

STATE OF THE WORLD 2012

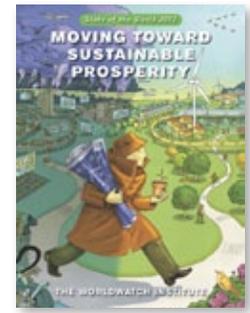
Moving Toward Sustainable Prosperity

POLICY BRIEFS

Chapter 14

Food Security and Equity in a Climate-Constrained World

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KEY MESSAGES

- ▶ In recent decades, a “livestock revolution” has increased meat, egg, and dairy consumption worldwide, particularly in the developing world.
- ▶ Large, input-intensive factory farms are replacing smaller, more environmentally sustainable agricultural projects throughout developing nations. These industrial farms use more land, consume more water, and produce more waste than most smaller operations.
- ▶ Reversing these trends will require a collaboration of government and civil society, including legislation, education, and an internalization of the costs of industrial livestock production.

THE PROBLEM

Since the 1970s, global meat production has tripled, increasing 20 percent since 2000 alone. More than 60 billion land animals are used worldwide for meat, egg, or dairy production, and if current trends persist, the global livestock population could exceed 100 billion by 2050—a number more than 10 times the projected human population.

This “livestock revolution” represents a significant increase in the consumption and production of animal products. Farmers use industrial-scale livestock techniques to raise enormous numbers of animals and to produce high levels of meat, eggs, and dairy. They breed their animals intensively, often using a diet of mostly corn and soy, as well as hormones and antibiotics, to promote rapid growth and increase production. Animals are typically confined in small pens, cages, sheds, or indoor stalls on these factory farms, lacking access to pasture, fresh air, and sunlight and unable to perform many of their natural behaviors.

Proponents of this type of farming believe that it is the only way to feed the world’s growing population. But critics point to the increased public health and environmental concerns that result from such farming and its related food systems, and argue that

industrial agriculture is unsustainable.

Human health concerns. Globalization of the food system has paved the way for the rapid spread of the Western diet, including increased consumption of animal products, salt, sugar, and processed and fried foods. In China, the amount of energy from fat in the average diet increased by 10 percent from 1996 to 2006. By 2006, according to the State Food and Nutrition Consultant Committee, about 60 million Chinese were obese. Diet-related diseases are the number one cause of death for Chinese. In India, 50 million people suffer from diabetes and this number is on the rise—according to the International Diabetes Foundation, 87 million Indians will suffer from the disease by 2050. Diabetes-related medical care expenses and lost productivity represent 2.1 percent of the country’s annual gross domestic product.

Environmental concerns. Factory farms concentrate agriculture’s impact on land, water, and the climate. Although such farms appear to use less land, the massive animal feed requirements demand the use of vast land outside their immediate area. Producing one calorie of energy from meat requires between two and five times as much grain as producing one calorie of grain eaten directly by humans (up to 10 times in industrially produced beef). Livestock



An intensive “broiler” chicken facility near New Delhi, India.

production also competes for the world's limited water resources. The production of one ton of beef requires approximately 16,000 cubic meters (4.2 million gallons) of water.

In China, studies by Agricultural University professor Xu Cheng reveal that China's livestock produce 2.7 billion tons of manure annually. Xu estimates that among the 20,000 large- and mid-size livestock facilities in China in 2007, only 3 percent had facilities for treating animal waste.

Meanwhile, a 2.5-year study of U.S. factory farms found that: "the volumes of manure are so large that traditional land disposal methods can be impractical and environmentally threatening. Excess nutrients in manure contaminate surface and groundwater resources." The United Nations Food and Agriculture Organization reports that livestock are responsible for approximately 18 percent of global greenhouse gas emissions, including 9 percent of carbon dioxide emissions, 37 percent of methane emissions, and 65 percent of nitrous oxide emissions.

MOVING FORWARD

There are many ways to address the various problems related to industrialized animal production:

- ▶ *Internalize costs.* Currently, factory farms do not pay for the environmental damage they cause. These costs are externalized in the form of decreased health, polluted land, unsafe water, and a changing climate. Governments can work to internalize these costs by ensuring that land degradation, water pollution, harm done to ecosystems and biodiversity, and greenhouse gas emissions are priced fairly and that the livestock industry pays its fair share.
- ▶ *Promote cultivation of nutritious foods.* Governments can provide incentives to promote vegetable foods that provide animals with essential nutrients, including leafy greens and pulses. These foods also typically require less water than soybeans or other livestock feed grains and are often resilient to drought, disease, and other anticipated effects of climate change.

- ▶ *Restore ecosystems.* If governments partner with civil society to revitalize overgrazed and overharvested lands and create opportunities for the production of nutritious foods to replace livestock feed, the effort can result in the regrowth of forests and vegetation that help ensure stable rainfall, and will also help create new jobs and livelihoods.

- ▶ *Pass animal-welfare legislation.* Governments should pass legislation that prevents the abuses inherent in factory-style livestock production. In many countries, this would mean a return to the natural cultural heritage that has valued animals and their habitats for generations. Ecuador's 2008 constitution protects the rights of nature, and Kenya's 2010 constitution includes an animal welfare provision.

- ▶ *Exchange information.* Both nongovernmental organizations and community groups worldwide should trade experiences, information, and insights as they work on food security, climate change, and animal welfare.

- ▶ *Popularize alternatives, promote dialogue, and educate the public.* Governments and civil society can find ways to collaborate on projects that promote alternatives to industrial agriculture that are better for the environment, family farmers, and food and income equality. They should encourage a dialogue around livestock, sustainability, equity, and food production and access that helps inform national and regional policymaking. And they should find ways to launch public education efforts that encourage people to eat more healthily.

LOOKING AHEAD

As the global population continues to grow, we must wrestle with questions surrounding how our growing population's demand for food will be met. Allowing industrial livestock production to escalate will result in dramatic harm to human health and the environment. We need to find ways to confront the challenges posed by industrial animal agriculture if we are to create a food system that is equitable, humane, and sustainable.

This brief is based on Chapter 14, "Food Security and Equity in a Climate-Constrained World," by Mia MacDonald, published in Worldwatch Institute's *State of the World 2012: Moving Toward Sustainable Prosperity*.

To order a copy of the report, visit www.worldwatch.org/stateoftheworld2012.

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