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From plastic litter to high-quality compost

Early shoots for the bioeconomy have sprung up through innovative ideas in completely different businesses. And, at the same time, they raise some legislative initiatives.

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In the early 1990s, Italian chemist and Novamont Chief Executive Catia Bastioli invented Mater-Bi – a biodegradable plastic made from agricultural products. The goal: plastic carrier bags that will turn into compost, so that they can also be used as a bin bag for collecting organic waste. One reason, she explained, was Italy's delicate environment, consisting of lots of mountains and coast and little flat land.

Since the invention, public authorities have stepped in. Cities in northern Italy, such as Novara and Turin, banned non-biodegradable plastic bags.

In 2011, Italy became the first country in Europe to ban them – ordering people either to use biodegradable plastic bags or bring their own carriers. As a result, the number of disposable bags used in supermarkets has halved, and the amount of waste sent to landfills is down by a fifth.

Biological plastic bags themselves won't transform the European economy. But their success is a concrete example of how the bioeconomy can take off – through a combination of invention, public pressure over a

problem, and lawmaking. As policy-makers encourage research projects and set up cooperation networks to try to ignite the bioeconomy, living examples of biotech business successes can serve as models.

‘You cannot start to rule all the bioeconomy from the top level,’ Bastioli told the EU’s Bioeconomy Conference in Dublin in February. ‘We need to see what case studies can teach us.’

The new plastic bags are a particularly good lesson in how to proceed, because they helped do more than just reduce litter. In parallel to the plastic bag rules, Italy also reformed its treatment of compost and waste.

> The biodegradable plastic bag is just one example of what one can do with biopolymers coming from agricultural pr
> The biodegradable plastic bag is just one example of what one can do with biopolymers coming from agricultural products. © Novamont

The biodegradable plastic bag is just one example of what one can do with biopolymers coming from agricultural products. © Novamont A 2006 law ruled that compost has to be collected separately, either using bins or biodegradable bags. Since then, the amount collected has risen from 2 million tonnes to 4.2 million. The composters’ association created a quality mark, and today 78 % of high-quality compost is produced from waste collected by local governments.
To make the biodegradable plastic bags, a network of biorefineries and other industrial facilities related to bioplastics has sprung up across Italy. Total investments are estimated at more than EUR 1 billion (2013-2016) and around 3 000 direct jobs (up to 2016) are expected to be created in the country, according to Novamont’s Bastioli.

‘The real initial seed is not really important for its nature but for what it’s able to create in terms of interconnection and development,’ she says. ‘This is the only way to speed up the growth of the bioeconomy.’

Last March, the European Commission launched a consultation concerning the new European Strategy on Plastic Waste in the Environment. Among other issues, it addresses biodegradable plastics and bio-based plastics.

More info

Novamont

Consultation on the European Strategy on Plastic Waste in the Environment