**Nepapple**

The best way to enjoy Nepalese apples year-round

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<th>Name</th>
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<tr>
<td>Laura Hudson</td>
<td>New Zealand</td>
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<td>Mahima Poddar</td>
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<td>Nguyen Linh Chi</td>
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<td>Pratyush Mishra</td>
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1. Executive Summary

Every year, approximately 30% of apples in the Jumla region of Nepal are wasted (Karki, Shrestha & Shrestha, 2015). This is because poor infrastructure has left the region isolated from the rest of the country (Shrestha, 2016). But what if there was a way to preserve these apples - enabling them to be sold later when access is easier and prices are higher? Nepapple leases industrial processing equipment to farmers allowing them to dehydrate excess apples and sell them back to us to be distributed. This enables us to transport the goods safely to marketplaces and supermarkets at a higher price than traditional apples.

Unlike current organisations (such as the UNDP’s efforts in the area), this idea allows farmers to not only make the most of their produce, but provides a gateway to future international markets through our involvement. This is because the scale of investment and production capabilities is unlike any options available in the current market.

Since the development of the Karnali Highway, the Jumla region has become more accessible (Thapa, 2017). However, problems with apple storage persist. Due to the continuing availability of solar power and the additional access to the region, this business is ideally placed to transport equipment and run without traditional electricity access.

For an initial investment of Rs. 400,000 to cover capital costs, profits of Rs. 30,000 are expected after five years.

2. Business Overview

Our business will lease machinery specialising in dehydrating and packaging apples. As a starting point, we are targeting Nepalese farmers in the Jumla region (pictured right), who grows apples but struggle to successfully transport their products before they expire. They can lease our machinery to dehydrate the apples on site and ensure they can sell them for a longer period. The reason for this is if you dehydrate apples they stay good for up to six months. Currently, apple farmers in Jumla can only sell during one season, due to the lifespan of apples and the seasonal nature of fruit (Karki Shrestha & Shrestha, 2015). The customer demand during this time is very high, but the huge supply of apples from Nepal and neighbouring countries cause the price to radically drop. This venture will help Nepalese apple farmers to generate income throughout the year and we can generate an income by leasing this machinery out to the farmers and adding a profit margin on dried apple selling.

Now is the perfect time to start this business because the Nepalese government recently built a new highway through the region, making it more accessible (Thapa, 2017). It is also important to consider whether farmers can buy the machinery themselves. Individual farms cannot pay such a large amount of money for the initial investment, but they are able to pay smaller lease payments throughout the year as they generate more income from the venture.

3. Target Market

Dried apples can be preserved for a long time and are accepted as healthy products, making them appealing to many groups. They are a rich source of vitamin
A, B and C, along with essential minerals, which keeps the bone strong and healthy (Alasalvar, & Shahidi, 2013) making them ideal for children. Dried apples have high dietary fibre content which prevents constipation, making them suitable as snacks for children and adults (especially for office workers and school lunches) (Alasalvar, & Shahidi, 2013). Dried apples can also reduce cholesterol in postmenopausal women (Alasalvar, & Shahidi, 2013). Due to its ability to satisfy hunger for few calories, it is good for weight loss in middle aged people and people who are unable to exercise daily. Due to the vast range of benefits and the location in relation to the apple farms, the target market will be mainly families in the Jumla region and Nepalganj, as this will provide a dynamic customer base.

Trekkers and hikers in Nepal are also potential customers as dried apples are more convenient on hiking trips than fresh ones. Given they are not based primarily in the area, we will not be marketing directly to them.

4. Competition

Given that this business requires farmers to consider the opportunity cost of processing the apples rather than selling them fresh, the apple industry is a viable competitor. Despite what would be increased profits for farmers, there is risk involved, which may make them hesitant to invest in our equipment. Of course, we have a huge point of difference compared to the apple industry. We offer farmers the opportunity to be involved in creating products with higher profit margins and a chance to reinvest apples which would usually got to waste.

Additionally, efforts have already been made to teach farmers how to make homemade dehydrators for their apples. The United Nations Development Programme (UNDP) began an apple processing training course under MEDEP (Micro-Enterprise Development Program (Shrestha, 2016)). This allows farmers to learn how to make and use homemade dehydrators, which results in similar products to what we are offering. Despite this, we can offer farmers an opportunity to become invested in an organisation with constant support, an industrial angle and from that, future expansion opportunities, which would in turn increase profit for farmers.

There are also similar companies which process apples in the international market. As we move towards expansion into the global market in the future, these will become an even more important consideration. Ever Fresh is a US-based company which processes apples with the same process as Nepapple. In the short-term, this will not pose a huge threat, however as we expand, it will be important to stress our support for local communities in Nepal and our strategy to ensure profit is shared between ourselves and the wider communities.

5. Marketing Strategy

Our marketing strategies will reflect the 4 P’s (Product, Price, Place and Promotion) which are all necessary considerations for creating a successful business. Each of these are explored in the following aspects as noted below:

5.1 Product

Given the vast global production of apples, our business will initially work with a specialised focus within the apple industry. Apples are abundant products in the Jumla region that are wasted due to lack of transportation possibilities and few efforts to preserve and process them as a raw material. This makes it an ideal location to start the business. Initially we shall buy four sets of the following equipment, all with shipment included: 15kg processing solar dehydrator from Sun Works (Rs. 66,000), apple peelers
from Holistic Machinery and Chemical Suppliers (Rs. 2000) and plastic sealers from Muncha House Company (Rs. 7000). Farmers as a cooperative can then lease the equipment (worth approximately Rs. 90,000 including maintenance) and dry apples on their farms for Rs 21,000 per year with interest of approximately 12% over the first five years, with use after that being mainly profit for our organisation. After processing, we shall buy dried apples to sell to end customers and retail outlets (i.e. supermarkets). The price and quality of apples will increase since we will provide strong evaluation and monitoring during the dehydration process. This can also provide market potential in selling the dried apples to industrial buyers as a quality raw material to produce good quality finished product (e.g. muesli manufacturers).

5.2 Price

We shall determine our retail price for dehydrated apples basing on cost of production for farmers, our transportation costs and small proportion of profit. From a farmer's perspective, the normal farmgate price of Jumla apples are Rs. 30 per kg with approximately 1 million kgs going to waste across the region (Adhikari, Gurung & Bhattarai, 2013). The yearly leasing costs for the equipment will be approximately Rs. 21,000 (shared between two farms) and when selling back to us, the price per kg of dried apple will be Rs. 150. As a collective, farmers can expect a return of Rs. 1,000 per year on their investment once additional labour costs are considered. If we consider that no profit would be made on the apples without processing, the profit jumps to Rs. 21,000. This is based on 700 kgs of dried apples being processed and sold to us per set of machinery and any additional production will be mostly profit. This increase in price (to Rs. 200 per kg) for selling to consumers will be backed by the quality of the finished products. Automatically, this price will influence the value proposition which will motivate industrial buyers and consumers to buy our dehydrated apples.

5.3 Place

Our business will be centred in Jumla, where we can easily reach farmers and communicate with our buyers in the city, as well as in the industrial region. This place is strategically located in the sense that there is good transport to bigger cities and enables direct communication with farmers which will make the distribution of our products and services easier. We shall be able to respond to demands for dehydrated apples as raw materials from industries, from other local consumers and maintenance requests from farmers concerning the dehydrator machines.

5.4 Promotion

Based on our business, we shall advertise our products to buyers using social media like websites mainly those for agriculture. Over the first five years of growth, we shall expand our advertisement channel from social media to newspapers, radios and TV. Therefore, in our promotion, we shall offer to large industrial buyers of dehydrated apples and individual consumers.

In order to get farmers to invest in our equipment, they will need a specific promotional strategy as many do not have access to the internet or cell phones. This
will mean direct marketing to farmers, going to the farms and outlining the potential returns and expansion opportunities should they choose to invest.

6. SWOT Analysis

**Strengths**
1. Wasted apples can be properly utilized
2. Great potential of solar energy in Jumla region of Nepal
3. Lack of excessive market competition
4. Newly built road in Jumla district of Nepal

**Weaknesses**
1. Long transportation time
2. Prefer fresh apples over dried apples
3. Snowfall could halt business during winter
4. Need to train farmers to use machinery
5. Storage could be difficult

**Opportunities**
1. Drying of other fruits like plum etc
2. Expansion to Mustang where apple production is high like Jumla
3. Selling to trekkers to the Annapurna Base Camp and nearby tracks
4. Large scale exporting

**Threats**
1. Farmers could replicate the process
2. UNDP has started to work on the problem in Jumla
3. Extreme weather conditions could lead to obstruction of Jumla Highway

7. How We Operate

The business will be centred in Jumla itself to handle supplier and farmer queries throughout the year, such as fixing problems and ensuring instalments are paid on time. In the beginning, the business will pay a commission-based salary to one staff member (Rs. 80,000 p/a) centred in Jumla in charge of ensuring communication with suppliers and farmers throughout the year. During peak season, more employees will be hired on a casual basis (a budget of Rs. 80,000 p/a) to deal with the increase in necessary support. In the beginning, the business will reduce costs by only renting office space during the peak season when more staff are required. This will come at a cost of Rs. 20,000 per year, which includes rent/electricity and other amenities. The advertising budget will steadily increase at a rate of 20% p/a with an initial budget of Rs. 10,000, given that the salaried member will oversee this aspect.

8. The Management Team

As a starting point, the majority of the roles in the following diagram will be undertaken by one person throughout the year. However, as business picks up and the busy season comes around, more of these positions will be filled by individuals.

The general manager is the person in charge of the overall running of the company. Under him, there are two persons reporting directly to him – the finance manager and the chief operating officer.

Under the finance manager, there is the procurement officer, the equipment maintenance officer and the supply officer. Under the supply officer, there is the
transport officers or drivers and the delivery personnel, which will initially be outsourced, but will be integrated after five years.

Under the chief operating officer, there will be the processing supervisor (who monitor the use of peeling/decoring machine and solar dehydrator), the packaging supervisor (monitoring the vacuum packaging machines), the assembly officer (who is responsible for overseeing the assembly of the product i.e. dried apples) and the warehouse supervisor (who oversees proper storage, both on the farms and in the city). Each of these roles will involve quality control.

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<tr>
<th>General Manager</th>
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<td>Finance Manager</td>
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<td>Procurement Officer</td>
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<td>Processing Supervisor</td>
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<tr>
<td>Assembly Officer</td>
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<td>Warehouse Supervisor</td>
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### Management Structure at Nepapple

#### 9. Financial Summary

Initial investment will be approximately Rs. 400,000, which will cover start-up costs and immediate expenses for the first year. Once revenue begins to come in, no further capital will be required. The equipment purchased in the third year will be funded using the increase in cash flow from the previous year.

As an initial investment, the business will purchase four sets of machinery for leasing to farms. This is because it is possible for farms close to each other to use the same equipment and jointly share the expenses. Given the large number of farms in the Jumla region, this is both a reasonable number of investment items and allows for greater future investment and expansion. As the expectation is for a sharing of equipment, the leasing costs would be shared between parties making it more economical overall. In order to make equipment leasing economically viable for us, the annual payment from farms will need to be approximately Rs. 21,000. This would mean the cost of machinery would be covered after five years and from that point, it is mainly profit (even considering the added maintenance required).

We will lease all the equipment to farmers and we would be responsible for repairs and maintenance of that equipment. As Jumla farmers do not have sound financial support, we are planning to keep the interest rate of the lease at 12%. Given the additional earnings of between Rs. 1,000 and Rs. 21,000, this is a reasonable interest rate. The ongoing costs of machinery is expected at Rs. 10,000 in the first year, increasing by 10% each year the machinery remains in use. Additionally, the cost of casual staff is directly related to the number of machinery sets the organisation invests in.

The net present value of the business is outlined below, with the projected value being approximately Rs. 30,000 in five years and a healthy 14% internal rate of return for investment for five years. Despite not intending to sell the business after five years, it is useful to note that should this be done, the expected value of the business would be Rs. 430,000.
10. Future Development

Apple harvest in Jumla usually starts from late July to late November. The proposed business plan, if successful, can be replicated in other parts of Nepal with similar apple production. One such part is Mustang. The cost of apples in Mustang is anywhere between Rs. 8 to 20 per kilo. The freight to Pokhara from Mustang fluctuates from Rs. 5 to Rs. 10 per kilo. With this prospect, the business can expand into Mustang and Pokhara after five years, once initial machinery is completely paid off. Furthermore, the demand for dried fruit is soaring in Europe and America with almost all the dried fruits being imported. Expanding into Mustang and Pokhara would produce enough dried apple to not only sustain local demand but cater to the international market. The cost of equipment and development into Mustang would be equal to those contained in this proposal.
11. Bibliography


