

Post-harvest management

Value chain perspective on economically and environmentally sustainable food chains

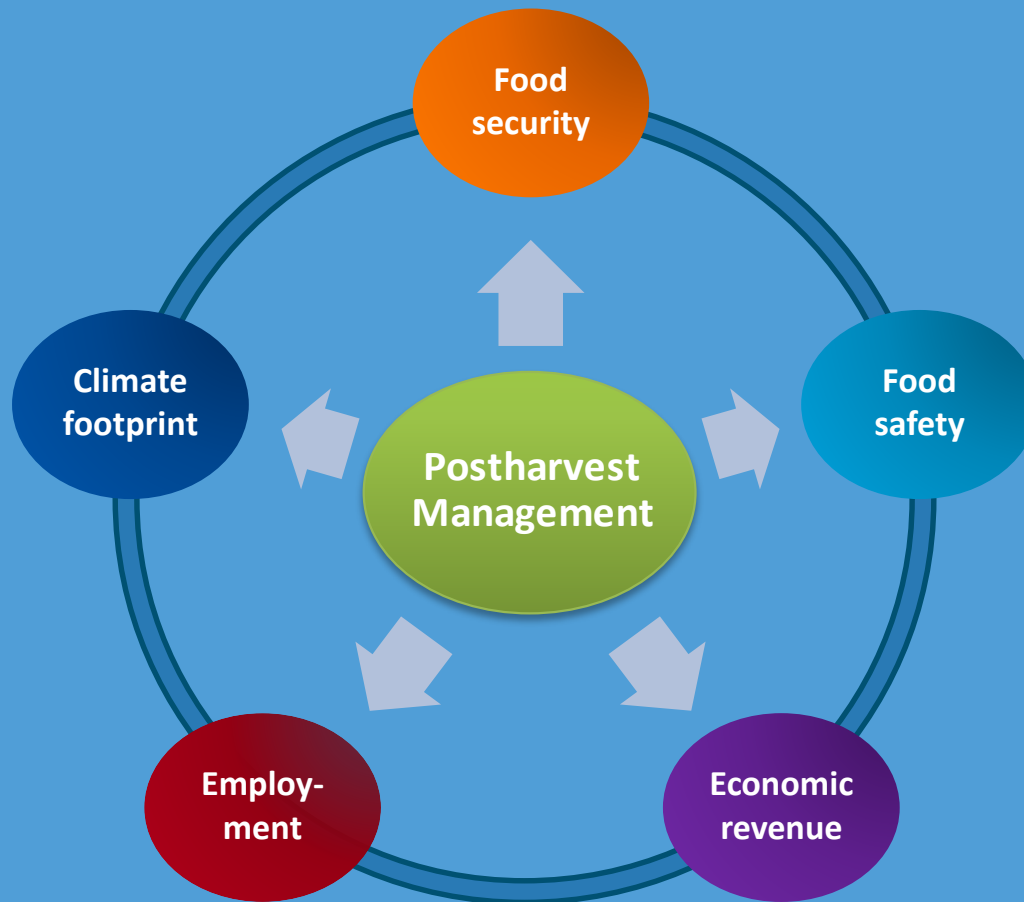
| Cape Town | South-Africa | 5 December 2017 |

| B. van Gogh N. Waldhauer T. Timmermans R. Ruben |



Scope of the research

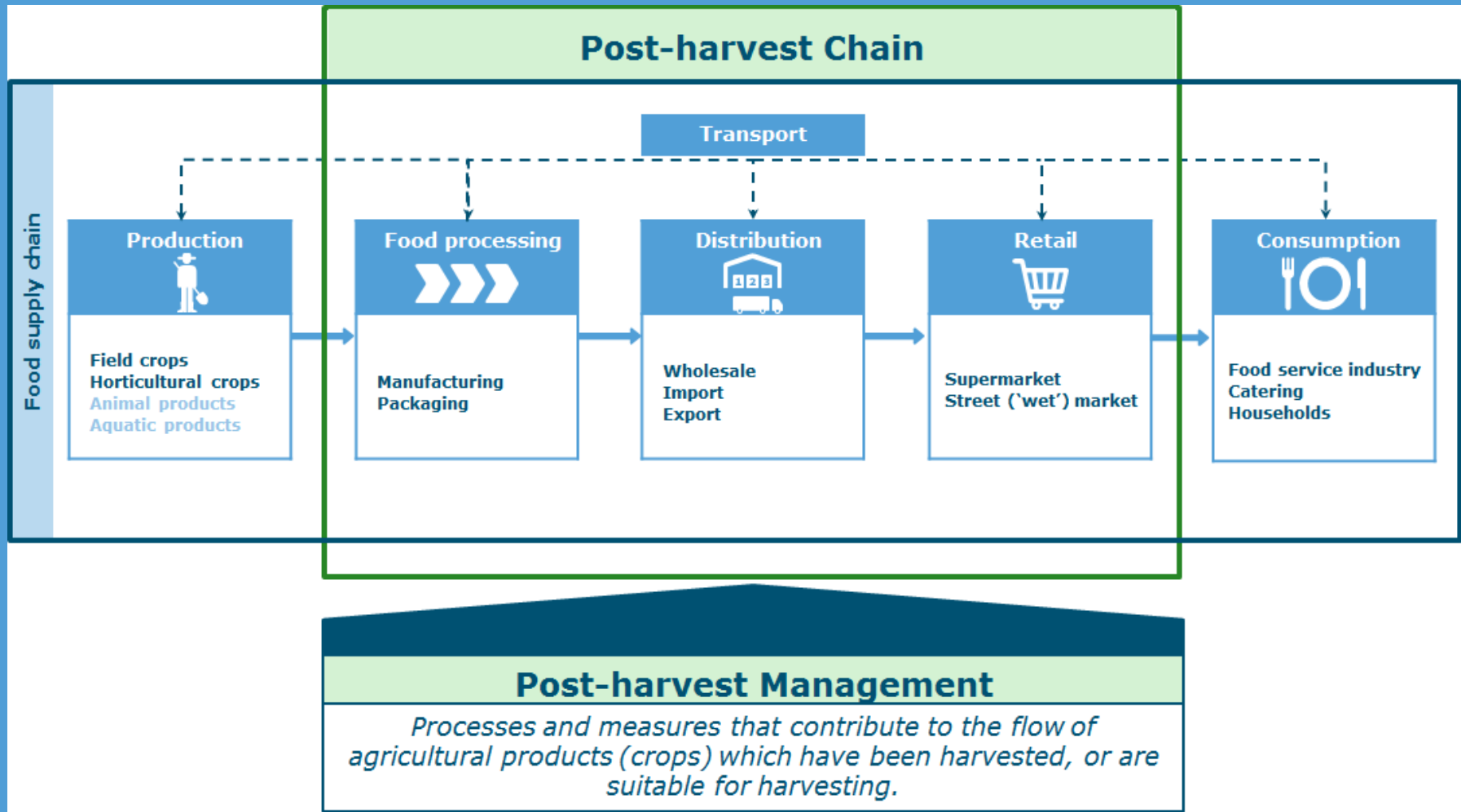
How does post-harvest management contribute to:



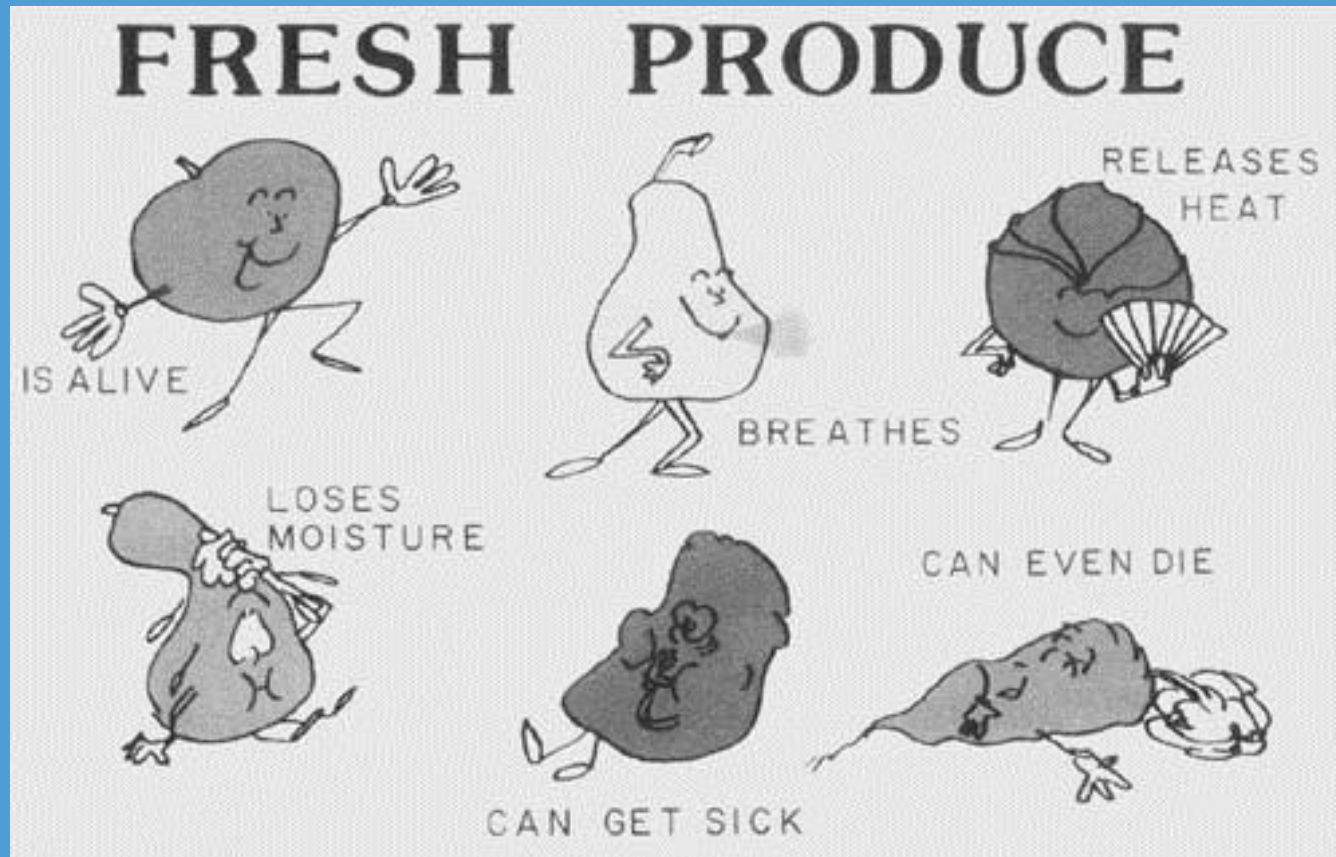
Overview of the presentation

1. Introduction
2. Post-harvest management (PHM): what is it?
3. Scope of impact of PHM
4. Value chain approach on PHM and reducing food losses and waste
5. Main conclusions and remarks
6. Time for some Q & A (hopefully)

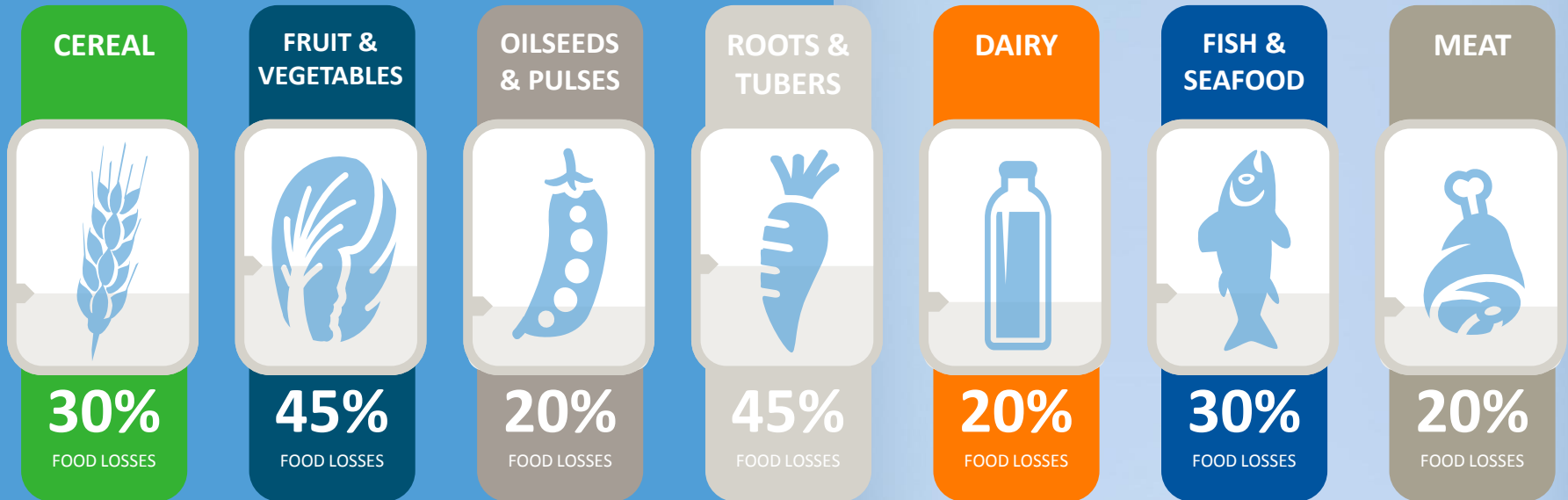
2. Definition of post-harvest management



It is not just a commodity, it is



1/3 OF ALL PRODUCED FOOD IS NEVER CONSUMED



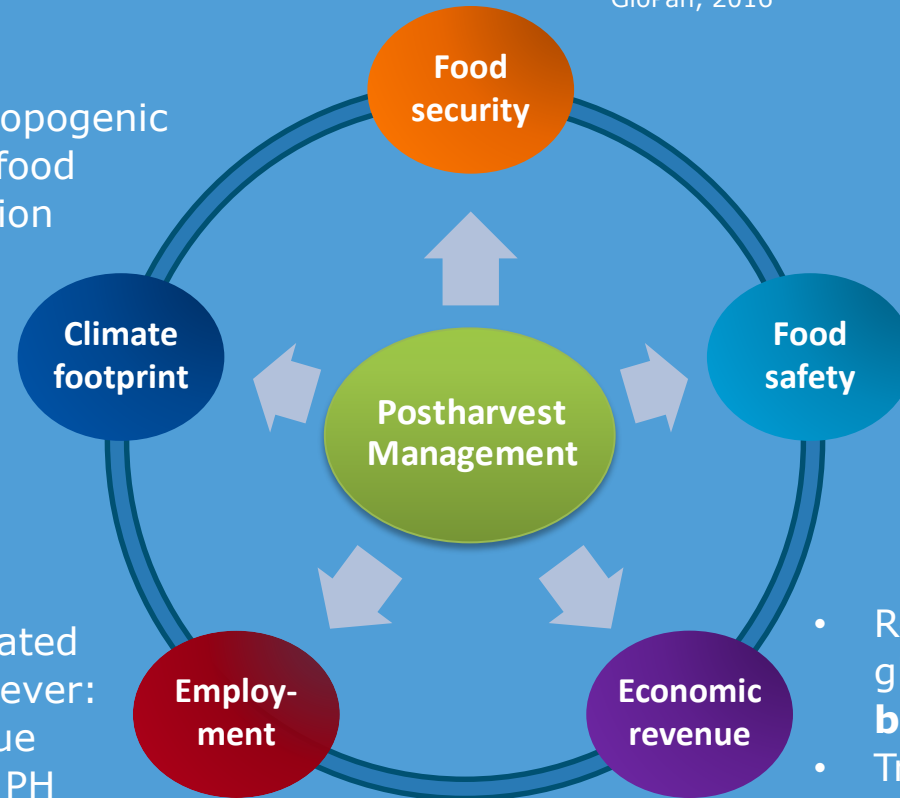
1,3 BILLION METRIC TONS = 60.000.000 TEU
= 2800 x
WORLD'S LARGEST CARRIER



3. Scope of impact PHM

- **800 million** people chronically hunger
- **3 billion** people have low quality diets

GloPan, 2016



- 19-29% of global anthropogenic emissions is related to food production & consumption
- CO₂-eq. from FLW:
3.3 Gtonnes

Vermeulen, 2012
FAO, 2013

- **1 in 10** people fall ill from food borne diseases
- **33 million** healthy people die of fbd's
- 1/3 of deaths are **children**

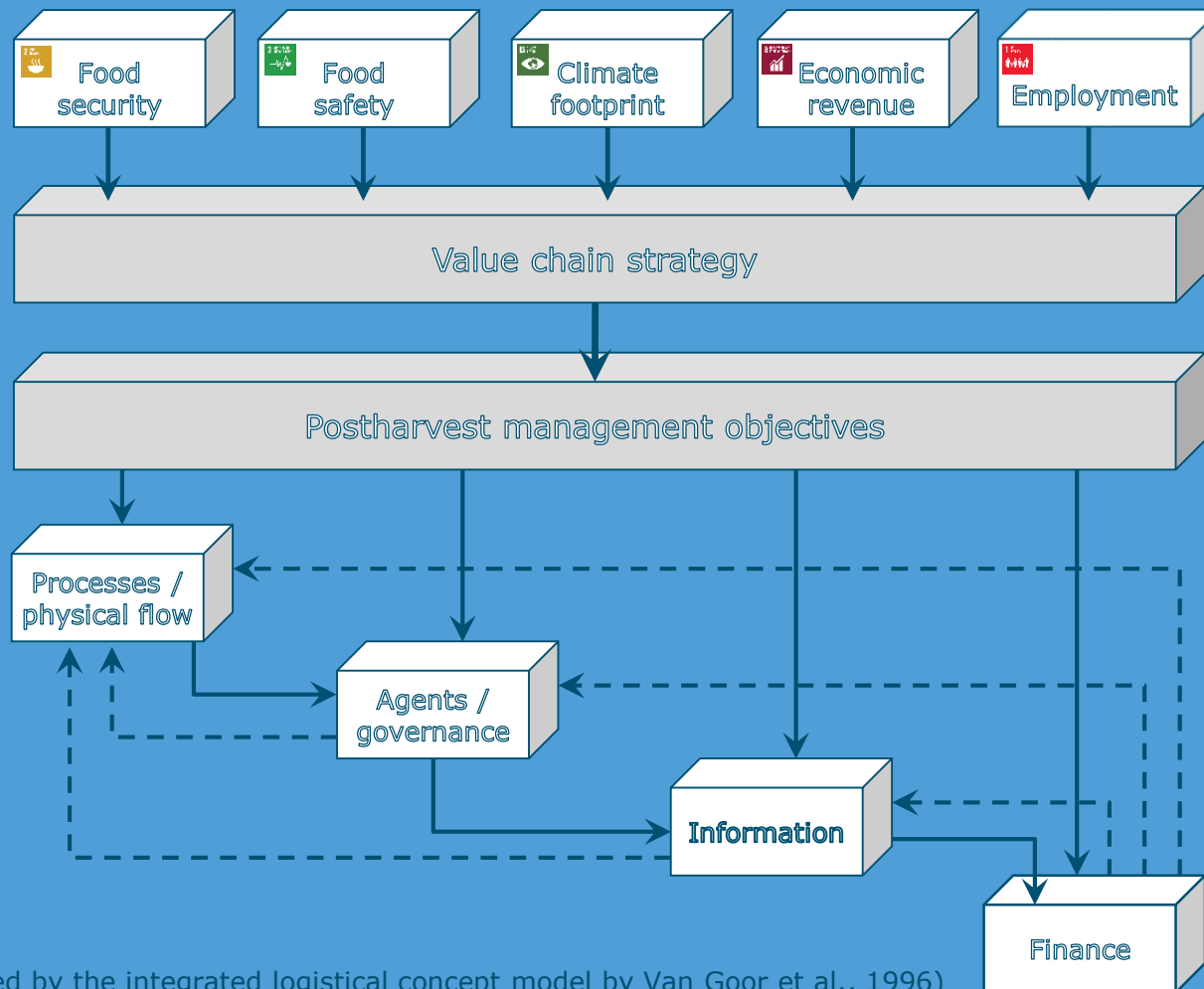
WHO, 2015

- FLW not directly associated with employment; however:
- Expected effects of value adding activities in the PH chain on employment

- Revenues lost from global FLW: **\$990 billion per year**
- True cost multiplier unknown

FAO / Gustavsson, 2011

4. PHM assessment model



(Inspired by the integrated logistical concept model by Van Goor et al., 1996)

5. Value chain strategy: food security

- PHM influences the availability and utilisation of food
- PHM modifies the consistency and predictability of food supplies and the nutrient composition and diet quality of food consumption.
- Food security is critically dependent on dovetailing of value chain processes and value chain network organisation (interaction between chain agents)
- An approach for reducing risks and uncertainties related to PHM is to further engage in contractual exchange and product insurance

5. Value chain strategy: food safety

- Food safety is the most critical dimension of food quality; assuring food safety and quality is an indispensable element of food loss reduction.
- National policies that will address food losses in post-harvest chains will need to have local governance and institutions in place.
- Investment in control bodies that will premise food safety, may generate short-term adverse effects: re-adjustments may lead to an increase of post-harvest losses and declining prices.
- Worldwide differences in legal requirements for food safety may result in post-harvest losses. International harmonisation of food safety standards is a must.

5. Value chain strategy: economic revenue

- Effective PHM will increase market supply, eventually leading to lower farm-gate prices.
- Effective PHM will safeguard product quality and availability of nutritious f&v: stimulate consumption in local markets and an upward shift in demand.
- Upstream PHM investments benefit downstream revenues; attention needs to be given to intra-VC financial streams that enable co-funding by downstream parties.

5. Value chain strategy: employment

- Not much know about the effects of PHM on employment; PHM interventions might be either capital – or labour intensive.
- Net employment effects of PHM depend on the selected technology and on the organisation of PHM activities.
- Net employment effects depend on the degree of long-term character of the PHM intervention and on the strength and mutual commitment of the partners in the VC.

5. Value chain strategy: climate footprint

- By investing in PHM and hence the reduction of PHLs, the waste of resources will be avoided and GHG emissions from landfills will be decreased.
- The trade-off in terms of GHG-emissions from lowering FLW vis-a-vis investment in energy-consuming measures (e.g. cold chain technology) has to be investigated on a case-by-case basis.
- Investments in PHM measures may benefit CO₂-emission reduction targets in developing economies when adverse effects from FLW on the climate footprint will be diminished.

Key-message

Post-harvest management contributes to the *improvement of availability, quality, and safety* of perishable food products. Improved food quality may lead to *higher incomes* in the value chain, *better consumer satisfaction*, and *lower environmental impact* (as post-harvest losses will be reduced).

But:

It will require a *value chain approach* to change a food system, in which conflicting interests and opposing effects will have to be managed step-by-step in a coherent and connected manner.

Post-Harvest Research @Wageningen University & Research



CCAFS research project 'Reducing food loss and waste'

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit <https://ccafs.cgiar.org/donors>