

We must dramatically reduce postharvest losses if we are to feed the world in the face of climate change.



Climate change and postharvest loss

Climate change could make postharvest loss reduction an even greater challenge.

Image by Damian Patkowski on
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The challenge

By 2050, we will have to nourish 2 billion more people than we do today, most of them in developing countries. To succeed, we will have to increase food production by 60 percent at a time when climate change is adding significant pressure to already stressed land and water resources.

So far, the typical policy response has been to focus on increasing crop yields through input management and new high-yielding varieties. However, achieving a significant increase in yields may not be possible in many regions, where climate change-driven water scarcity, rising temperatures and extreme weather could have severe long-term effects on agriculture.

A logical solution is to reduce postharvest food losses. Yet climate variations are creating conditions that could make postharvest loss reduction an even greater challenge.

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Postharvest loss

According to the Food and Agriculture Organization of the United Nations (FAO), around a third of the food produced for human consumption is lost or wasted. Postharvest losses occur all along the value chain, including during storage, processing and transport. Postharvest losses decrease the amount of available food, which raises prices and reduces producer income. They also waste the resources used to produce the lost food in the first place (e.g., seeds, fertilizer, water, money and labour).

The impact of climate change on food loss

Climate change is expected to have a profound impact on agricultural productivity, postharvest losses and value chains. Climate change affects agricultural productivity both directly, by introducing changes in agro-ecological conditions (e.g., drought, variable precipitation, extreme weather events) and indirectly, by giving rise to new diseases and pests. In addition, the planet's mean surface temperature and atmospheric carbon dioxide concentrations continue to increase, which will cause a further loss of productive land and decreased crop productivity.

The impact of food loss on the climate

Food loss and waste account for about 4.4 gigatonnes of greenhouse gas emissions each year; these include on-farm agricultural emissions and the energy used to produce, transport and store food that is ultimately lost or wasted. If food loss and waste were its own country, it would be the world's third-largest emitter—surpassed only by China and the United States.

The benefits of reducing loss

Postharvest loss can be greatly reduced by targeted investments in technology design and capacity development. The World Bank estimates that just a one percent reduction in postharvest losses in sub-Saharan Africa could lead to economic gains of USD 40 million each year. And most of the benefits would go directly to smallholder farmers.

Reducing food loss can increase climate resilience. For example, improving storage conditions can reduce the vulnerability of harvested produce to heat or pest infestation as well as

preserving nutrients, especially in highly perishable produce like fruits and vegetables. Importantly, it can also help to reverse global warming. According to a recent study, reducing food loss and waste by 50 percent over the next 30 years could prevent more than 70 million tonnes of greenhouse gases from being released into the atmosphere.

Solving postharvest losses requires reliable data on where, when, why and to what extent they are occurring. Yet, such data are scarce in many developing countries; as a result, there is little understanding of the impact that losses have on smallholder welfare, and the benefits that could result from reducing them.

The role of APHLIS

APHLIS delivers scientific estimates of postharvest losses in Africa, including the nutritional and financial dimensions of loss. APHLIS estimates annual losses at provincial, national and regional levels for cereals, pulses and roots and tubers. APHLIS combines academic research with on-the-ground data collection by a network of agricultural experts. This supports highly transparent, accurate – and relatively inexpensive – estimates of loss. This information is freely available on the APHLIS website, www.aphlis.net.

Understanding the magnitude of postharvest losses, where loss occurs, and its causes and impacts guides the postharvest loss research agenda and helps scientists and service providers to evaluate the impact of their efforts to mitigate loss. This helps decision-makers formulate policies and investments for successful postharvest loss reduction programmes.