

REVIEW

## A review of ‘Ending Plastic Waste – Community Actions Around the World’

Hardesty, B.D., Willis, K., Barrett, J., & Wilcox, C. (2023). *Ending plastic waste – Community actions around the world*. Victoria, Australia: CSIRO Publishing

### Review Author

Bruna Iotti Amaral

Wellington Secondary College, Mulgrave, VIC, Australia  
Email: [Bruna.IottiAmaral@education.vic.gov.au](mailto:Bruna.IottiAmaral@education.vic.gov.au)

*Ending Plastic Waste* is a good read in terms of the style and the approach it takes to explain the many different problems faced in removing plastic from the environment by disadvantaged communities across the world in a more dignified and safe manner. It introduces contemporary data about the projected growth of plastic production and consumption by 2040, which is a scary figure. The book values plastic as a commodity and the benefits that the community can have when working together. There are several programmes cited for that purpose, and they are well organised using different headers, which facilitates comparison amongst them. The editors take good care to inspire others to replicate and scale-up some of these programmes in their own cities. Instructions about ‘blue finance’ and how to seek funding from potential investors are provided for potential entrepreneurs.

When writing this book, the editors juggled with a lot of balls at the same time, and the clear focus and overarching theme became the social sphere rather than the environmental angle that I was hoping to read. I review this book through an environmental educator’s lens, and as much as I appreciate the transformative power of those bottom-up programmes to improve livelihoods and help the environment locally and in the short term, I cannot agree with the book’s title. The editors elucidate some success stories of proud ‘waste collecting’ groups to minimise plastic disposal in the environment, but not so much in educating the community to *avoid* the plastic consumption as the best environmental solution in the long term. From an environmental perspective, this book is not discussing how to ‘End Plastic Waste’, as much as it is about ‘Diverting Plastic Waste’ somewhere else or prolonging the life of that waste in another product. Just like the editors revealed, recycling plastic stays at the bottom of the waste hierarchy. Therefore, the best way to end plastic waste would be to focus on programmes that avoid it altogether, and in a true ‘circular economy’ that would mean to design plastic out of the supply chain.

The circular economy is cited several times in relation to different programmes, as it aims to maintain products and their constituent parts at their best levels of efficiency and value for the entirety of their intended lifecycles. However, while polyethylene terephthalate (PET) is the most abundant synthetic polymer globally produced, it is not a great example of feedstock for mechanical recycling as its quality degrades much quicker than aluminium and glass, which can be recycled endless times (Naderi Kalali et al., 2023). What will happen to the new product where the recycled plastic went to at the end of its life? If you use plastic material in a garment or other

product that eventually will be washed, you are not ending plastic waste. The resulting ‘microplastic’ is just going down the drain. Is there a programme overseeing and solving the problem of their end of life? What would happen to those communities if PET was finally banned from production? There are several examples where it would have been interesting to consider the above. For example:

1. **All Women Recycling** – undoubtedly, this is a great success story of woman entrepreneurship, to educate and help other women out of poverty. However, the book should address the stories that aim to end plastic waste and the few products that are made from recovered PET bottles relies on more PET bottles being produced.
2. **Bureo Inc** – a great programme to combat the problem that plastic fish nets cause in the oceans. This programme has been successful in communicating a fishing net recycling programme across the world, which saves the lives of many marine creatures. However, the transformation of plastic into ‘high-value’ items perpetuates the need for the polluting plastic as an input until it can no longer be repurposed. NetPlus<sup>(R)</sup> material has diminished manufacturing demand of virgin plastic, which obeys circular economy principles but again at the bottom of the waste hierarchy. It would have been ideal if plastic would be avoided in the first place.
3. **BV Rio** – introduces blockchain technology to record, manage and track the number of circular credits (similar to carbon offsets) issued to offset the waste footprint of partners from the Circular Action Hub. This programme is using the flawed mechanism of carbon offsets to resolve the plastic issue in a few places while allowing other plastic issues to continue at the same pace elsewhere. Just like carbon offsets, the circular credits become an excuse for avoiding real waste reductions. Therefore, this was not a good example for using blockchain technology in a true circular economy and ending plastic waste.
4. **Ocean Sole** – transforming the disposed plastic flip-flops into artwork. The best environmental example would be if the programme repaired those flip-flops and resold it for its original purpose.
5. **PETCO, Plastic Bank and Plastic Collective** – these are examples of companies that create jobs but perpetuate the creation of PET in the first place, so that it can be recycled. A better illustration would be if they provided recycled plastic feedstock to be employed for construction purposes that have a long-term application, instead of products with short-life spans that will generate new plastic waste. The image on page 83 shows a banner that reads ‘You see trash, I see treasure’ which implies that plastic is a magnificent commodity, but that could not be further from the truth. To end this point, Plastic Collective offers plastic credits based on the same principles of the circular credits mentioned earlier.

In my opinion, the best programmes cited in terms of long-term environmental benefits are

1. **EcoFaxina** – one of their goals is working to restore mangroves in their Brazilian region by working with the government to rehouse disadvantaged communities away from important ecosystem services, where they pollute when consuming plastic waste.
2. **Mamma’s Laef** – producing products that replaced the traditional plastic menstrual, incontinence pads and nappies.
3. **Free Plastic July** – a successful behaviour change campaign that reached different countries and is still active to date, as I used it in my chemistry lesson this year. The behaviour change to one issue has a compounded effect, as people also tend to reduce their food waste. Therefore, a great example to include in this book.

I would recommend this book for humanities and business educators because of the many interesting examples of entrepreneurs creating jobs in the waste sector. Moreover, environmental

educators may find this book useful to instigate critical reflections and see if students can highlight the ‘linear solutions’ to the existing exponential problems. Students could critique the book and establish what is missing. They could evaluate that every time some plastic gets recycled, it means that we are still relying on fossil fuels from which the virgin plastic comes from. If all signatory countries are to meet the Paris Agreement target to keep global temperature up to 1.5°C, then we need to remove the single-use plastics from the equation sooner rather than later. To conclude, the true environmental bottom-up approach would be to showcase those programmes where the community is innovating and changing the design of products using non-polluting materials.

## Reference

Naderi Kalali, E., Lotfian, S., Entezar Shabestari, M., Khayatzaheh, S., Zhao, C., & Yazdani Nezhad, H. (2023). A critical review of the current progress of plastic waste recycling technology in structural materials. *Current Opinion in Green and Sustainable Chemistry*, 40, 100763. DOI: [10.1016/j.cogsc.2023.100763](https://doi.org/10.1016/j.cogsc.2023.100763).

## Author Biography

**Bruna Iotti Amaral** holds a Bachelor of Science (Honours) in Natural Sciences and is currently a Science Teacher at Wellington Secondary College in Melbourne. Brunas is an advocate for environmental conservation and is a member of First Friends of Dandenong Creek. She has accepted responsibility for the precarious state of the planet and pursues an active role in making it less precarious. She is guided by the principles of the Doughnut Economics.