Wasted food, lost water

Ethical imperatives for water conservation

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Fix leaky faucets, use low-volume toilet tanks, run the washer with full loads. These are just some of the many water saving behaviors commonly practiced by millions of people conscious of the need to conserve water and energy. In a growing number of communities, individual action, treatment and recycling are definitely helping to reduce water waste.

The largest consumer of water is agriculture, which has been a centre of attention for water saving practices for some time. Most of that attention has focused on ways of reducing water for crop production. Technical innovations and improved land management and farming practices have made great strides, but it's time move past the farm gate.

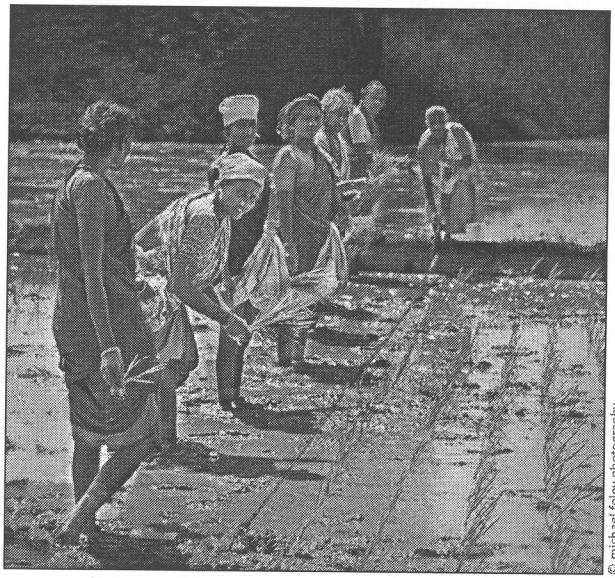
The loss of food between the farmers' field and our dinner table – in food storage, transport, food processing, retail and in our kitchens – is substantial. Considering the amount of water required to produce our food, lost and wasted food amounts to lost and wasted water. It stands to reason that reducing food loss and food waste can substantially reduce agricultural water.

Food waste is part of the world's looming water crisis. In the US alone, annual food production requires about 120 cubic kilometers of irrigation water. That's roughly the amount of water in Lake Erie. We waste approximately 30% of the food produced with this water, which amounts to 40 billion litres of irrigation water. That is enough water to meet the household needs of half a billion people.

How we lose water from field to fork

What happens to that 30% between the field, where it is produced, and the fork, where it is consumed? In developing countries, pests, pathogens and poor post-harvest technologies account for as much as 20 to 40% of the harvested crop. Conservative estimates indicate another 10 to 15% is lost in processing, transport and storage. If we take lost quality into account, loss in these links of the food chain could be as high as 25 to 50%. In developing countries, food waste in households is estimated to be around 10%. Not much gets scraped off plates into the waste bin here.

In developed countries, post harvest, storage and transportation technology tend to be better, but there is still considerable loss. What we are seeing now is the increasing role of consumers, supermarkets and the food industry in generating waste. In the US, around 25% of fresh fruit and vegetables sold in retail stores are not consumed. A recent report from Sweden suggests that families with small children throw away that much of the food that they have bought and carried home. Studies in the UK indicate a similar level of waste. Further losses occur during retail in the form of discarded perishable products, product deterioration, and 'plate waste' – the food that gets thrown into the garbage bin.



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A blind spot on water

With the world's population forecast to reach nine billion by 2050, that is food we can ill afford to waste and the reason a lot of people are talking about the need to increase food production. The problem is, if we increase production using the same water-wasteful methods we are using now, agriculture will need twice the amount of water it currently consumes. Even without the increase in demand from non-agricultural users, that much additional water will be hard to come by in many parts of the world. In fact, given the increasing demand for non-agricultural water and some of the predicted impacts of climate change, it's a sure bet that agriculture in most parts of the world will have to learn to get by with less water.

Our blind spot is that we see the problem of food production as a 'shortage' problem and not a water waste/efficiency problem. The conventional response to problems of shortage is to increase the volume of production, hence the research in is ever higher yielding plant varieties, fertilizers and genetic engineering. The other approach to increasing production is to reduce waste and increase efficiency. On a global scale, we are already producing roughly double the amount of food required to provide the current world population of 6.6 billion with enough calories to lead an active, healthy life.

Sadly, there is a huge imbalance. Globally, there are roughly 50% more people who are overweight and obese (1.2 billion) than there are malnourished (860 million). It would unrealistic to think we could eliminate all waste or redress all imbalances, but there is considerable room for improvement.

Bad news is good news

The sheer scale of the problem is good news. Because water loss along the market chain is so enormous and occurs at so many points, we have lots of entry points for improving water efficiency: farmers, agricultural workers, truck drivers, the food industry, supermarkets, government officials and individual consumers. Raising awareness is a good first step, but not sufficient on its own. People need tangible incentives to change their behavior. Supermarket chains learned very quickly that a tiny discount was needed to encourage people to use those good-for-the-environment, cost-saving, non-plastic, reusable shopping bags. We need to get similarly creative with incentives for saving water.

Reforming the policy environment offers the best return on our efforts to reduce the enormous waste of water in our food chain. We need policy that encourages investment in post-harvest technologies; that looks more closely at the role of the food processing industry, supermarkets and pricing mechanisms; and strategic efforts to reduce food waste and – in the west – over-consumption. Of course individuals have an important role to play, but suggesting that the entire enterprise of reducing waste is an individual responsibility amounts to a clever deflection of responsibility by vested interests and a cop out by politicians.

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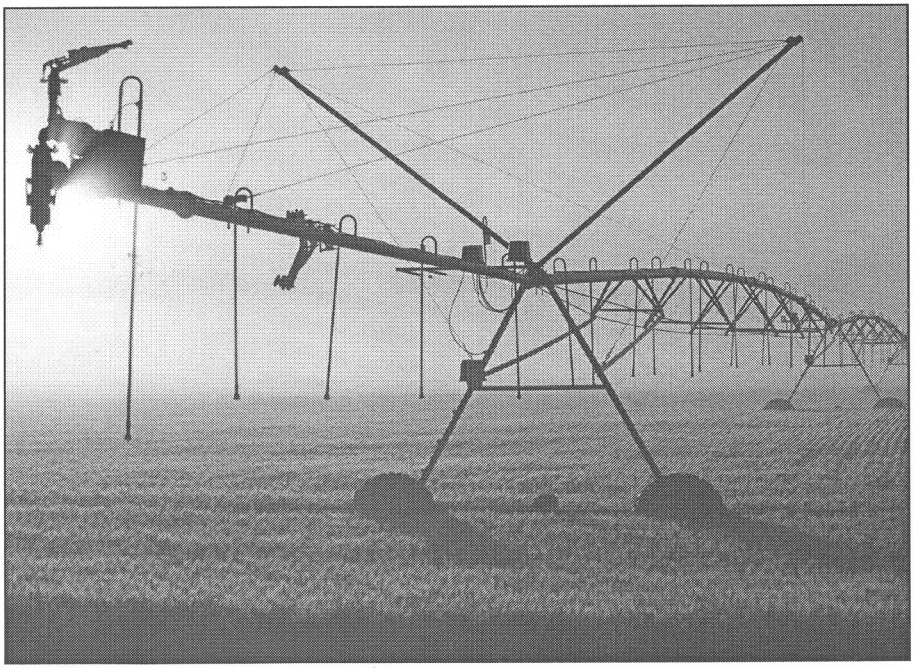
The bottom line is, we need to produce our food with less water. As a starting point, we need to include reducing the loss and waste of food from field to fork as part of a sound and rational water management policy. Reducing loss and waste helps ease the pressure on our water resources and frees up land and water for other users. The livelihoods of millions of smallholder farmers would be enhanced, reliable supplies to industry would be improved and consumers would benefit in terms of quality, stable prices and food security.

To achieve these ends we need to start setting targets to reduce food waste. Taking as a reference point the UN Millennium Development Goals and with due consideration to the magnitude of losses and the potential gains, a reduction by 50 percent across the chain from field to fork is not unrealistic. There are ample opportunities to produce more food with less water in rainfed and irrigation systems across the globe, and that has been a topic of in-depth study within organizations like the International Water Management Institute.

Next, we can tackle lifestyles and consumer behavior. With increasing disposable income, urban lifestyles and the influence of the food industry and supermarkets, the stages in the food chain beyond production are ever more important. Studies show that people living in cities, particularly in developed countries, display an alarming level of ignorance with regard to food. Most urban consumers interviewed in these studies simply did not think about meat, dairy and fruit as the produce of living things that use natural resources to grow. With increased distance between farms and food consumption sites, and the increased processing and packaging of food, this dangerous lack of awareness will only increase. It is dangerous because unaware consumers are less likely to question and change their behavior or support policy changes.

Finally, we need to get waste reduction and food production efficiency back on the political agenda. In the 1970s and 1980s, there were several landmark studies on global and regional post-harvest losses and waste. Over the last few decades, other issues have taken centre stage. With populations and food prices rising and the impacts of climate change becoming clearer, it is time to get waste back on the agenda. We have the means to reduce food waste and increase food production efficiency. All we need now is the will. ■

Interested readers are invited to download Saving Water: From Field to Fork: Curbing Losses and Wastage in the Food Chain (http://www.siwi.org/documents/Resources/Policy_Briefs/PB_From_Filed_to_Fork_2008.pdf).



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