FAS

Perceptions about tourist activity in conservation units Amazon: analysis and recommendations from the University of Notre Dame

Partnership

UNIVERSITY OF
NOTRE DAME
Mendoza College of Business

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analysis and recommendations from the University of Notre Dame

Sustainable Amazon Foundation (FAS)

Manaus, 2022

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DATASHEET

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Perceptions about tourism in protected areas in the Amazon: analysis and recommendations from the University of Notre Dame

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1. EXECUTIVE SUMMARY

Business on the Frontlines XIV ("BOTFL") is proud to continue the partnership between Notre Dame and FAS for a fifth consecutive year. This project's commitment to developing sustainable tourism practices will play a crucial role in increasing the income per capita of those living in the communities through employment opportunities and increased visibility of the food, art, and culture of the Amazon. Through continued education and increasing support, FAS can improve the river community's quality of life while staying true to their mission of environmental conservation.

Lack of online visibility, limited infrastructure, and environmental sustainability concerns all present significant challenges to increasing the number of tourists traveling to the reserves. In order to overcome these challenges, we recommend that FAS assist in the organization of two tourism associations for the lodge and restaurant owners - one for Rio Negro and another for Uatumã. Our recommendations should first be implemented in Rio Negro followed by Uatumã with an emphasis on targeting domestic tourists. During these first two stages, FAS would partner with a professional marketing agency to create and manage a digital marketing plan for each association. This will include strategies such as email marketing, social media, and visual presentation. The plan would include development of a website that can act as a direct booking channel for online reservations and payments. Integration can be achieved via the FAS, Poranduba, and Fisggar platforms.

In Stage 2, the same actions will be carried out for the Uatumã reserve with the addition of specialized ticketed events to draw tourists to the further, more time intensive locations. To ease access to the Uatumã reserve, FAS should lobby to improve unpaved roads that act as a deterrent for travelers. Finally, in Stage 3, the marketing agency should expand the target market to include international tourists from surrounding Latin American countries with easy access to Manaus, as well as other international travelers that frequently visit the State of Amazonas. To prepare for these travelers, it would be beneficial for FAS to support the creation of English and Spanish language courses.

From these recommendations, we anticipate the reserves to invest a total of R$2.14 million over 10 years and a total of R$4.42 million over 20 years. This will cover the cost of building the website and booking channel mechanism, as well as working with the marketing agency and the development of an English/Spanish language curriculum. This will lead to an estimated return of R$26.1 million and R$68.9 million respectively.
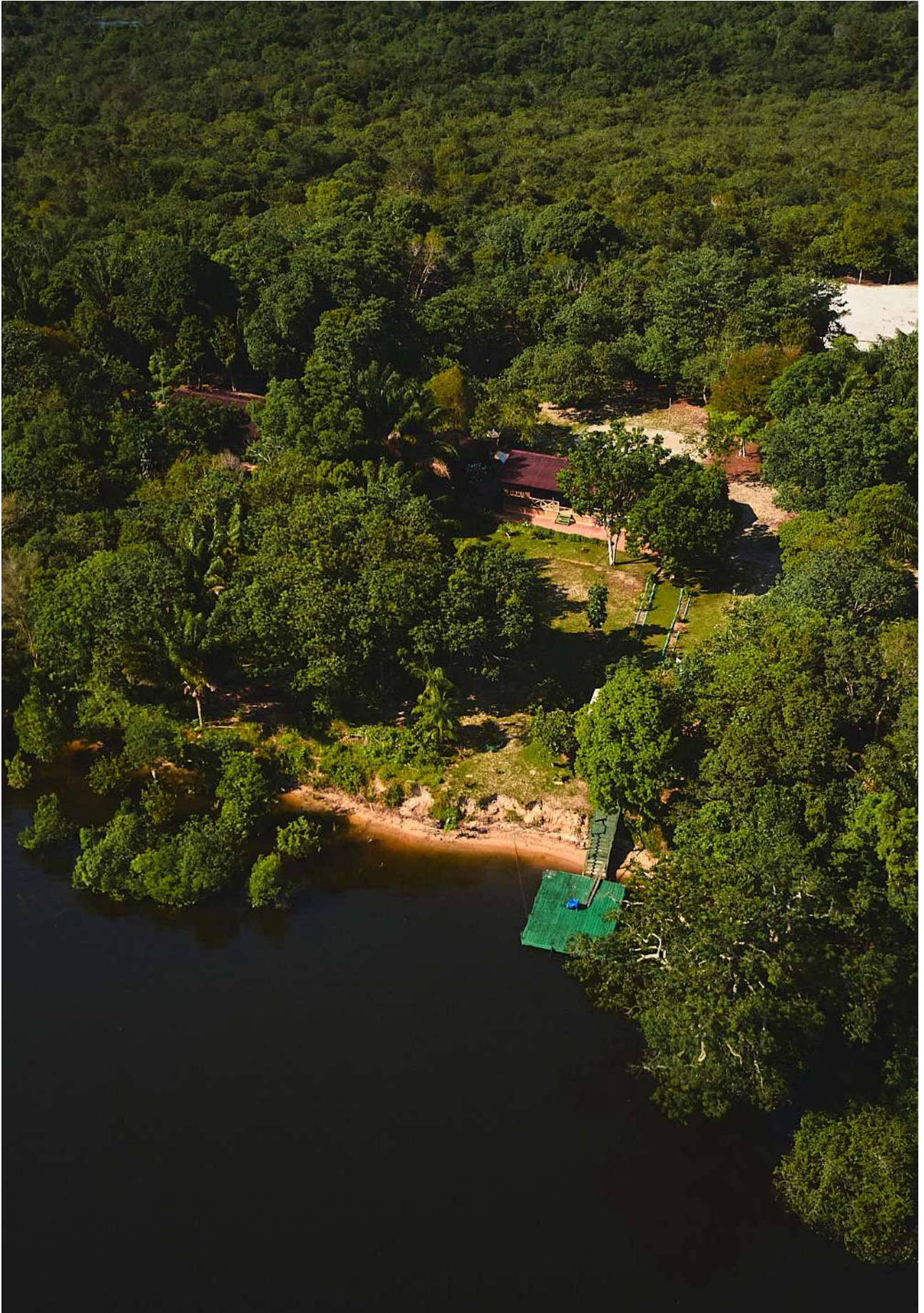
Photo: Rodolfo Pongelupe

2. BACKGROUND

2.1 Current Tourism Market Opportunities

In 2020, Brazil generated over R$98 billion in revenue from the tourism industry. Only 1.2% of Brazil's total tourism came from the State of Amazonas. The tourism industry in Amazonas peaked in 2014 with over 1.17 million visitors, but the market has contracted since then.[1] In 2020, about 343,530 tourists visited the State of Amazonas.

Around 62% of tourists coming to the State of Amazonas are domestic tourists, of which 54% are from Sao Paulo.[2] Because most tourists are from Brazil, we recommend that entrepreneurs continue to focus on increasing the number of domestic tourists rather than international tourists. Domestic tourists spend approximately R$2,388 per person while in the State of Amazonas, which is slightly more than the average international tourist.[3] They also experience significantly shorter travel times and face fewer logistical challenges. In choosing to travel to the Amazon, customers go through the following journey:

1. **Awareness of the Amazon as a possible travel destination**

2. **Consideration of how well the Amazon suits their needs and interests**

3. **Identification of the region of the Amazon they want to visit (in this case, using Manaus as a launch pad)**

4. **Evaluation of which lodge to stay at**

   a. **Based on factors such as price, location, and activities**

5. **Decision of final purchase (checkout)**

   a. **Including lodge, flights, car, etc.**

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[1] https://www.travelwires.com/fifa-world-cup-boosts-brazils-tourism-numbers-33824, ("This peak was caused by Brazil hosting the World Cup in 2014, with some games being played in Manaus.")

[2] (2019) Amazonastur.

[3] Id.

The reserves have a high retention rate of 80%. We believe that by increasing the number of tourists to the reserves in the off-season, we can impact the capacity at which the lodges are operating year-round. This is based on our analysis of the market size for tourism in the Amazon.

Photo: Dirce Quintino

2.2 Direct Booking

The lodges have relied primarily on word of mouth, known as "boca a boca", to convey specific package deals and incentives to retain their market share, with new customers occasionally trickling in. Upward of 80% of customers were return customers, with the rest being brought in by those same return customers or via "boca a boca."

2.3 Uatumã Sport Fishing Operating Capacity

Of the lodges we interviewed, a few were close to total capacity during the fishing season. From our time in the field, we identified bottlenecks that could be addressed to attract additional customer segments. In the past, the lodges' offerings lacked diversification, and the offerings and products they provided had a low aggregate value when used as add-ons to sport fishing experiences.

Photo: Christopher Terrell

2.4 Capacity for Tourism in Rio Negro and Uatumã

Photo: Dirce Quintino

Rio Negro

We estimated the capacity and the performance of tourism in Rio Negro and Uatumã conservation units based on interviews, in-country field trips, and data from FAS. Rio Negro currently has the capacity to generate income of around R$17 million per year based off our estimates. Compared with the result in 2021, Rio Negro communities generated R$906,630 which represents only 5% of total available capacity.

Tourism Capacity in Rio Negro
- No. of lodges 9 Lodges
- Average capacity 21 Customers
- Total Capacity 186 Tourists for 4-day package
- Tourist Period 365 Days

Price
- Package Price 1,000 R$ for 4-day package
- Price per day 250 R$ per day

Occupancy
- Revenue Capacity 17.0 R$ million
- Revenue in 2021 0.9 R$ million
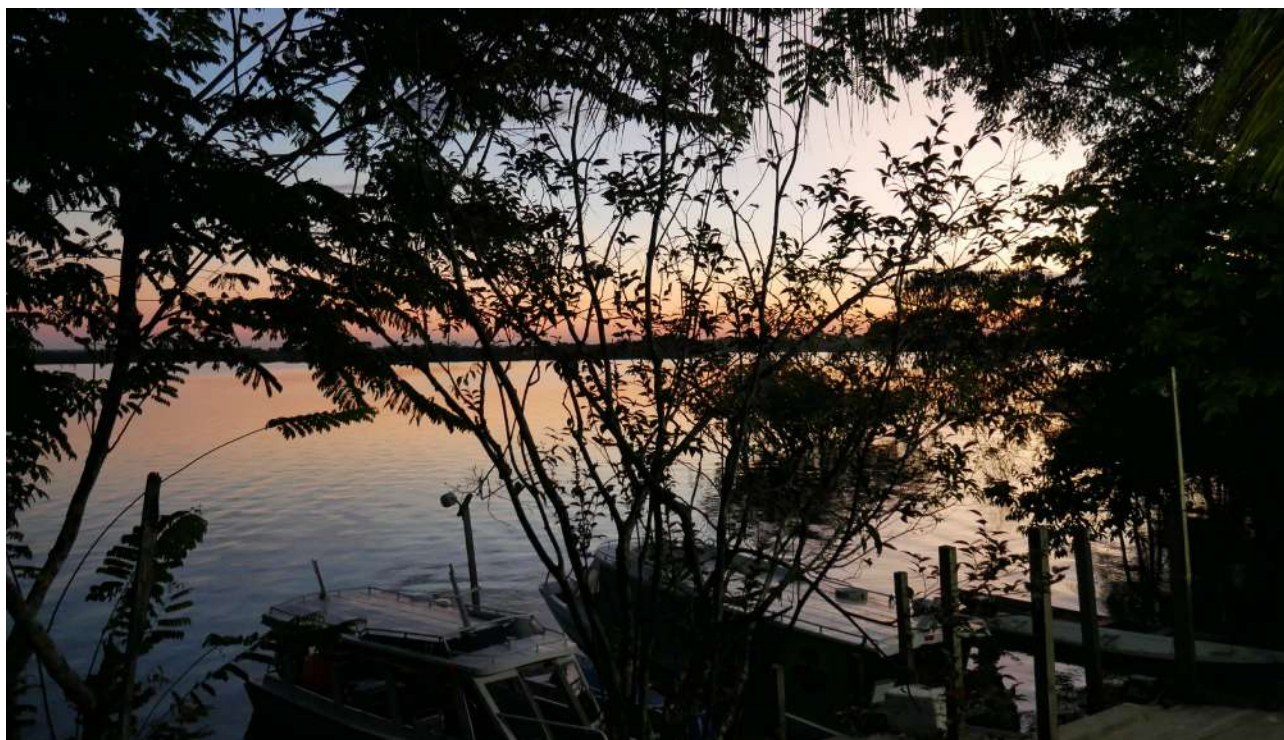- % generated of total capacity 5% *Uatumã*

Photo: Emile Gomes

Uatumã

Uatumã, which currently focuses on sport fishing tourism, has the capacity to generate about R$20.6 million over the three-month fishing season. Compared with the result in 2021, Uatumã communities generated R$2,635,400. While some of the lodges that we met claimed that they operated at full capacity during the high sport fishing season, the overall communities still utilized only 13% of the total current available capacity.

Tourism Capacity in Uatumã
- No. of lodges 12 Lodges
- Average capacity 21 Customers
- Total Capacity 254 Tourists for 5-day package
- Tourist Period 90 Days

Price
- Package Price 4,500 R$ for 5-day package
- Price per day 900 R$ per day

Occupancy
- Revenue Capacity 20.6 R$ million
- Revenue in 2021 2.6 R$ million
- % generated of total capacity 13%

2.5 Creating Value for Ecotourism and Sport Fishing Lodges

Photo: Christopher Terrell

Our study also estimated the financial value generated from tourism that is captured by local entrepreneurs and employees. Tourism generates value both directly and indirectly to the communities. Entrepreneurs receive value in terms of profit, while local people receive value in terms of employment for supporting tourist activities. Based on information received from FAS, interviews, and in-country visits, we gathered information on operating costs that are required to support ecotourism in Rio Negro and sport fishing tourism in Uatumã.

Ecotourism in Rio Negro

Of the revenue received from package sales, 24% of the income generated from tourists goes to entrepreneurs or the owner of the lodges, and 18% of the income goes to local people through salaries and wages. Cost of transportation remains a primary cost driver in supporting tourists as it accounts for over 27% of total revenue, as boats are the main form of transportation for tourists to visit different places during their stay in Rio Negro. The cost of transportation includes boat rental, fuel, and a wage for the boat driver.[4]

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[4] See Exhibit 1 in Appendix.

Operating Break-Even Analysis for Rio Negro

In estimating break-even analysis, we concluded that the four-day R$1,000 inclusive packages are unprofitable given that it costs R$6,000 for a four-day boat rental and fuel.[5] Our team therefore performed a sensitivity analysis based on the price of the package and number of tourists. We found that with inclusive services, lodge entrepreneurs would start making profit with a package price of R$2,000 for a four-day package, or R$500 per day, with a minimum of six tourists.

Sensitivity Analysis on Operating Profit (R$): Price level vs Number of tourists

R$		Package price (4 days and 3 nights)													
		600	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
		Price per day													
		150	200	250	300	350	400	450	500	550	600	650	700	750	800
Number of tourists	1	-8,522	-8,326	-8,130	-7,934	-7,738	-7,542	-7,346	-7,150	-6,954	-6,758	-6,562	-6,366	-6,170	-5,974
	2	-8,246	-7,854	-7,462	-7,070	-6,678	-6,286	-5,894	-5,502	-5,110	-4,718	-4,326	-3,934	-3,542	-3,150
	3	-8,183	-7,595	-7,007	-6,419	-5,831	-5,243	-4,655	-4,067	-3,479	-2,891	-2,303	-1,715	-1,127	-539
	4	-7,907	-7,123	-6,339	-5,555	-4,771	-3,987	-3,203	-2,419	-1,635	-851	-67	717	1,501	2,285
	5	-8,387	-7,407	-6,427	-5,447	-4,467	-3,487	-2,507	-1,527	-547	433	1,413	2,393	3,373	4,353
	6	-8,111	-6,935	-5,759	-4,583	-3,407	-2,231	-1,055	121	1,297	2,473	3,649	4,825	6,001	7,177
	7	-8,591	-7,219	-5,847	-4,475	-3,103	-1,731	-359	1,013	2,385	3,757	5,129	6,501	7,873	9,245
	8	-8,315	-6,747	-5,179	-3,611	-2,043	-475	1,093	2,661	4,229	5,797	7,365	8,933	10,501	12,069
	9	-8,795	-7,031	-5,267	-3,503	-1,739	25	1,789	3,553	5,317	7,081	8,845	10,609	12,373	14,137
	10	-8,519	-6,559	-4,599	-2,639	-679	1,281	3,241	5,201	7,161	9,121	11,081	13,041	15,001	16,961
	11	-14,633	-12,477	-10,321	-8,165	-6,009	-3,853	-1,697	459	2,615	4,771	6,927	9,083	11,239	13,395
	12	-14,357	-12,005	-9,653	-7,301	-4,949	-2,597	-245	2,107	4,459	6,811	9,163	11,515	13,867	16,219
	13	-14,837	-12,289	-9,741	-7,193	-4,645	-2,097	451	2,999	5,547	8,095	10,643	13,191	15,739	18,287
	14	-14,561	-11,817	-9,073	-6,329	-3,585	-841	1,903	4,647	7,391	10,135	12,879	15,623	18,367	21,111
	15	-15,042	-12,102	-9,162	-6,222	-3,282	-342	2,598	5,538	8,478	11,418	14,358	17,298	20,238	23,178
	16	-14,766	-11,630	-8,494	-5,358	-2,222	914	4,050	7,186	10,322	13,458	16,594	19,730	22,866	26,002
	17	-15,246	-11,914	-8,582	-5,250	-1,918	1,414	4,746	8,078	11,410	14,742	18,074	21,406	24,738	28,070
	18	-14,970	-11,442	-7,914	-4,386	-858	2,670	6,198	9,726	13,254	16,782	20,310	23,838	27,366	30,894
	19	-15,450	-11,726	-8,002	-4,278	-554	3,170	6,894	10,618	14,342	18,066	21,790	25,514	29,238	32,962
	20	-15,174	-11,254	-7,334	-3,414	506	4,426	8,346	12,266	16,186	20,106	24,026	27,946	31,866	35,786
	21	-21,288	-17,172	-13,056	-8,940	-4,824	-708	3,408	7,524	11,640	15,756	19,872	23,988	28,104	32,220
	22	-21,012	-16,700	-12,388	-8,076	-3,764	548	4,860	9,172	13,484	17,796	22,108	26,420	30,732	35,044
	23	-21,492	-16,984	-12,476	-7,968	-3,460	1,048	5,556	10,064	14,572	19,080	23,588	28,096	32,604	37,112
	24	-21,216	-16,512	-11,808	-7,104	-2,400	2,304	7,008	11,712	16,416	21,120	25,824	30,528	35,232	39,936

We also tested the sensitivity analysis on the offer that includes only accommodation and meals, while treating boat rental and tour activities as add-on services for tourists. The result indicates that lodge operators would start making profit at a price of R$250 per day (equivalent to a four-day offered package at R$1,000) with a minimum number of eight tourists for break-even. However, setting a minimum of eight tourists could be a tough criteria to accept only such a large group. We would thus recommend setting the price at R$300 per day (equivalent to a four-day offered package at R$1,200), with a minimum number of four tourists for break-even, which should be simpler to manage the tourist size requirements.

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[5] See Exhibit 2 in Appendix.

Sensitivity Analysis on Operating Profit (R$): Price level vs Number of tourists

| R$		Package price (4 days and 3 nights)													
		400	480	600	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800
		Price per day													
		100	120	150	200	250	300	350	400	450	500	550	600	650	700
Number of tourists	1	-3,084	-3,006	-2,888	-2,692	-2,496	-2,300	-2,104	-1,908	-1,712	-1,516	-1,320	-1,124	-928	-732
	2	-3,004	-2,848	-2,612	-2,220	-1,828	-1,436	-1,044	-652	-260	132	524	916	1,308	1,700
	3	-3,137	-2,901	-2,549	-1,961	-1,373	-785	-197	391	979	1,567	2,155	2,743	3,331	3,919
	4	-3,057	-2,743	-2,273	-1,489	-705	79	863	1,647	2,431	3,215	3,999	4,783	5,567	6,351
	5	-3,733	-3,341	-2,753	-1,773	-793	187	1,167	2,147	3,127	4,107	5,087	6,067	7,047	8,027
	6	-3,653	-3,182	-2,477	-1,301	-125	1,051	2,227	3,403	4,579	5,755	6,931	8,107	9,283	10,459
	7	-4,329	-3,780	-2,957	-1,585	-213	1,159	2,531	3,903	5,275	6,647	8,019	9,391	10,763	12,135
	8	-4,249	-3,622	-2,681	-1,113	455	2,023	3,591	5,159	6,727	8,295	9,863	11,431	12,999	14,567
	9	-4,925	-4,219	-3,161	-1,397	367	2,131	3,895	5,659	7,423	9,187	10,951	12,715	14,479	16,243
	10	-4,845	-4,061	-2,885	-925	1,035	2,995	4,955	6,915	8,875	10,835	12,795	14,755	16,715	18,675
	11	-5,521	-4,659	-3,365	-1,209	947	3,103	5,259	7,415	9,571	11,727	13,883	16,039	18,195	20,351
	12	-5,441	-4,500	-3,089	-737	1,615	3,967	6,319	8,671	11,023	13,375	15,727	18,079	20,431	22,783
	13	-6,117	-5,098	-3,569	-1,021	1,527	4,075	6,623	9,171	11,719	14,267	16,815	19,363	21,911	24,459
	14	-6,037	-4,940	-3,293	-549	2,195	4,939	7,683	10,427	13,171	15,915	18,659	21,403	24,147	26,891
	15	-6,714	-5,538	-3,774	-834	2,106	5,046	7,986	10,926	13,866	16,806	19,746	22,686	25,626	28,566
	16	-6,634	-5,379	-3,498	-362	2,774	5,910	9,046	12,182	15,318	18,454	21,590	24,726	27,862	30,998
	17	-7,310	-5,977	-3,978	-646	2,686	6,018	9,350	12,682	16,014	19,346	22,678	26,010	29,342	32,674
	18	-7,230	-5,819	-3,702	-174	3,354	6,882	10,410	13,938	17,466	20,994	24,522	28,050	31,578	35,106
	19	-7,906	-6,416	-4,182	-458	3,266	6,990	10,714	14,438	18,162	21,886	25,610	29,334	33,058	36,782
	20	-7,826	-6,258	-3,906	14	3,934	7,854	11,774	15,694	19,614	23,534	27,454	31,374	35,294	39,214
	21	-8,502	-6,856	-4,386	-270	3,846	7,962	12,078	16,194	20,310	24,426	28,542	32,658	36,774	40,890
	22	-8,422	-6,697	-4,110	202	4,514	8,826	13,138	17,450	21,762	26,074	30,386	34,698	39,010	43,322
	23	-9,098	-7,295	-4,590	-82	4,426	8,934	13,442	17,950	22,458	26,966	31,474	35,982	40,490	44,998
	24	-9,018	-7,137	-4,314	390	5,094	9,798	14,502	19,206	23,910	28,614	33,318	38,022	42,726	47,430

Sport Fishing in Uatumã

Of the revenue received from package sales, 35% of the income generated from tourists goes to entrepreneurs or the owner of the lodges, and 17% of the income goes to local people via salaries and wages.6 Given Uatumã's 631 tourists in 2021 during the three months of peak fishing season, we estimated that R$1.48 million from tourism directly benefits the members of the community. This includes 55 people that were employed in the tourism business who received about R$480,000 in wages, or R$8,712 per person. This equates to approximately R$1 million for lodge owners. The cost of fuel is a crucial component of tourism and is estimated to consume about 16% of total revenue. Diesel is used to generate power for electricity and for transportation. The pressure of rising fuel prices will have a direct impact on the operating profits for tourism entrepreneurs.

Operating Break-Even Analysis for Uatumã

In estimating the break-even analysis, we performed a scenario analysis on the number of visitors per group to the lodge with the inclusive five-day package at an average price offering of R$4,500. Our analysis indicated that the minimum number of tourists required for entrepreneurs to generate an operating profit is three tourists.

[6] See Exhibit 3 in Appendix.

Operating Break-Even Analysis

Break-even point
- three tourists

Operating profit (R$)

Number of tourists
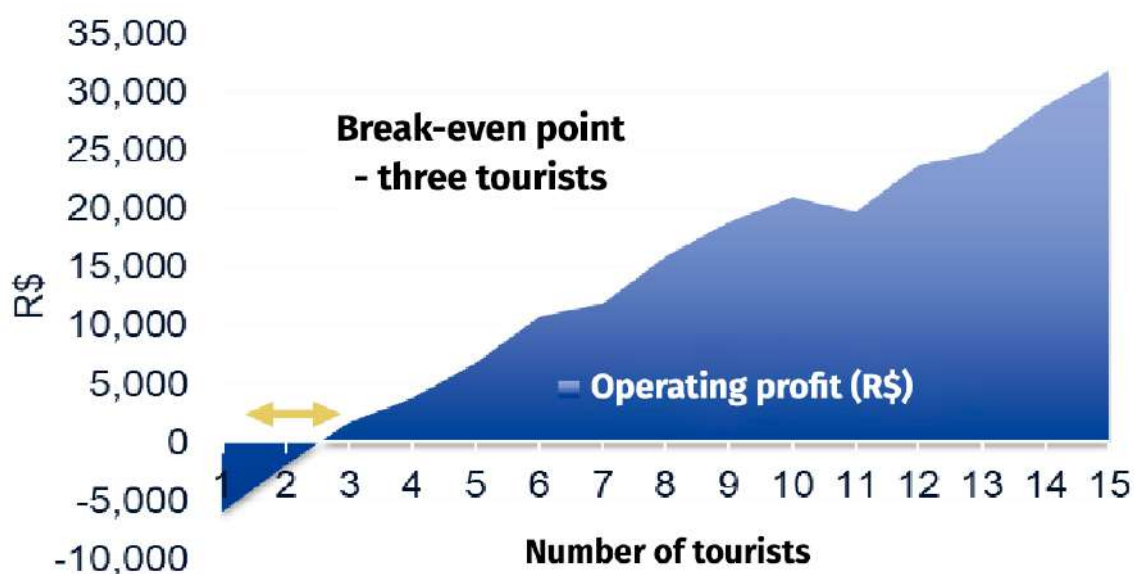
However, the thin margin generated from supporting three tourists may not financially incentivize entrepreneurs to operate. Receiving three tourists is estimated to generate an operating profit of R$1,674 at a 12% profit margin. According to some of the lodge owners we met during our in-country field, they require a minimum of six tourists per group as part of their package conditions. At six tourists, the lodge entrepreneur is expected to create an operating profit of R$10,728 with a profit margin of 40%. Our scenario analysis on profitability also showed that the increasing number of tourists drive economies of scales that the business can reach. The more tourists that share fixed operating costs (employee wages, electricity, boat running, etc.) the better operating profit margins the entrepreneurs can achieve.[7]

With the potential market for tourism in Amazonas, which has attracted both domestic and international tourists to visit, we believe tourism businesses in Rio Negro and Uatumã have the ability to welcome more tourists and generate more value for the participating communities. In addition, the local lodges, restaurants, and related businesses in tourism, especially in Rio Negro, require specfic numbers of tourists to make their businesses viable. With the existing capacity to support tourism in Rio Negro and Uatumã, the communities have more flexibility to grow their businesses to directly support tourism.

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[7] See Exhibit 4 in Appendix.

3. COMPLICATIONS

Photo: Geórgia Franco

In expanding tourism into the river communities, we identified the challenges that are currently obstructing the opportunity to improve tourism.

1. Limited Online Visibility

The lodges in the reserves are not highly visible online, making it difficult for travelers to become aware of them and their offerings. Most lodges do not have a website to showcase their facilities or their activities.[8] On these websites, as well as across social media platforms, many of the lodges are lacking professional grade media (photos and videos) to show and sell their properties. Furthermore, these websites do not offer comprehensive lists of activities offered by each lodge, nor the cost associated with them.

2. Difficulty Booking

Booking a trip at the lodges is hindered by the limited online booking accessibility. Rather, they depend on being contacted via direct channels such as WhatsApp, phone call, email, or Facebook chat.[9] Because river communities predominantly rely on direct communication and informal platforms such as WhatsApp, it often takes a long time to complete a booking, and the communication channels are not available on the booking website.

[8] See Exhibit 5 in Appendix.
[9] See Exhibit 6 in Appendix.

Furthermore, the ability to pay is not immediately available when booking. Without immediate payments, it creates difficulties to both customers and lodge operators. Customers will have to transfer money directly to the lodge owner or pay by cash upon arrival, which delays the booking confirmation process further. Having a difficult, time consuming booking process reduces the competitive edge of the lodges versus their competitors with an available seamless booking process.

3. Telecommunication Infrastructure

Unstable internet connection can obstruct the business' operational continuity. Instant booking confirmation could become challenging to achieve and may cause frustration to the business partners and customers. Most lodges require payment in cash due to undependable WiFi service in the rainforest that prevents them from accepting credit cards.

4. Accessibility and Road Infrastructure to Uatumã

The long hours of transportation, 6-8 hours from Manaus to Uatumã, as well as poor road conditions, could discourage tourists from taking vacations here. The hard-to-reach location struggles especially given competitive offerings in locations that have easier accessibility and proximity to Manaus.

5. Environmental Sustainability

Tourism in the river communities relies on the available resources that businesses generate value from. Those resources include flora and fauna that enrich the natural experience for tourists. Having fish available in the river allows Uatumã communities to maintain sustainable sport fishing. These resources are necessary for entrepreneurs, communities, and tourists to preserve so that future generations of tourists and local people in that area can enjoy their value. Potential risks of environmental unsustainability could arise if tourist activities threaten those resources either intentionally or unintentionally. As larger numbers of tourists arrive in the communities, it will be essential to monitor activities and assess continued best practices.

6. International Operations

An observation from the field was disregard for Brazilian regulations from international investors who funded operations that engaged in animal sightseeing encounters. These types of experiences were not kept secret, but instead promoted on customer-facing websites. After talking with American tourists while in Manaus, it became apparent that animal encounters were one of the driving forces that brought them to the Amazon. As such, the domestic lodges that adhere to the rules will be at a disadvantage unless their

access to the natural attractions are balanced. Equity could be sought via FAS lobbying for special exemptions for the river community lodges who would be more likely to engage in a sustainable form of tourism than the unlicensed groups that are currently conducting such interactions outside of the purview of the law.

Photo: Dirce Quintino

4. RECOMMENDATION

We identified opportunities for FAS to facilitate that can help the reserves capture more of the market for tourism while overcoming the challenges mentioned above. We forecasted these ideas to be executed over a five-year period based on resource requirements.

The Five-Year Implementation Plan

Under the five-year implementation plan, we laid out the resolution to support tourism promotion in three stages based on the priority, current market, and obstacles faced as follows:

> **Stage 1: Focus on ecotourism in Rio Negro, targeting domestic tourists**
>
> **Stage 2: Focus on ecotourism in Uatumã, targeting domestic tourists**
>
> **Stage 3: Expand the market to target international tourists**

In Stage 1, given the existing capacity that communities in Rio Negro can support ecotourism, as well as the availability of the ecotourism marketing in Amazon, the local entrepreneurs have an opportunity to capture and grow their market share. With the location of Rio Negro near Manaus, accessibility for tourists is easier and less challenging compared to Uatumã. Tourists can take a shorter period of time, around 2-3 hours by boat and car to reach the lodges. With less challenges in accessibility, we first focus on Rio Negro. Also, the level of facilities and services that entrepreneurs already provide to the existing tourist groups allows us to focus on attracting domestic tourists to the ecotourism in Rio Negro.
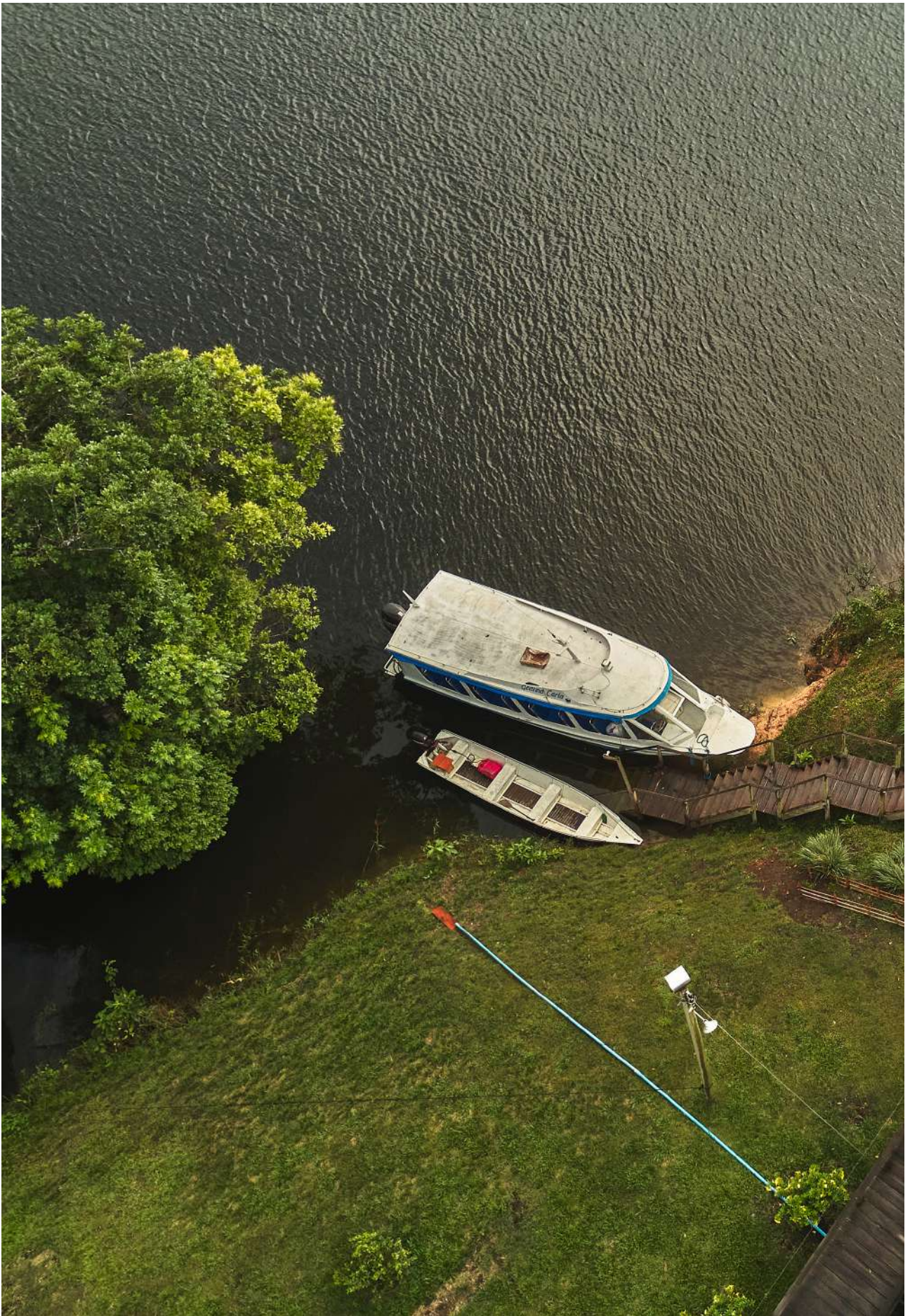
Photo: Rodolfo Pongelupe

Stage 1 focuses on the following:

1. Empower the local businesses through the establishment of the Rio Negro Sustainable Tourism Association to generate efficiencies in managing and promoting sustainable tourism.

2. Market and promote ecotourism in Rio Negro through an improvement of online presence via website and social media.

3. Facilitate distribution channels by enhancing booking facilities via online and offline channels.

4. Establish standards for environmental practices for local communities and tourists.

Shifting the focus to Stage 2, Uatumã today has already captured the sport fishing market to generate value for the local people. With the total market size for sport fishing in Amazonas of R$202 million in 2019, there is an opportunity to utilize the existing capacity for Uatumã to support the sport fishing market of R$20.6 million. Given the R$2.6 million generated in 2021 with 13% occupancy rate, a similar approach to Rio Negro's plan of empowering the community, promoting the products, and enhancing distribution channels should be simultaneously implemented for Uatumã. Once the establishment for sport fishing management is set up, we should consider supporting ecotourism in Uatumã as the next priority, Stage 2.

Given that the distance and duration for logistics to Uatumã remains a challenge in promoting eco and leisure tourism, we believe that ecotourism should specialize in research and education tourism. Based on our interviews with lodge entrepreneurs we met in Uatumã, they have served groups of students and groups of government employees who visited Uatumã for education/ecotourism purposes. The information from Amazonastur showed that in 2019 there were 57,649 tourists that visited Amazonas for events, fairs, education, research, and science with an estimated market size of R$130.9 million.[10] Given the opportunities, the target groups that Uatumã would focus on are domestic tourists.

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[10] Movimentação-e-Caracterização-dos-Turistas-AM-2020, Amazonastur.

Stage 2 focuses on the following:

1. Empower the local businesses through the establishment of the Uatumã Sustainable Tourism Association to generate efficiencies in managing and promoting sustainable tourism.

2. Promote attractions for ecotourism in Uatumã through event-driven destinations such as annual turtle releasing parties. Such attractions should be promoted through direct networks with school/universities, corporations, researchers, or NGOs.

3. Improve online presence via websites and social media, in addition to the above approach, to publish stories and activities of the ongoing events/eco-activities.

4. Support and advocate for an improvement of local facilities, road infrastructure, and communications systems.

Stage 3 focuses on growing tourism businesses to support international tourists. This stage requires additional skills and services to support international tourists. Language facilitators as well as distribution channels to reach customers outside of Brazil will need to be considered.

Stage 3 focuses on the following:

1. English and Spanish language courses to improve the availability of international languages in facilities and services.

2. Increase reach of marketing and promoting ecotourism in both Rio Negro and Uatumã at the international level.

4.1 Sustainable Tourism Associations

With the objective of efficient tourism promotion and management, we propose empowering all the local businesses in the tourism and hospitality sector through the establishment of Rio Negro's Sustainable Tourism Association. The role of the association is designating a leader and establishing the mission in accordance with the mutual goal of growing ecotourism in the area. This initiative would take place under FAS's leadership together with the commitment from the local communities. FAS would help guide and facilitate regular communication with the local communities.

The association will primarily manage by pooling marketing resources and data, and focusing specifically in the area of diversification of tourism offerings. Empowering the local businesses will generate efficiencies and effectiveness in promoting the river communities cohesively, rather than relying heavily on individuals to promote their own business with limited support and resources.

The centralized management association will also take a role in enhancing the distribution of tourism within the communities. By improving the booking channels (e.g. the Association Website, FAS's Websites, Poranduba, Fisggar, and related tourism website), the association can connect with current businesses which facilitate distribution channels to local businesses.

By pooling resources from each lodge, FAS and the lodge owners can pursue marketing and value chain improvements that stretch across each lodge and address many of the overlapping needs of the lodges while also making an open network of data to pull from.

Such a management model allows FAS to scale the management to promote sustainable tourism in other conservation units with tourism potential.

Photo: Rodolfo Pongelupe

4.2 Booking Channels

In order to convert tourists to customers of FAS's Sustainable Tourism Association, FAS will need to provide booking channels that make it easy for tourists to book reservations.

```
Fisggar ─────┐
             │
Poranduba ───┤
Amazônia     │      ┌──────────────────┐      ┌──────────────────┐
             ├──────│ Lodge Association │──────│ Customer Booked  │
FAS Website ─┤      │     website       │      └──────────────────┘
             │      └──────────────────┘      ┌──────────────────┐
Marketing and┤                          ──────│ Customer Data    │
Advertising ─┘                                │ Profile          │
                                              └──────────────────┘
                                                       │
                                              ┌──────────────────┐
                                              │ Future Marketing │
                                              │ Endeavors        │
                                              └──────────────────┘
```
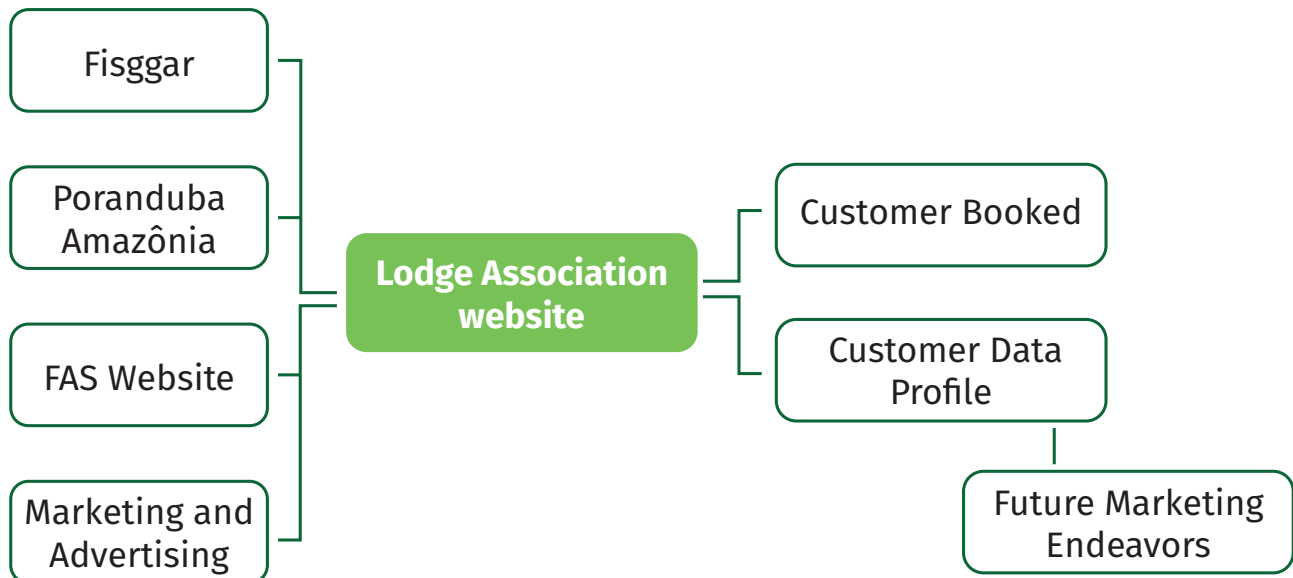
Process flow - Customers discover the lodges and are channeled to a centralized lodge website that manages and stores customer data.

From our discussions with Marcelino Macedo of Fisggar, we have discerned that creating an association website will require a full-stack designer and R$80,000 to R$150,000. Our recommendation to form a lodge association and establish a lodge association website gives structure and channels to make the Rio Negro and Uatumã regions more attractive for marketing companies to work with.

A booking website managed by the association can help better understand the environment's needs. Unlike TripAdvisor, this entity will be accountable to the communities needs and have more reliable and solidified connections with our lodge communities, allowing the lodges to be more open and transparent about their offerings. Additionally, FAS can negotiate the price and fees associated with the booking.

Also, working with a specialized platform has specific advantages for protecting the wildlife in the reserves. For example, Fisggar has created a "blacklist" of lodges and services that break environmental protection policies. An association website will give greater control to the lodge owners.

The goal of the lodge association is to become a hub of knowledge and resource sharing

while improving the process that each tourist experiences in the booking process. We do not recommend breaking ties with intermediaries like Tripadvisor.

Instead, invest effort into developing a private booking channel that allows lodges to book with customers directly and more easily control how they engage with their customers.

4.3 Marketing

FAS should partner with a professional marketing agency to implement marketing efforts that will increase awareness and accessibility. This agency should be capable of creating and carrying out a digital marketing plan that prioritizes social media strategy, website design and optimization, email marketing, Search Engine Optimization ("SEO"), and data analysis. The partnership with a marketing agency is vital to the success of Stage 1 as well as driving an increasing number of tourists towards the reserves. The marketing efforts should be focused on the created Rio Negro and Uatumã collective associations rather than on individual properties.

Some entrepreneurs are currently utilizing SEO tactics to increase awareness and traffic to their lodges online. To further improve this, the lodges should also analyze and identify potential keywords and phrases that can further drive web traffic. Entrepreneurs can also leverage the personal relationships they form with travelers through remaining in contact with them through the collection of email addresses. Already having a high average retention rate, email marketing during the off-season can bridge the gap between visits and encourage people to return to the Amazon for new experiences that fit their evolving lifestyle throughout the years.

In addition to paid marketing tactics, entrepreneurs can increase their online presence and image through utilizing photo and video assets of their properties. In turn, this will help increase engagement with followers and customers, ultimately increasing the appeal and brand of each lodge. Social media platforms can be a source of differentiation for each lodge to help prospective customers identify their ideal location.

4.4 Formalized and Ticketed Events

To solve for the lack of differentiation, the Uatumã reserve must create unique opportunities that drive tourists to the reserve. Larger events require more staff, which employs significantly more community members. By hosting these events, lodges will be able to provide more frequent and dependable work opportunities for employees.

This problem is created by the same ecotourism activities being offered in the Rio Negro reserve, which is 4-5 hours closer to Manaus and less expensive. Sustainable events similar to the turtle release in Uatumã can be a major draw for tourists and create the differentiation needed to justify the longer, more expensive trip. However, these events should be ticketed to cover the material and operational costs. Event packages can also be designed for specific experiences, especially those that can occur year round. Lodges can offer wedding, anniversary, and birthday packages, where visitors can engage with local communities for a one of a kind celebration. These events should offer online ticket purchasing options and be advertised on digital platforms to maximize awareness.

Photo: Clovis Miranda

4.5 Sport Fishing Expansion

Both the Uatumã and Rio Negro reserves can use their capabilities for sports fishing by hosting annual competitions with an entry fee. Though sports fishing is not developed in the Rio Negro reserve, the communities have indicated an interest and capability to include this in their expanding offerings. Furthermore, formalized fishing competitions can attract fishermen at specific times of the season chosen by the lodges where new, smaller lodges are not yet operating at full capacity. These events can also draw attention to any new sports fishing activities the Rio Negro reserve offers. For example, the Ingles community discussed offering activities where fishermen go to fish with the men from the village. Organized activities like this will let the communities expand their offering while allowing them to maintain control over the environment and ensure environmental sustainability.

4.6 Advertising Through Geofencing

In the long-term, the associations should work with the marketing agency to invest in geofencing efforts for advertisements. Geofencing allows advertisements to be targeted to a specific geographic location and can be activated after the individual has left that location. During the first two stages, cities such as Sao Paulo and Rio de Janeiro, as well as the state of Para, should be targeted based on where domestic tourists are traveling from. Upon reaching Stage 3, geofencing efforts should be expanded to include surrounding Latin American countries that have direct flights to Manaus as it decreases the logistical challenges tourists face. The United States, Germany, and France should also be targeted at this stage.

4.7 Training & Operations

To ensure that the river communities can effectively expand into this opening, a set of standard operating procedures should be introduced to define and establish criteria for the reliability of processes being used every day. With Covid still leaving many tourists hesitant to travel, attention should be devoted to the market's recovery phase. During the past two years, over 50,000 companies that depend on tourist traffic such as restaurants, cultural attractions, and hotels have gone out of business in Brazil.[11] This number accounts for close to 17% of Brazil's tourist-related businesses and creates an opportunity for new players to enter the space and begin to capture the reais. Standards address a range of issues that facilitate the exchange of information and support customer safety and public health.

Instead of FAS investing in creating new course material, having to find an instructor to operate the courses, and expanding its already hefty share of the load, a program such as Hospitality Assured Accreditation could be introduced. Used broadly from the United Arab Emirates to the Caribbean, an accreditation agency such as this allows for members of the tourism industry to learn about best industry practices while providing them with a "meaningful tool to stimulate and measure the improvements in service delivery and business excellence."[12]

Benefits of incorporating an accreditation agency such as this would include improvements in process and operational efficiencies, improved customer satisfaction, global recognition via a trusted source, consistency of product delivery, and networking opportunities for business owners to have a collaborative collection of individuals that may have encountered similar challenges in the development and refinement of their practices. Programs like this would be able to cover multiple areas of need that are currently major roadblocks for lodge owners.

The first area that would be covered is delivering consistent hospitality to enhance already high levels of customer loyalty. While there may be trepidation over entering the Amazon as many people are unfamiliar with others who have taken part in such an experience, it is imperative that a systematic approach be implemented to ensure a consistent and client centric focus to ease those concerns. This could be accomplished by utilizing tried and true accreditation methods such as Hospitality Assured, but it could be further supplemented via shadowing opportunities and clear-cut expectations for lodge owners and workers via an employee handbook. A handbook would also be able to feature comprehensive

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[11] <https://www.forbes.com/sites/kenrapoza/2020/10/05/brazils-tourism-industry-is-dying>

[12] <https://hospitalityassured.com/wp content/uploads/2020/10/HA-Brochure.pdf>

instructions for each position so that employees can cross-train and pivot into other roles if needed. Even if there are literacy barriers that arise, having a clearly articulated list of expectations and procedures would allow for clarity of work and optimize the tourist experience so everyone can operate on the same page.

Training courses would also allow for continuing education which is the key to creating a unique experience in a market that suffers from relatively low levels of product differentiation. When many services being offered are standard across all lodges, one of the differentiating factors to encourage someone to select a location that is a six-hour boat ride away rather than a two-hour ride will be how they are treated. Ensuring adequate hospitality would also be enhanced by continual staff performance monitoring and periodic feedback discussions so that employees understand what they are successfully achieving at and what is still an identified area of improvement. Advanced course work could also be recognized with enhanced wages to incentivize workers to take an active interest in their jobs and have a vested reason to improve their competency.

4.8 Risk Assessment[13]

Key areas of concern surrounding risk that must be addressed include:

- Legal liability from an influx of tourists and workers
- Lack of risk assessment procedures and mitigation strategies
- Competitors offer prohibited encounters and ignore reserve entry requirements

As more tourists begin to come to the State of the Amazonas, the likelihood that someone will be injured increases. This represents increasing risk which could involve financial loss, damage to property, or even injuries to workers or guests. As the likelihood of risk grows, a focused effort to mitigate that risk must be taken through the form of strategic risk management which involves the practice or designing policies and procedures to minimize or eliminate unacceptable risks.[14] It is essential that risk management is practiced based on two core prongs, avoidance of injury to guests and employees as well as protecting the lodges from financial or physical ruin.

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[13] This section will examine risk management and legal liability in tourism and hospitality but advice and definitions provided are general and should not be relied upon in the case of legal action.

[14] Cloutier, R. (2000). Legal liability and risk management in adventure tourism. Winnipeg, MB: Hignell Printing.

Keeping guests and employees safe is not only a moral and ethical necessity of tourism operators, but it also guards against financial implications stemming from litigation.[15] Proactively committing to a risk management strategy will be imperative for the lodges as it:

• Reduces the likelihood of an unwanted and unplanned event

• Reduces the consequences of the event

• Enhances your ability to access comprehensive and cost-effective insurance

For the lodges to effectively develop their risk management plans, they must first systematically identify the risks facing their businesses. This form of risk assessment can be accomplished via:

• On-site inspections and discussions with management and staff

• Review of experiences, services, processes, and agreements

• Identification of possible risk scenarios

Once the lodges are able to identify and consider their associated risks, they can begin to engage in mitigation strategies to eliminate avoidable risks. The analysis will revolve around two concepts, exposure avoidance which involves total elimination of a particular dangerous activity or threat and loss reduction, an acknowledgement of risk that will be continually offered but with newly added precautions. While the Brazilian legal system has "no direct and autonomous correspondent of tort" it does consider the increasingly common occurrence of situations such as accidents involving people or transportation of goods referred to as "consumer accident."[16] According to Brazilian Civil Code of 2002, liability can be assessed in contractual or extracontractual settings.[17]

With the inherent risk associated with more individuals engaging in any activity, it would be in the best interest of the communities to begin to develop an indemnification waiver that could be used to insulate themselves from liability. This could be achieved by the legal team at FAS or outside counsel drafting a document that could be implemented across the reserves and be a standard item that is signed when someone books their stay. It is important to note that the waiver would not completely insulate the

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[15] https://opentextbc.ca/introtourism/chapter/chapter-11-risk-management-and-legal-liability/

[16] https://www.elgaronline.com/view/edcoll/9781789905977/9781789905977.00032.xml>

[17] Brüggemeier, G. (2011). Modernising Civil Liability Law in Europe, China, Brazil and Russia: Texts and Commentaries. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511835179.

lodges from liability and they would still need to act in a manner that incorporates methods of negligence prevention. Some key elements of the waiver for it to be upheld require:

- The document does not violate state laws or public policy;

- The waiver is properly worded according to contract law in the state in which it was drafted; and

- The injury arises from risks stated in the contract or from the disclaiming company's simple negligence.[18]

Photo: Emile Gomes

[18] https://www.enjuris.com/blog/questions/liability-waivers/

This form of indemnification would also not guard against gross negligence or intentional acts, but it would provide a broad baseline that would serve as an ample deterrent to discourage visitors from pursuing costly litigation.

Another component that was being ignored was the lack of signatures and preapproval for tourists that were visiting the reserves. It seems that as it currently stands this regulation lacks any teeth and even the lodge owners were disinterested or unaware of its utilization. If the form is failing to be observed and only serves as a potential obstacle to entry for those that are unwilling to submit their inquiry for governmental approval, it may be in the best interest of the lodges to petition for the removal of this barrier.

4.9 Language Training

To enhance communication capabilities to accommodate international tourists, FAS should support the creation of an English and Spanish language curriculum in Stage 3. These courses will help benefit not only the river communities, but also FAS as they have indicated a strong interest in pursuing language classes for professional development. The cost of an English and/or Spanish teacher in Brazil is estimated to be R$30 per hour, or an average of R$2,500 to R$4,000 per month.[19]

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[19] <https://braziliangringo.com/english-teachers-brazil/>

5. POTENTIAL GROWTH BENCHMARK

To help us understand the potential growth of these recommendations, we refer to another Notre Dame tourism project in West Virginia, one of the weakest tourism industries in the United States. We recognize there are several differences between the Brazilian Amazon Rainforest and the American Appalachian Mountains; however, we think this example can show what might be possible for FAS reserves working in the tourism sector.

Photo: Rodolfo Pongelupe

Project	West Virginia	Rio Negro	Uatumã
Location	Rural & Mountainous West Virginia, USA	Amazonas, Brazil	Amazonas, Brazil
Attraction/ Destination	Adventure Tourism - ATV trails	Ecotourism	Ecotourism/Sport Fishing
Objective	Utilize tourism to promote entrepreneurship and job creation	Utilize tourism to promote entrepreneurship and job creation	Utilize tourism to promote entrepreneurship and job creation
Improvement Plan	Organized tourism businesses together into the Hatfield McCoy Regional Recreation Authority to manage ATV trails	Organize tourism business together into sustainable tourism association Improve booking channel facilities Promote tourism for the communities	Organize tourism business together into sustainable tourism association Improve booking channel facilities Promote tourism for the communities
Resultado	Grew from 3,300 riders in 2001 to 64,000 in 2020 (or 16% average annual growth rate) Increased income from tourism from R$1.3M to R$9.7M in 10 yrs (22% average annual growth rate) and to R$25.6M in 20 years (16% average annual growth rate)	Target to grow from 600 tourists in 2021 to 12,000 tourists in 20 years Target to increase income from tourism from R$900K to R$6.7M in 10 years and to R$18M in 20 years	Target to grow from 600 tourists in 2021 to 12,000 tourists in 20 years Target to increase income from tourism from R$2.6M to R$19M in 10 years and to R$51M in 20 years

6. INVESTMENT SUMMARY AND TARGET RETURN

We estimate that an initial investment of R$100,000 will be incurred through efforts to create an official website and dedicated online booking channel. In order to decrease these costs, FAS could use its internal digital communications resources to aid in the design and the optimization of these platforms.

In addition, FAS can expect to spend no more than R$15,000 per month on all of the listed digital strategies by partnering with a professional marketing agency. This is based on the average spend of a small three-star hotel group in Brazil, suggesting that the overall spend will in fact be less for the lodges.

By implementing these strategies, we anticipate that the lodges can expect to see an increase of 12,000 additional tourists traveling to the Rio Negro and Uatumã reserves within the next 20 years. For Rio Negro, this means they can expect to earn an average of R$6.7 million per year within 10 years, and R$17.7 million per year within 20 years. This equates to an average of an additional R$670,000 per community per year within 10 years and R$1.77 million per community per year within 20 years. With a market based more heavily in sports fishing, the Uatumã reserve can expect to earn an average of R$19.4 million per year within 10 years and R$51.2 million per year in 20 years. This equates to an average of an additional R$1.94 million per lodge per year within 10 years and R$5.12 million per lodge per year within 20 years.

With a total investment of R$2.14 million and a total return of R$26.1 million, we expect an annualized return on investment of 28.42% over 10 years. Over 20 years, with a total investment of R$4.42 million and a total return of R$68.9 million, we expect an annualized return on investment of 14.72% over 20 years.
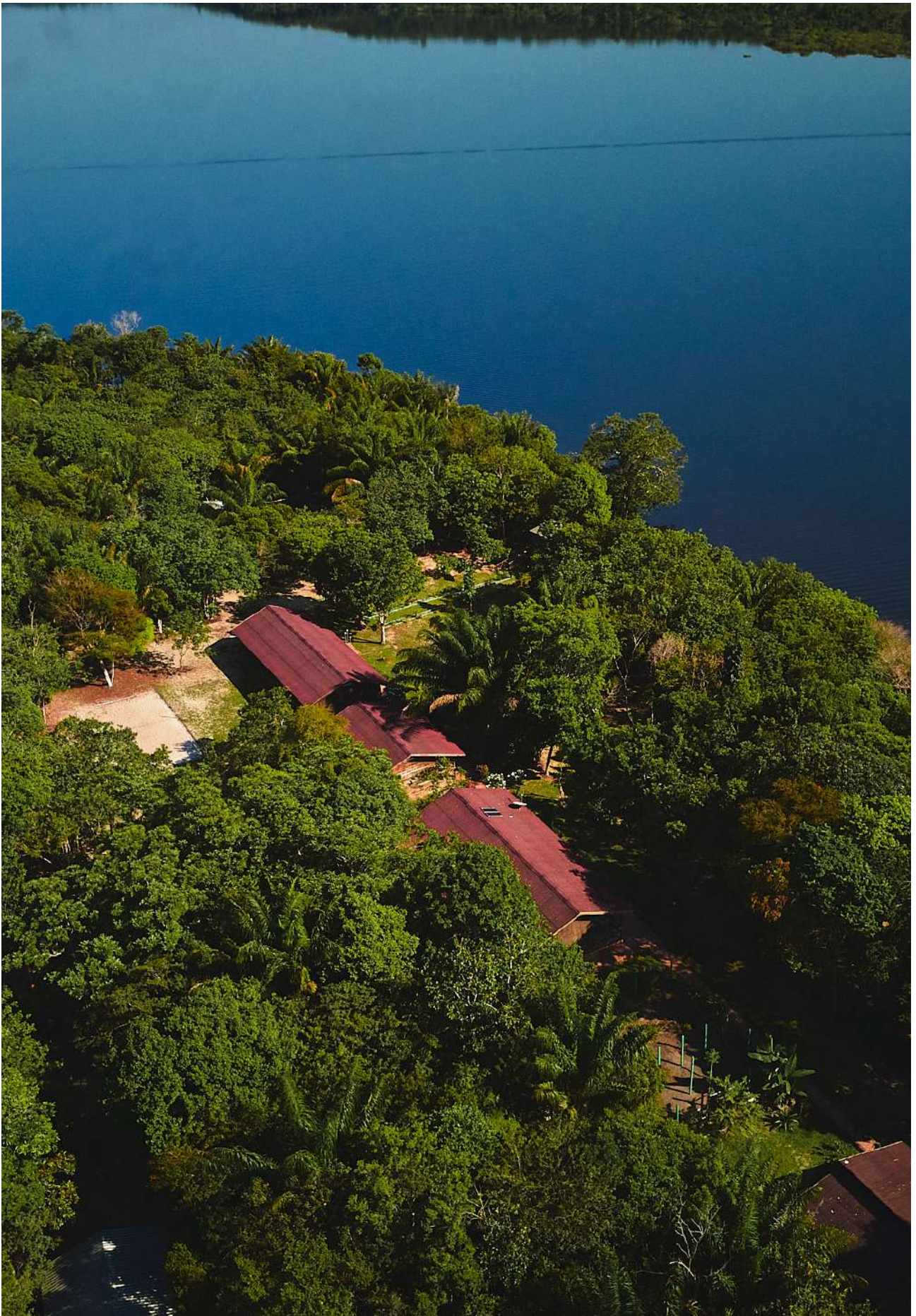
Photo: Rodolfo Pongelupe

Target Income Growth over 10 years and 20 years

Growth Benchmark

+16% per year

25.6

+22% per year

9.7

1.3

20-year target

17.7

10-year target

6.7

0.9

20-year target

51.2

10-year target

19.4

2.6
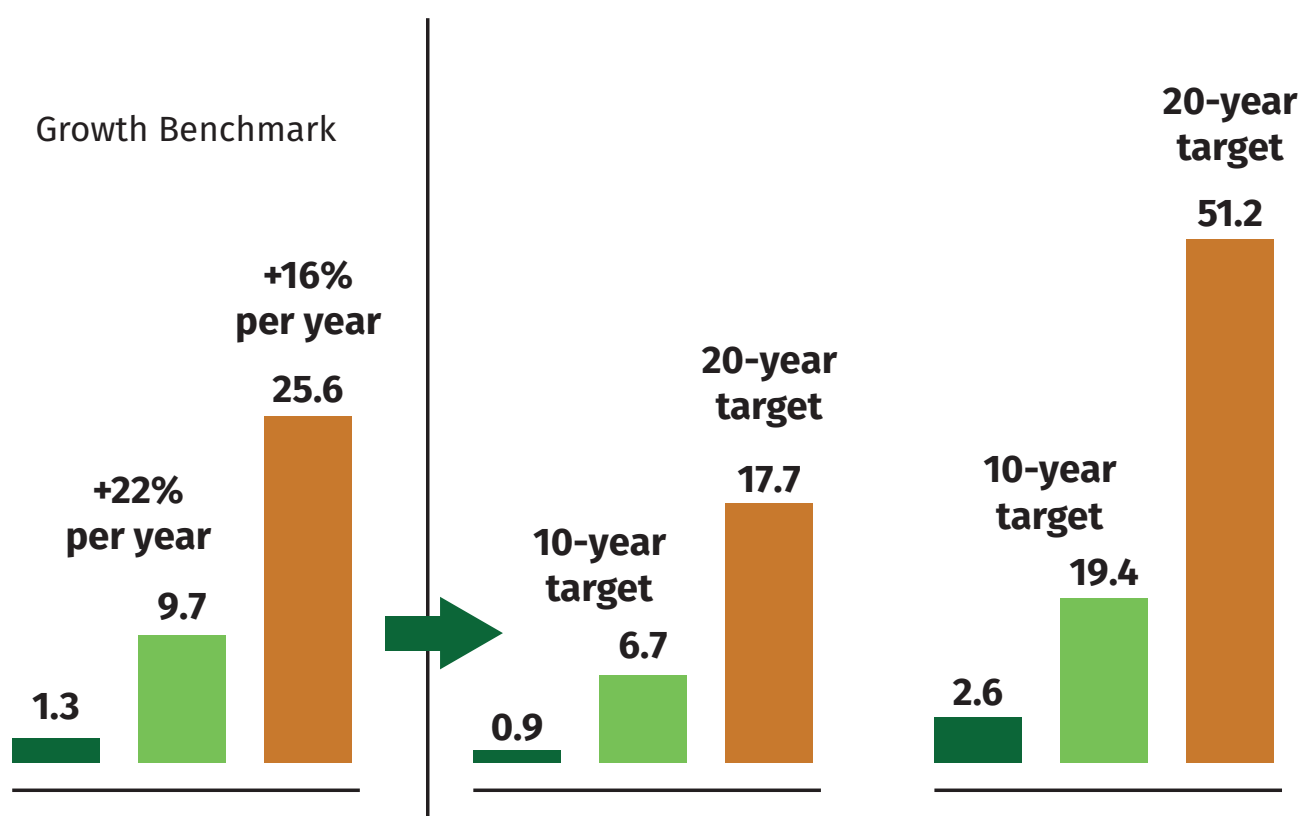
Currently, Rio Negro can welcome up to 22,630 tourists with the existing capacity of 186 beds that can offer total of 67,890 roomnights in supporting tourists throughout a year, given the average three night stay per one tourist. Uatumã can also support a total of 23,178 tourists, given the current number of beds and average four night stay. The available capacity in both reserves can therefore support the target number of tourists.

However, we did not incorporate the seasonality impact that tourists tend to travel during the similar period of time such as fishing season, long weekends, holidays, etc., which may drive over capacity for tourists. In such cases, entrepreneurs might consider expanding the capacity of the lodge. Based on our interview with the local entrepreneurs, we estimated an investment of R$30,000 per room. Assuming two beds per room, R$4,500 package with 40% profit margin, break-even for expanding one room would be to support more than eight visitors.

7. CONCLUSION

Overall, we see a significant opportunity for an ecotourism initiative to lead to growth in both the Rio Negro and Uatumã reserves. This begins with the creation of independent associations in each reserve that will assist in managing and promoting the lodges and restaurants. The anticipated growth can be accomplished through the development of digital marketing strategies and the creation of a collective online booking channel. To ensure these actions are aligned with the reserve's dedication to environmental sustainability, the association should create a set of enforceable standards for the facility owners and visiting tourists.

By implementing these recommendations, FAS can expect to see an increase of approximately 4,400 tourists to the Rio Negro reserve per year in 10 years and an additional 7,000 tourists per year within 20 years. This will lead to an additional R$17.7 million for the reserve in 20 years. Similarly, the Uatuma reserve can expect 4,000 more tourists to travel to the region per year within 10 years, ultimately growing to capture 7,300 more tourists per year within 20 years. This will lead to an additional R$51.2 million for the reserve in 20 years.

Photo: Geórgia Franco

8. APPENDIX

Ex. 1 Ecotourism in Rio Negro – Overall Value Breakdown

(%) of total operating cost

3%
Food &
Drink

36%
Lodge

59% Boat

1%
Tour Activities
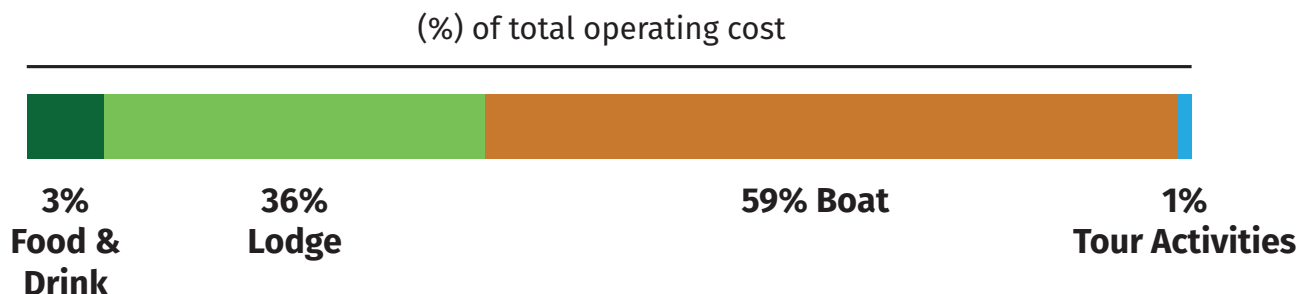
Ex. 2 Cost Assumptions for Ecotourism in Rio Negro

Operating Cost Program	Package (R$)	% of total operating cost
Food & Drink	312	3%
Lodge	3,332	36%
Boat	5,430	59%
Tour Activities	60	1%
Total Costs	9,134	100%

Ex. 3 Breakdown of Tourism Value – Sport Fishing in Uatumã

(%) Total Revenue

11% Food & Drink	13% Wage	14% Fuel	14% Other	49% Operating Profit
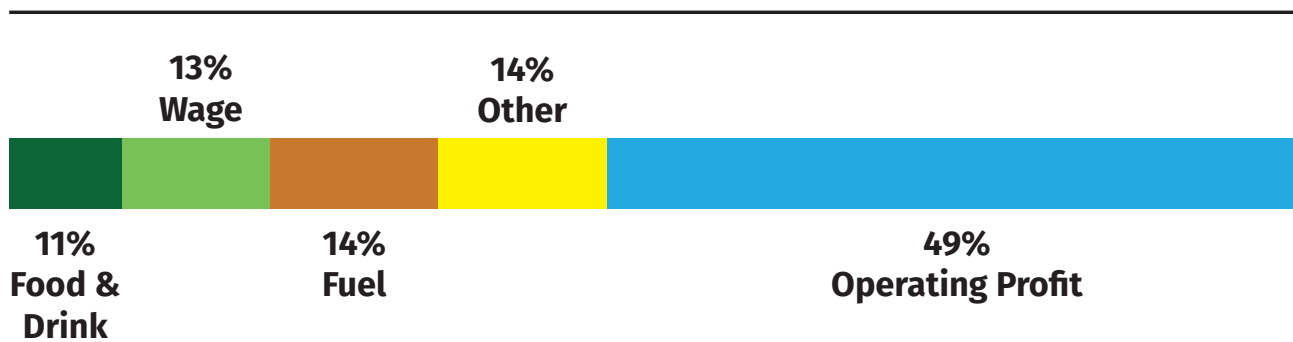
Ex. 4 Scenario Analysis for Profitability performance in Lodge Operation in Uatumã

Number of tourist	Total Revenue (R$)	Total Operating Cost (R$)	Operating Profit (R$)	Operating Margin
1	4,500	10,393	-5,893	
2	9,000	10,963	-1,963	
3	13,500	11,816	1,684	12%
4	18,00	14,169	3,831	21%
5	22,500	15,702	6,798	30%
6	27,000	16,272	10,728	40%
7	31,500	19,587	11,913	38%
8	36,000	20,157	15,843	44%
15	67,500	35,743	31,757	47%
24	108,000	54,252	53,748	50%

Ex. 5 Lack of online presence

The top online booking aggregators include 1) Google search 2) Booking.com 3) Tripadvisor. When we search for accommodation/lodges in Uatumã or Rio Negro, none of the local lodges pop up in the top results.

Ex. 5.1 Search result from Google for hotels in Rio Negro.

Ex. 5.2 Search result from Booking.com for hotels in Rio Negro.

Ex. 5.3 Search result from Tripadvisor for hotels in Rio Negro.

Ex 6 Challenge in booking practice

Assuming the specific lodge is known, customers would look up for booking online channels such as in Google, Booking.com, or Tripadvisor. None of those top online channels provide results/information that are provided by direct booking where customers reach out to the owners via direct call, Facebook page, or Whatsapp.

Ex 6.1 Search result of "Pousada El-Shaddai" on Google provides information on direct contacts (Phone number, Facebook page, Instagram) only.

Ex 6.2 No result when searching for ""Pousada El-Shaddai" in Booking.com.

Ex 6.3 No result when searching for ""Pousada El-Shaddai" in Tripadvisor.

Ex 6.4 Facebook page of Pousada El-Shaddai for customers to book via direct communications such as phone call, Facebook chat, Whatsapp, and email.

Sustainable Amazon Foundation (FAS)

Founded in 2008 and headquartered in Manaus/AM, Sustainable Amazon Foundation (FAS) is a non-profit civil society organization that disseminates and implements knowledge on sustainable development, contributing for the conservation of the Amazon.

The institution works with projects aimed at education, entrepreneurship, sustainable tourism, innovation, health and other priority areas. Through appreciation of the standing forest and its socio-biodiversity, FAS develops works that promote the improvement of the quality of life of communities riverine, indigenous and peripheral areas of the Amazon.

Confer the programs of the FAS:

Program of Management and Transparency (PGT)	By means of management mechanisms and forums, the PGT works together with the inner community, with planning and evaluation of results of programs and projects.
Program Upright Forest (PFP)	The PFP is focused on four strategic actions: income generation, entrepreneurship, infrastructure and community empowerment.
Program of Health in the Forest (PSF)	Result of the actions of Amazon Covid Alliance, the PSF qualifies the access to health care, with public policies and professional training in the area.
Program of Education for Sustainability (PES)	The works of PES are directed towards the education of children and adolescents, guaranteeing opportunities for a more inclusive and quality education.
Program for Innovative Solutions (PSI)	With a base in social technologies and solutions for sustainability PSI was developed, whose works focus on technical partnerships in PD&I.
Program for Entrepreneurship and Sustainable Businesses (Pensa)	PENSA aids entrepreneurs of riverside communities and indigenous people with an incubator, courses, workshops and consultancies to manage innovative businesses and access credits.

FAS

Partnership

UNIVERSITY OF NOTRE DAME
Mendoza College of Business