

UNIT 5 – Technology and Food

THE FUTURE OF FOOD



In the year 2050, dining at your favorite restaurant will be a different experience from what it is now. After being greeted by your robot waiter and taken to your table, you will take a look at a holographic menu. As you scroll through the options, you'll notice the usual dishes are still there but with a few unusual modifications. For your starter, one option is a delicious Caesar salad containing protein-rich worms, instead of chicken, with crunchy bread made using cricket flour. Next, your android waiter will bring the main course, a burger with lab-grown meat decorated with lettuce freshly selected from an underground farm and juicy tomato that has been genetically modified to contain extra vitamins. Then, if you still have room for dessert, you'll be able to choose from a range of sweet options that have been designed on a computer and printed directly onto the plate. These unconventional dishes may seem bizarre to us now, but in the future, they could help solve a global food crisis.

Over the next 35 years, the world's population is expected to exceed nine billion, meaning two billion hungry mouths more to feed. To satisfy this demand, the amount of food we grow will need to increase by 70 per cent, but with lots of farmland already being used, and billions of inhabitants with bad nutrition habits, this is going to be a major challenge. Today's global food industry is unsustainable, with agriculture responsible for almost a third of all human-caused greenhouse gas emissions. From

the nitrous oxide caused by crop fertilizers to the carbon dioxide generated to transport the food around the world, these gases are trapping heat in the atmosphere and warming the surface. In turn, the changing climate makes it difficult to grow more crops, so scientists will need to do more and more to help.

By genetically modifying the plants we grow, not only can the more vulnerable species be made able to survive difficult environments, but the strongest species that can survive could also be made more nutritious to ensure we all get the vitamins and minerals we need. Although growing fruit and vegetables generates a great deal of greenhouse gas, it is livestock production that is the biggest contributor to global emissions. Actually, producing one 230-gram hamburger generates the same amount of greenhouse gas as driving a passenger car for 16 kilometers. Among these gasses is methane, which is about 25 times more effective at warming the planet than carbon dioxide. As demand for meat grows, so does the list of negative consequences for our planet, so something needs to be done very soon.

Of course, one simple solution to the problem is to eat less meat, but for a mostly carnivorous global population, this idea is unlikely to work. Therefore, tasty alternatives need to be found, and our idea of what we consider to be meat may need to change too. For example, the beef and chicken in your burgers and burritos could soon be substituted for crickets and worms, or perhaps be grown in a lab instead of on a farm. In fact, even traditional farms as we know them are likely to look different in just a few decades. Gone will be the days of farmers having to drive tractors and milk the cows themselves, as autonomous machines are already being implemented to make the industry more efficient.

Once these ecofriendly and sustainable foods have been harvested, we might not recognize the products that we will find in the stores. Instead of packets and cans, your local supermarket will sell ingredients in cartridges that you can load into your 3D printer at home. Then, just by pressing a button, you can sit back and relax while the machine builds a delicious dish, layer by layer, which is sure to impress your dinner guests.

*Adapted from *How it Works – World of Tomorrow*. Fifth Edition. DK Publishing.

Complete the following charts based on the information presented in the text:

Cause	Problem
Irresponsible agricultural practices / livestock	
	Nitrous oxide
Food being transported	

Problem	Solution
	Unconventional dishes that don't affect the environment.
Not many opportunities to have more crops.	
There are species at risk	
	Substitute beef and chicken for crickets or worms. / Grow meat in labs.

The Present	The Future
Diner, a waitress, a paper menu, and a typical burger.	
A tasty dessert made by the chef.	
	Machines doing these jobs autonomously.
You find food in the supermarket.	