

PLANET PULSE



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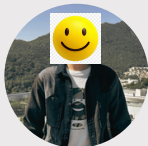
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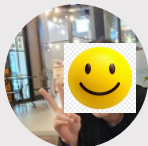
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ABOUT THE AUTHORS



IVAN SUEN

Ivan, a university student, is deeply concerned about the problem of food waste. As a student, Ivan has been directly exposed to the staggering amount of food that goes to waste on campuses, households and the local community. This concern has driven Ivan to explore different reduction strategies that can be implemented in society to minimise the environmental catastrophes associated with food waste, such as landfill burden and greenhouse gas emissions. Through his work at PlanetPulse, he aims to promote an eco-friendly way of food disposal to like-minded young adults to achieve the UN Sustainable Development Goals (SDGs) for the betterment of future generations.



TAESOO LEE

Taesoo, a university student, has a deep concern and passion for unbiodegradable packaging waste. With this deep concern and passion, Taesoo has been keeping a close eye on the environment and the harmful impacts of plastic packaging, such as the UN Sustainable Development Goals (SDGs), realizing the urgency of taking action. Hence, through his work at PlanetPulse, he hopes to encourage readers - including customers and companies - to actively participate in addressing the environmental catastrophe.



MAEKO MATARAGNON

Maeko firmly believes in the power of small steps to achieve significant progress towards larger goals, such as sustainable consumption and production, as outlined by the UN Sustainable Development Goals (SDGs). Growing up in an environmentally challenged world, Maeko discovered her passion for upcycling as a way to make a difference. Through her work at PlanetPulse, she shares to her peers the impact of collective small actions, such as reimagining and repurposing everyday items, whether through purchasing or creating, on generating meaningful impact to a more sustainable future.



OENGUS SWAN

Oengus is a student deeply concerned about the future of our planet, and as an engineer, understands the gravitas of the efficiency of different systems. Oengus believes civilisations around the globe are all systems that can be improved for those living in it, to give them the luxury of comfort and well-being, while maintaining the sustainability of natural resources and the environment. Through PlanetPulse, he aims to communicate to the audience another way in which they can also work towards improving our civilisation through downsizing, a movement that he believes would impact the future in a net positive manner.

INTRODUCTION

PlanetPulse is more than just a magazine. In light of environmental catastrophes such as climate change, waste accumulation, pollution, and land degradation, we came together as a vibrant community of individuals passionate about shifting to a sustainable lifestyle to make a positive impact on our planet.

With our fingers on the pulse of the latest sustainable trends, innovations, and practices, we aim to inspire and empower you to embrace a sustainable lifestyle and work towards meeting the 17 United Nations Sustainable Development Goals (SDGs) by 2030 in hopes of mitigating the environmental catastrophes that we are facing in this day and age.

Within the pages of PlanetPulse, you will discover a wealth of captivating articles and thought-provoking features that not only inform and engage but also highlight the direct links to the SDGs. From exploring the different ways and implications to reduce food waste, the replacement of traditional plastic with biodegradable/edible packaging, promoting sustainable consumerism through upcycling, and examining attitudes towards downsizing; we introduce a wide range of topics that resonate with environmentally conscious individuals like you.

Join us on this incredible journey as we explore the interconnectedness of our actions and the planet, aligning our efforts with the SDGs. Let us amplify our impact and make a difference in the world by adopting a more eco-friendly lifestyle. Welcome to PlanetPulse, where your subscription is for sustainability.

Remember, every choice matters. Together, we can create a sustainable and thriving future for generations to come.

The Problem, Causes and Waste Reduction Strategies

FOOD WASTE

What can be done for the future?

Written By: Suen Ka Wai (Ivan)

Food waste is a global issue that requires immediate attention, officially defined as “food that is fit for consumption but consciously discarded at the retail or consumption phases” (Food Waste, 2022).

The impact of this issue is high in magnitude. In Hong Kong, it is estimated that over 3353 tonnes of food waste are sent to landfills everyday, with this number equivalent to 233 double-decker buses, it has led to severe environmental impacts (Food wasted, 2022). Furthermore, the consequences of food waste do not only concern the high volume of wasted resources; but also the pressure on landfill capacity and greenhouse gas emissions. Therefore, it is vital to explore different waste reduction strategies such as a volume-based tax scheme and the conversion of food waste into value-added products to transition to a more eco-friendly approach to food consumption and disposal; mitigating the environmental consequences caused by food waste.

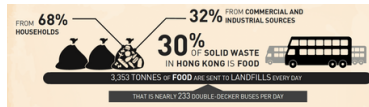


Figure One: Statistics of Food Waste in Hong Kong (Food wasted, 2022)

What are the causes of food waste?

Production Stage:

Producers grow more food than is demanded by the consumers, leading to a surplus of food that is unharvested and discarded.



Figure Two: Production Stage (Sole, 2020)



Figure Three: Distribution Stage (Held, 2020)

Distribution Stage:

Inadequate handling of food (e.g: faulty temperature control) may lead the food to become unsuitable for consumption.

Retail Stage:

Retail stores overstock items to fill up their shelves, leading to an excess of unsold spoiled food past its expiration date.



Figure Four: Retail Stage (Ossowski, 2015)



Figure Five: Consumption Stage (Langley, 2021)

Consumption Stage:

In Hong Kong, over 68% of food waste is from households, as individuals tend to purchase more food than they can consume (Food wasted, 2022).

WASTE REDUCTION STRATEGIES

In the battle against food waste, greenhouse gas emissions and landfill burden loom large. Thus, experts have suggested the implementation of large-scaled waste reduction strategies to minimize the amount of food waste in society.

How minimizing food waste contributes to sustainability?

Minimizing food waste is crucial in promoting sustainability along with achieving the UN Sustainable Development Goals for a more sustainable future.

SDG 2: Reducing Hunger

As the amount of food waste increases, less food is available to feed people in need. A NGO in Hong Kong, Food Grace collects surplus and ready to be discarded fruits and vegetables from wet markets, and distributes it to low-income families who are experiencing food insecurity (Food Recycling, n.d.).



(The 17 goals, n.d.)



(The 17 goals, n.d.)

SDG 12: Responsible Consumption and Production

Decreasing food waste contributes to responsible consumption and production as it promotes the importance of reducing unnecessary generation of waste through making informed choices; such as meal planning to decrease the amount of food consumers purchase.

SDG 13: Climate Action

Food Waste leads to greenhouse gas emissions as waste decomposes without oxygen in landfills, the ideal condition for methane production. Studies have shown methane is 28 times more potent than carbon dioxide, expediting the process of climate change; minimizing food waste would decrease the amount of methane released into the atmosphere (Methane emissions, 2022).



(The 17 goals, n.d.)



(The 17 goals, n.d.)

SDG 15: Life on Land

Currently, Hong Kong's landfills are estimated to be full by the "2030s," creating the need for landfill expansion in rural areas (Landfills, n.d.). However, if less food is wasted, the need for additional land for landfill expansion would decrease, minimizing the risk of destroying ecosystems and biodiversity.

VOLUME BASED TAX SCHEME

To combat food waste, volume-based tax schemes have emerged as an effective solution. By charging individuals based on the amount of food waste they dispose of, this scheme incentivizes

waste reduction behaviors straight from the source. In 2018, a forecast was conducted to model the impacts of implementing a tax of HK\$0.11 per liter of food waste in Hong Kong. The research findings concluded the tangible benefits of adopting a charging scheme which decreases food waste to landfills by 4.58% accompanied by an increase in the recycling rate (Lee et al., 2018). This reduction not only alleviates the pressure on landfills but also contributes to the establishment of a sustainable waste management system.

Hong Kong waste levy to come into effect next April – reports

The new scheme will mean that Hongkongers have to purchase bags in which to dispose of their rubbish or be fined HK\$2,500.



The Hong Kong government will begin charging residents for rubbish disposed in April next year, months later than planned, according to local media reports citing sources.



Figure Six: Hong Kong waste levy (Cheng, 2023)

Recently, the Hong Kong government announced a waste levy scheme which will charge rubbish disposal starting from next April.

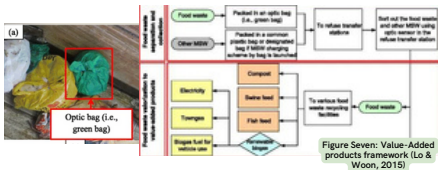
Implications of the Tax Scheme

The imposition of the tax scheme would impact less well-off families to a larger extent due to their limited financial resources. Moreover, as the tax scheme is unable to fully reach the well-off families, it diminishes its effectiveness.

Furthermore, the implementation of a tax scheme discourages impoverished families from purchasing food from discounted clearance sales for close-to-expiration date items. These markets are where meat and vegetables can be purchased for a much cheaper price, and may be the only source of these nutritious foods for these families; further insinuating inequality between the rich and the poor.

CONVERSION INTO VALUE-ADDED PRODUCTS

Another waste reduction strategy proposed by experts is a framework where food waste is converted into “value-added products,” currently adopted by countries such as Sweden and Norway. This system begins with food waste being packed in an optic bag (bag of a specific color) which is delivered to the refuse transfer centers. On the conveyor belt, the optic bags are detected transferring the food waste to a designated container. The food waste is then converted into value-added products such as: swine feed, fish feed, and renewable biogas, through composting, anaerobic respiration, and enzymatic processes (Lo & Woon, 2015).



Implications of the Framework

This framework is effective in aligning with the principles of a circular economy, as not only can it directly minimize the waste sent to landfills, but it can also utilize the waste to produce new products. Experts specify the use of food waste generated biogas fuel for vehicles to reduce the reliance on foreign fossil fuels and greenhouse gas emissions along with landfill burden.

However, the need for specialized infrastructure to employ the optic bag system, such as the optic sensor can be seen as an added cost to the government budget. Moreover, it is unsure if the framework would yield plausible results as there are a lack of forecasts regarding the feasibility of this technology and may lead to a poor financial investment if the framework is determined to be ineffective after it is implemented (Lo & Woon, 2015).

CONCLUSION

Reducing Food Waste is integral in achieving **UN's Sustainable Development Goals** to transition to a more eco-friendly future by eradicating the environmental catastrophes spawned due to food waste.

Implementing tax schemes emerges as the most plausible strategy for combating food waste, with the direct economic incentive encouraging individuals to take charge of their food consumption by being mindful of their food purchases; actively minimizing food waste even before it is even purchased.

This **proactive** approach **eliminates the need for additional efforts** and resources to further convert food waste into other products.

By **focusing on prevention rather than remediation**, a significant impact can be made in **curbing food waste** along with its associated environmental impacts.

Remember, **every bit counts**. By reducing food waste in our own lives, we can make a **significant difference**. So, the next time you are grocery shopping or preparing a meal, think about the choices you make and how you can minimize waste.

Together, let's contribute to a healthier planet!

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SMALL CHANGES CAN MAKE BIG DIFFERENCES

Problems and solutions of traditional plastic packaging

BIODEGRADABLE / EDIBLE PACKAGING

Written by: Taesoo Lee

INTRODUCTION

With the extensive scientific research that has been conducted on environmental health, it is evident our environment has been critically damaged (Greenfield & Weston, 2023). Results have sparked alerts against many scientists,



Figure 1. Packaging wastes on the ocean (Cuff, 2021)

naturally prompting them to find solutions to resolve the imminent environmental crisis confronting humanity. It is undeniable such scientific results triggered the rising environmental concerns among the vast majority of the global population. Along with the rising environmental concerns, one of the issues that scientists have turned their attention to is the environmental damage caused by **unbiodegradable packaging**.

The environmental issues of packaging were prominent, especially during the global lockdowns caused COVID-19 pandemic, due to the surging demands for delivery services. Most packaging was made out of **undegradable plastics** which weren't disposed of with the proper treatment needed, ultimately damaging the environment by releasing toxins, damaging soils, disturbing marine ecosystems, and more. Hence, scientists made varied endeavors to come up with biodegradable plastics that can potentially be replaced with regular plastics as a solution to protect the environment.

WHAT IS BIODEGRADABLE / EDIBLE PACKAGING

In contrast to plastics, **biodegradable** and **edible** packaging refers to a type of packaging made out of materials that is able to naturally decay at a fast rate in its organic state. Biodegradable and edible packaging can be decomposed by microorganisms in aerobic conditions, where the biodegradable polymers are broken down by the enzymes that are secreted by the microorganisms. Microorganisms refer to small living organisms such as, "bacteria, fungi, and algae", and when they decompose the biodegradable and edible packaging it is known to have "minimal impact on the environment".

Biodegradable and edible packaging's **texture, strength, versatility, and appearance** are extremely similar to plastic, where with the naked eye it would be difficult to identify the difference. Plastic, when it decomposes, becomes "microplastic", which refers to plastics that are "less than five millimeters in length". Microplastics are a "potential threat" to the ocean ecosystems, as marine organisms can easily consume the microplastics (Rinkesh, n.d.).

In contrast, biodegradable and edible packaging doesn't release any toxins when it decays or becomes microplastic, and it can be safely consumed by marine organisms therefore not disturbing the ecosystems. To move on, the advantages and the challenges of using biodegradable and edible packaging will be explained in great detail.

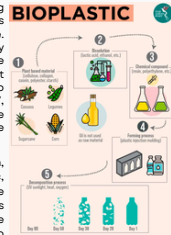


Figure 2. Manufacturing Process of Biodegradable Plastics (Leoni, 2021)

ADVANTAGE OF NEW PACKAGING MATERIALS

Biodegradable packaging and edible packaging don't have to be recycled, potentially saving more social costs. Although a large number of people elucidate the significance of recycling plastics, they neglect the resources that are wasted in the process of recycling.

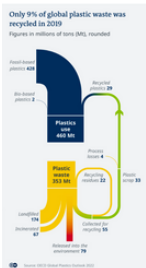


Figure 3. Statistics of Recycled Plastic Packaging Waste (Braun, 2023)

Through recycling, substantial amounts of electricity, water, and chemicals are used which can all cause considerable amounts of damage to the environment (Hopewell et al, 2009).

Moreover, there are realistic difficulties in the amounts of plastics that are being recycled to begin with. Statistics revealed by the OECD (Organisation for Economic Co-operation and Development) suggest **"only 9%** of global plastic waste was recycled in 2019", delineating the limits of recycling (Braun, 2023).



Figure 4. Example of Biodegradable and Edible Packaging Made by Seeds (Ashfaq et al., 2022)

Biodegradable packaging and edible packaging are organic, one of the examples being "gelatin-and papaya-based biodegradable and edible packaging films" produced by researchers. Despite the film not being made out of plastic, it **functions, feels, and looks** exactly like plastic. As the film is plant-based, it means that even if the waste isn't recycled properly and is disposed of irresponsibly, it would still decay naturally in its organic state (Ashfaq et al., 2022).

Although this is not the case for all biodegradable and edible packaging, a vast majority of them can be composed; hence, recycling is not absolutely necessary. Therefore, biodegradable and edible packaging is a valid ideal solution to counter environmental issues, as it can **save immense amounts of social costs and create a circular economy.**

OBSTACLE OF NEW PACKAGING MATERIALS

Despite the advantages of biodegradable and edible packaging, there are real challenges that prevent them from being alternative solutions for using plastic packaging. It is largely due to the issues with the **cost, biodegradability, and functionality.**

If the biodegradable and edible packaging fails to meet even one of the three components, there would be no merit for consumers and firms to switch from plastic packaging to biodegradable and edible packaging. However, just because consumers and firms aren't willing to switch their packaging options, forcefully constraining them from using plastic packages causes too much controversy and backlash. There are many oppositions because sustainable packaging is generally **more expensive** and has **few alternative choices** (Krishna & Sokolova, 2023).



Figure 5. Cost Issue (Canva Images, 2023)

Hence, scientists are left with two options: either appealing to their conscience or making a cost-effective and high-quality packaging that is better than plastics. Nevertheless, appealing to their conscience has serious limitations, as everyone has **different opinions about environmental preservation.** For instance, researchers have created biodegradable and edible packaging made out of bacterial cellulose, whose functionality matches plastic, and its biodegradability functions well (Cheung et al., 2023). However, it fails to recognize the economic aspects, and therefore the realistic aspects of commercializing this packaging are questionable.



Figure 6. Obstacle of Biodegradable and Edible Packaging (Canva Images, 2023)

Therefore, researchers are faced with huge obstacles to be able to successfully compete against plastic packaging and must fulfill the aspects of cost, biodegradability, and functionality.

CONCLUSION

World is currently at a **critical point** where efforts to preserve the environment must be taken. Inventions of biodegradable and edible packaging clearly reflects people's will to resolve the environmental crisis. Despite the obstacles that biodegradable and edible packaging are facing, researchers' countless efforts to overcome the obstacles will certainly produce a favorable outcome. Researchers are actively producing significant progress in creating sustainable packages, therefore the anticipation of replacing plastic packages is not a farfetched idea at all. Hence, not just researchers, the **consumers and firms should also hold social responsibility** and put in efforts to resolve the environmental crisis together. If no collective efforts are made by everyone, the entire world will be bearing the catastrophic social costs in various adverse forms. However, with continuous support from everyone around the world, achieving a **circular economy** in not just packaging industries, but in every field of industries will no longer be just a dream, but a reality for everyone to progress towards a better world.



Figure 6. Sustainability (Canva Images,2023)

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IS IT THE NEW FUTURE?

Driving Sustainable Consumerism
and Business Innovation

UPCYCLING

Written By: Maeko Mataragnon

INTRODUCTION

In a world where our traditional linear model of resource extraction, production, distribution, and disposal is proving to be unsustainable, it is imperative for us to embrace more sustainable and circular paradigms. The need to minimize waste, conserve resources, and reduce our environmental impact has never been more urgent (Seidel, 2018). While initiatives like the 3Rs (reduce, reuse, and recycle) have long been promoted, a new approach is emerging as a transformative force in various industries: upcycling. From fashion and textiles to automotive and electronics, upcycling offers a novel and promising solution for energy and material conservation. This article explores the economic feasibility of upcycling as a sustainable practice, highlighting its cost-saving advantages, revenue generation potential, and the success stories of pioneering companies like Pentatonic and TerraCycle. Despite the barriers and challenges faced in the upcycling market, upcycling presents a compelling case for a more sustainable future.



Figure 1. Upcycled Furniture (Seoul Upcycling Plaza, 2023)



Figure 2. Upcycled Bags and Office Supplies (Jang, 2021)

What sets upcycling apart from traditional recycling?

Upcycling takes a different approach from the conventional collection, breakdown, and reuse of materials in recycling: it repurposes waste materials and transforms them into valuable products without significant degradation. By creatively repurposing these materials, upcycling effectively reduces the demand for new resources and minimizes the environmental impact associated with waste disposal. Upcycling has the potential to retain or even enhance the quality and functionality of the resulting products. This approach not only reduces waste but also offers consumers the opportunity to own one-of-a-kind items with added value.

While upcycling holds tremendous environmental promise, it does face practical challenges. Mass production of upcycled products can be complex due to their inherent uniqueness, making scalability a hurdle for businesses. Additionally, the market for these products may be relatively niche, limiting their commercial viability. Nevertheless, businesses and craft professionals are actively exploring the economic feasibility of the upcycling market. By carefully considering the balance between environmental benefits and economic considerations, they aim to unlock the full potential of upcycled products.

RECYCLING



Waste Material



Sorting, grinding, and melting



Creation of new products with similar or worse quality

UPCYCLING



Waste Material



Creative Process



Greater value with new functionality

Figure 3. Comparison of Upcycling and Recycling Diagram

BENEFITS OF UPCYCLING

The key advantage in upcycling is its potential to generate revenue with minimal costs. Firstly, by repurposing discarded materials, businesses use up less time and effort in sourcing materials. Moreover, since the base materials already exist, less processing, energy and resources are required compared to traditional manufacturing processes. As such, there are cost-saving advantages gained in production (Singh et al. 2019; Hellmann et al. 2007; Zhuo & Levendis, 2014). Secondly, businesses can create new profit opportunities by improving the aesthetic value and material quality during the remanufacturing process, which differentiates products and improves appeal to mainstream customers. (Singh et al. 2019; Hellmann et al. 2007; Zhuo & Levendis, 2014).



Figure 4. Upcycling Benefits (Canva Images, 2023)

Figure 5. Pentatonic Upcycled Product Line (Pentatonic, 2020)

Transforming the World: A Sustainable Success Story

Pentatonic, founded in the UK in 2015, is a leading upcycling company specializing in transforming post-consumer waste materials into stylish furniture, tableware, and accessories. Their innovative closed-loop manufacturing system ensures that all products are fully recyclable, and they even offer a lifetime buy-back guarantee. When customers are finished with their items, they can return them and receive 10 to 15 percent of the product's value. These returned products are then upcycled and reintroduced into the supply chain for new creations. Pentatonic takes great care in selecting waste materials, ensuring no harmful additives are used. Their products are designed for easy assembly without tools, and each component is labeled with a unique identification number that provides details about its origins. Collaborating with renowned consumer brands, Pentatonic also offers bespoke consultation services to help companies develop closed-loop products and services (Kyungeun et al., 2022).



Partner with eco-friendly businesses like Pentatonic and make a sustainable impact as a consumer or business.

BARRIERS OF UPCYCLING

There are several barriers and drawbacks to entering the upcycling market. Primarily, businesses must conduct extensive research in selecting materials, designing the product, and in managing the product after its use (Ahn & Lee, 2018). Therefore, upcycled products often have relatively high prices due to research costs, which can become a high barrier (Singh et al. 2019). Furthermore, there are no appropriate models as everything varies depending on the types of industry and contextual situations. As such, businesses face design-implementation gaps due to lack of guidelines, and it is rare for an upcycling business to breakeven and succeed (Kanzari et al. 2022).

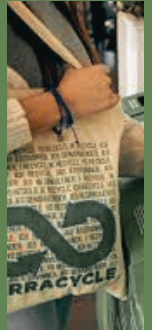


Figure 6. Upcycling Barriers (Canva Images, 2023)

Figure 5. TerraCycle Upcycled Bag (TerraCycle, 2023)

Falling Forward: Embracing Failure as a Step to Success

In 2019, TerraCycle introduced Loop, an innovative platform aimed at reducing waste through reusable packaging. However, the platform encountered several obstacles that contributed to its lack of success. One major challenge was the limited variety of products available, which hindered widespread consumer adoption and accessibility. Additionally, the high costs associated with developing reusable packaging made it difficult to offer competitive prices, deterring some potential customers. The logistics of collecting, cleaning, and refilling the packaging posed another significant hurdle, requiring extensive coordination and infrastructure among multiple stakeholders. Lastly, changing consumer behavior from a disposable mindset proved to be a formidable task. Despite these challenges, TerraCycle persevered and continued to grow. They recognized the importance of product diversification and expanded their range of upcycled consumer goods, including school supplies, home products, bags, and accessories. Through strategic partnerships and global expansion, TerraCycle established itself as a reputable brand in the circular industry, demonstrating resilience and commitment to sustainability.



Mistakes and setbacks are a natural part of going green.

CONCLUSION

In conclusion, upcycling stands as a transformative and economically viable solution that addresses both the environmental and economic challenges we face today. By repurposing materials and minimizing waste generation, upcycling effectively conserves resources and reduces our ecological footprint. While the upcycling market may encounter obstacles, the success stories of companies like Pentatonic demonstrate the economic advantages and market appeal associated with upcycled products. By embracing eco-friendly initiatives and adopting circular principles in our daily lives, we have the power to make a significant and positive impact on the environment while promoting sustainable success. Upcycling represents an innovative and practical approach that aligns with the goals of responsible consumption and production, bringing us closer to achieving a more sustainable and circular economy. Through collective efforts from businesses and consumers, the potential for positive change is within reach. Let us embrace upcycling and pave the way for a brighter, greener future.



Figure 6. Sustainability (Canva,2023)

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How do we preserve our resources?

Downsizing

Attitudes towards Living Small

Written by: Oengus Swan

Especially in Western countries where housing trends in the late 20th century have seen house sizes continually rise, a counteracting 'downsizing' movement has developed (Cohen, 2021). Downsizing is a recent housing trend in which people decide to move into tiny houses of under 400 square feet (2018 INTERNATIONAL RESIDENTIAL CODE (IRC) | ICC DIGITAL CODES, 2018). This is done to decrease a household's environmental impact, first and foremost by minimising resource consumption, for example by reducing energy usage over the total area of the house. This decision also increases the affordability of housing costs for the homeowner (Ford & Gomez-Lainer, 2017). This inevitably contributes towards increasing the sustainability of the planet regarding both the planet's natural resources and humanity's consumer resources. However, many are still opposed to the movement, likely due to an attachment to their comparatively spacious living conditions. So, while the positive effects of downsizing are obvious, only a non-diverse minority of the world's population feels inclined to take action, implying that the movement is not appealing to more general needs and desires (Boeckermann et al., 2019; Preece et al., 2021).



Figure 1: Tiny Caravan (Canva Images, 2023)

How Living Small Contributes to Sustainability

Downsizing & UN Sustainable Development Goals

3 GOOD HEALTH AND WELL-BEING



Ideally, downsizing reduces the required maintenance levels needed for cleanliness and functionality, which saves time and effort that can be focused on hobbies and passions. Furthermore, the expression of individualism is a core value for tiny house owners, especially those who are building or designing their tiny houses. This allows for a sense of comfort and pride in the tiny house for these homeowners despite the limited size, which may be inspired by the people and natural environment around them (Kilman, 2016).

10 REDUCED INEQUALITIES



Worldwide acceptance of smaller housing could do away with the large housing inequality prevalent in the modern world which features slums and mansions existing as close as within the same district. Because of the lower need for energy within a small house, this also means basic services such as water and electricity can be provided at similar, affordable rates.

11 SUSTAINABLE CITIES AND COMMUNITIES



Downsizing, if made mainstream, could provide multiple communities with a financially viable option for housing, while also allowing urban planning to be focused less on living spaces, and more on important structures such as all-weather roads or public spaces and infrastructure like public transportation instead.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Although downsizing reduces useful spare space in a house, this lack of emptiness discourages excessive storage of consumer products that may never be used, leading to more efficient consumer choices. Additionally, the smaller house area means that less energy is required to provide light, heat, and power to appliances etc. (Kilman, 2016; Cohen, 2021) Hence it is clear that downsizing contributes greatly to the goal of responsible consumption and production of natural resources and consumer products.

(The 17 Goals, n.d)

BUT WHAT ABOUT THE SOCIAL MOTIVATIONS?



Motivations for Downsizing

\$\$\$

COST



SIMPLICITY

A B

CONVENIENCE

There are multiple different motivations for downsizing, other than to reduce consumption. Many are for reasons that can be quantified, for example, decreased living costs of the home and distance to places that may be important in the life of the homeowner, or a reduction in the consumption of resources and energy. Other reasons, like freedom of design, or the location of the house - which is much more flexible with a tiny home, as many of them are built from very raw foundations - are much more personal or arbitrary.

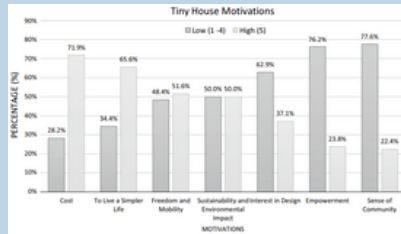


Figure 2: Tiny House Motivations (Boeckermann et al., 2018)

According to a survey conducted in Boeckermann's paper (2018), as seen in Figure 2, financial reasons ranked as the most important reason for homeowners who decided to downsize. However, this survey was conducted in America, a first-world country, and a majority of the surveyed were female and Caucasian. This implies that the data is likely not globally accurate, and that cost is also likely a more motivating factor worldwide when considering that people in third-world countries are by contrast much poorer.

Advertising Downsizing

There is a certain mindset of "bigger is better" when it comes to housing in the mainstream market (Kilman, 2016). Hence, there becomes an added difficulty when trying to promote downsizing to a wide range of audiences globally.

"Living in a smaller home [...] lack of possessions, and creativity in everyday living arrangements, which created an acceptable and relatable story for wider society" (Preece et al., 2021)

In a world where people have a plethora of different biases and lifestyles, a movement which advocates for a sudden and extreme change in their lifestyle must have a general appeal that can be seen as relatable to the intended audience, as touched upon by Preece (2021), shown in the above comment. One appealing positive to living small is that the houses in question tend to be aesthetically diverse, as reported by Ford and Gomez-Lainer (2017), that tiny houses can range from styles such as a cubic micro-house in the urban landscape of Tokyo to a rustic wooden cabin on wheels in the rural Vermont landscape. This presents tiny housing to be versatile enough to fit the needs and desires of the homeowner, instead of just a way to reduce the household's net carbon output or maintenance requirements.

Figure 3: Downsizing (Fidelity, 2023)



WHAT SHOULD I TAKE AWAY FROM THIS?

1

Acknowledge

Understand that relatability and individuality are key motivations for changing an essential feature in a person's life. Sustainability comes as an additional positive.

2

Reconsider

Your house does not have to be tiny. A house that is cost-efficient in terms of energy and money is one that is sustainable. Regardless, smaller housing is versatile enough to have an option that suits your needs, so consider it!

3

Advocate

Downsizing has multiple added benefits for a community and its infrastructure. If living small becomes a consideration of the majority, it provides an opportunity for communities worldwide to become more sustainable, well-balanced, and forward-thinking.

Make the right housing choices!

CONCLUSION

It is evident that downsizing offers numerous benefits that can help increase the sustainability of our daily lives. By embracing smaller living spaces, homeowners can significantly decrease their environmental impact and carbon footprint, increase affordability, and develop a sense of comfort and pride in their homes. Moreover, downsizing has the potential to address housing inequality, promote responsible consumption and production, and redirect urban planning towards essential infrastructure.

The prevailing mindset that "bigger is better" in housing presents a barrier to widespread adoption. To overcome this, it is essential to acknowledge the relatable aspects of downsizing, such as aesthetic diversity and the ability to customize tiny houses to meet individual needs and desires. However, it is not imperative that we take action by moving into tiny houses, but rather by making use of our housing space efficiently as a means of reducing the excess resources that we consume so freely and carelessly.

It is crucial for individuals, policymakers, and society as a whole to recognize the potential of downsizing and take steps towards embracing this transformative approach to housing. Together, we can make a significant impact in reducing the effects of modern housing problems and creating a more sustainable future.



Figure 4: Sustainability (Canva Images, 2023)

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CONCLUSION

Sustainable Living is undeniably of utmost importance. We need to save resources and increase the quality of life for all people, in the present and future. PlanetPulse covers a range of different ways that we, as a part of the global society, can support and help the movement to make the world a more sustainable place: reducing food waste is absolutely essential to preserving resources and preventing further increases in pollution and damages to natural habitats; biodegradable plastics represent the forefront of new technology that can be promoted to halt the increase in the pollution of our skies and seas; upcycling is a new economically viable option for multiple businesses and customers to invest into to improve their waste production and preserve material; downsizing allows households to reduce excessive consumerism and consumption.

Yet, there are drawbacks and tradeoffs to methods aimed at improving the sustainability of different societies. Integrating a volume tax scheme for food waste would establish further inequality through the effects on the rich and poor of the same scheme. Biodegradable plastics may sacrifice the quality of our packaging and hence lead to the wastage of materials and resources such as food. Consumer behaviour is a large obstacle in promoting upcycling and downsizing - it is hard to drive people away from their biases, preferences, and lifestyles.

However, we highly encourage you to contribute to some of these problems, whether it is by decreasing your personal food waste, supporting companies that produce biodegradable plastics, practicing upcycling, or maybe even trying your hand at getting a tiny house in the future. As Robert Swan, a famous polar explorer says, "the greatest threat to our planet is the belief that someone else will save it."

