

So You're an Environmentalist...

There has never been a better time for environmentalists to become vegetarian. Evidence of the environmental impacts of a meat-based diet is piling up at the same time its health effects are becoming better known. Meanwhile, full-scale industrialised factory farming – which allows diseases to spread quickly as animals are raised in close confinement – has given rise to recent, highly publicised epidemics of meat-borne illnesses.

All this comes at a time when meat consumption is reaching an all-time high around the world, quadrupling in the last 50 years. There are 20 billion head of livestock taking up space on earth, more than triple the number of people. According to the Worldwatch Institute, global livestock population has increased 60 percent since 1961, and the number of fowl being raised for human dinner tables has nearly quadrupled in the same time period, from 4.2 billion to 15.7 billion. Beef and pork consumption in the U.S. has tripled since 1970, during which time it has more than doubled in Asia.

Americans spend \$110 billion a year on meat-intensive fast food, and its growing popularity around the world may be a factor in dramatic increases in global meat consumption.

One reason for the increase in meat consumption is the rise of fast-food restaurants as an American dietary staple. As Eric Schlosser noted in his best-selling book *Fast Food Nation*, "Americans now spend more money on fast food -- \$110 billion a year -- than they do on higher education. They spend more on fast food than on movies, books, magazines, newspapers, videos and recorded music -- combined."

Strong growth in meat production and consumption continues despite mounting evidence that meat-based diets are unhealthy, and that just about every aspect of meat production -- from grazing-related loss of cropland and open space, to the inefficiencies of feeding vast quantities of water and grain to cattle in a hungry world, to pollution from "factory farms" -- is an environmental disaster with wide and sometimes catastrophic consequences. Oregon State University agriculture professor Peter Cheeke calls factory farming "a frontal assault on the environment, with massive groundwater and air pollution problems."

World Hunger and Resources

The 4.8 pounds of grain fed to cattle to produce one pound of beef for human beings represents a colossal waste of resources in a world still teeming with people who suffer from profound hunger and malnutrition.

According to the British group Vegfam, a 10-acre farm can support 60 people growing soybeans, 24 people growing wheat, 10 people growing corn and only two producing beef cattle. Britain -- with 56 million people -- could support a population of 250 million on an all-vegetable diet. Ninety percent of U.S. and European grain consumption is indirect, i.e. first being fed to animals. Therefore, by eating meat, westerners each consume an equivalent of 2,000 pounds of grain a year. Most grain in underdeveloped countries is consumed directly by people.

While it is true that many animals graze on land that would be unsuitable for cultivation, the demand for meat has taken millions of productive acres away from farm inventories. The cost of that is incalculable. As *Diet For a Small Planet* author Frances Moore Lapp writes, imagine sitting down to an eight-ounce steak. "Then imagine the room filled with 45 to 50 people with empty bowls in front of them. For the 'feed cost' of your steak, each of their bowls could be filled with a full cup of cooked cereal grains."

Harvard nutritionist Jean Mayer estimates that reducing meat production by just 10 percent in the U.S. would free enough grain to feed 60 million people. Authors Paul and Anne Ehrlich note that a pound of wheat can be grown with 60 pounds of water, whereas a pound of meat requires 2,500 to 6,000 pounds.

Environmental Costs

Energy-intensive U.S. factory farms generated 1.4 billion tons of animal waste in 1996, which, the Environmental Protection Agency reports, pollutes American waterways more than all other industrial sources combined. Meat production has also been linked to severe erosion of billions of acres of once-productive farmland and to the destruction of forests and wildlife habitat.

In the 1990s McDonald's took a group of British animal rights activists to court because they had linked the fast food giant to an unhealthy diet and rainforest destruction. The defendants, who fought the company to a standstill, made a convincing case. In court documents, the activists asserted,

"From 1970 onwards, beef from cattle reared on ex-rainforest land was supplied to McDonald's." In a policy statement, McDonald's claims that it "does not purchase beef which threatens tropical rainforests anywhere in the world," but it does not deny past purchases.

Circle Four Farms, a Utah-based pork producer, hosts a three-million gallon waste lagoon. When lagoons like this spill into rivers and lakes, as happened in North Carolina in 1995, the result can be environmentally catastrophic.

According to People for the Ethical Treatment of Animals (PETA), livestock raised for food produce 130 times the excrement of the human population, some 87,000 pounds per second. The Union of Concerned Scientists points out that 20 tons of livestock manure is produced annually for every U.S. household. The much-publicized 1989 Exxon Valdez oil spill in Alaska dumped 12 million gallons of oil into Prince William Sound, but the relatively unknown 1995 New River hog waste spill in North Carolina poured 25 million gallons of excrement and urine into the water, killing an estimated 10 to 14 million fish and closing 364,000 acres of coastal shellfish beds. Hog waste spills have caused the rapid spread of a virulent microbe called *Pfiesteria piscicida*, which has killed a billion fish in North Carolina alone.

More than a third of all raw materials and fossil fuels consumed in the U.S. are used in animal production. Beef production alone uses more water than is consumed in growing the nation's entire fruit and vegetable crop. Producing a single hamburger patty uses enough fuel to drive 20 miles and causes the loss of five times its weight in topsoil. In his book *The Food Revolution*, author John Robbins estimates that "you'd save more water by not eating a pound of California beef than you would by not showering for an entire year." Because of deforestation to create grazing land, each vegetarian saves an acre of trees per year.

"We definitely take up more environmental space when we eat meat," says Barbara Bramble of the National Wildlife Federation. "I think it's consistent with environmental values to eat lower on the food chain."

The Human Health Toll

There is some evidence to suggest that the human digestive system was not designed for meat consumption and processing, which could help explain why there is such high incidence of heart disease, hypertension, and colon and

other cancers. Add to this the plethora of drugs and antibiotics applied as a salve to unnatural factory farming conditions and growing occurrences of meat-based diseases like *E. coli* and Salmonella, and there's a compelling health-based case for vegetarianism.

The factory-farmed chicken, cow or pig of today is among the most medicated creatures on Earth. "For sheer over prescription, no doctor can touch the American farmer," reported *Newsweek*. According to a Centers for Disease Control and Prevention (CDC) report, the use of anti-microbial drugs for non-therapeutic purposes -- mainly to increase factory farm growth rates -- has risen 50 percent since 1985.

Ninety percent of commercially available eggs come from chickens raised on factory farms, and six billion "broiler" chickens emerge from the same conditions. Ninety percent of pigs are closely confined at some point during their lives. According to the book *Animal Factories* by Jim Mason and Peter Singer, pork producers lose \$187 million annually to chronic diseases such as dysentery, cholera, trichinosis and other ailments fostered by factory farming. Drugs are used to reduce stress levels in animals crowded together unnaturally, although 20 percent of the chickens die of stress or disease anyway.

One result of these conditions is a high rate of meat contamination. Up to 60 percent of chickens sold in supermarkets are infected with Salmonella enteritidis, which can pass to humans if the meat is not heated to a high enough temperature. Another pathogen, *Campylobacter*, can also spread from chickens to human beings with deadly results.

In 1997, more than 25 million pounds of hamburger meat was found to be contaminated with *E. coli*, which is spread by faecal matter. The bacteria are a particular problem in hamburgers, because the grinding process spreads it throughout the meat.

The British epidemic of Bovine Spongiform Encephalopathy (BSE), or mad cow disease, jumps to beef-eating humans in the form of the always-fatal Creutzfeldt-Jakob Disease (CJD). The CDC reports that an average of 10 to 15 people have contracted CJD from meat in Britain each year since it was first detected in 1994. In 1998, the British Medical Association warned in a report to Members of Parliament, "The current state of food safety in Britain is such that all raw meat should be assumed to be contaminated with

pathogenic organisms." In 1997, it added, *Salmonella or E. coli* infected a million people in Britain. BSE spreads through cattle that are fed contaminated central nervous-system tissue from other animals. *"Its future magnitude and geographic distribution... cannot yet be predicted,"* the CDC reported.

In the book *Eating With Conscience*, Dr. Michael W. Fox reports that what is known as "animal tankage" - the non-fat animal residue from slaughterhouses -- is used in a wide variety of products, from animal feed and fertiliser to pet food. Dr. Fox adds that hundreds of cats in Europe (and several zoo animals) that ate tankage-laced food have contracted forms of BSE.

According to the U.S. Department of Agriculture (USDA), more than 10 million animals that were dying or diseased when slaughtered were "rendered" (processed into a protein-rich meal) in 1995 for addition to pig, poultry and pet food. Animals that collapse at the slaughterhouse door or during transportation are called "downers," and until very recently their corpses are routinely processed for human consumption.

Europe spends billions of dollars bringing a virulent epidemic of yet another animal-borne disease -- foot-and-mouth -- under control. In the last few years, 60 countries have had outbreaks of foot-and-mouth, which kills animals but does not spread to people.

One of the major western exports is a taste for meat, though it brings with it increased risk of heart disease and cancer. Clearly, there is something seriously wrong with a diet and food production system resulting in such waste, endemic disease and human health threats.

Caring About Animals

The average meat eater is responsible for the deaths of some 2,400 animals during his or her lifetime. Animals raised for food, particularly intensively-farmed animals, endure great suffering in their housing, transport and slaughter, which is something not clearly evident in the neatly wrapped packages of meat offered for sale in the supermarket. Given the information, many people -- especially those with an environmental background -- recoil at knowing they participate in a meat production system so oppressive to the animals caught up in it.

The family farm of the nineteenth century, with its "free-range" animals running around the farmyard or grazing in a pasture, is largely a thing of the past. Brutality to animals in today's factory farms is commonplace. A recent article in the pig industry journal *National Hog Farmer* recommends reducing the average space per animal from eight to six square feet, concluding *"Crowding pigs pays."* Morley Safer reported on the television program *60 Minutes* that today's factory pig is no "Babe": *"[They] see no sun in their limited lives, with no hay to lie on, no mud to roll in. The sows live in tiny cages, so narrow they cannot even turn around. They live over metal grates, and their waste is pushed through slats beneath them and flushed into huge pits."*

Feedlot beef cattle are luckier than factory pigs in that they have an average of 14 square feet in the overcrowded feedlots where they live out their lives. Common procedures for beef calves include branding, castration and dehorning. Veal calves, taken away from their mothers shortly after birth, live their entire lives confined in near darkness. They commonly suffer from anemia, diarrhea, pneumonia and lameness.

Virtually all chickens today are intensively raised, whether for eggs or meat. As many as 100,000 birds can live in each "henhouse." Conditions are so psychologically taxing on the birds that they must be de-beaked to prevent pecking injuries. Male chicks born on factory farms -- many millions per year -- are killed because they are of no economic value.

Some 95 percent of animals are moved by truck, where they are typically subjected to overcrowding, severe weather, hunger and thirst. Many animals die of heat exhaustion or exposure during transport.

Some of the worst abuse occurs at the end of the animals' lives, as documented by Gail Eisnitz' book *Slaughterhouse*, which includes interviews with slaughterhouse workers. *"On the farm where I work,"* reports one employee, *"they drag the live ones who can't stand up anymore out of the crate. They put a metal snare around her ear or foot and drag her the full length of the building. These animals are just screaming in pain."* He adds, *"The slaughtering part doesn't bother me. It's the way they're treated when they're alive."*

The threat to slaughterhouse workers' safety is largely underreported or ignored in the media. For example, *Mother Jones* magazine, in an otherwise admirable story on slaughterhouse workers, barely mentions the frequent injuries caused by pain-wracked animals lashing out inside the slaughterhouses.

The Vegetarian Solution

Vegetarianism is not a new phenomenon. The ancient Greek philosopher Pythagoras was vegetarian, and until the mid-19th century, people who abstained from meat were known as "Pythagoreans." Famous followers of Pythagoras' diet included Leonardo da Vinci, Benjamin Franklin, George Bernard Shaw and Albert Einstein. The word "vegetarian" was coined in 1847 to give a name to what was then a tiny movement in England. It comes from "vegetus", the Latin for "enlivened", and has no connection, apart from a linguistic one, with vegetables.

In the U.S., the 1971 publication of *Diet For a Small Planet* was a major catalyst for introducing people to a healthy vegetarian diet. Other stimuli included Peter Singer's 1975 book *Animal Liberation*, which gave vegetarianism a moral underpinning; Singer and Jim Mason's book *Animal Factories*, the first expose of confinement agriculture; and John Robbins' 1987 *Diet for a New America*. In the U.S., according to a 1998 *Vegetarian Journal* survey, 82 percent of vegetarians are motivated by health concerns, 75 percent by ethics, the environment and/or animal rights, 31 percent because of taste and 26 percent because of economics.

Is the vegetarian diet healthy? The common perception still persists that removing meat from the menu is dangerous because of protein loss. Lapp says there is only danger of protein deficiency if vegetarian diets are heavily dependent upon 1) fruit; 2) sweet potatoes or cassava (a staple root crop for more than 500 million people in the tropics); or 3) the particular western problem, junk food.

But Reed Mangels, nutrition advisor to the Vegetarian

Resource Group (VRG), says vegetarians can meet their protein needs "easily" if they *"eat a varied diet and consume enough calories to maintain their weight. It is not necessary to plan combinations of foods. A mixture of proteins throughout the day will provide enough 'essential amino acids.'"*

Although meat is rich in protein, other good sources are potatoes, whole meal bread, rice, broccoli, spinach, almonds, peas, chickpeas, peanut butter, tofu (soybean curd), soymilk, and lentils.

Supermarket shelves now overflow with soy- or seitan-based meat substitutes. The soybean contains all eight essential amino acids and exceeds even meat in the amount of usable protein it can deliver to the human body. (It should be noted, however, that some people are allergic to soy, and the "hyper-processing" of some soy-based foods reduces the useful protein content.)

The American Dietetic Association says in their position statement on vegetarian diets, *"Appropriately planned vegetarian diets are healthful, are nutritionally adequate and provide health benefits in the prevention and treatment of certain diseases."*

With the products available these days vegetarians can quite easily put together well-planned meals. A diverse range of delicious veggie foods are now available in most supermarkets and on a growing list of restaurant menus.

It's never been easier to become a vegetarian, and there have never been more compelling reasons for environmentalists to make that choice.

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