

Food and the environment

Feeding the world

Food in crisis

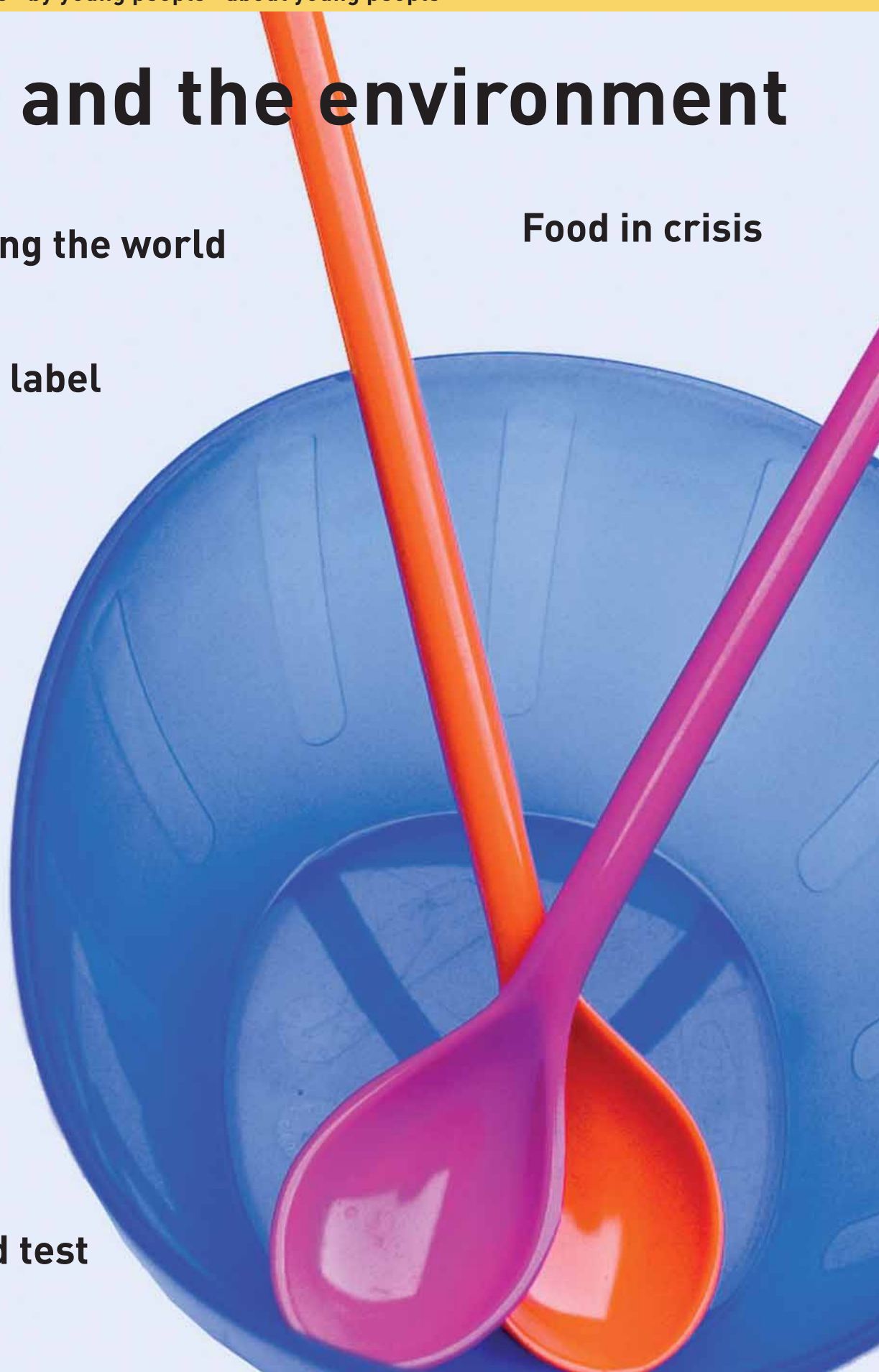
Check the label

**Organic
dilemma**

A fair fight

**Eat less
meat?**

The acid test



TUNZA

the UNEP magazine
for youth. To view current
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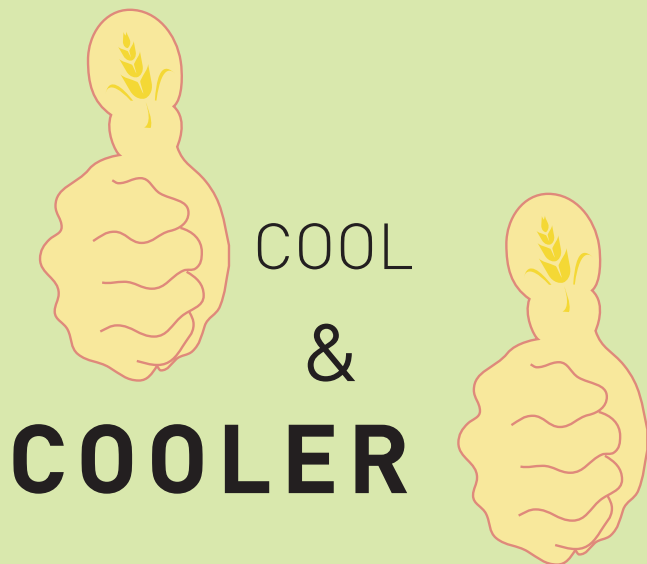
Partners for Youth and the Environment



UNEP and Bayer, the German-based international enterprise involved in health care, crop science and materials science, are working together to strengthen young people's environmental awareness and engage children and youth in environmental issues worldwide.

The partnership agreement, renewed to run through 2010, lays down a basis for UNEP and Bayer to enlarge their longstanding collaboration to bring successful initiatives to countries

around the world and develop new youth programmes. Projects include: TUNZA Magazine, the International Children's Painting Competition on the Environment, the Bayer Young Environmental Envoy in Partnership with UNEP, the UNEP Tunza International Youth/Children's Conference, youth environmental networks in Africa, Asia Pacific, Europe, Latin America, North America and West Asia, the Asia-Pacific Eco-Minds forum, and a photo competition, 'Ecology in Focus', in Eastern Europe.

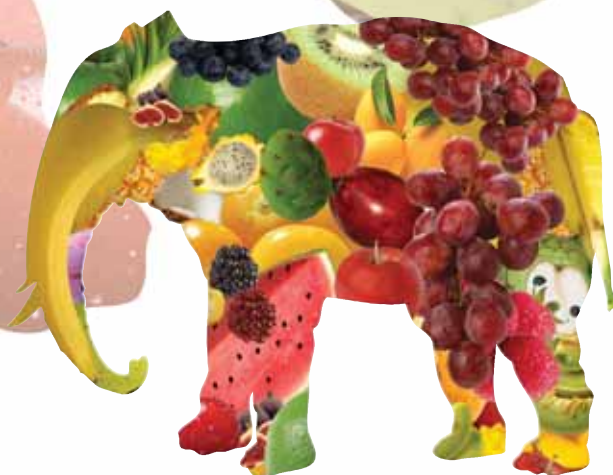


EDITORIAL

There is no more important task for any generation than ensuring that everyone on Earth has enough to eat, and that the planet will continue to be able to feed its growing number of people. It is a task at which humanity so far has both succeeded and failed. The good news is that – despite predictions that population growth would outstrip food supplies – the world has continued to produce enough to feed all its inhabitants. The bad news is that there are as many hungry people as ever, because the Earth's bounty is not distributed anything like fairly.

Every day, 18,000 children under the age of five die from hunger or hunger-related diseases. That toll – in a world that produces enough for everybody – is a scandal on the scale of such historic inequities as the slave trade. And it is getting worse as the present world food crisis takes hold, a crisis driven not by food scarcity as a result of poor harvests, but because of growing demands from the relatively prosperous. This situation has to be addressed as an urgent matter of justice. Feeding the hungry must be the absolute priority, and one of the most effective ways of doing it is to provide support to the world's hundreds of millions of poor farmers who are themselves often short of food, and who can be outstandingly productive in the amount of food they harvest from each hectare of land.

More food will have to be produced as human numbers swell, but it must not be done at the expense of the Earth's ability to feed future generations. Failure to observe this simple principle of sustainability has already made our task much harder. Overfishing has exhausted most of the world's fisheries, overgrazing is one of the main causes of increasing desertification, and overcultivation has degraded soils worldwide. And the felling of forests is disrupting rainfall and water supplies and contributing to climate change which, in turn, poses an ever-growing threat to food supplies. It's going to be a big task to reverse all these trends, but – let us say it again – there really is no more important one.



COOL: Composting vegetable waste. There are loads of ways of doing it, from a simple pit dug in the garden to household worm composting bins (vermicomposters). Unlike landfill, composting releases no methane, a greenhouse gas 30 times more potent than carbon dioxide.

COOLER: Using the compost to grow vegetables and fruit. Compost improves the soil, strengthens roots, speeds plant growth and makes produce more nutritious.

COOL: Crockery and cutlery made from bamboo, which is highly renewable, 100 per cent organic and biodegradable! Bamboo is one of Earth's fastest-growing plants and needs no replanting, fertilizers or pesticides.

COOLER: Banana leaf service – an Indian tradition of serving food on a banana leaf 'thali' plate, which adds not only flavour but medicinal value as well.

COOLEST: An edible plate. Injera, a round, 'pancake' of sourdough bread made of an iron-rich grain called teff, is the basis of Ethiopian cuisine. After the injera is cooked, it's served topped with spicy stews and salads. Diners tear off a piece of the injera and use it to pick up bits of food – making it serve as utensil, plate, and meal!

COOL: Picking up a basic skill. Learning how to sew, knit, garden, fish, forage, build furniture, or even start a fire are all absorbing ways to increase your sustainable lifestyle.

COOLER: Baking bread. As basic skills go, nothing is more satisfying! Soda bread is easy to start with. Mix 450 grams flour, a teaspoon of sugar, a teaspoon of bicarbonate of soda, and a teaspoon of salt. Add 200-300 millilitres of buttermilk, or milk soured with lemon juice, or yogurt. Knead the dough. It should be soft but not sticky. Split into two mounds, cut a cross on top, and bake on parchment paper at 200°C for an hour.

COOLEST: Joining the 'transition town' movement. Transition towns – already in existence in Australia, England, Ireland, New Zealand and Wales – aim to redesign local communities so that they work together to be more self-sufficient and sustainable rather than relying on fossil fuels. Wherever possible, goods are grown, produced and consumed within the community. Workshops and training events build knowledge of traditional skills, and barter is encouraged.

Food in crisis

It's being called the 'silent tsunami'. A world food crisis – unlike anything we have ever experienced before – is rushing towards us. Already millions are facing starvation.



Haitian Children's Home

All the signs of impending disaster are there. Food prices have shot up while grain reserves have plunged to record lows. People who were already hungry have even less to eat. And food riots are breaking out around the globe.

At first sight it all seems familiar. Prices have soared like this three times over the past 60 years, sparking worldwide crises. But this time it is different.

All the previous crises have come about as a result of failing harvests. But this one is coming at a time of record production. The previous ones have been quickly resolved when abundant crops resumed. This one looks like going on for a long time, unless there are dramatic changes in policy.

The World Food Programme – which coined the 'silent tsunami' phrase – calls this 'the new face of hunger'. Its Executive Director, Josette Sheeran, explains: 'There is food on the shelves, but people are priced out of the market.' She goes on: 'This crisis threatens not only the hungry, but also peace and stability.'

While previous crises have been caused primarily by reductions in the supply of food, this one – for the first time – has resulted from growth in demand. In part this is fuelled by the world's success in achieving widespread economic growth, which has caused a rapid increase in demand for meat.

Most people like to eat meat when they can afford to do so, and more and more now can. The number of middle-

class people in developing countries is rising by 50 million a year. But soaring meat-eating mops up world food supplies, because livestock consumes so much grain: it takes 8 or 9 kilos of grain, for example, to produce just 1 kilo of beef.

Meanwhile, demand has also been shooting up in rich countries (where people already eat a lot of meat) as the rapid growth in biofuels has led to cars, as well as cows, competing with hungry people. Just one tank of fuel for a large private vehicle uses enough corn to feed a hungry person for a year.

From 2006 to 2007 the expansion of biofuels more than doubled the world's normal increase in demand for grain. Lester Brown, President of the Earth Policy Institute, estimates that by next

Forgotten heroes

Meet the world's least-sung hero – the small farmer of the developing world. Often ignored by policy makers, he – or more often she, for women usually do the bulk of the work – is the single most important ingredient in any

recipe to tackle hunger. Though among the poorest people on the planet, these small farmers are up to 20 times more productive than big rich ones. They get much more food out of each hectare of ground, partly

because they have no alternative. But given better seed, fertilizer and other support, they could be even more productive. Above all they need security of tenure of their land and help in getting their crops to market. Instead, new technologies and assis-



Biosphoto/Thouvenin Claude/Still Pictures

year biofuels will be using more than a quarter of the US harvest, which traditionally has helped feed more than 100 countries. The price of grain will in future be determined by the fast-rising price of oil, he adds, as the market will cause it to be used for fuel, not food, if it is more profitable to do so.

In truth, the crisis has been brewing for a while now. Even though harvests have generally been quite good, rising demand has meant that the world has not produced as much as it has consumed for seven of the last eight years. We have got by through eating our reserves, with the result that the world's food stocks – our insurance against famine – are now lower than they have ever been. And this – aided by market speculation – has driven prices even higher.

Prices of rice and wheat doubled in a year. This is already putting governments under pressure in the developed world, where the rising cost of grain has relatively little effect on the prices of foods in the shops because so much value has been added in processing. But the effect on the poor in developing countries – who already spend some 80 per cent of their income on food – is devastating.

Already 25 million people in India are thought to have cut down from two meals a day to one, while the calorie intake from an average meal in El Salvador dropped by half in less than two years. Food riots have broken out from Mexico to Mauritania, Indonesia to Yemen.

Robert Zoellick, President of the World Bank, says that the rising prices will undo the past seven years of progress

in fighting poverty. He warns that more than 30 countries are now at risk of social unrest from the crisis, and that at least 100 million people are facing imminent destitution.

The future looks grimmer still. Studies at the University of Minnesota, carried out before the advent of the crisis, reckoned that the number of hungry people in the world would fall from the present 850 million to 625 million by 2025. Now these estimates have been revised, and the hungry are expected to grow to 1.2 billion by then.

And none of this takes into account the effects of climate change, which threatens to disrupt world harvests. If the world is facing such a crisis while production is good, what will it be like when it fails?

tance are usually given to richer farmers, who often use the advantage to push the small ones off their land.

Redirecting attention to these unsung, neglected heroes is vital – they and their families make up a large proportion of the hungry because

they can't produce enough to feed themselves. Helping them tackles hunger directly while at the same time increasing production. And it is usually better for the environment, because they tread more lightly on the planet.



Ron Gilling/Still Pictures

Q & A

Q Many people, particularly in developed countries, have lost any sense of connection with their food, often eating on the run with little sense of ritual or any awareness of the origins of the food. This may contribute to wastefulness and overindulgence. How can they get that sense of connection back?

A Our reasons for eating range from hunger, through the craving for a specific dish for its tastes, colours, textures, or nutritional values to, unfortunately, overindulgence. We often forget the millions who do not have access to basic food, nor remember the negative impacts on our health and well-being – and the environment – of consuming junk food.

Food should not be treated as trash. So order or prepare the right amount – and if you can't finish it, pack what is left to take with you, or store it for later use.

Many of us, in this era of consumerism, are also missing out on the important social skills and life-long lessons gained from eating together, with the opportunities it offers to discuss and share ideas and views, and get to know each other better and learn from one another.

Q Food prices are rising but a culture of wastefulness persists, especially in developed countries. Recent reports revealed that every day, Britain throws away 220,000 loaves of bread, 1.6 million bananas, 550,000 chickens, 5.1 million potatoes, 660,000 eggs, 1.2 million sausages and 1.3 million yoghurts. Will it take a state of emergency for people to realize the value of the food they eat?

A We need to be much more aware, and understand what goes on in the poorest countries of the world and how most of their people struggle minute-by-minute to make it through to tomorrow. It is staggering but true that 2.5 billion people – well over a third of the world population – have to make ends meet on less than \$2 a day, and more than a billion have to try to survive on half of that. The main state of emergency that needs to be declared is in the media, to make this reality well known and help us all act responsibly towards our fellow human beings and the planet.

Q We are often encouraged to eat more fish to support a sustainable lifestyle. But can aquaculture and fisheries have a damaging effect on the environment?

A Seafood is indeed generally very healthy, but fish stocks are stretched to the limit – and sometimes collapse – as a result of overfishing, pollution and loss of breeding grounds. This has devastated fishing and coastal communities alike. The demand for seafood continues to increase, nevertheless, so there has been a rapid expansion of fish farming in closely

managed environments. This can be carried out responsibly and sustainably, but it can cause damage – such as from pollution by uneaten feed and excrement, high in nitrogen and phosphorous. More needs to be done to minimize the impact of aquaculture on the environment, and to ensure its full sustainability.

Q If every member of the human family became a vegetarian, would there be enough food for all? Would it help combat global warming by cutting emissions from livestock?

A Being vegetarian is a personal choice based on such things as principle, religious belief, concern for health, or even just taste. At present there is probably enough food to go round, to satisfy all diets, if only it were distributed fairly. Livestock provides livelihoods to more than 1.3 billion people and makes up about 40 per cent of global agricultural output, but this is the fastest-growing sector in agriculture, and contributes significantly to many environmental problems, including climate change and the degradation of land and water. It needs careful management, and an awareness of the need to use water resources sustainably.

Q Will producing enough food to feed an ever-growing human population necessarily put an intolerable strain on the planet?

A A growing population inevitably puts enormous additional demands on the planet's environment, not just for food but for water, land, shelter, and goods and services. What is most important for our species' survival is a generation of environmentally responsible citizens who can make decisions and choices based on knowledge and understanding of the workings of the natural world, and who want eventually to pass the planet on to the next generation in better shape than they found it.

Q What can young people do to live a more sustainable life in terms of the food they eat?

A There are lots of things young people from both developed and developing countries can do, including learning more about the food we need, buying and eating local produce, leading the sustainability debate and influencing processes linked to food security and lifestyles, and protecting the natural resources on which we depend.

Young people have a special role in stimulating and mobilizing the maximum level of commitment to sustainability from the bottom up, all the more so at a time of climate change and rising food and energy costs.



USEFUL WASTE

CUTTING the carbs

Does your kitchen need to go on a carbon diet? Ovens, fryers and hotplates guzzle fuel. Many traditional cooking methods are kinder to the planet... Check out these low-carbon options from around the world.

Ceviche: This South American dish uses citrus juice to pickle fresh seafood – usually white fish – instead of cooking it. The juice's acidity breaks down the fish protein through a process called denaturation. There are hundreds of versions of ceviche, Peru's national dish, but everyone knows their mother's is best.

Volcanic lava: As long as you have an active volcano handy (Hawaii is a good bet), cooking with molten lava is pretty simple. Wrap some meat in banana leaves, place a shovelful of molten lava on the ground, and carefully place the meat in the centre of it. Pop a second blob of lava on top of the meat, leaving a small opening to avoid steam explosions. Wait 45 minutes. Break the now not-molten lava open with the shovel. Serve hot!

Biltong: In South Africa, lean cuts of venison, beef – and even ostrich – are doused with vinegar, mixed with seasonings, and dried in the sun until they get nice and tough. The result makes a high-energy chewy snack, but also shows up as pizza topping, in salads and in pasta sauce.

Hay box: Back in wartime 1940s, when fuel was short, the United Kingdom reached for boxes filled with hay, shredded newspaper or straw, and put pots of half cooked stew in them. The insulation trapped the heat in the stew, letting it continue to cook itself, slowly.

Hangi oven: Throughout the South Pacific these stone-lined pits (also known as *umus*) are heated with fire. When the stones are hot enough, the fire is extinguished and the food – often an entire pig and lots of veg – is wrapped in leaves and placed in the pit. More rocks are layered on top and the whole thing is covered with earth to prevent heat escaping. In two hours it's all dug up and it's time to feast.

Alex Lin tells TUNZA about putting his computer enthusiasm to work for the planet, starting when he was just 11.

People replace their electronic gadgets frequently, but what happens to the old ones? Some people put them out of sight and forget them, or give them away. Most often, though, old computers or cell-phones end up as e-waste. About 97 per cent are burned, dumped or exported – exposing people to poisons like cadmium, lead and mercury, which can cause brain damage and cancer.

I first heard about this in 2005, and wondered if it was a problem in my hometown of Westerly, Rhode Island, United States of America. My friends and I at Westerly Innovations Network – a student volunteer organization that we set up ourselves – investigated and were horrified to find that more than 4 million computers, televisions and monitors would be discarded by 2011 in our small state alone – and that there was no regulation against dumping e-waste.

So, we first found local recyclers that had signed a stewardship pledge to recycle e-waste without damaging the environment. Then we started a recycling drive that collected nearly 10 tonnes of e-waste, and installed a permanent collection receptacle at our local dump. This keeps an average of around 2.5 tonnes of e-waste out of landfill every month: so far, we've recycled 90 tonnes of it.

We also discovered, with the help of a local company, that refurbishing is realistic, not so difficult, and seven times more efficient than recycling. So far, we've managed to replace the hard drives and RAM on 350 computers, adding cool software, and given them to local students who don't have one of their own.

While action like ours helps, it's not enough. Recycling e-waste should be mandatory, global and sustainable. So as part of our project, we testified to the State Environment Committee, helping to enact a law that forbids the improper disposal of e-waste in Rhode Island.

But the story doesn't end there. The best bit of all is reaching out to kids around the world. We've sent refurbished computers to young people in Sri Lanka affected by the 2004 tsunami, and are getting similar recycling and refurbishing projects going in both Mexico and Cameroon – for a start.

Our message is: if you want to get involved in community service, just find a cause, and really believe that what you're doing is right!

Feeding the world

TUNZA asked three agricultural experts about the future of the world's agriculture and the prospects of feeding a population that is expected to increase to 9 billion by 2050.



Ron Giling/Still Pictures

'Food, whether cultivated as is done by humans and termites, or foraged for as is done by bees, has always been, and will always be, the limiting factor in population growth,' says Dr Tewolde Berhan Gebre Egziabher, Director General of the Environmental Protection Authority of Ethiopia.

'Just as increased foraging can temporarily augment the food supply of a bee colony, so an increased tapping of the biosphere through the temporarily feasible maximization of cultivated land and intensification of farming can temporarily increase agricultural production. There is still more land that could be cultivated, especially in Africa and South America, so there is some technological leeway for intensification. But, in the final analysis, the carrying capacity of the biosphere is limited, and we have to curb the human population to stay within that capacity. The alternative is chaos.'

Dr Egziabher believes that humanity must work with nature through recycling nutrients to grow crops. 'This is the essence of organic agriculture, which fed humanity until the intrusion of industrial agriculture about 70 years ago, and which must, whether we wish it or not, continue to feed humanity into the indefinite future. This is because industrial agriculture is becoming increasingly expensive and untenable in this age of climate change.'

'We humans will always need food, but most of what we eat can be produced locally,' he adds. 'To do this, we must minimize our consumption of animal products when those animals compete with us for food crops. If we eat the crops directly, they amount to nine times or more than the body weight of the animals. It is only when the animals feed on plants that we do not eat or on crop residues that we cannot eat that they constitute a net addition to our food.'

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