

Reducing Wasted Food, While Sustaining Food Production

North American Workshop on Food Waste Reduction and Recovery

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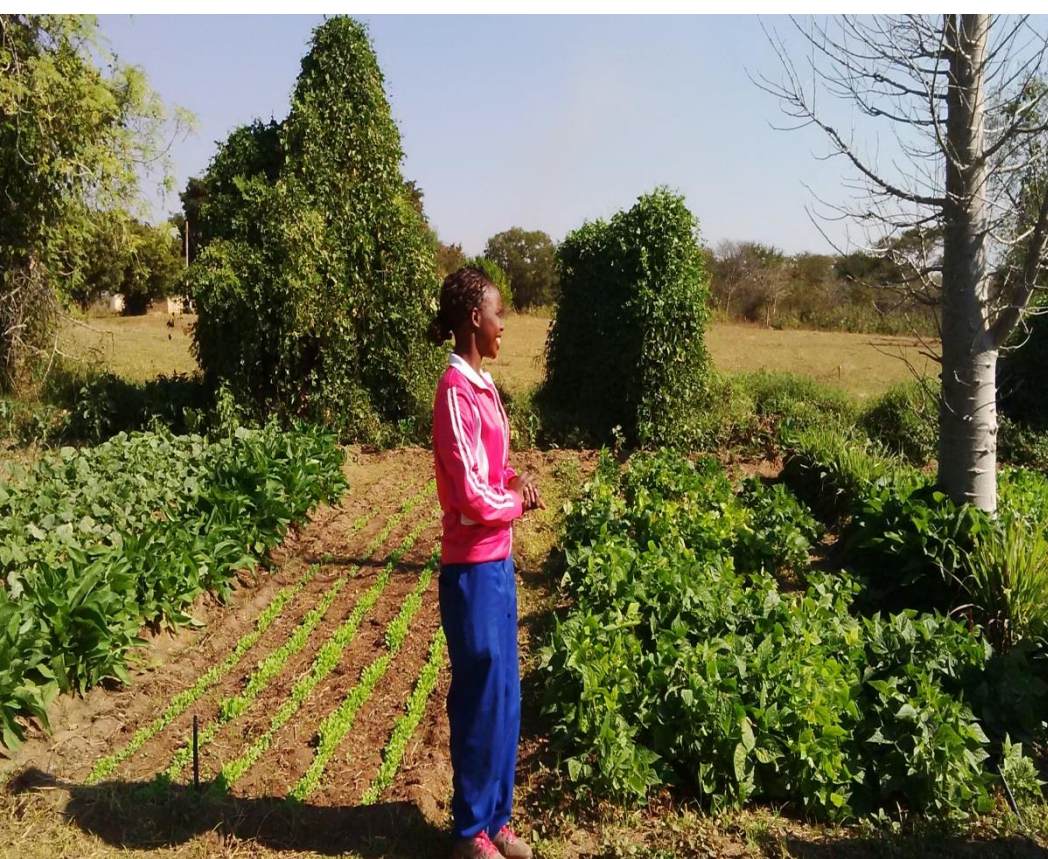


I thank the First Nations people across Ontario.

I appreciate that they cared for the land in this region of Earth, prior to our arrival.



Production > Food Sales > Consumption
Goal - Sustain Sufficient Production to =
Adequate, Healthy Consumption



Kasisi Ag Training Centre, Zambia, www.katczm.org



Loic Dewarin, QC, open-pollinated corn

Plan A for 2050

- 9 - 10 billion people (**30 – 40 % increase**)
- In developing countries, average incomes rise, consume more meat and richer foods
- Thus increase food production by **70 – 100%**



Plan B for 2050

- More and improved education for girls and women in developing countries with goal of < 9 billion people
- **Reduce** wasted food (now 40% in Canada)
- Eat less meat (higher quality), more pulses and edible insects



<https://meetingplaceorganicfarm.ca>



Spicy cricket fritters

<http://entomofarms.com/>

1 Billion

The number of extra people that could be fed if we globally applied the best **current** methods to reduce food waste.



Kummu et al. 2012. Sci. of the Total Environ. 438: 477-489

\$31 Billion

Value of food waste in Canada, in 2014

Gooch and Felfel. 2014. "\$27 BILLION" REVISITED, THE COST OF CANADA'S ANNUAL FOOD WASTE. Value Chain Mgmt Intern

U of Guelph Food Waste Audit



- Unavoidable (36%)
 - not edible under normal circumstances (e.g. apple cores, melon rinds)
- Avoidable (53%) – thrown away prior to disposal and still edible (e.g. heel of bread, half a roast) + 11% possibly avoidable

Principles of Addressing Wasted Food

1) **REDUCTION**

2) Feed people with co-products rather than wasting this potential.

3) Feed pets, livestock (incl insects)

4) Anaerobic digestion (energy and nutrients)

5) Bio-diesel (energy) or compost (nutrients)

6) Divert from Landfill
(after all else)



By reducing wasted food and not having
to produce excess food, we all save:

CO₂, CH₄, N₂O emissions

Energy

Water

Biodiversity

Soil quality

Labour

Money

Future capacity

Respect



Photo by K. Howe

Consumers Could Change

- Households in Canada spend \$153/wk on food. Assuming 20% of food is wasted in households, then tossing cost is **\$31/wk**
- Organic shoppers spend **\$27/wk** more than those who buy non-O. **Stop wasting, then buy organic, save \$4/wk**

www.guelphfoodwaste.com



Wasted Food Survey

www.guelphfoodwaste.com

- Most feel guilty about wasting food and if feel more guilty, then waste less food.
- People with more food awareness, waste less food and most say wasted food is a **social issue**, more than an economic or environmental issue



Identifying Waste



Most common criterion is appearance, followed by smell and best-before date.

Those who use more criteria to determine what is no longer edible tend to waste more food.

Institutional Wasted Food

- 20% of edible food, wasted in restaurants (Engstrom and Carlsson-Kanyama, 2004)
- Plate waste 11% in restaurant
Fries with Clubhouse (21%) and with Pulled Pork (28%*)
Steamed vegetables, salads (0%)
- > 410 g threshold, waste more (von Massow and McAdams, 2014)
- 514 lbs waste per meal with trays vs 335 “ “ without trays in a university cafeteria (Sarjahani et al. 2009)

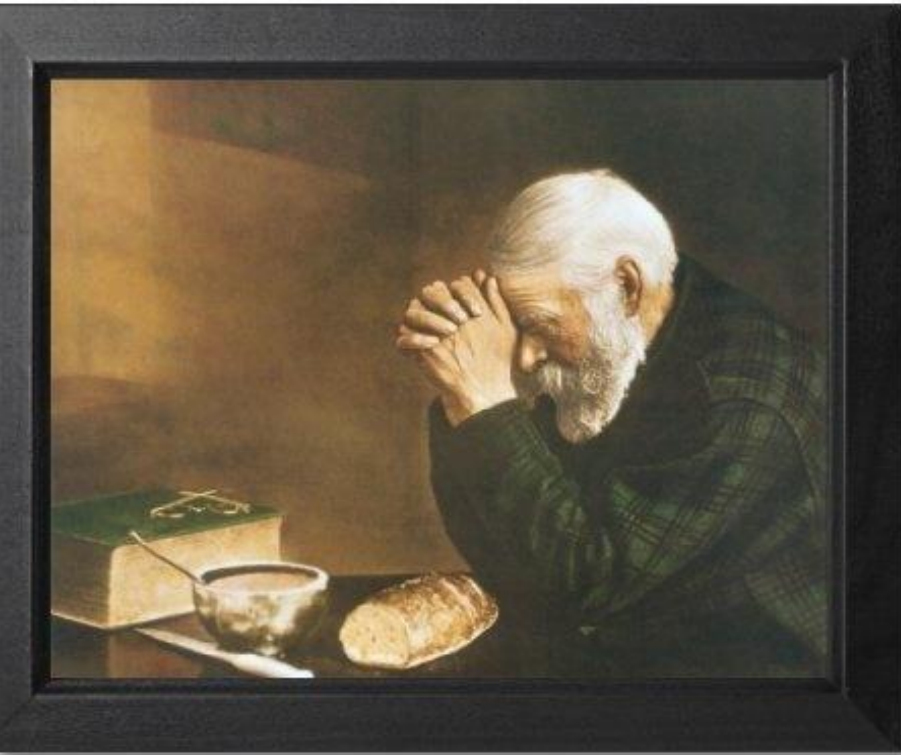


From Many to Few and Back Again

- 350,000 plant species, 195,000 flowering plants, most have edible parts useful to humans
- < 300 plant species for food; only 17 species provide 90% human food
- Grow diverse crop species, spread risk as climate changes, accept seasonal food, improve health



Attitude of Gratitude



Take moments to be thankful, especially for good land and food. Appreciate when we have enough and treasure it.

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