MAKE BACTERIA WORK FOR US

TEXT | ANDREAS LINDSTRÖM, JOACHIM ÅHLANDER AND LINDA ROSENDAHL NORDIN INFOGRAPHIC | ELIN INGBLOM

THE USE OF CHEMICALS HAS INCREASED BY 3900 PER CENT IN THE LAST HALF-CENTURY. IT IS TIME TO CONSIDER REPLACING THEM WITH BIOTECH SOLUTIONS TO MINIMIZE THREATS TO HUMAN HEALTH, WRITE ANDREAS LINDSTRÖM, JOACHIM ÅHLANDER AND LINDA ROSENDAHL NORDIN IN THIS OPINION.

In 50 years, the use of chemicals in the world increased from ten million to 400 million tonnes. In the last ten years alone, the use of chemicals more than doubled and the Organisation of Economic Development and Co-operation (OECD) predicts an annual continued increase of three per cent to 2050. We know very little about the potential impact these chemicals have when released into the environment. Exposure to potentially dangerous chemicals occurs continuously as they enter airways and water.

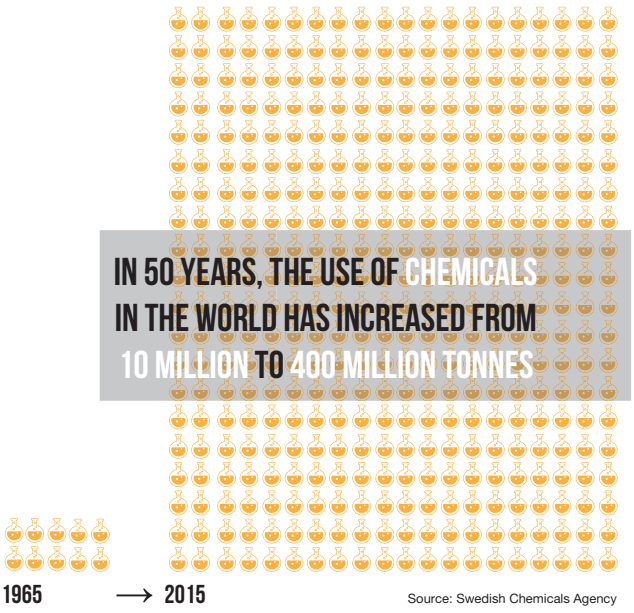
Up to 15 per cent of pollutants reaching the Baltic Sea comes from decentralized private sewage systems. It is unknown how efficient these systems are when treating pollutants, especially household chemicals. Globally, many households do their washing and cleaning in open water sources that often serve as drinking water sources as well.

Cleaning products are bought and used in every corner of the world. The content of many of these products are often unkown to the public. But there is evidence to support that they contain potentially harmful components. Only very recently did some of the world's major retailers announce that they were removing phosphates and chemical toxins from detergents and household cleaners.

In order to stem the flow of chemicals reaching humans and the environment from different house-hold activities, we must use a broad approach. One avenue is to increase access to and efficiency of waste and water treatment systems. This, however, might only help in limiting negative impacts. By rethinking the very products that people use and consume today, and thereby addressing the problem higher up in the supply chain, the effect could be much greater.

Biotechnology is the use of micro-organisms, such as bacteria, micro-fungi and mold, to create substances that humans can benefit from. Humans have used the technique for thousands of years, for example, when producing yeast to get dough to ferment, or fungi and bacteria for cheese and wine.

We already use biotechnology in the pharmaceutical, agricultural and water treatment sectors. In addition, when it comes to products for different household activities, biotechnology offers an ever-increasing range of solutions that can lessen the load of harmful chemicals released into the environment. Furthering the development of duplicating natural systems andprocesses, using enzyme-producing micro-organisms that break down organic waste, could offer a more sustainable and non-polluting alternative to products created by chemical synthesis. Promoting biotech solutions in the development of a new generation of consumer goods aimed at households, such as cleaning and washing products, could dramatically reduce the use of hazardous chemicals, chemical emissions and solvents, benefitting users, producers as well as the environment.



Source: Swedish Chemicals Agency

Biotechnological production is a natural process, relying dominantly on renewable resources rather than fossil fuels, which in turn means lower emissions of greenhouse gases, and less environmental impact.

A greater saturation of more affordable products (not least in developing parts of the world lacking waste and water treatment) generated through biotechnology, could offer sustainable alternatives and competition to established, environmentally unsafe consumer products by market leaders.

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