



Everest Recycling Solutions

Business Plan - Timor-Leste

December 2017, January 2018 & February 2018



**PROJECT
EVEREST**

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1.0 Executive Summary

Everest Recycling solutions (ERS) is a paid collection, segregation and recycling business operating in Dili, Timor Leste. ERS has a clear sales purpose in creating a viable solution to the extensive waste management issue in Timor Leste. Currently, ERS collects aluminium, glass and plastic from customers. Aluminium cans are on-sold for recycling, glass is currently being tested as an aggregate in cement and plastic bottles are repurposed with a local organisation, 3R.

ERS currently services five local businesses, which are predominantly expatriate-owned, with the aim to expand the service to local businesses and communities in Dili and wider Timor Leste. These businesses include Plaza Hotel, Hotel Timor, Moby's, SDV & WEC. The operations of the collection service is maintained by three local employees while Project Everest isn't operating in the country. These employees include a truck driver, Aminu, a segregator, Andre, and the manager, Augusto. To increase the customer base a model whereby customers pay per bag of recycling collected has been ideated and future operations intend to test this product.

An important element in expanding the reach of ERS is to create a widespread culture that values recycling. It is important to note that there is no word for 'recycling' in the local language of Timor Leste (Tetum). As such, ERS has conducted and planned education programs through a variety of means including staff workshops, schools and conferences in order to create understanding and empowerment surrounding recycling.

Overall, ERS aims to develop a long-term solution to the waste management situation in Timor-Leste, whilst increasing employment rates, generating sustainable profits and stimulating the local economy.

1.1 Business Summary

Everest Recycling Solutions (ERS) is an ideated and trialled collection, segregation and recycling business operating out of Dili, Timor. Currently there are five local businesses onboard that separate recyclables from waste, where it is collected for a fee on a scheduled basis. The recyclables which are currently collected include plastic and glass bottles, as well as aluminium cans. ERS subsequently on sells the recyclable material (aluminium, glass and plastic) and is also exploring means by which recyclables can be repurposed.



1.2 Business Aim

ERS aims to develop a sustainable, long-term solution to the waste management problem in Dili and eventually the whole of Timor-Leste. To ensure a lasting positive impact the focus of the business is targeted to four main aspects.

1. Reduction of waste being sent to and burnt at Tibar;
2. Improved aesthetic of Timor-Leste through reduction of waste contaminating streets, rivers and oceans;
3. Implementation of recycling practices and techniques within Timor-Leste;
4. Increased local knowledge about waste management leading to long-term behaviour change.

1.3 Business Model

ERS is a for profit organisation that generates revenue from customers who pay for the collection service and the onselling of recyclables collected. The focus for early adopters of the business model were expatriate businesses in the tourism industry, who understand the value of recycling through pre-exposure and also can afford a higher price point. Bars, restaurants and hotels also have large amounts of recyclables in comparison to Timorese businesses, representing a strong target market for the ERS service. Recently, this market has been expanded to include international organisations within Dili, including Worldwide Evangelisation of Christ (WEC) International.

There are several other potential revenue streams to be explored in the near future, which include selling recycled and repurposed products, and conducting paid environmental education workshops to businesses, schools, governments, communities and organisations. An avenue for expansion will also include the development and trial of a 'Bag-Pay' service, which will increase the availability of our service to both locals and rural communities. This aims to target and engage local businesses, schools and residents and will run concurrently to the existing collection service.



ERS is strongly supported by its long-standing relationships with local organisations and community members including Universidade Nasionál Timor-Lorosa'e (UNTL) students, 3R, Besi Tua, RMS and the Red Cross. ERS is seeking to partner with other organisations working in the environmental management field. Partnerships will be of mutual benefit and achieve common goals of waste management and a strengthened economy in Timor-Leste.

1.4 Business Model Canvas

Key Partners	Key Activities	Value Propositions
<ul style="list-style-type: none"> - Timor Foundation - Red Cross - Expats that understand the value in recycling - Larger businesses - Hospitality businesses - Tourist-related businesses - Schools and Universities - UNTL interns - RMS - Tasi Tolu - 3R - Government 	Key Resources	
	<ul style="list-style-type: none"> - Collection - Segregation - On-selling - Repurposing - Education (staff workshops) - School education <ul style="list-style-type: none"> - Truck Driver - Vehicle - Storage for recycling - Recyclables - Segregators - PPE - Manager - Overseer - means of communication - phone, internet 	



Cost Structure

- Driver wage- approximately \$120/month
- Manager wage- \$60/month
- segregators' wages - \$48/month
- Purchase of bins - \$50/ large bin
- Cost of cement bags - \$12/month
- Protective equipment - \$10/month

Customer Relationships

- Personal relationships
- Create value in our service based on the interests and needs of customers
- Customer feedback surveys
- Check in calls/meetings to ensure customer satisfaction
- Positive bin/business branding
- Endorsement for customers/businesses

Channels

- Face to face meetings
- Emails
- Government meetings
- Phone calls
- Word of mouth
- Local people and students
- Networking with top tier businesses
- Education workshops in schools

Customer Segments

Currently, Expats are our major customer base.

Customer Base

- Hotel Timor (2 pickups)
- Plaza Hotel (1 pickup)
- Moby's (1 pickup)
- WEC International (1 pickup)
- Bollore/SDV (2 pickups)

Stakeholders

- Red Cross
- Timor Foundation (for education)

Revenue Streams

- Collection fee, \$10 per pickup
- On selling aluminium, \$0.75/Kg
- Selling bins to our customers (\$35 for small bin. \$70 for large bin)



1.5 SWOT Analysis

STRENGTHS	WEAKNESSES
1. ERS is currently the only recycling service in Dili, Timor-Leste.	1. Operating months in country follow the Australian University schedule meaning ERS has only ever operated approximately four months in the year. This poses a number of problems including
	a) ERS' collection service has not been provided consistently for more than three months, which limits the service and threatening the legitimacy of ERS within the local community.
	b) High team turnover of Australian interns, which poses the potential risk of inconsistency in the service we provide and our presence in Timor Leste.
2. Offers customers an alternative to sending their waste to Tibar.	2. Language barriers with local people can create misunderstanding of the business purpose and service offerings.
3. Offering a regular, scheduled and reliable service for recyclables pick up.	3. No large scale solutions for how plastic and glass will be recycled.
4. Hiring local people to work in its collection service, with the likelihood of more employment as the business expands.	4. ERS is a new business, which creates less legitimacy with potential customers.
a) A Timorese truck driver, a Timorese segregators, a Timorese manager and an overseer in county that will enable continued operation of the business from March to July.	
5. Diverse team of people that come from various backgrounds and have numerous strengths.	5. Heavy reliance on a paper trail in the management of employees and pickups.
6. On the ground market research.	6. Predominantly cash handling in business operations, which carries a high level of risk.
7. In-line with UN sustainable development goal eleven to create sustainable cities and communities.	7. Predominantly expatriate businesses that participate in ERS' service, and thus are ERS' main reliance of cash inflows. This also limits



	the reach of ERS' impact to the local community.
	8. Local employees currently have limited experience with the business and how it operates.
OPPORTUNITIES	THREATS
1. Funding and partnership opportunities with large stakeholders, such as Red Cross in order to educate and empower more Timorese people about the service ERS provides as well as create a greater awareness of the service provided.	1. Potential competitors entering the market and undercutting the price we offer to customers
2. Opportunity to roll out our services to a wider range of stakeholders such as communities and families through expanding ERS' service with varying prices and degrees of service	2. Lack of understanding and awareness on what recycling is among the Timorese people and thus a lack of value around recycling.
3. There is a large market of consumers who are aware and interested in recycling but do not have the means to do so. This represents an extensive opportunity to expand ERS to these consumers.	

2.0 Ownership Structure

ERS is a subsidiary of Project Everest (XYZ For Good Pty Ltd T/A Project Everest) and is legally registered as Project Everest Unipessoal, LDA in Timor-Leste. The company is in the process of finalising its incorporation in Timor-Leste as Everest Recycling Solutions LDA. It is the intention for Project Everest Australia to take ownership of ERS. Currently, Wade Tink is the only shareholder of Project Everest. Project Everest intends to offer equity in return for a qualified team to take over ownership of ERS, with the intention to retain only 5-10% of the business.

A partnership agreement is being finalised between Timor Foundation (Scope Asia Switzerland). The intent for Timor Foundation is to not have any ownership of ERS but rather to



act as supporting partner. Additionally, funding is being sought from Market Development Fund (MDF) in order to secure the longevity and prosperity of ERS through substantial funding.

3.0 Products and Services

3.1 Current Collection Service

ERS collects aluminium cans, glass and plastic bottles from businesses in Dili. Whilst some businesses do segregate glass, aluminium and plastic into three separate bins, it is only required that the recyclables be separated from other waste. In the future, it is recommended to investigate the viability of the collection and repurposing of other recyclables like organic waste, paper, batteries and kinds of plastic besides PET. This should be accomplished first through surveys to businesses and residential areas to assess the demand for such service, then to research potential partners for onselling and prototyping.

Customers pay per collection, with the ability to choose up to two collections per week on a Monday or Thursday. The cost of each collection is \$10. Invoices are delivered to customers monthly and payment is collected at the end of each month by our local manager. After being collected from customers, recyclables are delivered to the ERS warehouse to be fully segregated by staff and ready for recycling.

ERS is currently collecting from five businesses: Hotel Timor (Monday and Thursdays), Plaza Hotel (Mondays), Moby's (Mondays), WEC (irregular Mondays) and SDV (Mondays and Thursdays).

3.2 Bag Pay

Bag Pay represents an avenue for the expansion and development of the ERS service to local businesses and communities throughout Timor-Leste. In this model, customers pay per bag of recyclables collected, at a more affordable cost than what is currently provided. A new bag replaces the existing bag upon each collection thereby creating ease in service. This concept is still in a preliminary phase, however, through surveys described in Section 6 there was a positive response expressed by individuals and Timorese-owned businesses.



At a cost of \$1-2 a bag, the service provides an opportunity to target and engage with local businesses and individuals who cannot afford the \$10 collection service. The specific monetary value of the bag has not been confirmed and will depend on financial projections and consumer demands.

The expansion of the ERS service will provide an additional revenue stream for ERS, whilst empowering locals who seek to make a positive environmental impact through recycling but do not have the means to do so with the current service. For the bag pay system to be economically viable and efficient, the customers will need to initially be attained on existing collection routes. This will drive profit maximisation, by ensuring that on each run the number of collections is maximised between \$10 collection customers. The objective, however, is to execute the independent bag pay runs as a service solely for small businesses and communities, whilst maintaining the \$10 collection service as the main revenue stream for ERS.

3.3 Recycling Bins

Complementary to the current collection system, ERS offers two different sized bins for businesses to purchase. Smaller 40L bins cost \$35 while the larger 100 litre bins cost \$70. For customers who are interested in purchasing a bin, however, are not able to afford the total cost in a single payment, a payment plan may be negotiated.

ERS also offers free paint stenciling of bins, regardless if they are the ones sold by ERS or their own. This indicates which products can be recycled and which bin the products need to be placed in. This service can be requested at any time by businesses paying \$10 per service. .

3.4 Staff Education Workshops

Free workshops about recycling are offered for all staff of participating \$10 businesses, which run staff through the value of recycling, why it is important and how to actually recycle. These workshops are run to further ensure that the collected recyclables are not contaminated and staff learn why their business does this from a social perspective. The reception garnered from these workshops have been incredibly positive, with the ratio of recyclables to waste always



improved. The service is offered in both English and Tetun, using the aid of an UNTL intern to reduce the likelihood of confusion and misunderstanding that a language barrier may create.

3.5 On-sell & Repurposing

A key aspect of the end state ERS business model is the guarantee of the recyclables being collected are then repurposed into useful products. Throughout the months of operations there has been extensive research into various applications of repurposing for aluminium, glass and plastic. Currently, there is an end state solution for aluminium, a prototype currently in testing for glass and various stakeholder partnerships being considered for plastic, all described below.

3.5.1 Aluminium

Aluminium cans comprise of a quarter of portion of the recyclables collected from businesses in Dili. Aluminium is a commonly recycled material that is able to be easily melted down and reformed into other viable products, such as other aluminium cans, cookware and wiring. The major incentive to recycle aluminium for companies is that recycled aluminium uses 5% of the energy that is required to create the equivalent of raw aluminium. Additionally, recycling the collected cans results in the production of fewer greenhouse gases than the initial manufacturing process of aluminium, due to the reduction in electricity usage. As such, ERS has established a partnership with a local business Best Tua, which purchase the aluminium cans and exports them to Singapore, where they are repurposed in air conditioning units. Best Tua purchases the cans at USD\$0.75 per kilogram and are contacted when we require them to collect aluminium.

3.5.2 Glass

ERS has engaged with RMS Engineering & Construction, an Australian based company operating in Timor, for the purpose of testing glass as feasible aggregate in concrete. RMS testing and equipment comply with international standards. RMS has currently used 40 kilograms of crushed glass from the ERS recyclables to test the compressive strength of concrete substituting 100% of the gravel aggregate which would otherwise be used. Due to the time constraint, the typical 7, 14 and 21 day testing were incomplete, but the 7 day testing determined



the sample to fail at 11 Mega Pascals (for a successful sample, the 7 day test must be 70% of the required 25MPa).

The test failed due to the lack of absorption the cement has to the glass compared to the gravel. Although the test failed, the use of glass as a supplemental substitute in concrete is still documented throughout research papers across the world and has been proven to meet engineering standards. The current test that has been conducted will act as a reference, with further tests showing the improvement and ideal percentage of glass aggregate with gravel.

It is intended to continue testing with the crushed glass, ensuring that it will only be used as a supplemental substitute for aggregate. The optimum replacement (to have minimum overall impact on the quality of the concrete) amount is between 10 and 25% depending on the strength required.

By including small amounts of crushed glass in the concrete making process, the need to dredge rivers for the collection of gravel is reduced and for construction companies the cost per kilo of concrete will reduce.

Another option that has been researched for repurposing glass is the application of it with bitumen to cover roads. The ERS team have compiled a list of construction companies that can be contacted to enquire about the viability and customer interest in this, which can be found in the drive.

3.5.3 Plastic

ERS currently has its plastic bottles picked up for free by an organisation, 3R. 3R is a group of Tlmorese youth who recycle and repurpose plastic bottles through projects such as the construction of rubbish bins using plastic bottles, funded by USAid. This is a temporary and small scale solution which helps reduce the amount of plastic being stored or burnet at Tibar, while also strengthening community ties. 3R also has a strong focus on education in schools. ERS intends to continue working with 3R to develop new prototype ideas, including using plastic bottles in construction and using glass bottles within engineering.

3.6 Prototyping

Throughout the operations of ERS there have been a variety of prototypes ideated and tested in the hopes of designing a way to repurpose plastic bottles.



3.6.1 Eco-cooler

One of the prototypes included an eco-cooler, which is a device that utilises plastic bottles screwed onto a sheet of plywood. The objective of the eco-cooler is that air enters through the larger diameter of the bottle and exits through the smaller diameter. This compression then expansion resultantly cools the air. Prior months had tested such a device, however, failed because the temperature change was measured ineffectively thus hindering any advancement. Research concluded that although eco-cooler can reduce in air temperature, however, considering the composition of materials used, the eco-cooler functions better as a window rather than an air-conditioning system. For serious consideration of the application and onsell of this product, further testing is required under more controlled conditions. However, it is of note that in its current stage the prototype doesn't appear to be feasible.

3.6.2 Greenhouse

A greenhouse model was designed in conjunction with the Agriculture team, and constructed to mitigate the extremely heavy rainfall in Timor, which damages and destroys crops. Plastic bottles were selected as they were deemed structurally sturdy and capable of withstanding harsh weather conditions. If successful, the greenhouse would serve as a means by which a steady output of food source could be grown. Customers would purchase the greenhouse at a low cost with the guarantee that yield would be consistent. Issues arose when the structure of the greenhouse and plastic bottles themselves were not sturdy enough. During testing, bodies of water pushed the individual bottles apart thus defeating the purpose of protecting the contents of the greenhouse from the external environment. Bottle size should be measured appropriately in order to create a stronger and more compact structure. An initial prototype that is able to be effectively tested is required before going to the community to test the viability of the product as a revenue source.

4.0 The Market

4.1 Target Customers

Initially, larger expatriate businesses were targeted. These businesses, typically bars, hotels and restaurants are typically run by Australian expatriates, who have a greater knowledge and interest in recycling than the Timorese population. These businesses typically have a higher



level of revenue and profit and are more willing to engage in a paid trial. Customers are typically in the tourism industry and recognise the benefit of advertising as an environmentally friendly business to clientele. Expatriates also speak English, enabling clearer communication without the need for a translator. Many of the businesses from which ERS collects generate a high percentage of recyclables for collection. It is this high percentage of recyclables in the waste from hotels and restaurants that makes it increasingly appealing to engage with recycling collection service. ERS collections reduce the amount of waste businesses have to pay to be removed and dumped at Tibar, the local dump depot.

4.2 Market Segments and Growth

As ERS grows and develops, it can begin to expand and start to make a significant impact on waste management in Timor-Leste. Following successes and the development of strong relationships with expatriate businesses, ERS seeks to target local businesses, followed by local and rural residential areas. An integral part of this expansion will revolve around being able to offer a more affordable service to these customers - such as the bag pay. Comprehensive means by which ERS will recycle collected materials must be formulated in order to allow for further expansion. This includes acquiring larger plots of land and facilities for employees and following expressions of interest from suco chiefs like Tasi Tolu in Comoro.

4.3 Sales Process

Upon initial interaction, ERS contacts potential customers via email or approach in-person and details the service it provides. If customers express an interest, a meeting will be organised via phone, email or in-person. In this meeting, Project Everest and ERS are pitched, the prospective customer is empathised with and possible ways how ERS could benefit the business is discussed. If successful, customers will be provided with information regarding a one week paid trial and cost of service and subsequent ongoing commitment to the collection service.



5.0 Market Research

5.1 Current Waste Collection in Dili

Following months of empathising with the community, ERS has acquired sufficient knowledge of the waste disposal system in Dili. At present, the majority of Dili's residential and business waste is disposed of into large collection containers on the side of the road called 'sampahs'. These are manufactured out of bricks and cement and are located on the side of roads and in residential areas. The Asian Development Bank reported in 2014 that there were 337 sampahs around Timor Leste. Both organic, non-organic waste and recyclables are disposed at these locations. The Timorese government operate an irregular collection of the waste disposed, all of which is delivered to Tibar landfill where it is subsequently burned.

To assess the viability of a recycling collection service, ERS interviewed a variety of businesses including hotels and restaurants to investigate their waste management system. When surveying local businesses about their waste, it became clear that the method of collection, regularity, reliability and payment for collection around Dili varied significantly. Some businesses dispose of rubbish in sampahs while others paid for the collection of their waste. This is approximately 0-\$20 per collection to have waste collected from their business when required or alternatively, engaging in a privately arranged collection service. One business that ERS have engaged with reported that they pay \$150 per month. As such, there is no established or widespread recycling service within Timor-Leste. It should also be noted that there is no word for 'recycling' in the local Timorese language Tetun.

5.2 Attitude Towards Recycling

Within Dili there is a large expatriate community, many of whom own and operate large businesses. ERS identified early on that many expatriates within Dili would understand the importance of recycling and the social, environmental, economic and health benefits that came with it. Therefore, companies such as Plaza Hotel, Moby's and WEC International were consulted early on to discuss their preferences when it came to recycling collections. It became evident that several larger businesses were interested in a service that was more reliable, more consistent,



had a standardised payment process and offered the value proposition of ecotourism to their business . This shaped the way that the ERS collection service was initially established.

It was important, however, that ERS empathised with and understood the attitudes of the local Timorese community towards recycling. ERS have conducted surveys among several local Timorese restaurants in Dili, most of which were small and unnamed. The response from majority of these local businesses was extremely positive, with many excited by the idea of recycling as a potential waste management solution. A recurring issue raised by multiple small businesses in Dili was that they do not have sufficient space to store their waste and recyclables and therefore the daily dumping of their waste in sampahs was a matter of convenience. Many small businesses were also surprised that they were required to pay for the collection of their recyclables. As much of the waste collection in Dili is free, some Timorese locals were hesitant about paying for the collection service. This provided valuable information to ERS and reinforced the overarching goal to eventually operate a business that provides an affordable collection service where majority of the revenue is generated by repurposing the recyclables. These responses suggested that if a means to recycle at an affordable price is available, many local business would be eager to engage with the service ERS provides.

Within Dili there are also several international schools, supermarkets, petrol stations and other organisations that produce recyclable waste. Preliminary ERS research indicated that most of the waste produced by supermarkets is cardboard and paper, which ERS does not currently recycle. ERS is investigating opportunities in this area to encourage further expansion across Dili.

6.0 Market Strategy

ERS is able to scale up through utilising the expatriate market as the initial mode of entry into the larger market. This niche entry mode enables ERS to expand into local businesses and residential areas. Education and awareness of recycling as well as our business model is key in the success of the scale up. ERS seeks to engage with more local Timorese and expatriates to empower and give rise to participation in recycling practices within the Timorese community.



6.1 Marketing Stages

ERS' current customer base is expatriate businesses, primarily within the hospitality industry. Currently, ERS are investigating as to how to approach small business, in a wider range of industries and owned by local business owners. The 'Bag Pay' model (see section 3.1), is one that is currently being drafted with initial trials to begin in July. These target smaller businesses owned by Timorese still primarily within the hospitality industry, to investigate the potential in this market. Several surveys have been conducted with results proving to be quite positive, with 51% of approached business being immediately interested in the proposed idea and only 15% were not interested at all. The remaining 34% were otherwise unable to be formally contacted or there were communication issues. From these results, potentially 86% of local business owners may be interested in the bag pay service ERS is looking to provide. This is despite many people having little to no prior information on recycling or knowledge of the business.

6.2 Brand

ERS is passionate about empowering Timorese people to improve the sustainability of waste management systems. A core focus is to minimise the per capita negative environmental impacts of cities. This can be achieved by providing a more reliable and environmentally conscious alternative to the current model of burning all wastes close to homes and young children.

Over the course of eight months, ERS has successfully cultivated brand equity and brand awareness through Project Everest. The reliability and customer rapport of ERS has built a solid foundation for growth and expansion in Dili that is yet to be fully explored and utilised. A business logo seen throughout this document has been developed for ERS. This logo aims to brand ERS as a separate, albeit similar, brand to Project Everest. Recognition of this logo has proved successful with current customers and new customers are able to link it to the Project Everest logo. This, however, is not something that ERS has been able to advertise due to licensing and legalities surrounding Project Everest operating as an official business subsidiary. In Timor-Leste, businesses are prohibited from being licensed as one business and "operating under" or "also known as" a different name. This places an obligation on ERS to identify as Project Everest Unipessoal LDA in all contracts and advertising.



6.3 Channels of Communication

ERS prides itself on developing strong relationships through personal and direct selling. Through this, ERS ensures that current and potential customers are contacted directly to allow for empathetic and open communication. There is a prominent lack of understanding about recycling as it is a new and innovative concept in Timor-Leste. To mitigate this, advertising is heavily involved in larger expatriate businesses about recycling (early adopters). Word of mouth is a key tool, as it easily enables and creates dynamic discussion between both big businesses and staff about the ecotourism benefits of recycling. Staff workshops aim to further increase awareness of the overall benefits of recycling, such as cleaner air, less landfill and less waste. This has a flow on effect into residential areas due to the common awareness between the local Timorese staff of current customers.

Educational workshops remain a slow method of reaching out to potential customers. A significant degree of planning, preparation and individuals are required in order to produce a successful programme. Future teams will need to investigate and attempt to establish a social media presence in country, as this is a very commonly used platform for businesses in East Timor. The primary issue with this method is the licensing laws around operational names of companies. Mass communications through other advertising methods, for example television, newspaper or signage have also been considered. These media are costly and it was thus determined that they require a lower level of priority than establishing a social media presence.

The initial ERS pitch includes an information pack, which includes the benefits of recycling in both English, Bahasa and Tetun. When contracting with ERS, customers receive a poster, which highlights “we proudly recycle”. This advertises both ERS as a service and creates awareness of recycling. The signs supplied to clients depict the ERS logo and email address, which allows new customers to discover and contact the business. “We love recycling” stickers are also used by businesses to promote the fact that engage in such practices and operate as environmentally conscious entities. This is an excellent selling point for businesses, particularly those in the hospitality and tourism industry.



6.4 Education

Approximately 50% of the Timorese population are under the age of nineteen (*World Population Review 2018*). Thus, the success of ERS within Timor-Leste depends significantly on the education of youth about recycling. ERS school education programmes have proven successful in the past. These programmes empower the youth by providing them with the knowledge and importance of how to recycle. Without sufficient education, it becomes increasingly difficult to encourage a positive solution to proper and environmentally conscious waste management.

ERS has developed a series of educational workshops targeted at students and children in Timor-Leste. The content is capable of being tailored to various age groups and education levels and provides information about the benefits of recycling, how to recycle and what to recycle. The snowball effect of such education programs is that younger people encourage a culture of recycling and promote it to their families and other friends. UNTL interns are essential in translating the content to Tetum and in portraying the material in more relatable terms delivering ERS message in a more engaging way.

ERS is passionate about involving local Timorese people into the business. It is the intention of ERS to formalise the UNTL students' participation in Project Everest's ventures by means of a formal internship. During a fixed period convenient for both parties, UNTL students would work side by side with ERS and PE. This would provide interns with professional work experience and PE trekkers with a reliable access to translators and cultural consultants, who provide insights into Timorese culture and habits to smooth interactions with stakeholders, customers and the wider Timorese community.

There are a variety of organisations who have expressed interest in facilitating this accreditation of professional work experience, one such being MOVE, a Portuguese NGO. MOVE facilitates programmes and educates individuals, largely students, providing training and development workshops for business and entrepreneurship.

Moreover, ERS is planning an education conference in collaboration with Timor Foundation to raise awareness in the thirteen Timorese districts. This event will likely leverage



the influence ERS yields in the recycling industry thereby disseminating ERS and its objectives nationally.

6.5 Customer Relationships

ERS manages its customer relations by ensuring that there is a constant open channel for feedback. Customers may communicate queries, concerns and suggestions for the business via email and receive a response within twenty-four hours. From the 25th of January to the 1st of July 2018, communications will be monitored by Lucy Preiss and Bec Pink prior to being taken over by the July trekker team. Similarly, to ensure customer satisfaction whilst ERS and Project Everest are not in country, a customer satisfaction survey will be distributed. Answers will be reviewed by ERS employees so to ensure that the customer is receiving the most efficient and reliable service possible.

7.0 Competitor Analysis

7.1 Competitors

A direct competitor for ERS is the current governmental systems in place concerning waste management, who take it to the dump site in Tibar. Given the flexibility of the service ERS provides and the wide variety of options and pricing, ERS is a competitive business particularly for small businesses and residential communities.

Star Products and Hopeseller have been identified as two major potential competitors of ERS. Both competitors have plastic shredders and machinery to operate a repurposing facility for plastic. Star Products currently does not operate however, but instead hoards plastic. Whereas, Hopeseller is currently under review and have exhausted company funds, so are also unable to operate. Thus, there are no currently active competitors in the market. It should, however, be noted that the threat of new entrants is quite substantial, as it only requires a service that does not require a collection fee at all to eliminate ERS from the market completely.

There exists a possibility for competition to exist for repurposing recyclables. Currently, aluminium cans are being sold to Best Tua. Best Tua and ERS have a collaborative relationship rather than competitive relationship and strive to mutually improve each business. The only



competitors in this area are the local collectors and the businesses themselves realising they can just on sell their own aluminium cans.

As of yet, there are no competitors that ERS is aware of in the field of glass as an aggregate for concrete. Although there are no companies using glass as aggregate in Timor Leste, being able to undercut the market for gravel aggregate will be difficult for ERS to achieve given the longstanding relationships that the construction companies that have with the gravel suppliers.

The education service that ERS provides does not aim to generate profit, however, there are also no other companies, NGOs or organisations that provide education to schools about recycling specifically. Thus, no competition exists in regards to the provision of staff education workshops as no other company or body provides such a service. ERS is not averse to engaging with other businesses, individuals and organisations in order to provide a succinct and informative educational programme to schools and customers. Thus far, the Red Cross (CVTL) has been involved in this.

7.2 Unique Value Proposition

ERS invests time, money and resources into providing a recycling collection service to Timor in order to create a cleaner environment, better local health, as well as a strengthened local economy. It collaborates with local residents, staff, businesses as well as schools and the expatriate community of Timor to provide a long-term sustainable service. The service ERS provides is reliable, consistent and at a predetermined time to best suit customers.

The unique value proposition of ERS lies in the many and varied services we provide. This includes the employment of and relationships with local Timorese businesses, the collection and repurposing of recyclables, continually spreading awareness about the environment and the benefits of recycling through school and staff education workshops. Further, research and testing recycled product prototypes and constantly iterating and improving services based on feedback from locals to ensure that ERS provides a solution that addresses the issue of waste management in Timor.



8.0 Operations and Logistics

8.1 Method of Delivery of Products and Services

The ERS collection service operates weekly on both Monday and Thursday with customers selecting the frequency of pickups that best suits their business. A truck driver completes the collection with segregators and together they visit all customers who have pickups scheduled for the day. At each location, the segregators collect the recyclables and load them into cement bags in the rear of the truck.

Customers may also be provided with laminated 'We Proudly Recycle' posters, which advertise businesses as eco-friendly. For customers who wish to label their bins, ERS provides free paint stenciling of collection bins, indicating the type of products which can and cannot be recycled.

8.2 Storage Space

Currently, recyclables collected are segregated and stored at a warehouse within 10 minutes of Timor Plaza (second right after Colmera bridge heading in the direction of the airport). A copy of the lease agreement labeled can be found in the Appendix B. While not in the immediate vicinity of PE HQ, ERS team determined the storage space and its location as being appropriate for business practices. Accessibility of the space by employees, cost of rent per month (\$150 + 10% land tax), structural integrity as well as business expertise of the landlord were all necessary considerations when deciding upon land.

The storage space has the dimensions of 6m² x 25m², is structurally sound, capable of being locked, easily accessible with a docking or parking area for a truck and a sheltered space to store recyclables and any necessary machinery. Per traditional rental agreements, it was suggested that the landowner be entitled to access the space. Nonetheless, the landlord insisted that while ERS is conducting business, we will be responsible for securing the space and providing a lock. This is an indication of a strong element of trust in ERS as a business and its practices.



The warehouse at which ERS operates has some amenities, such as access to non-drinkable water to wash the recyclables, a power socket to plug in machinery and other devices necessary. Bathroom facilities and food stalls are located adjacent to the property. There are no windows in the facility. Therefore, it is likely necessary to install fans provided that leaving the gate to the storage facility open is insufficient in maintaining a comfortable temperature for workers. Further, there is no drainage, thus so the water has to drain through the gate.

The space allows for future expansion of ERS, as the business engages and contracts with more customers and begins collecting and segregating more recyclable materials. It is estimated that the space is capable of accommodating ERS' practices for at least another year. Prospective uses for the storage space included segregation and storage of recyclables. Further, the space has the potential to accommodate prototype testing as well as repurposing of recyclable materials.

8.3 Equipment

8.3.1 Current Equipment

Materials necessary for the functioning of ERS services have been considered for current and future business practices. ERS has purchased hessian bags, at \$3-\$5, for the segregation and ease in transport of recyclables. They were selected as they are durable and an appropriate size for the collection of and ongoing storage of recyclables. Reusable gloves are provided to ERS employees when segregating recyclables. This mitigates occupational health and safety risks when handling potentially dirty or broken recyclables.

ERS' truck driver hires his truck for the purposes of collection. It is suitable at for the collection services at present. As ERS expands in the future, more trucks are likely to be purchased or hired. This will ensure reliable service and to transport any recyclable and repurposed materials.

8.3.2 Future Equipment

Machinery for the effective repurposing of recyclable material would be necessary for ERS to produce reusable material for market consumption. A pelletizer functions by compressing or



moulding a material into the shape of a pellet. A variety of materials can be repurposed using the pelletiser, including recyclable materials collected. An injection or blow-mould machine are necessary to transforming shapes of hard plastic substances and glasses. A generous estimate of the cost of a pelletiser and shipping there of is \$80,000. A plastic shredder serves a similar purpose but reduces the size of plastics and is estimated, albeit generously, to cost approximately \$20,000.

A glass crusher is integral for the pulverisation of glass into smaller shards. This would be suitable if ERS seeks to repurpose glass materials as an aggregate for concrete.

8.4 Utilities

Communications between employees and ERS are to be made via telephone call or using an internet service. Employees are required to bring their own personal telephones as no landline access is available at the storage space. Internet is to be accessed on individual telephones. There exists the potential for purchase of computers and company internet access at a later stage, once ERS has expanded and acquires more funds.

8.5 Legal Requirements

Project Everest adheres to all relevant legislation and licensing laws that requires it to operate. Project Everest additionally ensures that the requirements according to Timor-Leste's legislative framework have been met in regards to occupational health and safety, intellectual property rights, land and labour laws.

Project Everest intends to set a precedent in occupational health and safety practices and respect the rights of workers by providing staff with a safe, secure and clean work environment.

Any contracts issued to customers by Project Everest have been stringently revised and reviewed by a lawyer to ensure respective parties are fully aware of their obligations and rights. A translator subsequently translates each contract into Tetun to enable clarity in understanding for employees and landlord.



Contracts clearly define responsibilities and entitlements. Taxes payable are necessary operating costs once ERS' annual profit exceeds \$6000 or the employees begin to earn more than \$500 per month.

8.6 Employees

ERS intends to operate between the months of February and July while Project Everest is not in Timor-Leste. ERS has thus employed three Timorese locals to continue operations while Australian staff are not in country; a truck driver, a segregator and a manager.

The truck driver, Amino, is paid a flat rate of \$10 per hour. For every additional fifteen minutes that exceeds one hour, he is paid an extra \$2.50. The payment to the truck driver includes the cost of petrol, as well as the expectation that they provide their own truck of appropriate size and working condition. The truck driver is employed part time on Monday and Thursday mornings weekly.

The segregator, Andre, is paid \$1.50 per hour. They are required to accompany the truck driver on the collection runs on Monday and Thursday mornings to load the recyclables into the truck. Once the segregator has returned to the storage facility from the collection run, they are required to segregate the collected recyclables into glass, plastic and aluminium.

The manager, Augusto, is paid \$2.50 per hour. Tasks include, ensuring that timesheets are completed for each collection run, that time sheets for each employee are filled out after each shift and that appropriate protective equipment is provided to segregators before each shift. The manager is also required to complete financial inflow and outflow sheets at the end of each month and collecting all money from customers at the end of each month. Additional duties include, paying employees and themselves at the end of each month as well as reporting to the Overseer in Timor-Leste and Project Everest in Australia.

The overseer, Colin, is a voluntary position, in which the main responsibility is to be a point of a communication between Project Everest in Australia and ERS operations in Timor-Leste. Between February and July, the overseer is required to communicate with the manager on a regular basis to ensure that ERS is operating properly and professionally.



9.0 Cost and Pricing Strategy

9.1 Service Cost Breakdown

There are a number of variable and fixed costs involved in the recycling collection service which are detailed below.

Variable Costs

Cost Type	Cost Per Pick Up
Segregator Wage	\$0.92
Truck Driver Wage	\$4.61
Manager Wage	\$1.53
Concrete Bulk Bags	\$0.38

Fixed Costs

Cost Type	Cost Per Month
Land Lease	\$150
Land Tax	\$15

9.2 Price & Justifications

Currently the price point of our service is USD\$10 per pickup. This price was established through initial empathising with larger expat businesses and gaining an understanding of how valued recycling was to those with disposable income and who understand the need to recycle. This represents an upper limit on tiered pickup pricing, as the larger expat market is agreed to be the market with the most ability and willingness to pay. For USD\$10, a business can have up to three full 100L bins of recycling picked up. This pricing also includes a complementary staff workshop, free labelling of bins and provides the opportunity for customer feedback and iterations within the service.



In order to access a larger share of the market, different price points and levels of service should be investigated. Empathising with smaller expat and local businesses has been undertaken, largely discovering that these businesses would be willing to pay USD\$1 per bag of recycling. To further justify the price point, additional services offered to USD\$10 customers are not offered to this level of service.

ERS has also sold bins to some customers that have required, in order to access greater profit margins. Customers can purchase either 40L bins for USD\$35 or 100L bins for USD\$70. This generates approximately USD\$15 and USD\$20 of profit respectively.

9.3 Competing Prices

There are no other businesses offering a recycling collection service in Tlmor-Leste currently, although there are businesses that offer selected parts of our service. Waste pickups, offered by the government or random companies range in price from free to \$20 per week. Other companies, including Star Products and Hopeseller, collect plastic for free. These companies have been described time and again as unreliable, and often are not utilised as collection services. When they are not used, rubbish is simply burnt on the street.

9.4 Gross Profit Margins

These margins are calculated off the revenue generated and the costs involved with the \$10 per pick up service. Over the course of the summer 2017/18 the total costs incurred from the business were \$573.80. The total revenue generated from the business over the summer resulted in \$854. Although this doesn't include the capital cost of the land rent seeing as it is seen as a capital investment, the gross profit from the summer was 32.80%. Financial cash report summaries can be seen in Appendix A.

With current projections completed through till the beginning of July 2018, the estimated total cost of operations from the beginning of December 2017 through till the start of July 2018 is \$2323.30 (including land cost), with large over estimations made to ensure that while Australian staff aren't operating in the country there is enough money in the overall wallet. The estimated total revenue of operations during the same period, with the assumption that all customers are retained is \$1,944. This results in a gross profit margin of -19.5%, which is quite reasonable seeing



as there isn't any expansion of the business being undertaken during the break period of March-June. The intention for July would be to have this as a positive profit margin, and to train staff in sales to allow for ever growing customer base even during months of not operating.

9.5 Break Even Analysis

Cost Type	Composition	Cost (per month)	Total
<i>Fixed Cost</i>	<i>Lease of land</i>	\$150.00	\$165.00
	<i>Land tax</i>	\$15.00	
<i>Pick up Price Price</i>	-	-	\$10
<i>Variable Cost</i>	<i>Employee Costs</i>	\$7.07	\$7.45
	<i>Supplies (cleaning, safety, storage)</i>	\$0.38	

$$\text{Break Even Point (BEP)} = 165 / (10 - 5.30) = 35.1$$

This places the current break even point to be 36 \$10 pick ups per month. This is 10 more pickups than are currently being conducted, and is likely to require the addition of another 2 to 3 businesses to the service.

The addition of various levels of service and prices will alter this break even point.

10.0 Contingency Strategies

10.1 Automation of ERS

The issue with the current business position is that between February to July, the collection service will have to run autonomously for the first time since ERS has been in country. This is particularly worrying, as it will be conducted without any supervision from Project Everest. During February ERS sought to establish the collection runs as self-sustained by the employees. Roadblocks were inevitable and the segregators only went on one independent run (the last



Thursday) from the land site as opposed to the normal run which started from Project Everest's accommodation.

10.2 Alternate Recycling Collection Systems

Whilst ERS is operating in a relatively unpopulated market in terms of competitors, some free modes of waste collection may have the ability to undermine ERS as a social business. However, a limiting factor for potential competitors is that they are unable to effectively repurpose recyclable waste, due to their lack of a strong monetary base and innovative mechanisms to appropriately deal with the waste management situation in Dili.

What defines ERS is its capacity for continual innovation and marketability of its repurposed recyclables. In itself, ERS' value proposition as a highly adaptable social business is what sets it apart from other collectors of waste in the region.

Government initiatives exogenous to ERS may undermine the business model. Although such responses from the public sector appear benign, close partnerships between ERS and respective government departments have been developed so that the organisation is positioned as a natural intermediary between government objectives in terms of waste service and meeting those requirements.

10.3 Employees

Another risk is price increases in rent or employees. Contracts have been written, checked by a lawyer and will be signed in order to mitigate this risk. A 15% contingency has also been included in the budget to account for any small variations that may occur. The prices quoted to the segregators, truck driver and manager were well received, which is taken to mean that employees are pleased to work for such an amount and are likely not to request a pay rise. The only point of contention is petrol to run the truck, which is estimated at \$3 per run. This cost is included in the truck drivers wage. The wage of the segregator is quite high given that it is just manual labour, however, due to the hours being very minimal if the segregator requires multiple modes of transport to get to work the wage is quite minimal. As such, the wage may need to increase to maintain strong employee relations and to incentivise the segregator to stay on board until the business expands and receive more hours.



10.4 Cultural Attitudes

A prominent long term risk is that there is no uptake of the collection service to the larger Timorese community. ERS' previous model to spur market adoption of our services was to target expatriate business. Though this method achieved the objective to increase awareness of ERS as a company, its traction was limited to making real changes to Timorese attitudes towards recycling. As a precursor to market entry and to mitigate this risk, free and paid education workshops at schools, universities and the staff of onboard businesses have been and will need to continue to be run. These workshops have the intention to instill long term shifts in attitudes on the importance and necessity to recycle.

Headway was made during operations through beginning relations with a community leader in Tasi Tolu to break into the residential market. This relationship will aim as a case study to identify the specific cultural attitudes of the community and allow for iterations on the marketing material produced to better suit the residential customer.

10.5 Business Attitudes

Many businesses view paid recycling services as a hindrance to profit maximisation. To curb this attitude, marketing strategies are constructed to portray the indirect costs of current models that degrade the environment and hence the economy. A strong undercurrent is present within the Timor-Leste business community that anticipates a rapidly developing tourism industry. When engaging with businesses, by explaining that a clean environment is a prerequisite to a thriving tourism industry, and one of the main contributors to this is through recycling has proven to be effective thus far. Also, in developing appropriate pricing strategies that reflect market prices, business objectives are then more closely aligned with the societal benefits derived from recycling.



Appendix A - Financial Reports

December 2017

ERS CASH REPORT - DEC 2017						
Date	Category	Description	Receipt #	Entered by	Amount In*	Amount Out*
01/12/17	Bin sales	Bins from Hotel Timor	1712001	Bec	\$210.00	
5/12/17	Recyclables onsell	Aluminium pick-up (64kg @ \$0.75/kg)	12743	Bec	\$48.00	
11/12/17	Collection Service	Hotel Timor Collection	1712006	Bec	\$60.00	
14/12/17	Collection Service	Castaways collection		Bec	\$25.00	
15/12/17	Collection Service	Osteria Collection	1712003	Bec	\$21.00	
15/12/17	Collection Service	Hotel Esplanada collection	1712004	Bec	\$30.00	
18/12/17	Collection Service	Obeiro Collection	1712010	Bec	\$20.00	
18/12/17	Collection Service	Plaza Hotel Collection	1712008	Bec	\$20.00	
19/12/17	Collection Service	Farol Hotel	1712012	Bec	\$20.00	
19/12/17	Collection Service	Mobys Collection		Bec	\$20.00	
1/12/17	Bin sales	3 x 240L bins		Bec		\$ (150.00)
7/12/17	Driver wages	Al as truck driver (1hr)		Bec		\$ 30.00
15/12/17	Printing	Sticker and document printing		Bec		\$ (34.70)
17/12/17	Collection bags	4 x Concrete bags		Bec		\$ 30.00
25/12/17	Driver wages	Amino (longterm truck driver) (1hr)		Bec		\$ 40.00
		TOTALS IN CASH			\$474.00	\$ (84.70)
		BALANCE			\$389.30	

January 2018

ERS CASH REPORT - JAN 2018						
Date	Category	Description	Receipt #	Entered by	Amount In*	Amount Out*
2/1/2018	ERS Wallet	Opening Account Balance	-	Georgia	\$389.30	
4/1/2018	Collection bags	3x Hessian Bulk bags		Georgia		\$ (16.50)
04/01/2018	PPE	6 pairs of gloves for recycling segregation		Georgia		\$ (4.50)
9/1/2018	Collection Service	Moby's (4 pickups)	171203	Hazik	\$40.00	
9/1/2018	Collection Service	Hotel Timor (8 pickups)	1712016	Hazik	\$80.00	
9/1/2018	Driver Wages	Amino (truck driver) (2hrs, inc. 1 hr public holiday)	180101	Hazik		\$ (40.00)
09/01/2018	Printing	Printing invoices		Georgia		\$ (0.35)
10/1/2018	Collection Service	Plaza Hotel Collection (2 pickups)	1712014	Hazik	\$20.00	
10/01/2018	Office supplies	Spray paint for bin signs and drill bit for e-cooler		Georgia		\$ (4.00)
17/01/2018	Collection bags	3x Hessian Bulk Bags		Georgia		\$ (12.00)
18/1/2018	Driver wages	Amino (longterm truck driver) (2hrs)	180118	Hazik		\$ (20.00)
18/01/2018	Collection bags	3x Hessian Bulk Bags		Georgia		\$ (12.00)
25/1/2018	Driver wages	Amino (longterm truck driver) (2hrs)	180122	Hazik		\$ (20.00)
25/01/2018	Printing	Contracts printed		Georgia		\$ (5.25)
		TOTALS IN CASH			\$529.30	\$ (134.60)
		BALANCE			\$394.70	



February 2018

ERS CASH REPORT - FEB 2018						
Date	Category	Description	Receipt #	Entered by	Amount In*	Amount Out*
28/02/2018	ERS Wallet	Opening Account Balance	-	Remi	\$394.70	
08/03/2018	Segregator wages ▾	Andres (Segregator) (1h40)	1802001	Khoen		\$ (2.50)
14/02/2018	Collection bags ▾	4x Concrete Bags	1802002	Remi		\$ (20.00)
14/02/2018	Office supplies ▾	Envelopes/folder/clipboard/receipt books	1802003	Remi		\$ (6.20)
15/02/2018	Driver wages ▾	Amino (longterm truck driver) (2.5hrs)	1802004	Lucy		\$ (75.00)
15/02/2019	Segregator wages ▾	Andres (Segregator) (2hrs)	1802005	Lucy		\$ (3.00)
01/02/2018	Collection Service ▾	Hotel Timor (6 pickups)	1802006	Lucy	\$60.00	
15/02/2018	Collection Service ▾	Moby's (4 pickups)	1802007	Lucy	\$40.00	
17/02/2018	Printing ▾	Printing for contracts & stickers	1802008	Remi		\$ (8.30)
19/02/2018	Collection Service ▾	Plaza Hotel (5 pickups)	1802009	Lucy	\$50.00	
21/02/2018	Land ▾	1st Installment for Land	1802010	Khoen		\$ (412.50)
22/02/2018	Collection Service ▾	Hotel Timor (2 pickups)	1802011	Lucy	\$20.00	
22/02/2018	Collection Service ▾	Bollore (5 pickups)	1802012	Lucy	\$50.00	
22/02/2018	Driver Wages ▾	Amino (truck driver) (2.5hrs)	1802013	Lucy		\$ 25.00
22/02/2018	Segregator Wages ▾	Andre (Segregator) (3hrs)	1802014	Lucy		\$ 4.50
		TOTALS IN CASH			\$614.70	\$ (498.00)
		BALANCE			\$116.70	

Appendix B - Land Contract

CONTRACT FOR LEASE OF LAND / kontratu ba rai

<https://docs.google.com/document/d/1C239IPGtApYDZlrWe6qeXaY1uzD4HslGCNI77H57wro/edit>

