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Veg or Non-Veg?

India at the Crossroads

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UNTIL RECENTLY, INDIA WAS A somewhat reluctant bridegroom of the global livestock industry. Vegetarianism has a more than 2,000-year history on the Indian sub-continent. Vegetables are still at the center of most Indian cuisines, with meat, if present, often consigned to a supporting role. Globalization, and India's greater opening to international investment beginning in 1992 are, however, sweeping aside some of this legacy. Indians belonging to the country's booming middle class—estimated to number between 50 million and 250 million people—driving India's domestic demand for meat and dairy products.

For many Indian urban dwellers today, owning a television, driving a car, wearing brand name clothing, and now, eating meat, have become important markers of independence and affluence. Only 20 percent of Indians con-

sider themselves strict vegetarians. The majority (60 percent) of India's population now follows an omnivorous, rather than vegetarian, diet.

"If India had the 'Green' Revolution, the 'White' Revolution, and the 'Blue' Revolution, can the 'Pink Revolution' be far behind?" asked Dr. S. K. Ranjhan, a 40-year veteran of India's livestock sector, several years ago. The evidence suggests it isn't. India has the world's largest dairy herd, and is the second largest (after the U.S.) global producer of milk. It's the world's third largest

mate experts, India will be particularly hard hit.) India's cattle herd is the largest global livestock source of methane, a greenhouse gas with 23 times the global warming potential of carbon dioxide. A 2009 survey found that India's livestock together produced 11.75 million metric tons of methane each year, an almost 30 percent increase over the nine million metric tons of methane livestock emitted in 1994.

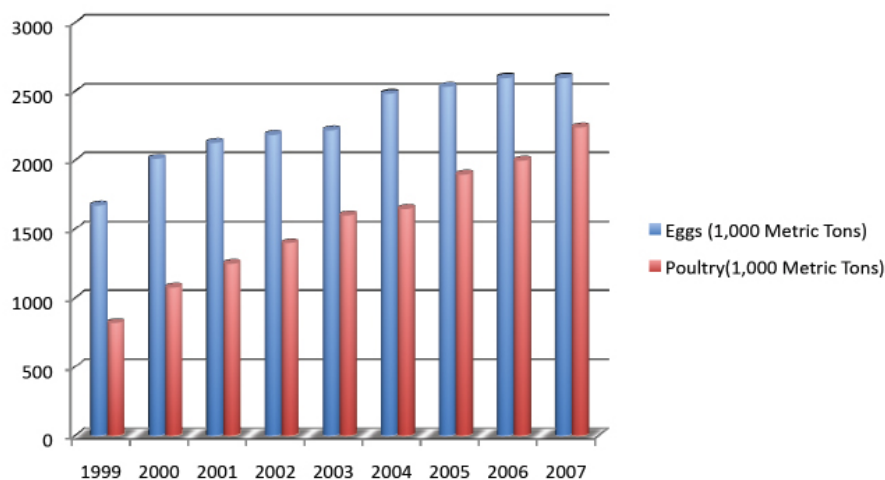
India is also a key exporter of soybean meal—the fourth largest globally—a key ingredient in feed that's a staple for farmed animals raised in industrial systems. Such facilities, in which large numbers of animals are kept in close confinement in indoor sheds, are becoming increasingly common in India as they are in other fast-developing countries. Currently, for example, two hundred million egg-producing hens are raised in battery cages in India. Producing feed crops

for farmed animals also has climate impacts, with significant quantities of carbon dioxide emitted through the production of chemical fertilizers and the clearing of land and forests.

While per capita consumption of an-

Egg and Poultry Production in India 1999-2007

Source: FAO



producer of eggs and sixth largest producer of poultry meat.

The expansion of India's animal products sector is having global impacts, including for the crucial challenge of climate change. (According to many cli-

imal products in India is still low in comparison to neighboring China (about one-tenth the Chinese consumption level) and the U.S. (one-twentieth of what an average American consumes), levels have been rising gradually, but steadily. In 1980, the average Indian ate 3.7 kg of meat per person per year. That has grown to about 5.5 kg per person annually. Even though livestock-industry analysts predict that Indians won't ever consume as much animal protein as the Chinese or Americans do, the size of India's population, at 1.17 billion people, magnifies the impact of even small changes in consumption.

As India works to produce more and more animal products and to make them more affordable and accessible, the long-term ecological and social viability of these efforts is an open question. With 479 million livestock and billions of chickens, the competition is on for already strained sources of fresh water and food. The summer of 2009's failed monsoon, which led to lost crops and significant reductions in groundwater replenishment, may have offered a glimpse of what's to come in India as climate change gathers pace. Moreover, India's middle class population is set to expand to 583 million by 2025, and as it does, demand for animal products will rise, too. At the same time, malnutrition remains stubborn and persistent. Nearly one-third of the world's undernourished children, 57 million, are Indian.

India and Indians Growing

Rapid changes in the way millions of Indians eat, and the impacts, are increasingly evident. Fast food is growing in popularity in India's urban centers, particularly among young people. McDonald's has 169 outlets across India and plans a significant expansion. KFC has nearly 50 restaurants in 11 Indian cities. At the same time, public health statistics are raising alarms about the consequences of diets high in animal fat, sugar and processed foods.

According to surveys, 30 percent of Indian adolescents from high economic brackets are overweight. Diabetes, too, is raging among India's middle and upper classes. According

The unfolding of India's "pink revolution" makes the issue of equity a central factor. If projections of the effects of climate change on rainfall, drought and agricultural productivity ring true, will India continue to divert resources towards the intensification and expansion of its livestock sector? Can it, without further challenging prospects for food security for billions of people—or further exacerbating the global climate crisis?

to Dr. K. Srinath Reddy, head of the Public Health Foundation of India, about 120 million Indians suffer from hypertension and 40 million have diabetes (diseases commonly associated with affluence, over-consumption, or a lack of access to nutritional food). Those numbers are set to increase to 215 million and 70 million, respectively, in 20 years. The World Health Organization projects that by 2050 India will lead the world in cases of diabetes.

Even as the middle class struggles with obesity and can now choose fast-food chicken from a variety of quick-serve outlets, an alarming number of Indians are struggling to access basic nutrition. In a country where 20 percent of the population consumes 80 percent of the dietary fat, 230 million Indians are currently defined as undernourished. Though many within government health and nutrition departments see eggs, in particular, as an affordable means of bolstering diets lacking sufficient protein, programs to increase egg consumption among poor families have yet to reach the country's poorest. To date, poor, rural Indians consume only 10 eggs on average per year.

The Face of India's Livestock Revolution

Poultry

Chicken is often the meat of choice in India, as it is less of a cultural and religious taboo than beef or pork, and is cheaper than sheep and goat meat. (During the summer of 2009, poultry meat was cheaper to buy than legumes, another staple of Indian diets.) Egg consumption is also on the rise, spurred in part by the government's initiative to add eggs to its school lunch programs. At present, India is among the top producers of "meat" chickens in the world, raising and slaughtering more than two billion every year. During 2009, the country will produce a staggering 47.4 billion eggs.

In response to burgeoning domestic demand and foreign investment, India's poultry sector is rapidly consolidating and industrializing. Six major players now account for 40 percent of the country's egg production,

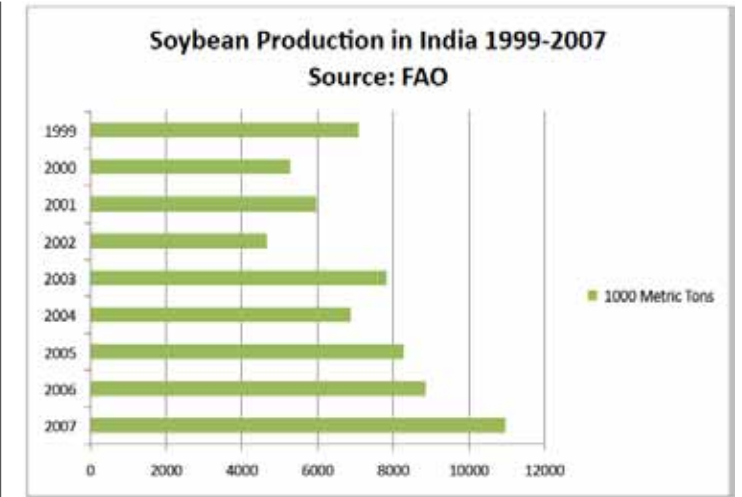
intensive facilities housing as many as 50,000 chickens are becoming the norm, and—as in factory farms around the world—multinational companies have replaced indigenous chicken breeds with international hybrids.

In November 2006, the International Finance Corporation invested in India's largest poultry company, Suguna Poultry. Suguna has been instrumental in developing a contract farming system, which is rapidly replacing traditional means of raising chickens, in small-scale backyard flocks. A handful of corporate entities supply farmers under contract with all the production inputs required, from day-old chicks to vaccines, feed and medical support. In return, farmers are expected to provide a constant supply of eggs or broiler chickens when ready for slaughter.

Foreign agribusiness sees potential in India's protein economy, too. In 2008, for example, U.S.-based Tyson foods acquired a 51 percent stake in Godrej Foods, a major producer and marketer of animal feeds in India, which sells chicken under the "Real Good Chicken" label. The joint venture processes 60,000 chickens daily and is estimated to earn \$50 million annually. With contract farming and joint-ventures becoming increasingly common, about 60 percent of India's poultry meat is currently produced through the use of intensive models of production. About 80 percent of the country's eggs come from the 200 million hens now confined in battery cage facilities.

Milk

India is now home to 280 million cows and buffaloes, the largest herd worldwide, largely as a result of "Operation Flood". Launched in 1970 by a number of international development organizations, this initiative aimed to raise milk production in India and increase rural incomes by al-



lowing dairy farmers to create cooperatives and establishing a National Milk Grid that produced a "flood of milk." Now, nearly 40 years later, multinational corporations are laying claim to India's booming dairy industry, establishing "milk shed" areas where they supply farmers with discounted milking machines and affordable livestock and veterinary services, in return for a reliable supply of milk.

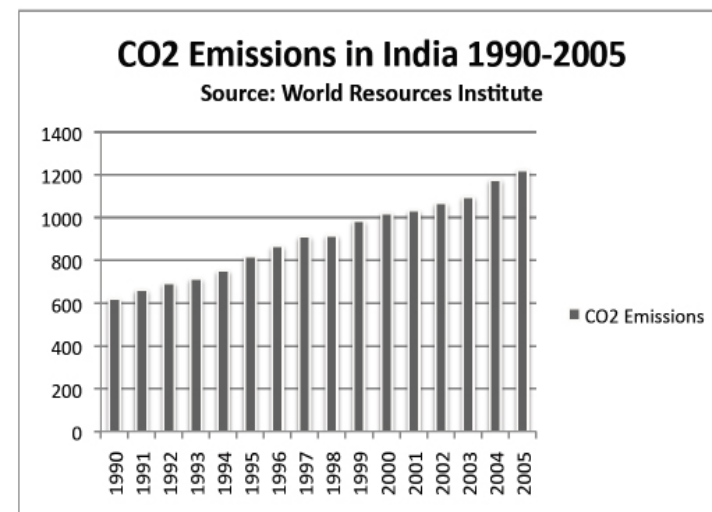
Nestlé, one of the oldest multinationals to have invested in Indian dairy, holds a large stake in the industry, managing a milk shed—area that covers 82,000 farmers in Moga, Punjab. The company's success in India's dairy sector has attracted a number of other large corporations, both domestic and multinational. Reliance, India's top refiner and petrochemical maker and owner of the Reliance Fresh convenience stores, will invest \$1.3 billion by 2010 in the distribution and retail sale of milk from 70,000 villages throughout India. Wal-Mart, with the aid of Indian partner Bharti Enterprises, is laying the foundation to source 15 million liters

of milk daily from North Indian farmers to sell in both its domestic and international chains. And Coca Cola, taking a page from its Chinese endeavors where it recently launched the "Pulpy Milky" dairy-fruit beverage, plans to start a line of flavored milk beverages in India.

Because of Hindu religious edicts, cow slaughter is banned in the majority of Indian states. Only in Kerala and Tamil Nadu in southern India, West Bengal and seven northeast states is cow slaughter legal. The contentious nature of cow-use has given rise to a booming trade in buffalo milk and meat, considered comparable in taste to cow milk and meat, and free of cultural and religious restrictions. According to the U.S. Department of Agriculture, buffalo meat consumption in India will hit 1.94



Cows in India. Photo: Wan Park



million tons by the end of 2009, a five percent increase from the previous year's figures. Today, buffalo meat is second in popularity only to poultry within India, and with the global prices of pulses like lentils rising, more Indians today are opting for buffalo as a protein source. Buffalo also comprises the vast majority of India's meat exports, 90 percent, with sales primarily to Malaysia, Angola and the Philippines.

Strains

India's two most popular livestock animals, cattle and poultry, also require the most water. Cattle need nearly 4.5 times the amount of water to produce an equivalent tonnage of wheat, making the beef or dairy cow the most water-intensive animal to sustain. Poultry comes in a close second, requiring over 3.5 times the amount of water needed for wheat. From 2002 to 2008, water levels in North India fell 1.6 inches each year, Matthew Rodell of the U.S.' NASA's Goddard Space Flight Center. That's the equivalent of 26 cubic miles of ground water—gone, largely as a result of water-intensive agricultural practices.

As India's farmed animal population rises, even greater withdrawals from its water table will be necessary, causing farmers to drill deeper and pay more for sources becoming increasingly scarce. At the same time, animal agriculture is a leading source of water pollution in India, as manure is carried downstream in rainwater run-off.

In addition, the country's booming livestock sector is leading more Indian farmers to plant soy, a high value cash crop used both domestically and exported as a component of animal feed. Soy is tremendously water-intensive, requiring 2.5 times the water needed for wheat, and the majority of India's soy is fed by the summer monsoon. As global warming makes India's monsoon increasingly erratic, farmers will find it harder to water their soy, risking further debt and the potential loss of their livelihood as they are forced to purchase water to avoid losing their harvest.

Which Way Forward?

The growth of a fast food culture and the greater availability of animal products haven't been met by all Indians with open arms. In major cities, farmers, union members, food activists, and intellectuals have attacked McDonald's and KFC outlets. They've lobbied against new trade rules that could flood India with cheap agricultural imports, including meat and milk. They have exposed instances of slaughterhouses getting electricity while households deal with power cuts. They also have railed against the pollution, the land and water requirements, and the cruelty of factory farms and the sidelining of small farmers by the wave of corporate-driven, intensive meat production.

Such critiques show no signs of abating. And the realities of global warming are providing more fodder for campaigns

against agricultural consolidation and India's full embrace of mass, industrial production of meat, eggs and milk.

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