



DRAWDOWN: FOOD WASTE

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Extent, Causes and Strategies for
Prevention

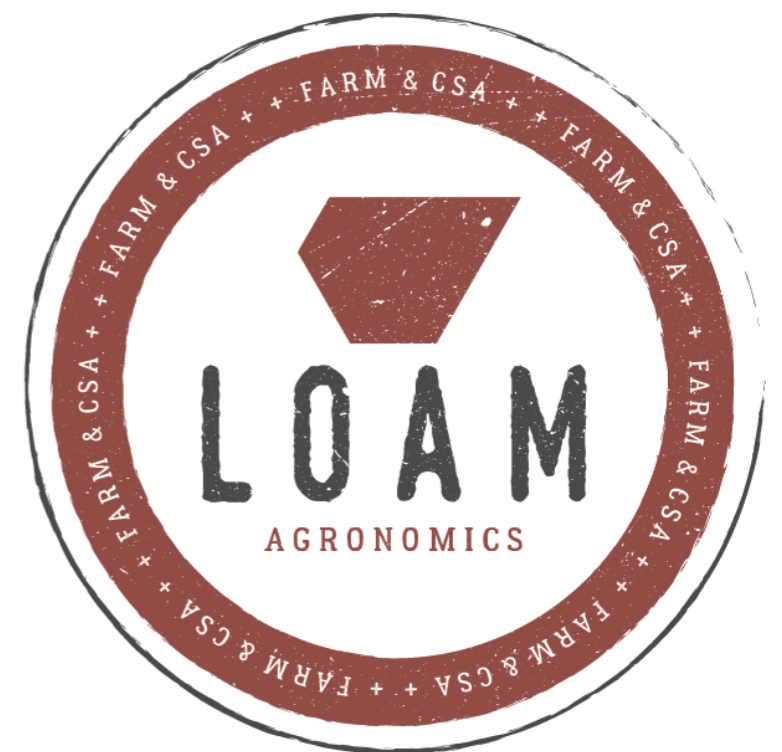




Scott Snodgrass

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Scott Snodgrass is at least a 4th generation Texan and has lived in Houston for most of his life. He is passionate about seeing viable systems for local food production thrive. Scott has spent time in the garden center, landscaping and restaurant industries as well as farming (certified organic) and education. He is excited to see high quality produce grown in urban areas and made available to all people.



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FAO. 2011. Global food losses and food waste – Extent, causes and prevention. Rome

THIS PRESENTATION HAS LARGELY
BEEN ADAPTED FROM THE ABOVE
REFERENCE

FOOD SUPPLY CHAIN

- **AGRICULTURAL PRODUCTION:** losses due to mechanical damage and/or spillage during harvest operation (e.g. threshing or fruit picking), crops sorted out post-harvest, etc.
- **POST-HARVEST HANDLING AND STORAGE:** including losses due to spillage and degradation during handling, storage and transportation between farm and distribution.
- **PROCESSING:** including losses due to spillage and degradation during industrial or domestic processing, e.g. juice production, canning and bread baking.
- **DISTRIBUTION:** including losses and waste in the market system, at e.g. wholesale markets, supermarkets, retailers and wet markets.
- **CONSUMPTION:** including losses and waste during consumption at the household level.

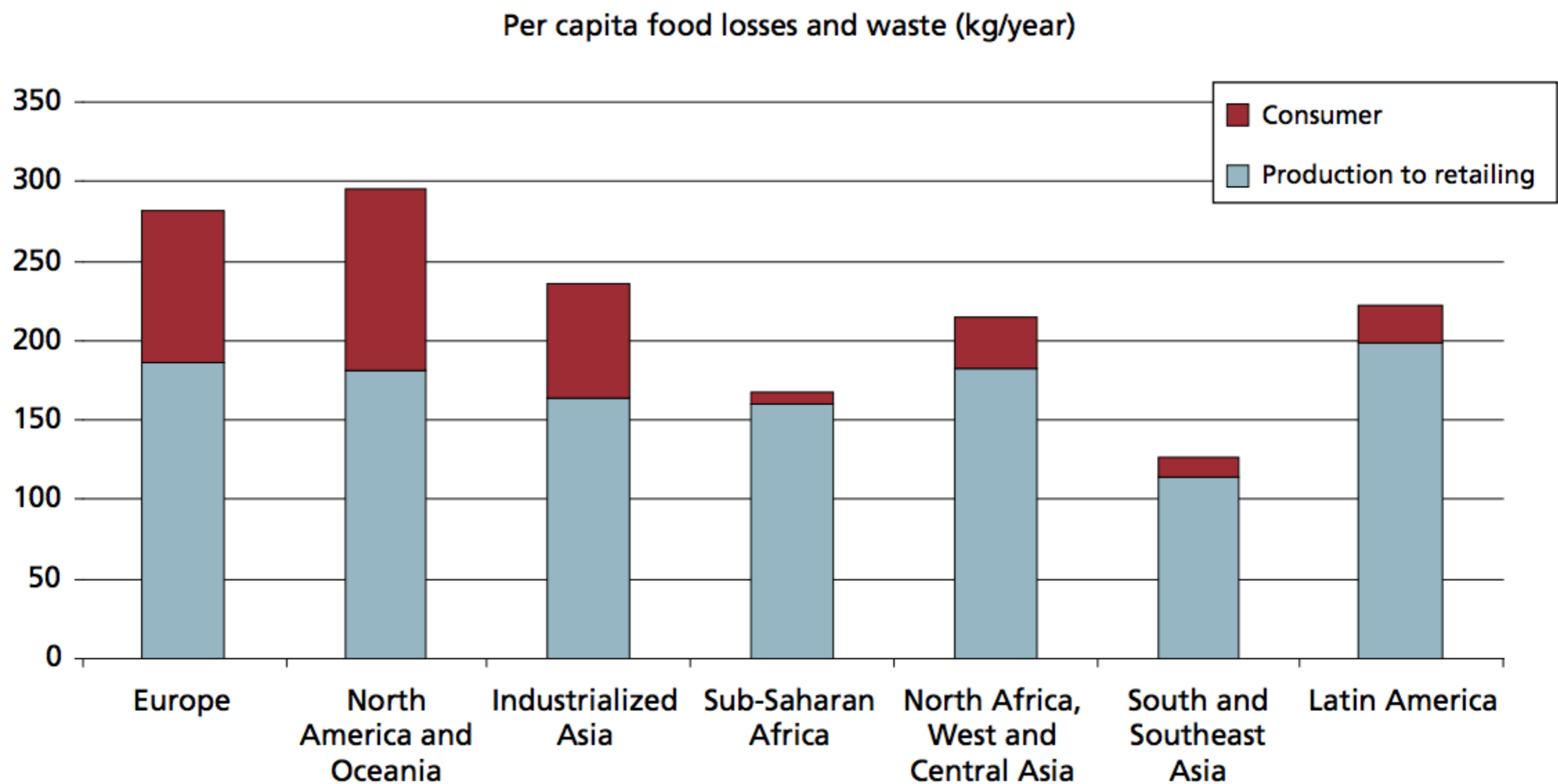
DEFINITIONS

- **FOOD LOSSES:** the decrease in edible food mass throughout the part of the supply chain that specifically leads to edible food for human consumption. Food losses take place at production, post-harvest and processing stages in the food supply chain.
- **FOOD WASTE:** food which, due to consumer behavior, is lost. Food waste takes place at retail and consumption stages.

For the purposes of this presentation we will use the term “food waste” for both of these concepts, making sure to note at which stage the waste is taking place.

PER CAPITA WASTE

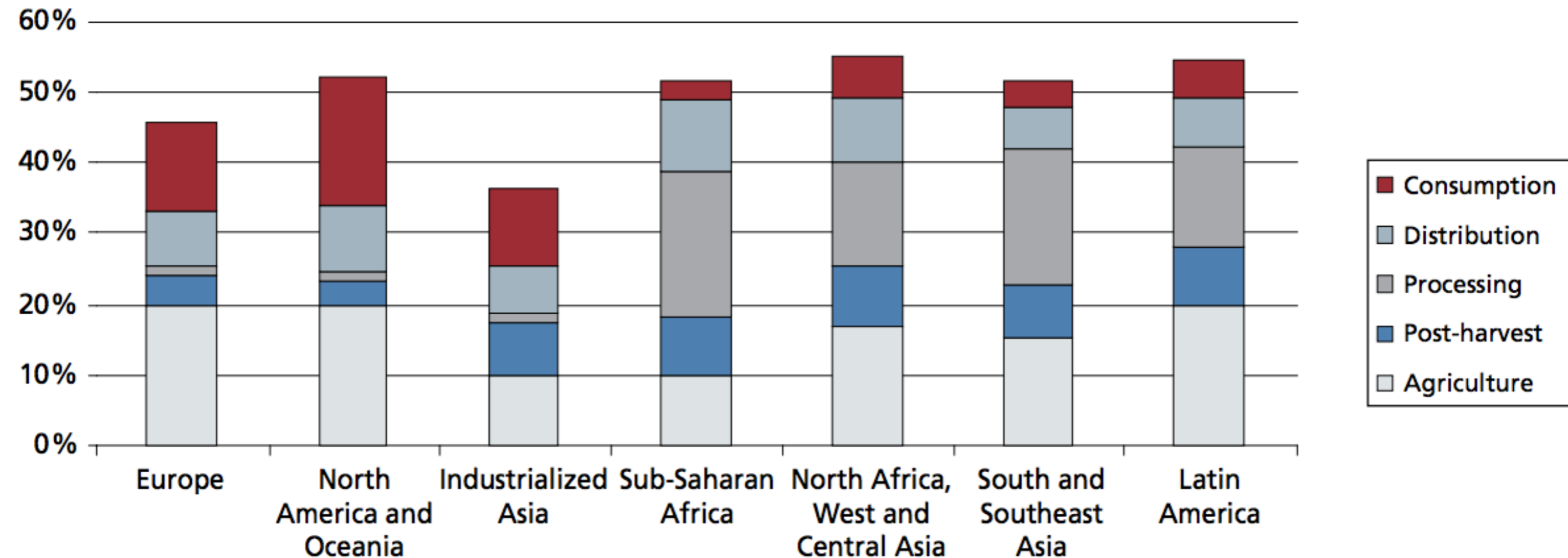
Figure 2. Per capita food losses and waste, at consumption and pre-consumptions stages, in different regions



FOOD WASTE BY COMMODITY-FRUITS AND VEGETABLES

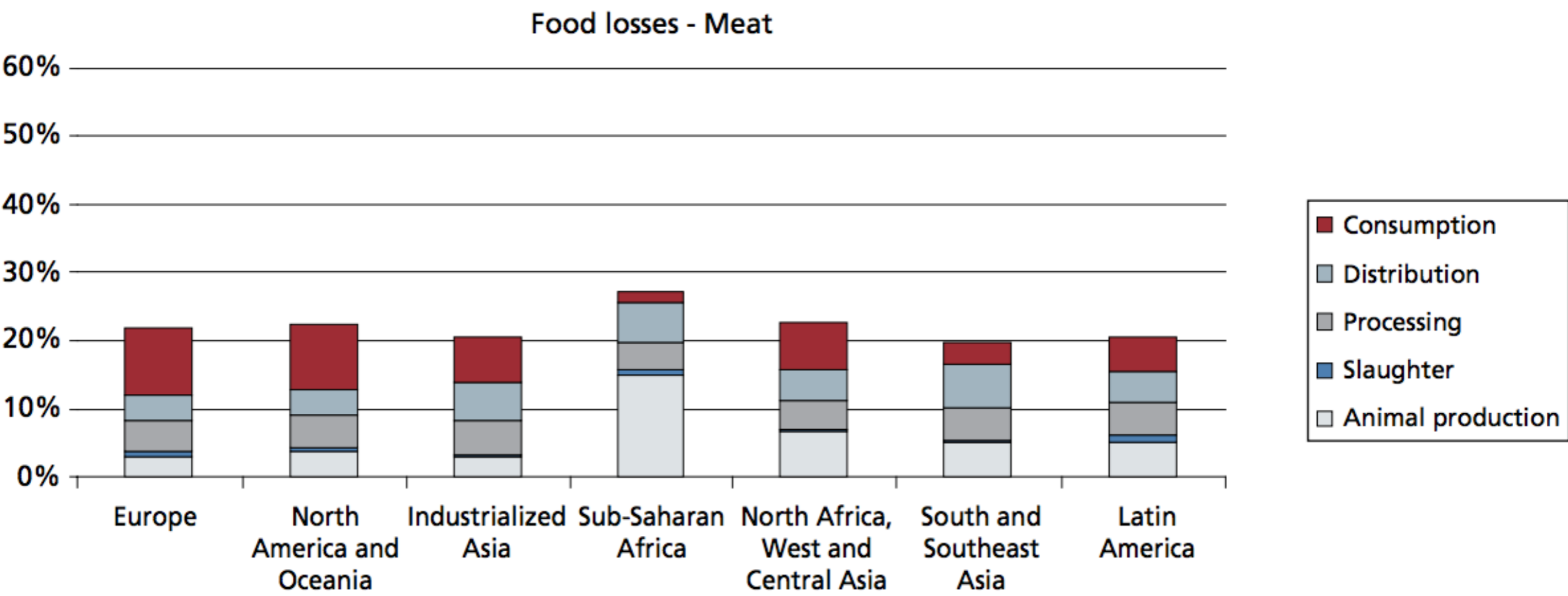
Figure 6. Part of the initial production lost or wasted at different stages of the FSC for fruits and vegetables in different regions

Food losses - Fruits and vegetables



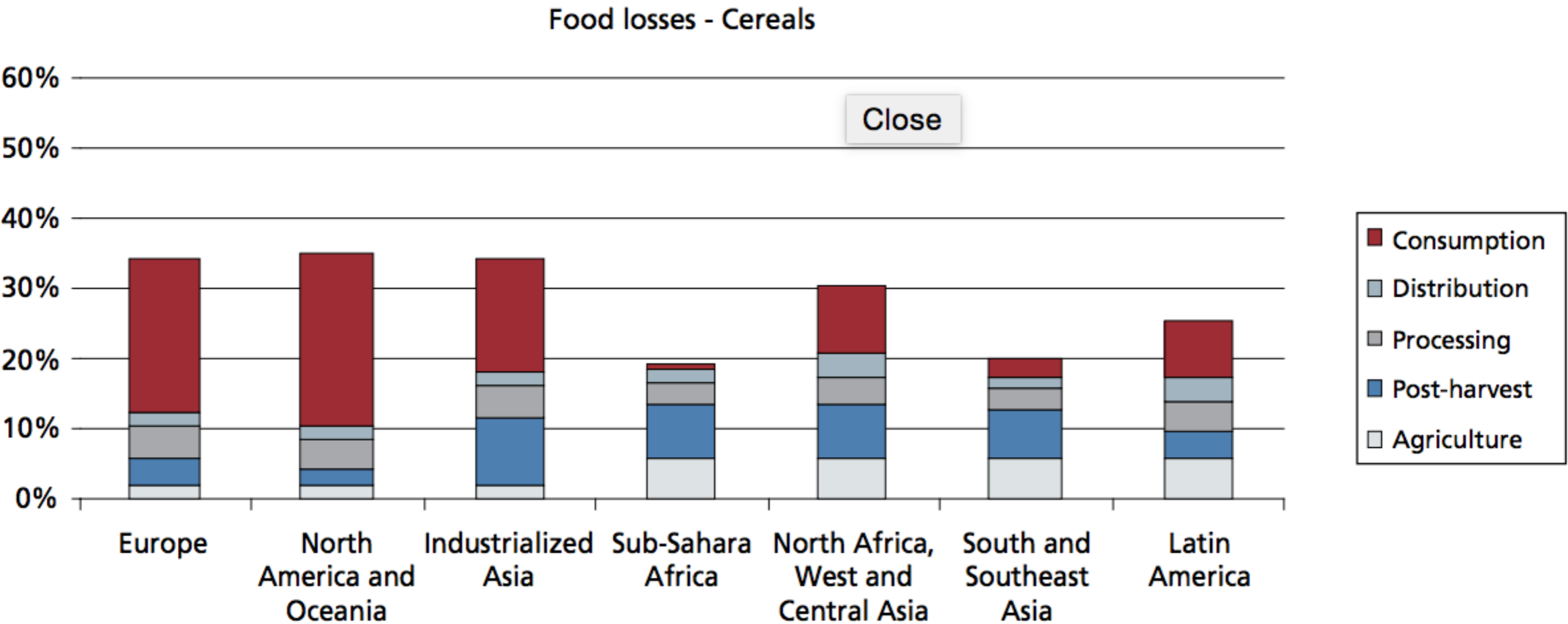
FOOD WASTE BY COMMODITY-MEAT

Figure 7. Part of the initial production lost or wasted for meat products at different stages in the FSC in different regions



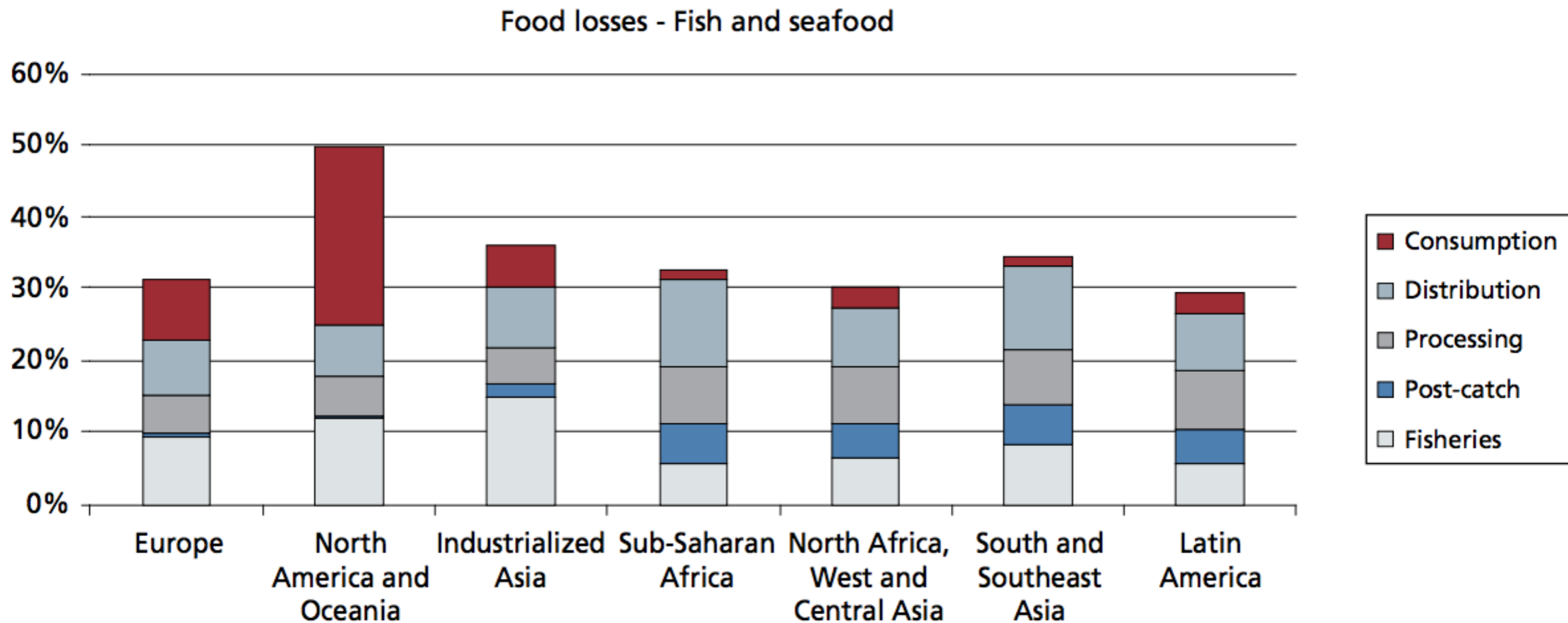
FOOD WASTE BY COMMODITY- CEREALS

Figure 3. Part of the initial production lost or wasted, at different FSC stages, for cereals in different regions



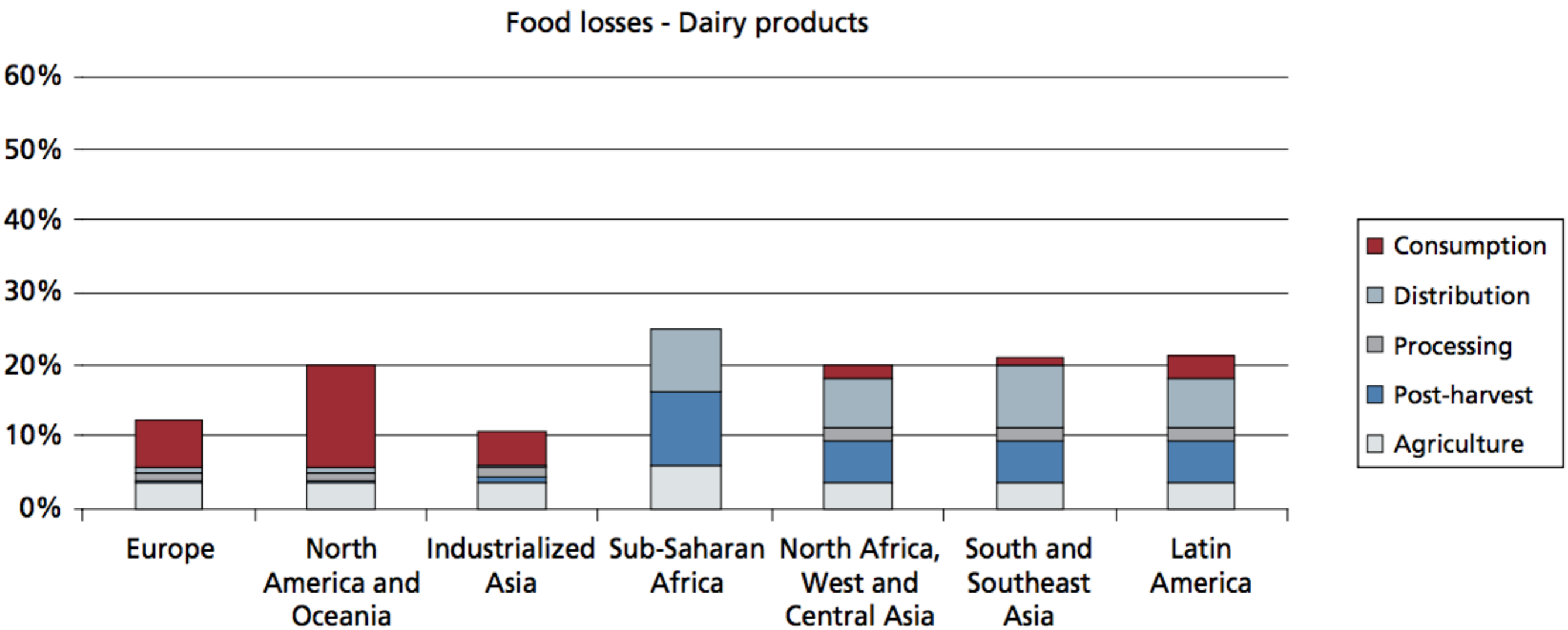
FOOD WASTE BY COMMODITY- SEAFOOD

Figure 8. Part of the initial catchings (fish and seafood harvested) discarded, lost and wasted in different regions and at different stages in the FSC



FOOD WASTE BY COMMODITY-DAIRY

Figure 9. Part of the initial milk and dairy production lost or wasted for each region at different stages in the FSC



POST- HARVEST FOOD SUPPLY IS WASTED

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Neff RA, Spiker ML, Truant PL (2015) Wasted
Food: U.S. Consumers' Reported Awareness,
Attitudes, and Behaviors. PLoS ONE 10(6):
e0127881.

<https://doi.org/10.1371/journal.pone.0127881>



CALORIES WASTED PER CAPITA PER DAY

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Neff RA, Spiker ML, Truant PL (2015) Wasted Food: U.S. Consumers' Reported Awareness, Attitudes, and Behaviors. PLoS ONE 10(6): e0127881.

<https://doi.org/10.1371/journal.pone.0127881>

WHAT 1500 CALORIES LOOKS LIKE

**342
CALORIES**

Carbs 46g, Protein 21g
Fat 8g, Fiber 3g

BREAKFAST

4 Protein Packed
Pancakes +
½ cup sliced
strawberries and
bananas



**198
CALORIES**

Carbs 23g, Protein 8g
Fat 9g, Fiber 2g

MIDMORNING SNACK

¾ cup whole milk
yogurt + ¼ cup
blueberries + 2
tablespoons granola



**333
CALORIES**

Carbs 30g, Protein 25g
Fat 14g, Fiber 4g

LUNCH

Waldorf
Chicken
Wrap



**172
CALORIES**

Carbs 23g, Protein 7g
Fat 7g, Fiber 8g

MID- AFTERNOON SNACK

¼ cup hummus +
8 baby carrots + 5
whole grain crackers




**453
CALORIES**

Carbs 48g, Protein 27g
Fat 17g, Fiber 9g

DINNER

Black bean +
spinach quesadilla
topped with ¼ cup
guacamole + ¼ cup
2% Greek yogurt



A large pile of food waste, including vegetables, meat, and bread, scattered on the ground. The waste is a mix of green leafy vegetables, red tomatoes, yellow corn, and pieces of meat and bread. The pile is spread out on a dark, possibly asphalt, surface.

While around 2/3 of US food losses occur prior to point of purchase, there are consumer habits that can be shifted to reduce food waste.

Do your part.



CONSUMER BEHAVIORS-

“EXPIRATION DATES”

- “Best By” “Sell By” and “Use By” labels are mistaken to be expiration date labels
- In fact, these dates are primarily meant to guide retailers as to when they should pull product from shelves
- There is no proven correlation between “Expiration Dates” and food borne illness
- Spoilage ≠ Contamination
- However, 70% of respondents said they thought throwing away food after its expiration date helped reduce the potential of food-borne illness.

Grade Tolerances - USA

| Grade 1 | Grade 2 | Grade 3 |
|--|--|---|
| Fairly well formed | Reasonably well formed | May be misshapen |
| Fairly smooth | Not more than slightly rough | |
| Free from sunscald or any other damage | Free from sunscald or any other damage | Free from serious damage by sunscald or any other cause |



CONSUMER BEHAVIORS- “UNNECESSARY..... QUALITY STANDARDS”

- Many standards for grocery and food processing are cosmetic and not related to quality
- Significant product is abandoned in post-harvest
- More product is rejected by retailers as well

CONSUMER BEHAVIORS-

“LACK OF MOTIVATION”

- 53% won't change habits to reduce food waste

Qi D, Roe BE (2016) Household Food Waste: Multivariate Regression and Principal Components Analyses of Awareness and Attitudes among U.S. Consumers. PLoS ONE 11(7): e0159250.

<https://doi.org/10.1371/journal.pone.0159250>





CONSUMER BEHAVIORS-

“CONVENIENCE.....
AND VARIETY”

- Consumers desire produce that does not grow in their climate
- Consumers desire produce year round
- Both desires lead to longer shipping distances and times than needed and increased losses



REAL WORLD

ACTION ITEMS

- Ignore “expiration dates,” trust your senses
- Buy “ugly vegetables”
- Shop local, eat seasonal
- Shop smart and become “kitchen efficient”
- Grow food at home