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The World Wastes As Much As Half Its Food, New Study Finds

By **Jeff Spross** on Jan 14, 2013 at 1:58 pm

The world wastes from one-third to one-half of the four billion metric tons of food it produces each year, according to [a report released](#) last week by the Institution of Mechanical Engineers. Because any item of food also represents an entire chain of production, wasted food also translates into wasted fresh water, wasted energy, wasted cropland, and further contributions to global warming with no discernible counterbalancing benefit.



And even as the world wastes huge amounts of food, its ability to produce that food is being put under added stress by global warming and climate change. Studies [by Oxfam](#) and [other research groups](#) show extreme weather, higher temperatures, flooding and pest outbreaks could increasingly destabilize food production, [driving prices up](#) by as much as 180 percent by 2030. East Africa has [already seen](#) the worst drought in 60 years, decimating its food supply as climate change makes reduced rainfall a “chronic problem.”

The problem is especially unnerving because, as the report notes, the global population is expected to surge another 2.5 billion by 2075, bringing the total well beyond 9 billion. And according to the UN, [nearly 870 million people](#) were already chronically malnourished between 2010 and 2012. As societies become more affluent, global meat consumption per capita is expected to rise 40 percent by 2050, which exacerbates the problem as feeding people with meat is far more inefficient in terms of water, land, and energy input.

The report found that the problem spans both first-world and third-world countries, with most of the waste occurring on the consumer-side in the first case, and on the supplier-side in the second:

In less-developed countries, such as those of sub-Saharan Africa and South-East Asia, wastage tends to occur primarily at the farmer-producer end of the supply chain. Inefficient harvesting, inadequate local transportation and poor infrastructure mean that produce is frequently handled inappropriately and stored under unsuitable farm site conditions.

As the development level of a country increases, so the food loss problem generally moves further up the supply chain with deficiencies in regional and national infrastructure having the largest impact. [...]

In mature, fully developed countries such as the UK, more-efficient farming practices and better transport, storage and processing facilities ensure that a larger proportion of the food

produced reaches markets and consumers. However, characteristics associated with modern consumer culture mean produce is often wasted through retail and customer behavior. [...]

Controlling and reducing the level of wastage is frequently beyond the capability of the individual farmer, distributor or consumer, since it depends on market philosophies, security of energy supply, quality of roads and the presence of transport hubs. These are all related more to societal, political and economic norms, as well as better-engineered infrastructure, rather than to agriculture. In most cases the sustainable solutions needed to reduce waste are well known. The challenge is transferring this know-how to where it is needed, and creating the political and social environment which encourages both transfer and adoption of these ideas to take place.

The *Washington Post's* Brad Plumer went through the report and listed a whole host of concrete examples of how this takes place: In developed countries such as America and the UK, between 30 and 50 percent of all food bought is thrown away by the purchaser, due to marketing strategies that encourage bulk buying and other issues. Major supermarket chains will often reject whole crops for purely aesthetic reasons — practices that lose the UK one-third of the food it produces, for example. Plumer previously noted other issues in developed countries, including over-zealous sell-by dates, large portion sizes at restaurants that go uneaten, flaws in the processing and distribution chain, and the simple willingness of households to throw out 14 to 25 percent of the food they buy simply because it's cheap.

In developing countries, the problem is much more one of inadequate infrastructure: India loses at least 40 percent of its food en route between growers and consumers due to lack of refrigeration, bad roads, and corruption. Africa has many similar problems. Countries such as Pakistan and the former Soviet Republics have out-dated and inadequate storage facilities — Pakistan loses 16 percent of its grain production annually because poor storage allows for rodent infestation. Rice loss in Southeast Asian countries ranges from 37 percent all the way up to 80 percent.

On top of this, about 70 percent of the 3.8 trillion cubic meters humans use annually goes into agriculture, meaning the potential for wasted water resources is huge. About 550 billion cubic meters of water are wasted around the world each year producing crops that are never consumed. And by 2050, demand for water in food production could be driven to 10 or even 13 trillion cubic meters per year.

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