

# EM=C<sup>2</sup> Eating Meat = Catastrophe<sup>2</sup>

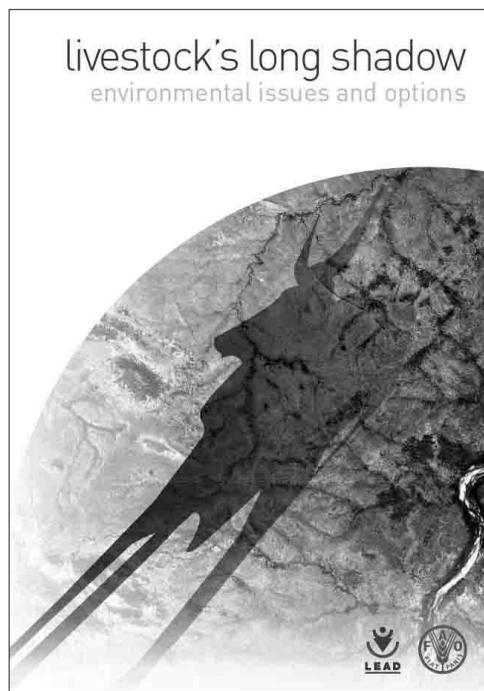
Take action now on climate change, don't feel helpless, says **DR ARYAN TAVAKKOLI**. With a climate tipping point fast approaching, the quickest way to personally cut warming emissions and most effective means to prevent climate catastrophe is to eliminate or reduce meat and dairy consumption. Reducing the numbers of animals bred for meat and dairy production will reduce emissions of the potent greenhouse gas, methane. Eliminating or reducing meat consumption would also solve the world's hunger problems many times over and bring excellent health and ecological benefits.

A series of articles on climate change in *Pacific Ecologist* in 2002, made it clear that unless we alter our way of living, we can expect to see catastrophic changes on a planetary scale within a few years. Warnings were given on calamities ahead, with food insecurity problems, sinking islands and environmental refugees, which are already happening. The message of urgency was unequivocal.

Several years down the line, the situation has become even more critical. All over the world, scientists are speaking out, warning governments, leaders and the public alike, that we need to act, we need to change. Time is running out, fast. For those aware of the climate crisis, every other problem pales in comparison. It is something affecting, or that will affect, every person on the planet. There is no escaping the changes heading our way, unless we change our track, now. Yet observing what is going on, one sees many people still live as though there is no problem at all.

## Feeling helpless, take action!

Do we feel helpless to make any noticeable change in averting the predicted disasters? Have we given up hope, leaving it instead to our governments to find all the solutions? Perhaps individuals feel powerless and think it's up to the multi-billion dollar enterprises and our leaders to make the changes. There's no denying the role of governments and leaders is crucial in alerting the public to the dangers ahead and actions required to avert catastrophic climate change but it would be a mistake to believe individual action is ineffective. Nothing could be further from the truth.



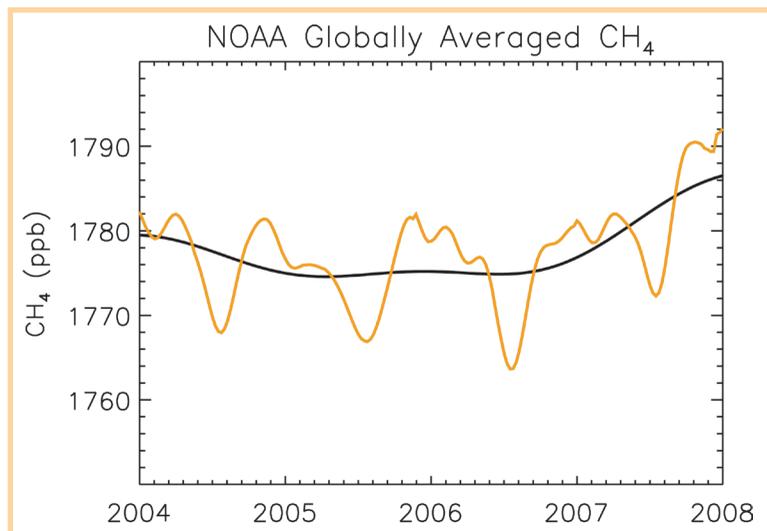
One powerful action can have a significant impact on climate change. It's a lifestyle change bringing more carbon savings and environmental benefits than probably all other lifestyle changes put together. Our diet, specifically, reducing or eliminating meat has largely been ignored but is now gaining recognition and earning its rightful place as one of the foremost influential factors in curbing climate change.

According to the recent United Nations report, *Livestock's Long Shadow*,<sup>1</sup> the livestock industry creates more greenhouse gas emissions than every mode of transport in the world, combined. In fact, meat production accounts for almost a fifth of the planet's greenhouse gas emissions, a chilling figure. The impact of a meat-based diet on our individual carbon footprint has also been calculated. According to a team of researchers from

Chicago University,<sup>2</sup> we would reduce our individual carbon footprint more by switching to a plant-based diet (an estimated reduction of one and a half tonnes of carbon emissions per person annually) than by switching to driving a hybrid car. For a family of four, there could be a potential household reduction of carbon emissions of one tonne yearly, if the family car is changed to a hybrid and by six tonnes per year if the family cuts out animal produce from their diet. This explains the saying that a vegan driving an SUV is more environmentally friendly than a meat-eater riding a bicycle.

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diet, will potentially have a far more rapid effect in reducing the effect of greenhouse gas emissions than relying on corporate industries to reduce their emissions. To understand this, one must appreciate the full impact of methane, the greenhouse gas generally less mentioned.

Ruminant livestock, with two billion being bred yearly for human consumption, are the number one source of methane. Methane is over 20 times as toxic as CO<sub>2</sub> over a 100-year period, but over a 20-year period, it is 72 times as potent as CO<sub>2</sub>. In Australia alone, the cattle industry currently releases about three million tonnes of methane yearly, and their coal-fired power stations release about 180 million tonnes of CO<sub>2</sub>. Although it seems coal-fired power stations contribute much more to global warming than do cattle, when you multiply three million tonnes by 72, to calculate the correct potency of methane, compared to CO<sub>2</sub>, it becomes very clear that cattle and sheep actually contribute more to global warming than coal-fired power stations.<sup>3</sup>

That's why relying on technology alone, as a solution to climate change, would lead to disaster. Multi-billion dollar corporations do not have the incentive to drastically reduce their CO<sub>2</sub> production in a timeframe that could allow us to avert the catastrophes heading our way. Also, about 20 percent of the carbon emitted today will last in the atmosphere more than a thousand years, after emissions are cut, altering the earth's climate for many human generations,<sup>22</sup> so a reduction in CO<sub>2</sub> emissions, even if achieved, would not result in any noticeable change in temperature in the short to medium term.

### Near climate tipping point

We are already close to "tipping point,"<sup>4</sup> where a further small rise in Arctic temperature is predicted to be the catalyst for runaway global warming.<sup>5</sup> The potentially dangerous release of toxic amounts of methane gas from the ocean bed and thawing permafrost is a real and imminent danger. If temperatures continue to rise, the subsequent release of an estimated 400 Gigatons<sup>6</sup> of methane could be the final tipping point spelling the end of civilization as we know it. There is no time to lose in reducing our emissions dramatically and rapidly. There is a practical way this can be achieved, by focusing on reducing human-induced methane emissions.

Methane has a much shorter half life than carbon dioxide, less than a decade. The good news is, if we stop purposefully producing methane in the vast quantities we do today as a side-effect of animal agriculture, most of it would clear relatively rapidly over the next decade, reducing the risk of a dangerous rise in temperature that would almost certainly ensue if current livestock farming practices are allowed to continue. Although the average person holds no power over multi-billion dollar corporations, we do have great power to reduce methane emissions arising from livestock farming, simply by changing our dietary habits. Where there is less consumer demand for meat, the livestock trade will respond accordingly, producing less meat.<sup>7</sup>

While it is imperative to sharply reduce our carbon dioxide emissions, an emphasis on reducing methane emissions is a faster, more practical approach to address rising temperatures in the short term. The urgency with which we need to do this does not allow time to research methods to reduce methane emissions from livestock. Reducing the amount of meat we consume and numbers of animals bred for meat will reduce the amount of this powerful greenhouse gas in the atmosphere, which strongly affects global warming in the short term. On an individual level, cutting out animal produce is the single most effective way to reduce our eco-footprint. On a collective level, the effects would be enormous.

Reducing dairy intake also has a significant impact on emissions. Over a one-year period, consuming a diet including meat and dairy has been calculated<sup>8</sup> to cause greenhouse gas emissions equivalent to driving a car for 4758 km per person. Changing to organic meat and dairy does not solve the problem, emissions are still equivalent to driving a car 4377 km per person, yearly. Switching to a vegetarian diet (no meat but including dairy) is equivalent to driving 2427 km per person, yearly. But eliminating meat and dairy

from the diet has the most powerful impact, with greenhouse gas emissions equivalent to driving a car only 629 km per person yearly. This is reduced even further to 281 km per person yearly, if eating organic produce. Calcium intake is more than adequate on a well-balanced vegan diet,<sup>9</sup> without the harmful fats present in dairy produce, which contribute heavily to diseases like stroke, heart disease, and diabetes, so prevalent in countries with a western diet, typically with high meat and dairy intake.

If everyone in the UK ate no meat for just one day a week, it's been calculated this would save 13 Megatonnes of CO<sub>2</sub>,<sup>10</sup> resulting in greater carbon savings than taking five million cars off the road in the UK (10.4 Megatonnes CO<sub>2</sub>). If everyone in the UK abstained from eating meat for two days a week, they would save 26 megatons of greenhouse gas emissions, the equivalent of almost 73 million return flights from London to Ibiza.

Closer to home, significant reductions in greenhouse gas emissions could also be achieved. New Zealand's animal farming industry produces an amazing 50% of the entire nation's greenhouse gas emissions, a higher figure than any other country.<sup>11</sup> It could be argued New Zealand's total emissions comprise a very low proportion of the world's emissions, but per capita, our level of emissions is high at 12th in the world, so there is a moral responsibility for more affluent nations to lead the way by showing a switch to a more plant-based diet is not only achievable but also sustainable in the long term. It is time for all nations to consider the survival of the human race as the priority, rather than short-term economic benefits.

#### Many benefits in less meat/dairy

Scientists, like Dr James Hansen, director of NASA's Goddard Institute, politicians and other high profile figures are speaking out about the benefits of a plant-based diet. Amongst them is the chief of the United Nation's Intergovernmental Panel on Climate Change, Dr Rajendra Pachauri, who has spoken widely about the excessive carbon emissions associated with the livestock industry and the environmental damage caused by meat production.<sup>12</sup> He advises we should aim to reduce our meat consumption by at least 50%, and says, "if we eat less meat, we would be healthy and so would the planet."

Other issues make the wide-



Cattle ranching is a major cause of rainforest destruction in Amazon and Central America.

scale transition to a more plant-based diet both logical and compelling. There is substantial medical evidence confirming that animal protein and fats in the diet are major contributors to heart disease, stroke and obesity and other chronic degenerative diseases. The health benefits of adopting a plant-based diet and reducing or cutting out animal fats from the diet, are now well documented. The World Health Organization recommends a move away from saturated animal fats to unsaturated vegetable oil-based fats.<sup>13</sup>

Animal farming is the number one user of fresh water. Over 70% of the world's fresh water is used in the agriculture sector and most of this is for meat production.<sup>14</sup> In a world fast running out of freshwater supplies, what sense is there in using 2,400 litres of water to produce a single hamburger,<sup>15</sup> when a nutritionally complete vegan meal of tofu, rice and vegetables requires less than 100 litres of water?<sup>16</sup> Animal farming is also the number one polluter of water. The main cause of huge oceanic dead-zones and pollution of rivers and streams is due to toxic effluent from animal farms.<sup>1</sup>

Animal farming is the number



Dr Rajendra Pachauri.

**Cutting out meat, or at least significantly reducing it in our diet, would potentially have a far more rapid effect in reducing the effect of greenhouse gas emissions than relying on corporate industries to reduce their emissions**



Hunger is rampant in the 21st century, and meat production is a big cause.

**With over 900 million people starving, the grain we feed to animals could cover the global food deficit 14 times over**

one cause of deforestation. Seventy percent of the Amazon rainforest has already been cleared to create pasture land for grazing cattle or to grow crops used to feed cattle.<sup>1</sup> While biofuel production has angered many with wasteful use of forest land to produce 100 million tonnes of crop to use as biofuel for cars yearly, over 760 million tonnes of crops are produced annually to use as animal feed.<sup>17,18</sup> That's nearly half the world's grain supply. With over 900 million people now starving,<sup>19</sup> the grain we feed to animals could cover the global food deficit 14 times over.<sup>19</sup> Farm animals don't die of hunger, but every few seconds, one child does. Aside from using crops to feed farmed animals rather than humans, destruction of our forests for pastureland or production of feed crops is also a major contributor to greenhouse gas emissions, species disruptions, and dramatic changes in wind and rainfall patterns, contributing to floods, droughts and hurricanes.

For anyone concerned about our environment, the facts are very clear, there is no future for the human race on this planet as long as we continue to breed animals for meat. Our planet does not possess the resources to meet the demands of 57 billion beings every year (7 billion humans and 50 billion farmed animals). Moving to an animal-free diet would require a fraction of the resources needed for a meat-based

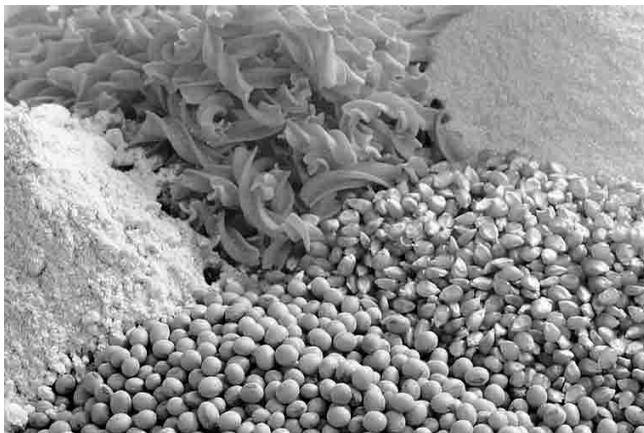
diet. Problems of deforestation, water pollution, water scarcity, methane emissions and the whole array of environmental chaos caused by meat production, would be significantly reduced. The planet's greenhouse gas emissions would be cut by one fifth, with the deleterious effects of methane disappearing over a decade.

Time is short. According to the United Nation's GEO4 Report: "The need couldn't be more urgent and the time couldn't be more opportune... to act now to safeguard our own survival and that of future generations."<sup>20</sup>

Technological advances take time, time we do not have. Neither do technological advances aiming to curb greenhouse gas emissions, address the environmentally destructive effects of animal farming: deforestation, enormous water use in the face of rapidly dwindling fresh water supplies, water pollution, species disruption and biodiversity loss caused by livestock farming. Waiting for technology to avert catastrophic climate change and loss of millions of lives would be disastrous.

Switching to large-scale organic animal farming would not eliminate methane and nitrous oxide emissions, neither would it address deforestation issues or water usage, both of which remain high even with organic animal farming.

Cutting down, or even better, eliminating meat and preferably dairy, from our diets is the most powerful lifestyle change we can make as individuals to curb the disastrous effects of climate change. On a collective scale, according to the above calculations, effects would be significant. Media and governments can play their part by educating the public about environmental and health benefits of a plant-based diet. Adopting initiatives like "Meatless Monday" would be a good start, a suggestion already referred to President Obama. According to food writer Michael Pollan, if all Americans



900 million people are starving while grains which should be used to feed people are being fed to animals for the highly polluting meat market.

eliminated meat from their diets one night a week, the environmental effect would be equivalent to taking “30 to 40 million cars off the road for a year.”<sup>21</sup>

For personal health, the benefits of adopting a plant-based diet are well established. For climate change and our planetary emergency which calls for drastic and urgent change, it will mean the difference between life and death. Each one of us has a responsibility to act in the short time that remains to ensure a future for ourselves, our children, and our planet. It's time to take action. The quickest way to slash our greenhouse gas emissions on an individual and planetary scale, and the most effective means of preventing more environmental devastation on a major scale, is to reduce or eliminate meat and dairy consumption. Let's make the connection in time. ■PE

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*Editorial, continued from page 2*

cell phones, walkmans and other conveniences, is it possible to give up these non-essential things? We can live probably much better without them. Our ancestors, the hunter gatherers, with few possessions and very low energy consumption were the original affluent society with material needs easily met in a few short hours a week (p.3). They were confident in nature's abundance because their material demands were small, whereas our demands are huge and 1 billion people suffer extreme hunger as a result. Gandhi said: "*Man should rest content with what are his real needs and become self-sufficient. If he does not have*

*this control he cannot save himself*," (p.9-10). How true this is today. Our way of life is causing serious environmental problems, Ted Trainer writes and has only been possible because rich countries take far more than their fair share of the world's resources in a global economy that condemns most of the world's people to grinding poverty. He sees hope in the Transition Towns movement (p.11). We must work hard he says to make the transition in time to far simpler living standards, high levels of self-sufficiency, and a radically different culture in self-sufficient collectives. ■ Kay Weir