

Imagine Zero Waste being the *new normal*: A fascinating future without single-use plastics

How the future of a localized, circular and zero waste economy increases human health and well-being, regenerates ecosystems and creates value for all stakeholders.

How will the future be different from today? Imagine a future where all materials and products are treated with value and flow circularly. Our resources stay in the loop and our well-being increases as we transform our relationship with trash. So, how will we make, deliver, use and dispose materials and products in this fascinating future that skips single-use plastics? Let's imagine how the circular and zero waste future of Bandung, a typical city in Indonesia, would be like.

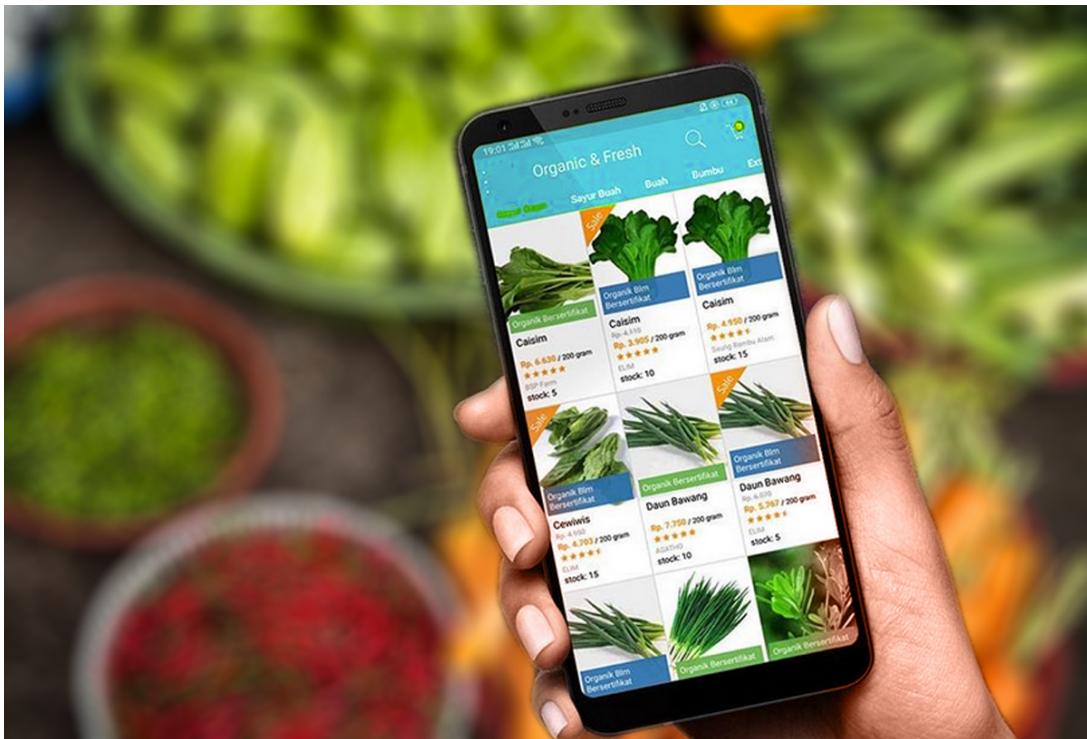


Zero waste is the new normal and highly convenient: Packaging is a service with reusable and standardized food containers, drones pick up empty delivery boxes and refill containers stay in an endless loop.

Walking through Bandung in 2030, inhabitants and tourists see the sun reflecting in the main river of Bandung, Citarum¹. Sights of cluttered plastic and heaps of rubbish along the borders of the river have fully disappeared. The landfills outside of the city have become a green playground for families. Circular consumption has become the standard for both inhabitants and tourist. This green capital of West Java has become a hotspot and global living example of how a zero waste economy looks and feels like. If you were to visit the place, you would most certainly experience the thrilling feeling of something extraordinary: we value keeping our nature pristine and making re-use a routine. Let's explore this *new* world where zero waste is normal.

¹ Get a glimpse at Citarum river today: <https://theaseanpost.com/article/dying-rivers-asean>

Precision farming and artificial intelligence platforms cut energy demand, packaging and food waste

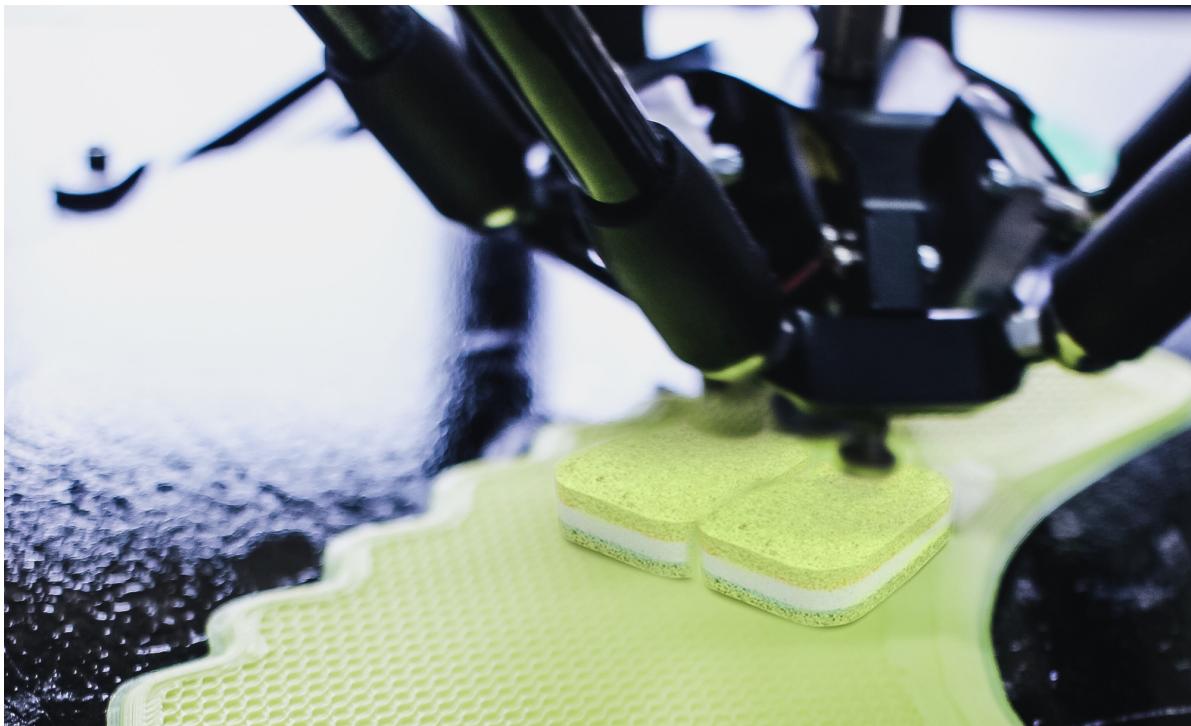


Living in Bandung in 2030 is comfortable, easy and affordable. Youngsters on e-bikes bring around deliveries of fresh produce at the doorstep from the local, mostly organic, farmers surrounding Bandung. Since several years, organic produce has become the “ordinary vegetables” that are affordable for all. How it works? Simple: The farmers offer their soon-to-be ripe produce, consumers order directly on their app and the farmers provide the fresh harvest, sending it in reusable crates to their consumer as quick as the next morning. Not just delivery has become zero waste: farming itself has become truly circular. There is hardly any food loss, organic waste is cycled back into fertilizer, and waste water is used as a source of nutrients. Artificial intelligence combined with precision farming is matching year-round local demand and production, hereby significantly cutting unnecessary energy, packaging and food waste. Even the need for cooling is minimized and single-use packaging along the way is reduced to zero.

Circular and decentralized production has increased significantly

Not just fresh fruits and vegetables are produced in a circular and zero waste manner. More localized production of other fast moving goods form the backbone of Bandung’s zero waste economy. Bandung’s economy is really building on local resources, producing local solutions and products instead of importing. We now see a range of new local industries that have popped up. This economic twist enabled to foster a strong community: People are creating, building and strengthening this new economy together. Using Indonesia’s available resources, these industries make organic, affordable and sustainable products while significantly reducing the need for transport and packaging. As with fresh fruit and vegetable production, smart IT has optimized the logistical flows, packaging and payments – creating a truly convenient shopping experience, simply ordering from home.

Hyper local production – Home making is fully integrated in everyday life



Hyperlocal production: with universal active ingredients people 3D-print their daily demand of household cleaning products and cut packaging and transport costs

Aside from industrial scale production of foods and consumer products, Bandung has seen a large increase in do-it-yourself (DIY) production. Whereas this used to be a niche of enthusiast ‘brewing’ their own personal care products, DIY and home making has become truly integrated in everyday lives. *Hyperlocal production* – as this is now called – is based on a home making processing station, which by now is present in almost every home. This automated, robotized machine can easily process resources like dried ingredients into the right end products. Whether it is food or non-food products - almost everything can be made at home customized and adjusted on your specific needs and preferences. But also sodas, drinks, sauces and other foods are easily made at home from concentrates and dried ingredients. The logistical process drastically reduces CO₂ emissions by simplifying and reducing the weight of shipments. Since only dry products are sent, plastic packaging became redundant.

Autonomous vehicles and drones disrupt the food delivery system



Eating on the go has never been so earth-conscious and convenient: empty to-go food containers get automatically pick-up by drones, sanitized and distributed to local restaurants

You remember the annoying feeling of ordering good quality food, brought to you in these thin, cheap and ugly single-use plastic and Styrofoam containers? Visiting Bandung in 2030, this time certainly belongs to the past. Go-Jek, the Indonesian delivery services of anything, brings your hot meals by drone delivery and autonomous vehicles, in beautifully designed containers made of a lightweight, self-cleaning surface and strong material. It is fast, convenient and cheap. Healthy, hot and freshly prepared food wherever you are within 15 minutes. The delivery systems powered by drones and autonomous vehicles pick up your empty containers when you're done. This zero waste experience is not only a sustainable solution to take-away food, but also BPA, BPS and BPF free – so zero toxicity that negatively affects your body.

Water is not transported anymore, it is harvested everywhere

Bottled water belongs to the past in 2030. All across Bandung, water access has drastically improved and became more equitable. A nation-wide support program has enabled schools, universities and public organizations on their path towards zero waste water access. Circular (rain)water systems are everywhere. Fog catchment for the dry season and purification systems that collect and purify drinking water, without the need of electricity are just one example. At events, water is often provided in soluble packaging, easy to drink without leaving a single trace of waste. Tourists going out in nature can simply purify water on-the-go with smart, portable water filtration systems that are provided for rent and lease by national parks, hotels and tourist hotspots. In Bandung, water consumption has become a fully zero waste experience.

Packaging is a fully circular material flow

If you look at the type of packaging that is used, you see that most reuse packaging has become durable, lightweight and affordable. Using intelligent sensor technology, packaging has become smart and connected through a city-wide network, enabling optimized (reverse)

logistics. While the standard has become reusable packaging, a small portion of packaging is still disposable. This packaging is either compostable or recyclable, and Bandung has enforced a strict Extended Producer Responsibility (EPR) system which has enabled the financially viable collection and recycling of this material – creating truly circular material flows. The production of packaging is fully decoupled from the consumption of finite resources, with the use of locally available secondary resources and organic waste streams.

What happened to realize mainstreaming zero waste lifestyles in 2030?

Cross-sector collaboration at the heart of a zero waste future

A key reason why inhabitants and tourists in Bandung have been able to start living a zero waste lifestyle, is because new innovative services and products were brought on the market at a dazzling speed. Reuse business models, dispenser systems and zero waste take-away services sprouted massively. Growing grant funding and early stage investments in the field led to more solutions entering the market and the growth in zero waste customer base enabled affordability of solutions. Entrepreneurs could succeed in the market for zero waste consumption because of the favorable innovation ecosystem of supporting, local policies, economic incentives and consumer awareness. These innovative businesses led the way and partnered with frontrunning local and international corporate partners to drive these solutions over the tipping point towards the new normal. Aside of venture support, local and global zero waste NGOs played a pivotal role through lobby and awareness campaigns. Leading universities and research institutes forged new technology and material development that further facilitated the transition to a zero waste society. The local government created a level playing field by implementing zero-waste procurement guidelines for private organizations and incentivized entrepreneurs to experiment with new business models that skip single-use plastics. This cross-sector collaboration was the unique ingredient to drive this positive change at a rapid and much needed speed.

In 2030, Bandung has become a global showcase for successful zero waste systems that satisfy consumer demand for convenience, performance, and sustainability. And actually now already, we see that [Zero waste business models all around the world](#) are already showing us today that (part of) this future is real. Discover in our next blog post in more detail which business models are creating and enabling this zero waste future.

Join us in making zero waste the *new normal*.

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