

YOUNG SCIENCE COMMUNICATORS' COMPETITION

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Food for thought: What's at 'steak'?

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As you slice into that tender steak covered in creamy mushroom sauce and raise it toward your mouth, the last thing on your mind is climate change or deforestation. It is often difficult to think beyond the tantalizing hamburger, glass of smooth red wine, or warm chocolate brownie that seemingly entices you to eat it without much thought or consideration. We live in a world with a food system increasingly dominated by intensification and factory production, where the only piece of farm soil we see is in the picture on the box of 'freerange' eggs in the supermarket.

So where does our food come from and how does its production affect our environment? Well, within South Africa, it may surprise you that only 3% of our soils are considered truly fertile and arable. This is why our largest agricultural sector is livestock farming which uses the remaining non-arable land (69% of our land surface) for extensive grazing. As our economy increases and our pockets get heavier, we tend to buy more meat. For instance, between 2001 and 2004 the average per capita chicken consumption increased from 6 kg to 27 kg.

This may seem positive, yet a closer look at the environmental footprint of that meat production reveals otherwise. A 200 g hamburger requires 1000 to 5000 liters of water to produce – roughly the equivalent of 2 months' worth of showers. Combined, the meat and dairy industries use roughly one third of all the fresh water in the world. What is even tougher to swallow is the fact that animal agriculture produces more of the world's greenhouse gas emissions than all transportation combined.

Compounding this effect on the climate is that increasingly, meat and animal feed is imported from South America where animal agriculture is responsible for 91% of Amazon destruction. This biodiversity loss is not only restricted to land. For every kilogram of fish caught, roughly five kilograms of different marine species are also caught and discarded as by-catch.

But, before any of you think that vegetarianism is the only solution, let us get to the root of the issues behind that healthy looking fruit-salad or wholesome loaf of bread. Each year, around the world, about 10 million hectares of crop land are lost due to soil erosion. In some regions of the world, for each kilogram loaf of bread you eat, 7 kilograms of topsoil are lost. That lost soil contains pesticides and pollutants that disrupt water ecosystems and affect our drinking water. In fruit production, about 0.1% of sprayed pesticide reaches the target pest. The rest is washed away or remains as residue on the fruit. In this case, an apple a day may not keep the doctor away.

By now, some of you may be asking “But how else are we meant to feed the world?”. Reducing food wastage would be a great starting point. In South Africa, as much as a third of food produced is wasted or lost before it even reaches our dinner tables. This is like throwing away a third of your pizza before you even get to taste it. Not only is this emptying our stomachs, but it is also depleting our natural resource base. Given that agriculture uses 62% of the country’s water supply, it is clear that we are not only going to be hungry, but also thirsty if this wastage continues.

Reducing wastage along the food value chain is only one of many ways to create a more sustainable food system. Environmental issues often seem overwhelming, yet the solution can sometimes, quite literally, be a piece of cake, made from sustainably produced ingredients. Next time you are faced with a piece of juicy steak on the end of your fork, take a moment to ask yourself where that meat came from and how its production has affected the environment. Each time we buy a product from the store or take a bite of our dinners, we are casting a vote for or against the destruction of the environment. There is a little food for thought!