



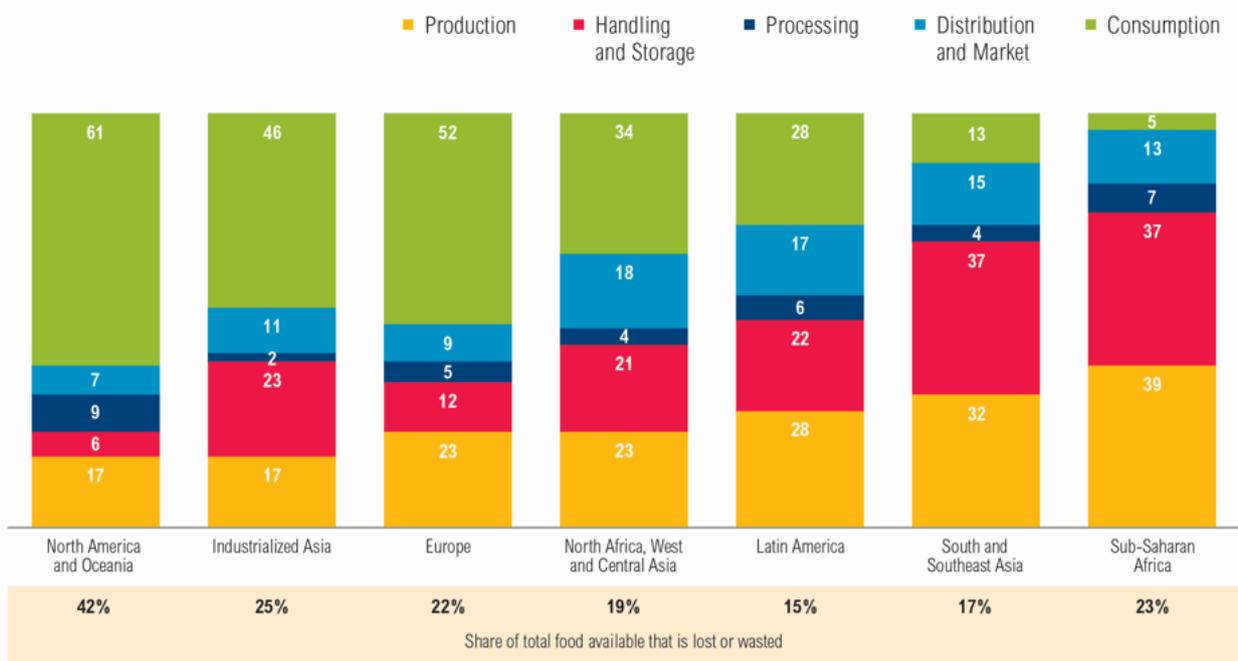
FOOD CONNECTION CHALLENGE

Food losses, value chain efficiency and food security

Facts and figures on food losses worldwide

According to the Food and Agriculture Organization of the United Nations (FAO), between one quarter and one third of all food produced worldwide is never consumed (FAO, 2011). Food losses and waste occur at every stage of the value chain including during production, harvest, storage and transport, processing and retail. Food waste occurring at the end of the chain (at the level of distributors and consumers) is particularly high in medium and high-income countries. This is mainly caused by consumer behavior and lacking coordination in the supply chain, chiefly those related to supermarkets and restaurants. In low-income countries, the most significant causes of food losses are financial, managerial and technical limitations in the harvesting techniques, storage and cooling facilities located in difficult climatic conditions, infrastructure, packaging and marketing systems and related policy environments.

Figure 1. Food loss and waste occurs more “near the fork” in developed regions and more “near the farm” in developing regions (Percent of kcal lost and wasted)



Note: Number may not sum to 100 due to rounding.

Source: WRI analysis based on FAO. 2011. *Global food losses and food waste—extent, causes and prevention*. Rome: UN FAO.

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The impact of food losses

Value chain inefficiencies can negatively impact food security, quality and safety. In some cases, less food is available at the consumer level due to losses. In other cases, food prices rise significantly due to shortages with more food insecure consumers as a result. Or in even further circumstances, the value of food is reduced due to low standards of storage or transport. Considering that one in nine people worldwide are undernourished, losses and waste at this level are unacceptable.

Food chain inefficiencies also have non-favorable effects on the environment and resource usage. About one-quarter of all water used by agriculture each year goes to producing food that will ultimately be lost or wasted. Cropland area the size of China is needed to grow this food, and the production generates about 8% of global greenhouse gas emissions annually.

Finally, food loss and waste has significant impacts on economic development simply because considerable effort and energy goes into processes that do not result in feeding people, causing roughly \$940 billion in economic losses globally per year. Quite the opposite, some actors in the short term profit from food losses and as such, do not initiate action to realize less losses. Thus unravelling interests of all related actors and power relations in the value chain is essential to explain all various consumer behaviors.

The need for context-specific joint integral solutions

The concrete causes of food losses – and the solutions to tackle them – depend on the conditions and context of the specific country or region. For this Food Connection Challenge, we focus on the Nigerian context and for each case zoom in on specific products. However, it is relevant to be aware that integrated value chains or food system approaches with an eye on context-specific circumstances are needed to improve value chains and food systems as a whole in order to counteract food losses. Interventions on individual chain elements and actors are more effective if embedded in a joint strategy and effort of the related actors and stakeholders. For example, constructing a new major road connection can create new opportunities for reaching markets and offering new products. Thus, building new storage should take into account that higher volumes can now be brought to the market.

The situation in Nigeria

Reliable and quantitative evidence on food losses and waste is generally rare. The 2011 FAO food loss and waste estimates per region, commodity group, and stage of the food supply chain reveal relatively high losses in agricultural production, post-harvest handling and storage, and processing and packaging stage in Sub-Saharan Africa. Roots and tubers, and fruits and vegetables face disproportionately larger losses than other commodity groups. Food waste in final consumption is relatively unimportant (5% or less).

Also for Nigeria, research into the exact figures of food losses is limited. Some surveys carried out on post harvest food losses in different parts of Nigeria revealed that as much as 20 – 30% of total grain production, 30 – 50% of root and tuber and usually high percentage of fruits and vegetables are lost with a substantial amount recorded during storage. The major problems are improper handling, lack of proper storage and packaging.



For particularly vulnerable crops like tomatoes, some studies even indicate the losses can be as high as 62,5%, because farmer harvest mostly when they have buyer, harvest at fully ripe stage (90%) and most still use the traditional basket and sacks as their packaging material in conveying produce.

Like most other African governments, the government of Nigeria has adopted the Malabo Declaration, launched by the African Union in 2014, and made the reduction of postharvest losses one of their priorities and wishes to develop a national investment plan.

Table 1. Estimated/assumed waste percentages for each commodity group in each step of the food supply chain for sub-Saharan Africa.

	Agricultural Production	Postharvest handling and storage	Processing and packaging	Distribution	Consumption
Cereals	6%	8%	3.5%	2%	1%
Roots and tubers	14%	18%	15%	5%	2%
Oilseeds and pulses	12%	8%	8%	2%	1%
Fruits and vegetables	10%	9%	25%	17%	5%
Meat	15%	0.7%	5%	7%	2%
Fish and seafood	5.7%	6%	9%	15%	2%
Milk	6%	11%	0.1%	10%	0.1%

Source: FAO, 2011.