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NetPlus:
Achieving a Net Positive Impact Plastic

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ABSTRACT

Once seen as a miracle material, petroleum-based plastics are now arguably one of the largest sources of pollution on the planet. With 80% of land-based litter ending up in our oceans, ocean plastic is now reported to be on track to outweigh fish by 2050. Conservationists have been able to identify the most harmful form of ocean plastic pollution for marine mammals, turtles, and seabirds worldwide to be discarded fishing gear. Bureo, a company operating between Chile and California in partnership with sustainable outdoor retailer Patagonia, is addressing this issue by transforming this harmful material into high-value products. Through their shared-value business model and life cycle thinking, they have built a network of partnering fishing communities across the coast of Chile committed to return their fishing nets at their end of life in exchange for compensation towards community programs. Through their innovative supply chain and the living product challenge framework, Bureo is setting out to achieve the first plastic with a net positive impact on the environment and people.

KEYWORDS

Circular Economy, Fishing Nets, Life Cycle Assessment, Ocean Plastic Pollution, Recycling

1. INTRODUCTION

In 1907, Leo Baekland developed the first synthetic plastic to launch what became known as the Age of Plastics (American Chemical Society, 1993). Playing an important role in the industrial revolution, synthetic plastics are now today used in nearly everything due to its low cost and ability to be molded quickly and easily. Although this material breakthrough came at a competitive monetary cost, from a life cycle perspective, it has carried tremendous cost on the natural environment.

With the annual production of plastics skyrocketing to more than 311 million tons annually in 2014, only 5% of this material is being recycled correctly while one third of it continues to end up in fragile ecosystems (Jambeck et al., 2015). The most vulnerable of these ecosystems has been found to be the world's oceans, where more than 8 million tons of plastic pollution is entering every year (Ellen Macathur Foundation, 2016).

A group of American surfers that shared a close connection to the ocean environment came across this problem first-hand through their travels to coastal areas around the world. All with engineering backgrounds, the group believed that there was much more that could be done about this problem.

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In 2012 they formed Bureo, a company that set out to address this problem by creating innovative solutions to preventing plastic pollution from entering our oceans.

The group compiled various published research reports that clearly capture the seriousness the problem of plastic pollution has on the oceans where ocean plastic is now on track to outweigh fish by the year 2050 (Ellen Macathur Foundation, 2016). Yet the research also presents how this problem is solvable. Focusing on stopping the pollution at the source and designing plastic products for an end of life solution can allow industry to close the loop on plastic waste to create what is now becoming known as the circular economy (Ellen Macathur Foundation, 2016).In addition, by transforming this plastic into new products an added value can be created, which can generate new employment opportunities while changing people's perception on this material as a 'waste'. This overarching concept is becoming known as the circular economy (Ellen Macathur Foundation, 2016).

A growing number of businesses and non-profits are beginning to work with this concept, where the powerful story of the material is drawing an increasing number of customers to put preference in purchasing products made from recycled plastic sourced from the marine environment. The cleaning products company Method incorporated recycled plastic sourced from beach cleanups in Hawaii into their cleaning product bottles. Dell Computers, one of the world's leading technologies companies released a packaging tray for their laptops made from recycled plastic with a portion of the plastic coming from an ocean-bound source. Europe's largest sportswear manufacturer, Adidas, is also producing shoes, swimsuits and sports jerseys made from recycled ocean plastic (Anderson, 2018).

With a grounded understanding that Bureo would be unable to tackle the entire problem of ocean plastic pollution, the focus was confined to addressing a material that met the following criteria: Represents a significant amount of plastic pollution in the ocean; highly recyclable and consistent in supply; and extremely harmful to the marine environment.

Discarded fishing nets met all of the criteria. Conservationists have been able to identify fishing nets not only represent 10% of the oceans' plastic pollution but also four times more likely to impact marine life through entanglement than all other forms of marine debris combined (Wilcox et al., 2016). In addition, fishing nets are most commonly made from Nylon, a highly recyclable and consistent source of material.

Bureo was able to discover several organizations already actively recycling fishing nets around the world, with the largest single recycler appearing to be Aquafil, a leading Italian manufacturer of Nylon 6 (Aquafil, 2018). Several non-profit organizations have also been leading up fishing net collection programs around the world, such as Net-Works, Healthy Seas, and Ghost Fishing, but little to no activity was taking place in South America. The Zoological Society of London and Interface Carpets has been operating the Net-Works program to partner with low-income fisheries in the Philippines and Cameroon (Net-Works, 2018), and Healthy Seas (2018) and Ghost Fishing have been working with teams of divers in Europe and North America to retrieve discarded fishing gear from the marine environment (Ghost Fishing, 2018). Amongst some of the largest fisheries in the world, Bureo identified Chile as another opportunity for fishing net recovery and recycling that was yet to be addressed.

Now today Bureo has established Chile's first fishing net collection and recycling program known as Net+Positiva. Through their innovative shared-value business model, Bureo has partnered with more than 23 fishing syndicates and fisheries across five regions of Chile. For every kilogram of fishing net Bureo receives, Bureo invest money back into the fishing community, which is focused on addressing other forms of plastic pollution, renewable energy and education for future generations.

Working in partnership with sustainable outdoor retailer Patagonia, Bureo offers a line of skateboards and sunglasses made from the recycled fishing nets sourced through Net+Positiva. In accordance with the circular economy movement, Bureo rewards their customers for returning their products if they ever meet their end of life so Bureo can recycle them again.

Bureo has received global recognition for their Net+Positiva program and achieved financial success on a small-scale where they have been able to collect more than 200,000kg of fishing nets