higher price for this kind of trips.

The sales generated by this activity, although estimated at 8 million euros year-round and 5 million euros in-season, must be interpreted with great caution, given the approximate data provided by some operators, particularly for off-season periods. Besides, the Whale Watching activities carried out by independent instructors from rental boats and non-declared activities have not been taken into account in the sales figures here but do exist. In addition, the strong presence of whales in 2023 and the great weather conditions have certainly contributed to an increase in Whale Watching rotations per structure during this year. This situation is likely to change over the coming years. It would therefore be useful to obtain annual figures from operators and centralize economic data on Whale Watching from local authorities, in order to be able to analyze this trend.

To get an idea of these trend, the number of companies linked to Whale Watching in 2024 has been analyzed, and the current figures show an increase in activity compared to 2023, with an overall figure of 66 to 100 operators. The low-end figure of 66 includes only structures practicing the activity on a daily basis, to which should be added independent professionals (12 known so

far), jet ski companies that can claim to do Whale Watching, and 17 operators that could offer on-board or in-water observations, or that practice the activity on an occasional basis. In 2024, new operators were set up, including 5 operators offering in-water Whale Watching and 3 rentals boats operators. As the season was underway when this study was carried out, sales figures have not been established for 2024.

Observation of cetaceans from land and from the air remains an occasional activity, but has the potential to be developed, particularly due to the sharing of information and photos. This activity has to be monitored.

Conclusion

The observation of cetaceans in Reunion Island mainly occurs during the whale season, from July to October, accounting for nearly 70% of the total revenue generated by the activity. This period plays a crucial role in tourism related to the blue economy. However, over the past five years, an increasing number of operators have also been offering Dolphin Watching activities outside the whale season. In 2023, more than 30% of the overall revenue was generated during off-season. This trend is worth monitoring, as a significant increase is anticipated in the coming years, which could contribute to the overall revenue growth.

This research has provided a better understanding of the impact of cetacean presence on tourism operators, highlighting a sector that is both expending and undergoing structuring. The survey emphasizes the importance of continuing to monitor overall activity and its evolution, considering its seasonal nature, variation in weather conditions, and the presence rate of whales. The year 2023, even with exceptional conditions, could serve as a benchmark for future years.

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