

# PürPod100™ Canadian Compostable Coffee Pod Exports to Nepal

Elaine Jeffs

## Introduction of Product

Single serve coffee preparation is dominating modern society, changing the way that this beverage is prepared and consumed. However, with this new technology comes an increasing amount of plastic waste. PürPod100™ is a compostable single serve coffee pod that was developed and made in Canada. The product itself is made up of three main parts; a lid, filter and ring to provide support and allow the pod to be compatible with the very popular Keurig® single serve coffee brewing systems (Davies, 2015). The pod's rings are manufactured by Club Coffee in Toronto, from a blend of coffee chaff, bio-plastics and resin. The resin is produced in Leamington by the company Competitive Green Technologies and its chemistry was developed at University of Guelph (Gemmiti, 2015). When placed in average composting conditions, the PürPod100™ typically takes only five weeks to compost completely (Davies, 2015). These properties make the PürPod100™ an incredibly ecologically friendly option when choosing to brew single cups of coffee.

## Description of Companies

Club Coffee is a rapidly growing custom roasting and processing establishment. This Canadian company is the largest manufacturer and distributor of packaged coffees in the country. Club

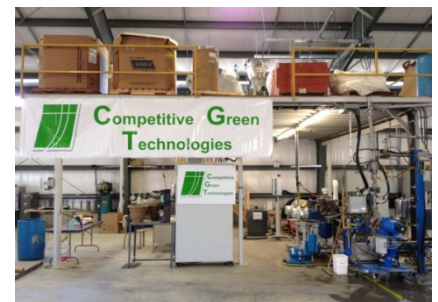
Coffee has more than 500 custom label products, employs 220 Canadians and 40% of their coffee sales are in the United States (Rittz, 2016).

Competitive Green Technologies is a company that develops bio composite resins using agricultural crops and other organic matter and mixing it with post-consumer and post-industrial plastics. In addition to the bio composite resin that they make for PürPod100™, they also



**Figure 1**

<https://cdn.shopify.com/s/files/1/0643/1915/files/logo.png?3257521890169611164>



**Figure 2**

[http://www.competitivegreentechnologies.com/uploads/1/0/4/7/10474088/5737531\\_orig.jpg](http://www.competitivegreentechnologies.com/uploads/1/0/4/7/10474088/5737531_orig.jpg)

develop products from flower pots to car parts (Bali, 2016). In 2014 the Canadian Government announced a plan to invest up to three million dollars into Competitive Green Technologies, as this company is seen to be a global leader using green, sustainable agri-based technologies.(English, 2014) This investment shows the promise that Canadians are willing to support green options.

### **Production involved in PūrPod100™**

Club Coffee produces the PūrPod100™ pods on behalf of customers to be filled with their own coffee who then sell it to consumers. For example, Club Coffee produces the President's Choice® single serve coffees for Loblaw. This coffee is imported from Brazil. PūrPod100™ ships them inside large boxes full of the individually filled cartons that they will sell to consumers through their stores (C. McKillop, personal communication, November 12, 2016). The blend of coffee chaff, bio-plastics and resin can be produced at an extremely low cost because the coffee chaff is considered to be a waste product in the coffee shelling process and is sold in large quantities for very low prices because there is little use for it else ware. (Murray, 2010). If the PūrPod100™ was shipped to be used in Nepal, a variety of companies would have the opportunity to sell their coffee internationally and reach a new market of consumers.

### **Inputs Required**

The PūrPod100™ is made on a production line machine which can range from \$2,500 to \$100,000 in price. (Cate, 2016). Club Coffee already has access to one of these machines, so it would not be an addition expense. Observe Figure 3. Approximately 20 employees are required to operate the production line (C. McKillop, personal communication, November 12, 2016). The blend of coffee chaff, bio-plastics and resin are easily accessible and keeps the cost of producing one PūrPod100™ under 1¢.The coffee is sourced by the company who is selling it and is not a input cost for PūrPod100™ to be responsible for.

### **Licensing**



**Figure 3**  
<http://purpod100.com/media-kit/>

In 2015 the PūrPod100™ successfully received a patent. The pods contain cutting edge, green technology developed by the Canadian licensor in collaboration with the University of Guelph’s Bioproducts Discovery and Development Centre. The extremely innovative PūrPod100™ is the only coffee pod to earn certification from the Biodegradable Products Institute (VanSickle, 2016).

**Benefits to Canada**

The PūrPod100™ would create new jobs for Canadians in many different areas. From researching new biological resins and developing machines for production, to quality control and shipment, the people employed would positively impact Canada’s economy. The University of Guelph, Club Coffee and Competitive Green Technologies would all benefit economically and socially from the success of this product. However, it is clear to see that sometimes it is not about the money, but the bigger picture. Canada is playing a very important role in revolutionizing the way that the world looks at disposable products. In today’s modern society everything from cutlery, diapers, food packaging and safety ware are all thrown away...into the trash. It would be incredible if producing this product lead to the creation of other compostable items to replace their existing disposable counterparts. This would help reduce the size of not only Canada’s ecological footprint but the world’s as well, creating a cleaner planet for everyone to live on.

**Comparing the PūrPod100™ to the Keurig® K-Cup®**

Figure 3		
	PūrPod100™	Keurig ® K-Cup®
Recyclable	No	No
Biodegradable	Yes	No
Compostable	Yes	No
# of Product Sitting in Landfills for more than 5 weeks	0	8.4 billion per year
Cost to produce	<1¢ each	<1¢ each
Developed in Canada	Yes	No

Landfills across Canada have been filling up at an alarming rate. Over the last ten years, the Canadian government has made little effort to manage the large amounts of household waste that is produced annually (Yuan, H., Lu, W., & Jianli Hao, J, 2013). John Sylvan invented the Keurig® K-Cup® in 1997 knowing that they would make him money. However, he did not foresee that less than two decades later, a single serving coffee machine would be in the homes of over 75 million Americans and more than 30 billion packages of his disposable coffee pods would be sold (Hamblin, 2015). ‘Disposable’ is a key factor to the problem that the Keurig® K-Cups® cause, as they cannot be recycled. To withstand the brewing process, coffee pods are made with four different layers of specialized plastic, a filter and topped with plastic foil, making them virtually un-recyclable and not biodegradable. These k-cups are filling up landfills across the world at an alarming rate. To date, the amount of K-Cups that have been trashed in landfills could wrap around the planet 13 times (Hamblin, 2015).



**Figure 4**  
<http://www.singleservecoffee.com/archives/046323.php>

To some, the solution may lie in returning to the full pot brewing systems. However, in many cases they are more wasteful than the single serving systems. Typically the full pot brewing systems require a heating plate which uses energy. Furthermore, the majority of coffee that is made in full pot brewing systems is dumped down the drain, as it cannot be consumed fast enough or by enough people. This is an even greater waste of all of the energy that went into brewing it, as well as all of the energy that went into growing and transporting the coffee that went down the drain.

The clear solution is the PūrPod100™ as it allows the energy input costs to be lower, without the physical waste the goes along with traditional single serve brewing systems. In addition to reducing these previously mentioned negative effects, the PūrPod100™ can promote the practice of composting to people all over the world, regardless if they live rural or urban areas. People can use the compost anywhere from house plants to outdoor gardens. There are even many municipal compost pickups in Canada if the consumer did not want to use their own. Once they begin to compost their coffee pods, hopefully this will spark an interest in composting other items too. The use of compost increases the soil’s Organic Matter content and enhances overall retention of nutrients and water of the soil (Rockwood, Becker, & Ozores-

Hampton, 2012). Not only is the PõrPod100™ an extremely forward thinking, ecofriendly and innovative product for Canadians to enjoy, but also as a potential export for other countries benefit from and strengthen their trading ties with Canada.

## Benefits to Nepal

Nepal is a country located between China and India with a population of 28.51 million people (Jebb, 2016). It is a very mountainous country rich in culture and diversity. In 2014, 34.7% of the GDP was from Agriculture (Government of Nepal Ministry of Agricultural Development Department of Agriculture, 2016). Many of the people of Nepal struggle financially. Most farms are very tiny subsistence farms that grow just enough food to feed themselves, not having any left over to sell. Often the men on the farm need to go overseas for work as the farm income does not provide enough income and weather conditions can make times even tougher (Dahal, 2014). Paddy, maize, millet and wheat are the top four crops grown in Nepal ten years ago (Sharma, 2001). However, today coffee is one of the few crops what can be grown in Nepal with maximum success. Nepalese farmers like to grow coffee as it is more profitable and less challenging to grow than traditional crops. Heavy rain and extreme dry weather do not seem to impact the growth of coffee plants nearly as much as it does for the growth of maize and millet (Rauniyar, 2012).



**Figure 5**

<http://www.coffeenepal.org.np/about.html>

One advantage associated with growing coffee in Nepal is the hills that make growing many other crops difficult, provide the ideal growing location for coffee. The coffee that is grown in Nepal's coffee is considered to be speciality coffee within the international market due to the climate that it is grown in. Greater than 60% of the coffee grown in Nepal is exported to Asia, and Eastern European countries. Coffee intake is projected to grow globally by 3% over the next decade, as it has done over the past 10 years (Rauniyar, 2012). Globalisation and rising incomes, combined with marketing drives, have propelled coffee drinking in countries such as China and India where coffee is not part of traditional cultures. Conveniently these countries are neighbours of Nepal.

Over the past six years there has been turmoil in the country surrounding waste management. A catastrophic amount of garbage is produced creating harsh environments for those who live near their heavily used landfills. Residents of Kathmandu often obstruct waste disposal entrances at Okharpauwa and Sisdol dumping sites. They are concerned about losing their farm land, are disrupted by the heavy traffic flow and liquids from the waste leak from the vehicles and this has made many locals ill (Nirjanasharma, 2013). This became such a big problem, that locals of Okharpauwa threatened to stop garbage trucks if their demands remain unaddressed. Roughly eighty garbage trucks reach the dumping site through the same route every day. If the garbage disposal is interrupted, more than 300 tons of solid waste a day can accumulate into heaps on capital city roads (Burke, 2013). This dispute requires immediate action. The PūrPod100™ would be an ideal solution to their problem. Although few of the local Nepalese people would own a single serve coffee making machine, the idea of replicating this product and using it as a model to creation more compostable items to replace their existing disposable counterparts is exciting. The Nepalese people could solve their waste management dispute, or at the very least make it more tolerable by replacing items that will become trash with items that will become compost. This benefits people working in the waste management industry, the people who live near dumping sites, people who care about the environment and especially the large population of farmers. An abundance of compostable materials would improve the quality of the soil, enriching crops and leaving a better earth for generations to come!

## **Shipment**

Each PūrPod100™ is very light, as when they are filled with coffee they only weigh 14-15 grams (C. McKillop, personal communication, November 12, 2016). The most economical method of shipment found was via courier. From the packaging facility in Toronto, Canada to Kathmandu, Nepal it would cost \$127.76 to ship 66 pods. Therefore it would cost \$1.90 to ship one PūrPod100™ which costs \$0.0090 to produce, containing about \$0.05 of coffee. Kathmandu is the capital of Nepal, making it the ideal place for distribution to hotels and other interested places (McAdams, 2014). The total price for one pod is estimated to be \$1.91 Canadian equivalent to 160.32 Nepalese Rupees. Since investing in this product would be investing in the future of Nepal's environment, it would be ideal if the Nepalese government was interested in

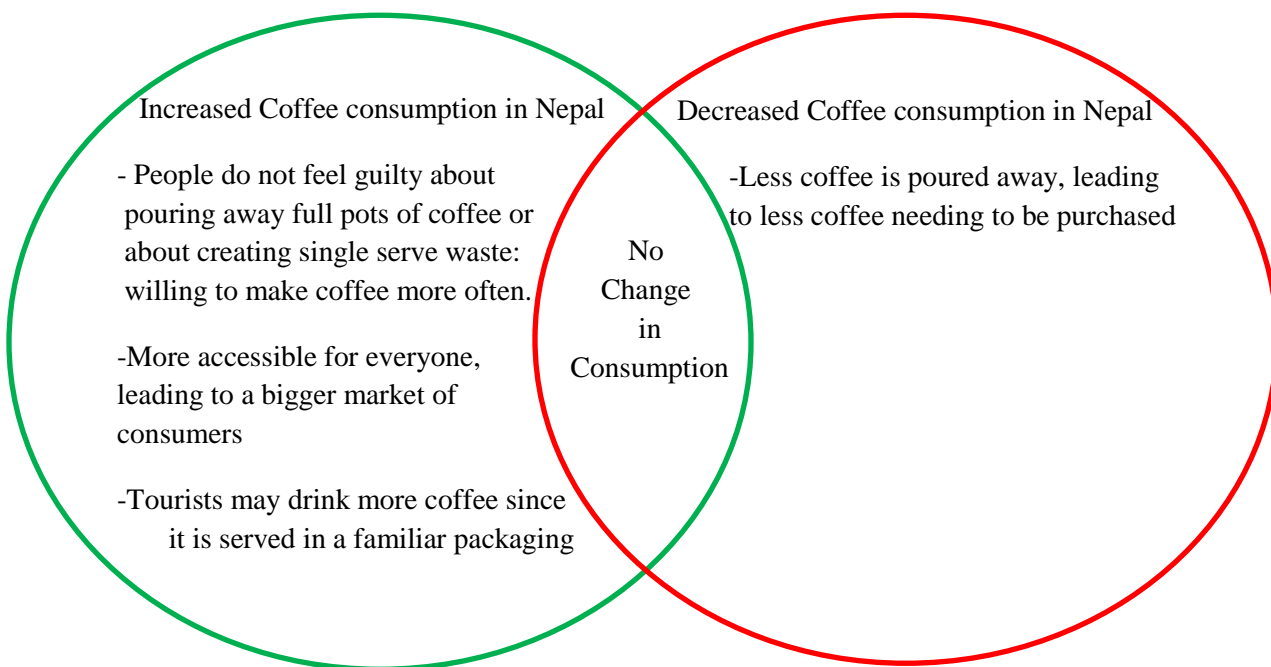
covering some of the cost of shipping, or subsidizing the price of these eco-friendly pods so that they gain popularity.

## Analysis

The backbone of Nepal's Economy is Agriculture and Tourism. The PūrPod100™ would be an ideal export to Nepal as a luxury item for the wealthy and a sold in bulk item for hotels. Since not many people would have access to a single serve coffee maker, it is predicted that product will not have a negative impact on the economy of the existing traditional ways that Nepalese people consume coffee and the people who are involved in the production area of the market. The PūrPod100™ would only affect the market of existing single serve coffee systems. Hotels can replace existing Keurig® K-Cups® to cater to consumer needs while reducing waste.

A negative perspective that can be viewed due to the export of the PūrPod100™ to Nepal is that it may impact the amount of coffee that is consumed. This could increase coffee consumption, decrease coffee consumption or the two opposites could cancel each other out. Refer to Figure 6 below.

Figure 6



It can be predicted that the PŕrPod100™ will improve or at the least, maintain the regular trend of coffee consumption in Nepal. In May of 2016 a research study was conducted called “Trend of Coffee Cultivation and Consumers Behavior on Coffee Consumption in Nepal”. This study concluded that foreign people prefer foreign coffee in comparison to Nepalese coffee and they generally consume three cups per day, while the local Nepalese consumer drinks and average of two cup of coffee per day (Yogendra & Punya, 2016). This study solidifies that the imported coffee will not disrupt coffee consumption or sales in Nepal, as most of the coffee grown in Nepal is exported to a specialty market. Refer to Figure 7, a table included in the study regarding the import and export of coffee in Nepal. A large amount of coffee is already imported to Nepal, so it might as well be coffee that is doing good for the earth.

Import Export quantity of coffee during last five year

Year	Export (Kg)	Import (Kg)
2010/11	279761	31324
2011/12	109441	28907
2012/13	85671	51826
2013/14	66460	62872
2014/15	99846	111040

Figure 7

<http://search.proquest.com/subzero.lib.uoguelph.ca/docview/1809016292/fulltextPDF/D10F69F504B24126PQ/1?accountid=11233>

### Additional counterparts

Located in Henan, China there is a company called Shenqiu ZM Filter Material Co., Ltd. Their total annual revenue is roughly \$20 million, employing 185 people (Verra, 2015). This company produces a product that is a spinoff of a Keurig® K-Cup® reusable coffee filter that does not contain coffee for \$1.95 CAD. When comparing this product to the PŕrPod100™ it has its advantages and disadvantages. It is reusable, so it would eliminate the need for production and disposal of a large number of the original Keurig® K-Cups®. However, it is made out of a low grade plastic and alloy filter. When they are being produced, hundreds of harmful toxins are released, causing damage to the environment and human health. The low quality cups are also likely to break after repeated use needing to be replaced, ending up in landfills and



Figure 8

[https://www.alibaba.com/product-detail/New-Reusable-Single-Serve-K-Cup\\_60302622433/showimage.html](https://www.alibaba.com/product-detail/New-Reusable-Single-Serve-K-Cup_60302622433/showimage.html)



defeating the purpose of 'reusable'. China is also known for forcing labourers to work in unsafe conditions at very low pay, this causes an 'unmoral' tag to be attached to these products when purchased. After reviewing the pros and cons of the two products, the PūrPod100™ is an easy winner.

### **Critical summary and Recommendations**

In order for the export of the PūrPod100™ to be successful, there must be a confirmed market and confirmation that Keurig® machines are present in Nepal. It is very likely that more of these products will be sold if an alternate, cheaper form of shipping can be found, as the price of shipping should not be thirty one times the value of the product. An alternate way of looking at this export idea is setting up a PūrPod100™ factory in Nepal, so that the bean chaff used in the production of Nepal's coffee and the coffee Nepal produces can be a part of PūrPod100™ without having to be shipped overseas. This partnership between Canada and Nepal could allow the two countries to merge their ideas, technology and natural resources to export an environmentally friendly product to countries all over the world.

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