

THOUSANDS IF NOT MILLIONS OF POVERTY-STRICKEN PEOPLE ACROSS THE GLOBE ARE DRIVEN TO DESPERATE MEASURES SUCH AS SCAVENGING EVERY GRAIN OF DISCARDED RICE AFTER HARVEST, JUST TO STAY ALIVE. MEANWHILE, LUCKIER INDIVIDUALS WASTE MILLIONS OF TONNES OF FOOD

FIXING FOOD

It's a sign of our times that only recently has the term "food security" become commonplace. While the world's best minds can send robots to Mars and discuss prolonging lifetimes, we have yet to solve that old chestnut — hunger. While those with access to food eat and waste too much of it, millions remain malnourished. **Chris Wright** gathers a world panel of food experts to look at the problems and solutions behind Earth's latest eating disorder

PHOTOS: VII/CLICKPHOTOS (TOP); GETTY IMAGES (BOTTOM)

THE GLOBAL FOOD SYSTEM IS RIFE WITH HORRIBLE STATISTICS. ONE IS THAT 925 MILLION PEOPLE EXPERIENCE HUNGER, AT A TIME WHEN WE AS A PLANET PRODUCE ENOUGH FOOD GLOBALLY FOR ALL OF THEM. ANOTHER STATES THAT JUST UNDER 15 PERCENT OF PEOPLE IN THE DEVELOPING WORLD ARE UNDERNOURISHED. GRAIN PRICES MEANTIME HAVE RISEN 12 PERCENT IN A YEAR. AND FINALLY? UP TO HALF OF THE FOOD CURRENTLY PRODUCED IN THE WORLD ENDS UP WASTED.

Sobering indeed. And these numbers aren't just urban myths, plucked from the air and repeated on the internet. In order, they are sourced from the United Kingdom (UK) Government Office for Science; the Food and Agriculture Organisation of the United Nations; the World Bank; and the UK's Institution of Mechanical Engineers.

"Today, when we produce more food than ever before, more than one in 10 people on Earth are hungry," says Raj Patel, who has worked at or for the World Bank, the World Trade Organisation and the United Nations, and whose book *Stuffed and Starved* is an angry and confronting narrative of the failures of the world food system. As he tells *Discovery Channel Magazine*, at its extremes the world food picture is one of haves and have-nots. "The hunger of 800 million happens at the same time as another historical first — that they are outnumbered by the one billion people on this planet who are overweight." Indeed, figures on global hunger vary between 800 million and a billion, depending on its definition. But you get the point.

At present, it looks set to get worse. Much worse. There are about seven billion

people to feed today — a figure which is expected to top nine billion by 2050. Not only will they all need feeding, but their dietary needs will have changed too. As people become wealthier, especially in high-population nations such as China and India, they in turn seek more protein in their diet, particularly meat — which, as we will explore later, is also not great news for the planet.

"The global food system will experience an unprecedented confluence of pressures over the next 40 years," says the UK government report *The Future of Food and Farming*. And it's not just the demands of a bigger and wealthier population either. "On the production side, competition for land, water and energy will intensify, while the effects of climate change will become increasingly apparent. The need to reduce greenhouse gas emissions and adapt to a changing climate will become imperative."

So how bad is it, and what can we do? To find out, *DCM* sought out experts at some of the world's biggest organisations, from Rome to Washington DC, and from Oxford to San Francisco. But our journey starts several years ago, at the sharp end of food security, in Bangladesh.

DHAKA



A DRAMATIC SPIKE IN RICE PRICES

In September 2008, I journeyed to Dhaka, Bangladesh, to understand the impacts of a sudden spike in food prices that had taken place earlier that year. In the space of six months, minimum rice export prices from India, the biggest exporter to Bangladesh, had risen from US\$425 per tonne to US\$1,000 per tonne.

Bangladesh's population then was 158 million, of whom the section of the population below the poverty line (60 million or so, or two entire populations of Malaysia) were already spending 46 percent of their income on rice, just in order to stay alive.

"If you are looking for a symbol of how higher food prices are now really hurting poorer countries, then Bangladesh is it," David Hernandez, a JP Morgan economist, told me at the time. And then it got worse. On two occasions, Bangladesh couldn't get any rice at all, at any cost. Twice, in April and

May 2008, the nation put out tenders for rice and didn't receive a single response — because by then, many of the world's biggest exporters, including India, Thailand, Vietnam and Cambodia, had panicked and put bans on rice exports to protect stock for their own population.

It led to some bizarre situations. One involved Bangladesh's General Moeen U Ahmed — arguably the man with the real power in the military-backed interim government of the time — addressing a press conference at the Dhaka Radisson, urging people to eat more potatoes. He

even came up with some handy recipes.

Bangladesh got by, but frankly, it was lucky. The country was saved by a bumper *boro* rice harvest, the most important of the year, alongside a last-gasp deal to import 500,000 tonnes of rice from India. Then, prices started falling again, as the global financial crisis kicked in, rice exporters lifted their bans, and Bangladesh stepped back from the brink.

But what if the nation had been hit by one of its frequent, devastating cyclones and floods, wrecking its harvest? We could have seen

genuine starvation, and everything that comes with it. Social unrest, violence, even war. "We were lucky," the then finance minister Dr Mirza Azizul Islam told me in Dhaka. "But that does not fully address the pricing problem."

It is useful to understand this, because it explains some of the intricate dangers around food security. It is all well and good that we have the technology to produce enough calories for everyone in the world. But if the supply is detached from the demand, that is where the real dangers for populations lie.



FOOD SECURITY

While people have starved and fought for food since the dawn of mankind, the term "food security" only came into being alongside the World Food Conference of 1974, itself formed at a time when food supply was a hot topic for several impoverished nations. Back then, the World Food Summit defined food security as the "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices." This definition has since been revised and refined.

RICE, IMPORTED FROM VIETNAM, IS UNLOADED AT ONE OF MANILA'S PORTS. THE PHILIPPINES DOES NOT GROW ENOUGH RICE TO FEED ITS PEOPLE AND MUST IMPORT THE COMMODITY, TO BE SOLD AT SUBSIDISED PRICES

PHOTO: VII/CLICK PHOTOS

ROME



WHERE THERE'S A WILL, THERE'S A WAY

Back in the present day, we start our search for answers in Rome, Italy, where the Food and Agriculture Organisation's (FAO's) arm of the United Nations (UN) is based. Here, we speak with Dr Kostas Stamoulis, the director of the organisation's agricultural development economics division. The first point he makes relates to the situation that hit Bangladesh: price volatility.

"Since 2007—2008, we have seen a number of price spikes, followed by declines," he says. "This volatility doesn't help. The prospects for food security deteriorate when prices are volatile." High prices are obviously worst for the poorest consumers. "If you already spend 60 percent of your income on food, and the price of food spikes, you have very little room. Whether people go hungry or cut out other kinds of expenditure — health, education — it's bad news."

It is especially bad news, because it is also stalling other progress. The FAO reckons that the number of undernourished people in the world defined by calorific intake, and certainly the percentage of the world population in hunger, had been falling steadily until 2007 — before the improvements suddenly reversed. This can only be due to the sudden appearance of the price spikes,

and of the global financial crisis. If these can be managed, the UN believes that the Millennium Development Goal of halving the percentage of people suffering from chronic hunger by 2015 is still possible.

Naturally, Stamoulis says, the picture varies from one place to another. "What are the root causes of people going hungry? They could be low or uneven economic growth, lack of a social safety net, political upheaval, or conflict. Some countries have managed to make significant progress," he notes, "While others have been going backwards."

There are examples in both camps. Ghana has been able to reduce poverty and hunger substantially, he says, while both Mozambique and (in the time since our visit) Bangladesh have made progress. On the negative side, a great deal of sub-Saharan Africa remains in a very difficult state.

"Unfortunately there are complex factors contributing to that: including political instability, civil strife, and the very low productivity of agricultural resources. The international community should focus its energies on that part of the world," says Stamoulis.

What can help the least developed countries most? "Agricultural development is key to reducing hunger and extreme poverty," he says. "It's not just because agriculture produces food. Agriculture creates income for very poor people — 75 percent of the people who have the potential to be hungry, or already are, are in rural areas," he states. Consequently, UN FAO publications on hunger tend to start with a focus on investment in agriculture.

"THE WORLD HAS THE POTENTIAL TO FEED EVERYBODY, NOT JUST 80 PERCENT AND HAVE 20 PERCENT HUNGRY. WHETHER WE DO IT DEPENDS ON WHAT WE DO TODAY"

One theme that appears repeatedly in interviews is that overpopulation, which might appear at first glance to be the core of the problem, is not actually what worries scientists most about food stocks.

"Our long-term projections, and they're the gold standard for the world, show that the world is perfectly able to feed 9.2 billion people in 2050," says Stamoulis. "Population growth in itself is not the issue," he stresses. "The issue is population growth not being matched with appropriate growth that would provide people with income to access food." So where governments fail, food systems will fail too.



DRIVEN FROM THEIR HOMES BY CONFLICT, REFUGEES FIGHT FOR FOOD IN A TEMPORARY CAMP IN JALALA, PAKISTAN

A TIMELINE OF WATER AND MODERN CONFLICT

DURING THE **FIRST ARAB-ISRAELI WAR**, ARAB FORCES CUT OFF WEST JERUSALEM'S WATER SUPPLY AS A **MILITARY TACTIC**. SUPPLIES OF OTHER STAPLES, SUCH AS FOOD, FUEL AND AMMUNITION, WERE ALSO AFFECTED

IN AN ACT OF WATER TERRORISM, A GERMAN BIOLOGIST THREATENED TO CONTAMINATE LOCAL WATER SUPPLIES WITH **ANTHRAX AND BOTULINUM TOXIN**, UNLESS HE WAS PAID A RANSOM OF US\$8.5 MILLION



WHILST **BESIEGING THE CITY OF BEIRUT**, IN LEBANON, ISRAEL CUT OFF WATER AND ELECTRICITY SUPPLIES TO THE CITY. ISRAELI FORCES WERE ALSO ORDERED TO STOP FOOD FROM REACHING THE POPULATION

FARMERS FROM HEBEI AND HENAN PROVINCES IN CHINA BATTLED EACH OTHER OVER LIMITED WATER RESOURCES IN THE AREA. ACCORDING TO SOME REPORTS, AFTER EXCHANGING **MORTAR FIRE**, NEARLY 100 VILLAGERS WERE INJURED



KYRGYZSTAN CUT OFF WATER TO ITS NEIGHBOUR, **KAZAKHSTAN**, UNTIL IT DELIVERED **COAL**. IN THE SAME YEAR, UZBEKISTAN HALTED THE SUPPLY OF WATER TO KAZAKHSTAN DUE TO **NON-PAYMENT OF DEBT**



1948

1973

1982

1999

2000

PRICES IN ACTION

In *Stuffed and Starved*, Raj Patel gives a real example of how food prices vary from the farm gate to the consumer — and who makes the money along the way. He tells the story of a family in Uganda: “Lawrence and his family live in an area well suited to coffee — it’s high-altitude, hilly terrain. This means that their land is unsuited to anything else. The choice that faces them is this: grow coffee or leave. With little else to go to, they grow coffee.” The family sells to a local middleman at 14 cents per kilogram, who sells it to a mill for 19 cents. The mill processes it for an additional five cents per kilogram. It is bagged and, for two cents per kilo in freight, sent to Kampala, by which time the per-kilo price is 26 cents. But by the time it lands in West London, where Nestlé has a processing facility, it will cost US\$1.64 a kilogram. “Already, at the gates of the Nescafé factory, the cost per bag is well over 10 times what the Kafuluzis or the Seguyas (the farming families) received for it.”

“But here comes the big jump. By the time the coffee rolls out of the other side, the price is US\$26.40 per kilo, nearly 200 times the cost of a kilogram in Uganda.” By virtue of their size, big conglomerates can dictate the terms of supply to growers, millers, exporters and importers, Patel claims. “Each is being squeezed dry. If the coffee industry in Uganda goes belly up, that’s okay. Vietnam has been brought into the world market by the World Bank, and is turning out bags of coffee cheaper than anyone else. So wherever coffee is grown, farmers are struggling, pitted against one another across vast distances by the international market in coffee — with few if any choices about the future.”



WASHINGTON DC



WHY ARE 870 MILLION PEOPLE STARVING?

Next stop is Washington DC, in the United States, to speak to José Cuesta, a senior economist for poverty reduction and equity at the World Bank. We ask Cuesta, just how bad is the situation around food security? “We are deeply concerned. We’ve been saying that for a number of years now.”

One of the most important publications that the World Bank puts out is the *Food Price Watch* report, which is published quarterly. It shows that in July 2012, the world witnessed record peaks reminiscent of 2008. Although prices had fallen a little by October, grains were up 12 percent, and maize by 17 percent, in the space of one year. In addition, the World Bank also reminded us that child malnutrition accounts for more than a third of deaths of children under five years of age.

What can be done? “We basically divide into two types of interventions, short-term and long-term,” says Cuesta. “In the short term, whenever there is a crisis, you want to

use your safety net to mitigate the problem and the suffering,” he says. “We are promoting countries that have safety nets, to strengthen them. And for those that don’t, to develop one. We understand that a crisis is not the best time to start a safety net — it’s something we need to do beforehand,” he notes.

Longer-term, the World Bank, funded by the world’s governments with the aim of alleviating poverty, tries to improve food production, through enhancing techniques for agriculture, for example. Like Stamoulis, he too notes a problem.

“There is also an important issue of distribution here. The world produces enough food to feed everyone. And still we have 870 million people starving.” The golden question, then, is why?

“Logistics is one factor, political economy issues is another,” says Cuesta. “Lack of capacity, poverty, the selection of the wrong policies, war, natural disasters. It is a combination of things. We cannot prevent natural disasters, but we can prevent wrong policies. We do not want to see panic policies in the face of price increases, for example.” Panic policies such as, say, the rice hoarding policies that nearly beset Bangladesh.

While Cuesta may sound troubled, he remains optimistic. “The world has already shown we can face these kinds of challenges in the 1960s and 1970s. I think technological change could put us in a situation, by 2050, of producing enough food to feed the population,” he predicts. “This distribution issue, rather than the population issue, is the key challenge,” he argues.

Just days before our interview with Cuesta, a study by the UK’s Institution of Mechanical Engineers (IMEchE) estimated that between 30 and 50 percent of all food produced on the planet, which equates to 1.2 to two billion tonnes, gets wasted. Or as Dr Tim Fox, head of energy and environment at IMechE, puts it, “lost before reaching a human stomach.”

Food wastage crops up in all *DCM*’s interviews: most experts, including Stamoulis and Cuesta, believe the true figure is more like 30 percent — either due to post-harvest losses in the places where the food is grown, or at the back of fridges in supermarkets and restaurants in the West. “It is paradoxical,” says Cuesta, “that we have 900 million people hungry — yet we are wasting 30 to 50 percent of our food.”



WOMEN SIFT THROUGH GRAINS OF RICE, WHICH WILL BE STORED AT THE INTERNATIONAL RICE RESEARCH INSTITUTE IN THE PHILIPPINES. THE MOVE AIMS TO ENSURE THAT ALL SPECIES AND HYBRIDS OF RICE WILL BE AVAILABLE IN CASE OF CROP FAILURE ANYWHERE ON EARTH

A TIMELINE OF WATER AND MODERN CONFLICT

WORKERS AT THE CELLATEX CHEMICAL PLANT IN FRANCE DUMPED 5,000 LITRES OF SULFURIC ACID INTO THE MEUSE RIVER WHEN THEY WERE DENIED BENEFITS



2000

FOR TWO HOURS, HUMANS AND MONKEYS CLASHED IN A DROUGHT-STRIKEN AREA OF KENYA. THE FIGHT BROKE OUT AFTER WATER TANKERS BROUGHT SUPPLIES AND WERE BESIEGED BY THE THIRSTY, STONE-THROWING ANIMALS. EIGHT APES DIED AND 10 VILLAGERS WERE WOUNDED

2000

A NON-FICTION BOOK WAS RELEASED ENTITLED *BLUE GOLD: THE FIGHT TO STOP THE CORPORATE THEFT OF THE WORLD'S WATER*, POPULARISING THE PHRASE “BLUE GOLD” IN RELATION TO WATER



2002

TWO MEXICAN FARMERS, AGED 70 AND 85, HAD ARGUED FOR MANY YEARS OVER WATER RIGHTS. IN MARCH, THEY SETTLED MATTERS WITH AN OLD-FASHIONED DUEL — IN WHICH THEY SHOT EACH OTHER DEAD



2004

THE UNITED STATES RELEASED A CLASSIFIED DOCUMENT NAMING “STRATEGICALLY IMPORTANT WATER BASINS” THAT COULD SPARK FUTURE CONFLICTS AS NEIGHBOURING COUNTRIES BATTLE OVER THEIR RESOURCES. THEY INCLUDED THE NILE, WHICH RUNS THROUGH 10 AFRICAN COUNTRIES; THE TIGRIS-EUPHRATES, WHICH IS SHARED BY TURKEY, SYRIA AND IRAQ; THE JORDAN, WHICH HAS BEEN DISPUTED AMONGST ISRAEL, JORDAN AND SYRIA; AND THE INDUS, SURROUNDED BY AFGHANISTAN, PAKISTAN, INDIA AND TIBET

2012

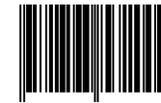
A WORKER ARRANGES SLAUGHTERED PIGS AT A PORK-PROCESSING FACTORY IN THE CHINESE PROVINCE OF HUBEI. ACCORDING TO SOME ESTIMATES, CHINA CONSUMED 50 MILLION TONNES OF PORK IN 2011, MORE THAN HALF THE WORLD'S TOTAL.



FARMERS FIRST

Technology and research could be a big help to agriculture. The maize crop in Malawi, for example, could see its yield increased fivefold by adopting existing technologies, says Dr Kostas Stamoulis, director of the FAO's agricultural development economics division. So why aren't they being used? "One reason is, the farmers are not aware. Or infrastructure could be bad. Prices can also stop people increasing their productivity, because prices at the farm gate can be very low. It could be availability of irrigation. The potential is there, but investment is the key."

OXFORD, UK



IN SEARCH OF A SUSTAINABLE MODEL

Next we venture to the verdant lawns of Oxford University in England, where Dr Charles Godfray is chairman of the lead expert group of the Foresight Food and Farming Project. He is also director of the Oxford Martin Programme on the Future of Food.

Regarding the issue of global food supply, Godfray wants to see policymakers looking ahead — far ahead. "What we need to do is take action now to prepare the food system for what

"THE WAY WE PRODUCE FOOD NOW IS LITERALLY UNSUSTAINABLE," SAYS GODFRAY. "WE ARE CAUSING DAMAGE TO THE ENVIRONMENT THAT WILL UNDERMINE OUR ABILITY TO PRODUCE FOOD IN THE FUTURE"

might happen over the coming decades. Because the food system is so extensive, changing anything takes a huge amount of time," he says.

In addition to the challenges around population and logistics, he says any policy must be linked to its impact on the environment. "There's an old joke that they are not making land any more. There's also increasing competition for water and for other inputs into agriculture. And everything has to be seen within the existential context of climate change."

"The way we produce food now is literally unsustainable," says Godfray. "It uses water at a rate greater than it is being replenished. We are causing damage to the environment that will feed back and undermine

our ability to produce food in the future. And all the while it is also producing greenhouse gases," he notes.

"This is the challenge. Not to produce as much food as we are doing at the moment, but to produce more, while causing less of an impact on the environment," Godfray explains. "We cannot allow the increasing demand for food to result in more land being brought into agriculture — because there isn't much land left. And what there is, is rainforests and wetlands." The scientific term for this feat is sustainable intensification.

It is a structural challenge, not just to agriculture, "but also to the environmental community, who have to realise one can't have it all," he says.

"One cannot have every bit of land producing multiple services. We have some nasty trade-offs in the future."

On the demand side, Godfray turns to the meat argument, over and above population. As people become wealthier, he observes, they tend to have fewer children, suggesting a plateauing of the world population at about 10 billion. We can feed that many, he says, but adds, "It

is inconceivable that 10 billion people could enjoy the diets we do in the rich world. We can't all eat meat at the levels we do in Europe and North America."

Godfray is another who cautions against some wholesale leap to mandatory vegetarianism — or to the notion that all meat is problematic. "Meat is produced in many different ways," he stresses. "Some practices are more environmentally friendly than others. It's wrong to say all meat is bad. If you are a pastoralist living on the borders of Kenya and Somalia, the only way you can survive is by having cattle, which produce about 90 percent of your sustenance."

Technology can also help to create new strains of crops for future needs, he adds.

Partly, this is to meet biotic challenges — pathogens and pests — and partly to tackle other issues. He cites efforts in Australia to produce varieties of wheat that will grow in salty soil. "In the past, plant breeding was devoted to a single aim: yields. In future there will be other goals. Efficiency of water use, nitrogen use, and greater resilience to climate change."

On the wastage issue (which Godfray calculates at about one-third of food produced), he argues, somewhat perversely, that one problem in the developed world is that food is too cheap. "Many people, me included, say that a lot of good would happen if food prices went up," he says. This would be disastrous for the poorest sector of a country, and so can't happen as a matter of policy, he says. "But we are in the curious position of some of the waste being because food is cheap."

Poor understanding of food is also hampering our abilities, he adds. "We don't have the skills that our parents and grandparents had in food processing." Nor maybe their attitude towards the "crime" of wasting good food.

Another trend to watch for is countries buying up resources elsewhere. This has been seen for many years in the mining industry — first with European and North American countries buying assets in Asia, Africa and Latin America; and more recently with China buying into Africa. It is starting to happen with food, too.

At first glance the trend appears worrying, as it could cheat countries out of their own resources and lead to hoarding. Godfray is less certain. "It is something that, were it to be done well, could actually be universally positive. But it is so often done badly." If an investor in sub-Saharan Africa brought with them food technology and capital, for example, everyone could come out of it well.

"In most places it has been done poorly, affecting the land rights of the indigenous population, and in a non-transparent manner." Still, this leads to another point. Is globalisation good or bad for the food system? To answer this, we look to a truly globalised city.



PHOTO: REUTERS

WORKERS PROCESS MEAT AT A SHINWAY GROUP PLANT IN HENAN PROVINCE, CHINA. SHINWAY GROUP, OR SHUANGHUI GROUP, IS ONE OF THE LARGEST MEAT PROCESSING COMPANIES IN CHINA. THE FIRM HAS BEEN HIT BY SEVERAL QUALITY SCANDALS RECENTLY. IN 2011, ILLEGAL ADDITIVES WERE FOUND IN ITS PRODUCTS. THEN IN 2012, GUANGZHOU AUTHORITIES REPORTED THAT A LINE OF SAUSAGES WAS TAINTED WITH A DIARRHOEA-INDUCING BACTERIA

SUSTAINABLE FOOD



The folks at United Kingdom-based site *Sustainweb.org* have the following guidelines for adopting a sustainable approach to food:

Aim to be waste-free: Reducing food waste saves the energy, effort and natural resources used to produce it, as well as money.

Use local, seasonally available ingredients as standard, to minimise energy used in food production, transport and storage.

Specify food from farming systems that minimise harm to the environment, such as certified organic produce.

Limit foods of animal origin (meat, dairy products and eggs) served, as livestock farming is one of the most significant contributors to climate change. Promote meals rich in fruit, vegetables, pulses, whole grains and nuts. Ensure that meat, dairy products and eggs are produced to high environmental and animal welfare standards.

Exclude fish species identified as most “at risk” by the Marine Conservation Society, and choose fish only from sustainable sources — such as those accredited by the Marine Stewardship Council.

Choose Fairtrade-certified products for foods and drinks imported from poorer countries, to ensure a fair deal for disadvantaged producers.

Avoid bottled water to minimise transport and packaging waste.

Promote health and well-being. Use generous portions of vegetables, fruit and starchy staples such as whole grains, while cutting down on salt, fats and oils, and halting the use of artificial additives.

FOOD'S PYRAMID IS NOW A PLATE

In 2011, the US Department of Agriculture, better known as the USDA, modernised the classic “food pyramid”, which indicates the optimum distribution of food types you should eat each day. In its place is the new “food plate”, divided into four sections: fruit, vegetables, grains and proteins. Next to the “plate” is a “glass” of milk, representing dairy. It is hoped the new graphic will be more successful in curbing soaring obesity rates.



PHOTOS: REUTERS (MAIN); GETTY IMAGES (MEAT AND COWS)



ACTIVE AND HEALTHY

The 1996 World Food Summit defined food security in health terms: “Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” Meanwhile, in the United States, a 2012 report from the Trust for America's Health and the Robert Wood Johnson Foundation estimated at least 44 percent of citizens in each of the 50 US states could be obese by 2030.

SAN FRANCISCO



WHY THE MIDDLE MEN ARE EATING ALL THE CAKE

Writer and food industry activist Raj Patel is based in the US city of San Francisco. Patel's books try to explain exactly how the food system works and what is wrong with it. He likes to start his portraits

logically, with the farmer — and the picture he paints is terrible. Farmers in poverty, with far higher suicide rates than other industries; including two million attempted suicides per year by ingesting pesticides in China alone. Farmers setting up a kidney sale centre in Maharashtra, India, to make ends meet — with scarcely any options on what to grow.

“Most farmers’ choice of crop is tightly circumscribed by the

kinds of land they own, the climate, their access to markets, credit and a range of visible and invisible ingredients in the production of food,” Patel writes in *Stuffed and Starved*. “There is no moment of sucking a finger, holding it to the wind and deciding what it'd be nice to eat next year. If they're hoping to sell their crops for cash rather than eat them themselves, most farmers have few options, particularly those in the Global South.”

“Old MacDonald now rents his farm,” he continues. “With banks wielding the threat of foreclosure, any kind of farming, even the kind of farming that asset-strips the soil, is preferable to no farming at all.” Instead, he argues, power rests with a few corporate buyers and sellers who stand between the farmers and the world's consumers.

“There are, after all, no mom-and-pop international food distribution companies.

The small fish have been devoured by the Leviathans of distribution and supply. And when the number of companies controlling the gateways from farmers to consumers is small, this gives them market power both over the people who grow the food and the people who eat it,” he writes.

“The food system is a battlefield, though few realise quite how many casualties there have been.” Having read his books, one might



IT IS IMPORTANT TO EAT HEALTHY — NOT JUST FOR THE WELL-BEING OF YOUR FAMILY, BUT ALSO FOR THAT OF THE PLANET

PHOTO: CORBIS

expect him to be an angry force in interview. Yet when *DCM* puts it to him that he paints a bleak picture in his book, Patel's response is somewhat surprising. "It saddens me a little bit that people feel that way," he says.

"Interspersed within the sad statistics are examples of people who are turning things

"THERE'S SO MUCH MORE INTEREST IN SUSTAINABLE AGRICULTURE THAN A DECADE AGO," SAYS PATEL

around and have sustainable models for agriculture, which demonstrably work in the 21st century," he enthuses.

In particular, Patel admires groups like Via Campesina, or "The Peasant Way", which have sought to unite disenfranchised farmers and rural communities, and fight back. Although they are arguably a loose aggregation at present, Patel considers the movement to have 200 million members, all thinking in similar ways: sustainably and internationally.

"I have pessimism of intellect and optimism of will," he says. "On one hand you've got to look with open eyes at the power food companies and banks have over the food system. And these corporations are not going to reconfigure things willingly," he notes. "On the other hand, there's so much more interest in sustainable agriculture than a decade ago."

How long do we have to build a sustainable food system? "No time at all," he says. "There are already 850 million people who are malnourished. For them, change can't come soon enough," he stresses. "We can and should have fixed this decades ago. We're in deep trouble right now."

Patel lays in blunt terms the ecological footprint of today's food system ("The current food system is a

wasteland"), blaming its legacy for worsening global warming, cruelty to animals, unsustainable energy and water use, as well as new illnesses like mad cow disease and bird flu. And even potentially, the possibility of future wars.

Patel describes to *DCM* how a decision made in Russia in 2010 to ban wheat exports led, through a series of knock-on effects, to riots over food prices in Mozambique — culminating in the police shooting their own citizens dead.

"Were agro-terrorists to poison the food supply, they'd find it hard to make their attacks stand out against background levels of 76 million cases of illness, 300,000 hospitalisations and 5,000 deaths every year from 'ordinary' food-borne diseases in the United States," he writes. "If they wanted to poison the water supply, they'd have to compete against levels of pesticide-related poisoning of up to one in four wells contaminated with nitrites above a safe level."

Perhaps not surprisingly given the heat of his claims, Patel's is also the most radical of all the mooted solutions — a solution tagged "food sovereignty". Simply put, this means the right of people to define their agricultural and food policies, without the dumping of food from other countries — and with the right to decide what they consume and how it is produced. A key area of this is the emphasis on the rights of women, who play a major role in global agriculture.

Patel wants people to change their tastes, learning to eat with the seasons and focusing on local foods that haven't had to be shipped. People also need to accept, he says, that if we want to eat meat or fish, we in turn should pay more to buy sustainably reared versions, and support locally owned businesses. On a macro level, he says we should also cancel developing world debts to the West — instead paying restitution for the injustices of the past. While arguably wishful thinking, this in turn would allow rural communities in the developing world (or Global South, as he prefers it), to experience a revival.



GLOBALLY LINKED BREADBASKETS

Yet among the sceptics is Oxford University's Godfray. "You do have movements for food sovereignty, that a particular country should have sovereign rights over its own food. Those sentiments worry me enormously. What if you're the prime minister of Egypt, the largest importer of wheat in the world, with a large population it is completely impossible to feed from agricultural land?"

When we put this to Patel, he notes that Egypt is a massive cotton exporter. "It chooses to grow cotton instead of food, because it is a way of Egyptians getting money to buy the food. But the missing ingredient here is a democratic discussion about where and how they grow what — so everyone gets fed."

Food sovereignty is not anti-trade, he adds. "It means that countries, before they engage in trade relationships, approach them from a position of equality rather than historical colonialism." Those who fear the sealing off of borders miss the point, he explains.

"It's not about that, or about turning the clock back. It's about countries thinking about how they are using their own resources," he says. Such systems occur now, through community food markets.

"That's an example of food sovereignty in action — figuring out how everyone gets access to food, and making sure the income stays in the community."

Making it work globally is the key. "One of the real challenges is a globalised system, which does help the poorest people and has resilience to climate change," says Godfray. "We're going to need a globally connected network of different breadbaskets, so if we have an awful year in one part of the world, we can provide for it."

"We have globalisation, you can't reverse it," he concludes. "The issue is, how to get it to work for the benefit of the maximum number of people." ●