

Global Food loss & Food Waste

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Abstract

Food wastage is a prevalent issue that provokes detrimental environmental and economic downturns. This paper highlights food waste and loss from supply chains to consumers behaviours. There are many components to the issue of food loss and waste (FLW), such as consumer perception of ugly produce. It also does not help that the lifecycle of food from production to distribution is inefficient. Likewise, unhelpful policies made by the government tends to exacerbate the problem further. Finally, everyone from food manufacturers to consumers has to play their part to reduce food waste and loss.

Introduction and Problem Statement

With the increasing trend of globalisation, demand for food production increases every year. However, an increase in production also results in an increase in (FWL). Based on the 2011 reports of the United Nations Food and Agriculture Organization (FAO), it is estimated that around a third or 30% of food is lost or wasted globally every year. (SOFA 2019 - The State of Food and Agriculture in the World, 2021)

Based on the FAO State of Agriculture report, food loss indicates the diminished quantity and quality of the food produced. Food loss stems from decisions and practices from food suppliers. In contrast, the definition of food wastage is the diminished quantity or quality of food. (SOFA 2019 - The State of Food and Agriculture in the World, 2021). This is more the fault of retailers and consumers.

The knowledge gap is the inconsistent calculation of the degree of global food waste. (Shafiee-Jood and Cai, 2016). There is also insufficient data as can be seen in the yearly State of Agriculture report. It is also hard to determine food waste in households or developing countries. Likewise, the scant amount of reviews and papers on sustainability practices in the retail and supply chain also contributes to the knowledge gap. (Shafiee-Jood and Cai, 2016)

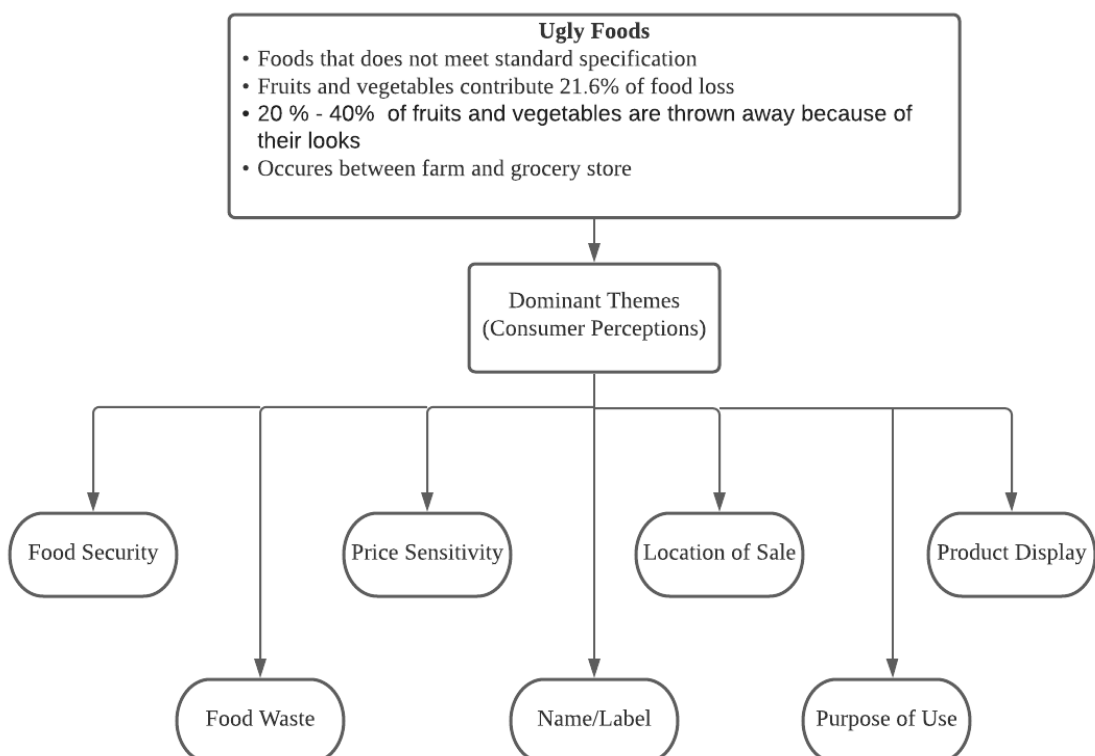
Findings

Consumers Perceptions Of “Ugly Foods”

Ugly food is the term used for food that doesn't meet the usual market standards but still contains its nutritional value. (Yuan, Yi, Williams and Park, 2019) Most of these foods are fruits or vegetables. Usually, farmers either discard or don't even bother harvesting these ugly foods. (Magalhães, Ferreira and Silva, 2021) Unfortunately, food producers are pressured by food retailers to consistently produce a high standard of the product specification.

This all stems from the consumer's perception of ugly food. This paper (Yuan, Yi, Williams and Park, 2019) examines consumer perceptions by delving deep into consumers understanding and experiences regarding imperfect produce. The dominant concern within the focus group is that ugly food has questionable food safety when containing blemishes or dent. The other notable sentiment among the focus group is the price sensitivity. When given a choice of a “perfect food” and “ugly food” that cost the same, consumers are more likely to choose the “perfect food” to get more bang for their buck.

The figure below is the perceptions identified during the survey and additional information.



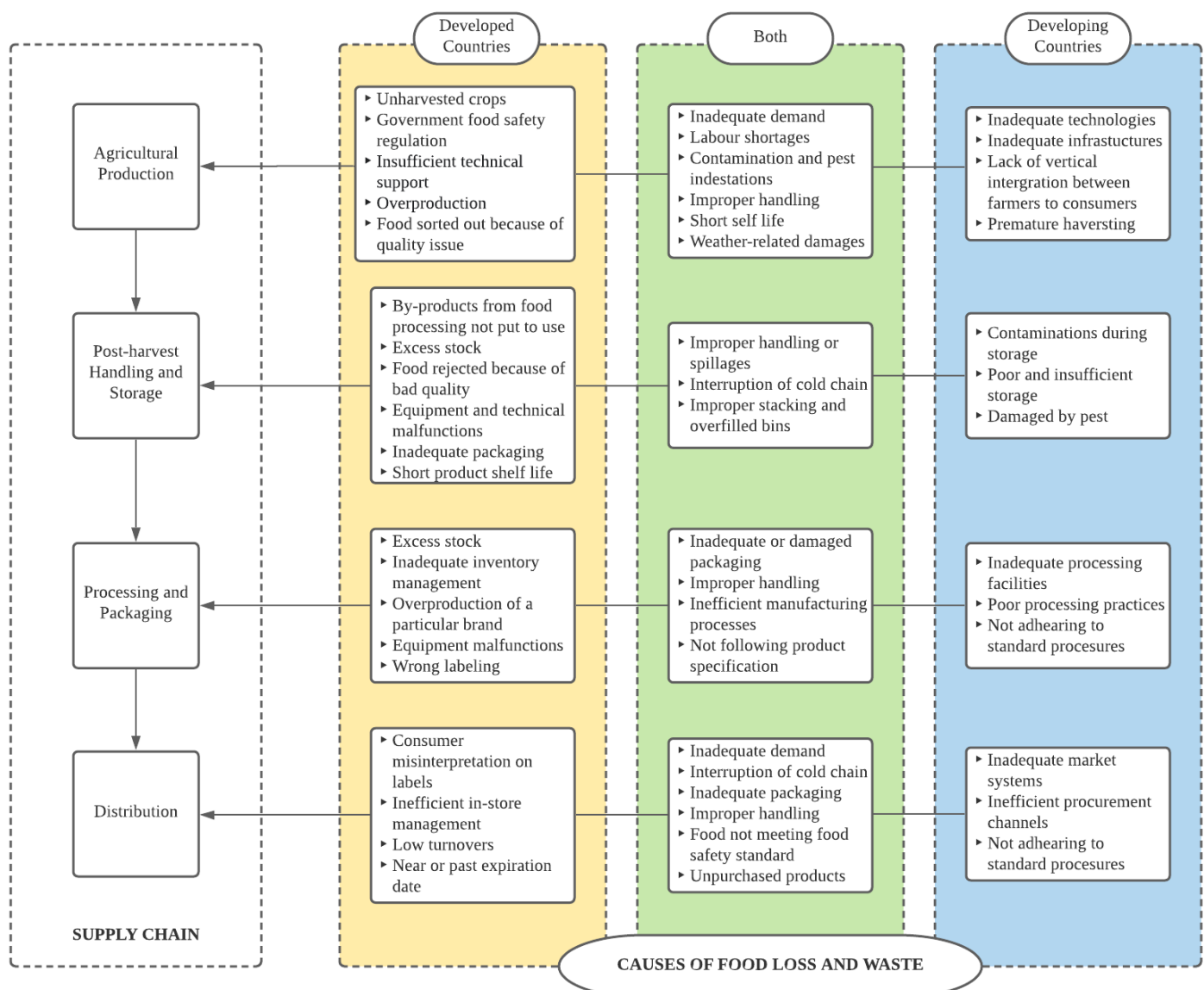
Adapted From: SOFA 2019 - The State of Food and Agriculture in the World, 2021
Yuan, Yi, Williams and Park, 2019
Cicatiello, Franco, Pancino and Blasi, 2016

Broken Supply Chain

It is estimated that up to 14 % of food is lost in the supply chain. (SOFA 2019 - The State of Food and Agriculture in the World, 2021). The supply chain is the process of food delivery from the farm to the consumer. This operation includes production, processing, storage and distribution. The main factor that causes waste is in the managerial and behavioural of suppliers and technological and infrastructural capabilities. (Magalhães, Ferreira and Silva, 2021).

It is also discovered that there is more FWL in the supply chain of developing countries compared to developed countries. (Cicatiello, Franco, Pancino and Blasi, 2016). The largest reason being developing countries have inadequate technologies for cultivation and harvesting compared to developed countries. For instance, lack of skilled labours, Improper food handling and more. In contrast, in developed countries the causes of food loss are usually overproduction, bad agreements with the retailer, not meeting industry quality standards or low market prices. However, developed countries tend to waste more food at the household level compared to developing countries. (Magalhães, Ferreira and Silva, 2021)

Below is a conceptual model and supplementary data of FWL in the supply chain.



Adapted From: Cicatiello, Franco, Pancino and Blasi, 2016
Magalhães, Ferreira and Silva, 2021
Buzby and Hyman, 2012

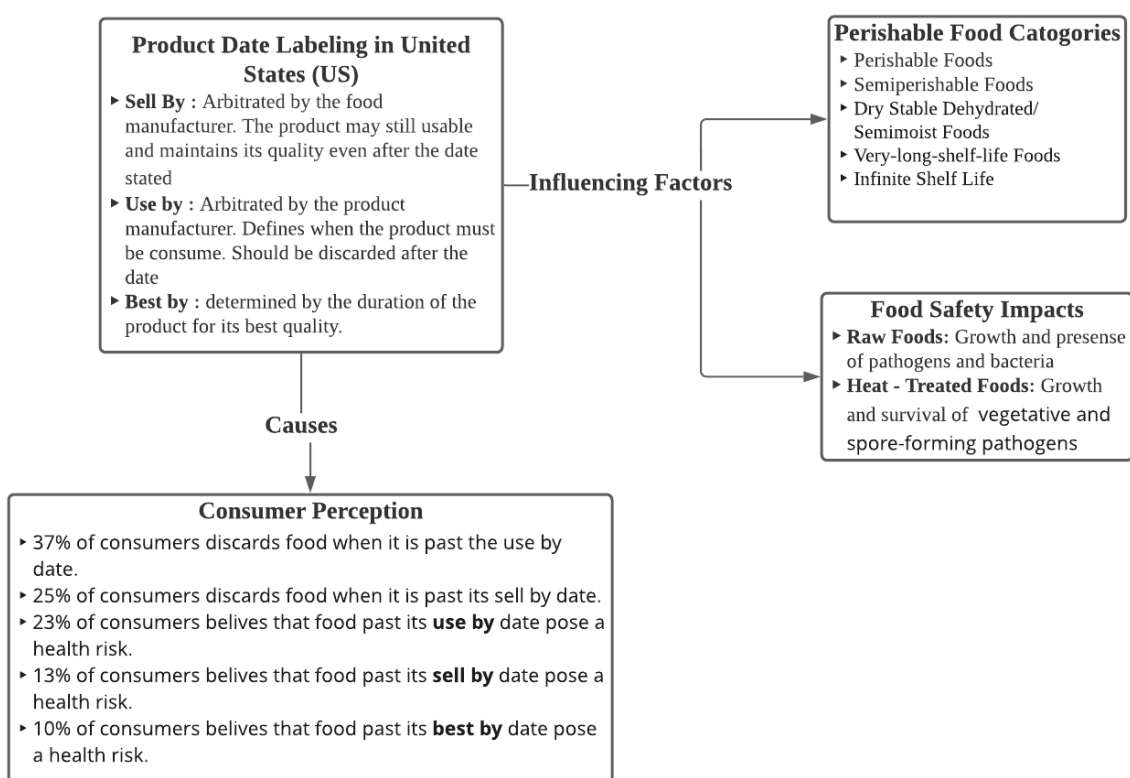
Unhelpful Government Policies

The retail and wholesale sectors play a crucial role in bridging the distribution of food from food manufacturers to consumers. This indicates they have considerable buying power. For instance, these sectors get to determine the type of food products, quantity and quality they want to sell. (Gruber, Holweg and Teller, 2016)

Is it commonly known that these sectors throw out tons of unsold food daily.(Gruber, Holweg and Teller, 2016) Governmental policies regarding the shelf life span of the product contribute to this habit. The legal aspects of labelling the product sell-by dates or best-before causes products to be thrown out or unsellable. (Newsome et al., 2014)

There is no consistency of nomenclature for date labelling and this causes consumers to have misunderstandings. The date labelling is sometimes not reliable to determine food safety because of the way some products are stored and passed throughout the supply chain. (Newsome et al., 2014). For instance, frozen food does not pose any safety issue as long as it was not previously exposed to pathogens and was pasteurized properly. Thus, the foods can still be consumable even after the indicated “sell by” date.

Below is the summary of notable information of the paper Applications and Perceptions of Date Labeling of Food.



Adapted From : (Newsome et al., 2014)

Conclusion

The growing scale of global FWL will have a detrimental impact on the social, nutritional and environment of the world. This issue heavily impacts the sustainability of the entire food chain. (SOFA 2019 - The State of Food and Agriculture in the World, 2021)

A solution for the ugly food problem mentioned previously, is to raise awareness and change the misguided perceptions among consumers. Additionally, these imperfect products can be sold at a cheaper price which will encourage consumers to purchase them. For instance, a Malaysian based company named Graze Market does exactly this.

This solution is aligned with the Sustainable Development Goals (SDG) that is Responsible Consumption and Production(SGD12). Within this goal, it also contributes to reaching the sub-goals of 12.3,12.5,12.7and 12.8. (THE 17 GOALS | Sustainable Development, 2021).

Reference List

Buzby, J. and Hyman, J., 2012. Total and per capita value of food loss in the United States. *Food Policy*, 37(5), pp.561-570.

Cicatiello, C., Franco, S., Pancino, B. and Blasi, E., 2016. The value of food waste: An exploratory study on retailing. *Journal of Retailing and Consumer Services*, 30, pp.96-104.

Grazemarket.com.my. 2021. [online] Available at: <<https://www.grazemarket.com.my/>> [Accessed 14 December 2021].

Gruber, V., Holweg, C. and Teller, C., 2016. What a Waste! Exploring the Human Reality of Food Waste from the Store Manager's Perspective. *Journal of Public Policy & Marketing*, 35(1), pp.3-25.

Magalhães, V., Ferreira, L. and Silva, C., 2021. Causes and mitigation strategies of food loss and waste: A systematic literature review and framework development. *Sustainable Production and Consumption*, 28, pp.1580-1599.

Newsome, R., Balestrini, C., Baum, M., Corby, J., Fisher, W., Goodburn, K., Labuza, T., Prince, G., Thesmar, H. and Yiannas, F., 2014. Applications and Perceptions of Date Labeling of Food. *Comprehensive Reviews in Food Science and Food Safety*, 13(4), pp.745-769.

Sdgs.un.org. 2021. *THE 17 GOALS | Sustainable Development*. [online] Available at: <<https://sdgs.un.org/goals>> [Accessed 14 December 2021].

Shafiee-Jood, M. and Cai, X., 2016. Reducing Food Loss and Waste to Enhance Food Security and Environmental Sustainability. *Environmental Science & Technology*, 50(16), pp.8432-8443.

www.fao.org. 2021. *SOFA 2019 - The State of Food and Agriculture in the World*. [online] Available at: <<https://www.fao.org/state-of-food-agriculture/2019/en>> [Accessed 14 December 2021].

Yuan, J., Yi, S., Williams, H. and Park, O., 2019. US consumers' perceptions of imperfect "ugly" produce. *British Food Journal*, 121(11), pp.2666-2682.

GLOBAL FOOD LOSS & FOOD WASTE

BASED ON THE UN FOOD AND AGRICULTURE ORGANIZATION (FAO) REPORT

30%

OF FOOD IS LOST OR WASTED EVERY YEAR

FOOD LOSS

DIMINISHED QUANTITY AND QUALITY OF THE FOOD PRODUCED

VS

FOOD WASTE

DIMINISHED QUANTITY OR QUALITY OF FOOD

WHAT CAUSES IT ?

"UGLY FOODS"

WHAT

Ugly food are foods that does not meet the product specification but still maintains its nutritional value.



WHY

- High market standards
- Misconceptions of food safety, price sensitivity and more

BROKEN SUPPLY CHAIN

Food is lost in the supply chain because of bad managerial, behavioural, technological or infrastructure. Below shows how much food is lost and wasted at each step



Agriculture Production

11% - 23%



Post-harvest Handling & Storage



Processing & Packaging

17% - 19%



Distribution

8% - 17%

UNHELPFUL GOVERNMENT POLICIES

Used By

Best before

Sell By

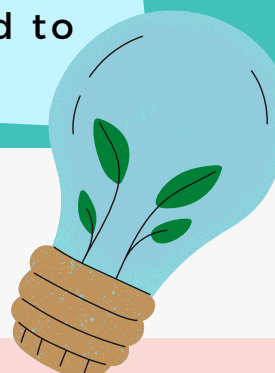
Policies on food date labelling made by the government exacerbate this problem. Inconsistency and vague labels cause misunderstandings in consumers. The date labelling is not always accurate to determine the safeness of the food. This caused food to be thrown out prematurely.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



WHAT CAN WE DO?

A Solution For The Ugly Food Problem



Raise awareness to consumers to make informed decisions



Sell ugly food at a cheaper cost to entice consumers

#SUPPORT LOCAL

Support Malaysian companies like Grub Cycle or Graze Market and more that buys ugly produce from local farmers and sell or donate to consumers

References

- www.fao.org. 2021. SOFA 2019 - The State of Food and Agriculture in the World. [online] Available at: <<https://www.fao.org/state-of-food-agriculture/2019/en>> [Accessed 14 December 2021].
- Magalhães, V., Ferreira, L. and Silva, C., 2021. Causes and mitigation strategies of food loss and waste: A systematic literature review and framework development. Sustainable Production and Consumption, 28, pp.1580-1599.
- Yuan, J., Yi, S., Williams, H. and Park, O., 2019. US consumers' perceptions of imperfect "ugly" produce. British Food Journal, 121(11), pp.2666-2682.
- Newsome, R., Balestrini, C., Baum, M., Corby, J., Fisher, W., Goodburn, K., Labuza, T., Prince, G., Thesmar, H. and Yiannas, F., 2014. Applications and Perceptions of Date Labeling of Food. Comprehensive Reviews in Food Science and Food Safety, 13(4), pp.745-769.