



Food Security and Food Waste

Outcome or Objective?

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and

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“It cannot be denied that an improved system of practical domestic cookery, and a better knowledge of its first principles, are still much needed in this country; where, from ignorance, or from mismanagement in their preparation, the daily waste of excellent provisions almost exceeds belief.”

*Eliza Acton
Modern Cookery for Private Families (1845)*



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What Is Food Waste?

The loss of food along the value chain that is suitable for human consumption, or will be fit for consumption after processing, such as wheat

Associated Wastes

Muda: any non-value adding activity in the food value chain (TIM WOOD)



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The Complexity of Food Waste

"For every complex problem, there is a solution that is simple, neat, and wrong."

Henry L. Mencken



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Canada: Food Waste Through the Value Chain



Statistics*

- 1.3 billion tons of food/inputs wasted annually
 - » Global 2011/12 grain supply est. at 2.3 billion tons
- Canadian food waste estimated at CAD\$27B
 - » US food waste estimated at US\$165B
- Sufficient food produced to feed the world
 - » 1.2 billion overweight; 860 million malnourished
- Environmental impacts of wasted food
 - » 17.5% of freshwater consumed annually (US)
 - » Food in landfill emits equivalent 20 Mt of CO₂ (UK)
- ~50% food waste relates to consumer behaviour
 - » Waste levels increased with fresh food trends



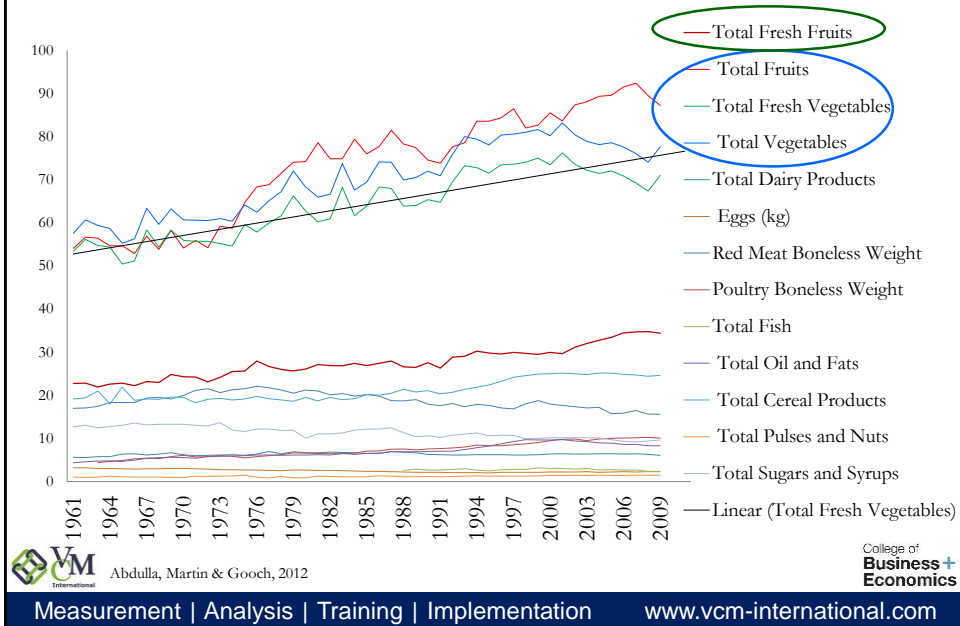
* Most statistics related to food waste are estimates



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Canadian Food Waste (Kg Per Capita)



Food Waste in Business

- “90% of problems in business are caused by management, 10% by the workman” (F.W. Taylor, 1912)
 - » Predominantly short-term (polarized) perspective
- Avoidable food waste is an outcome (symptom)
 - » Created by numerous root causes
- Lack of coordination between/within businesses
 - » Behaviour resulting from int. attitudes, ext. drivers
- Incorrect processes, procedures, incentives
 - » Failing to identify and control determinants of success
- Adherence to traditional business models and metrics
 - » Volume based metrics that fail to convey the full picture

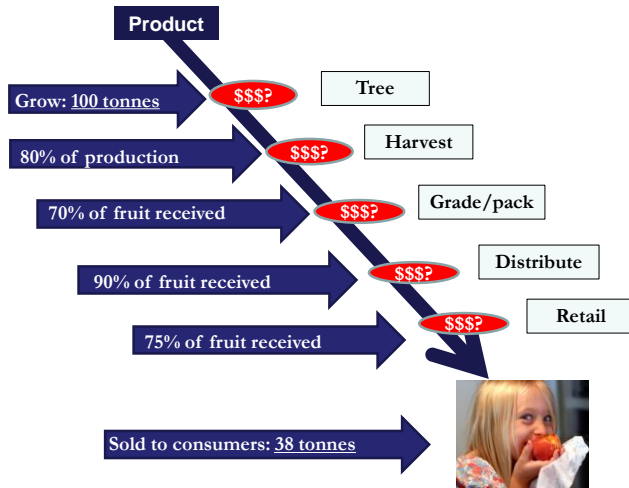


Price-Based Promotions



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“The world we see that seems so insane is the result of a belief system that is not working.”

William James



Beef Central

Reducing feed conversion rate by 0.5 would annually save equivalent to...

- 1 million tonnes of grain
- 250,000 acres of land*



*~wheat and corn production of 4 tonnes per acre

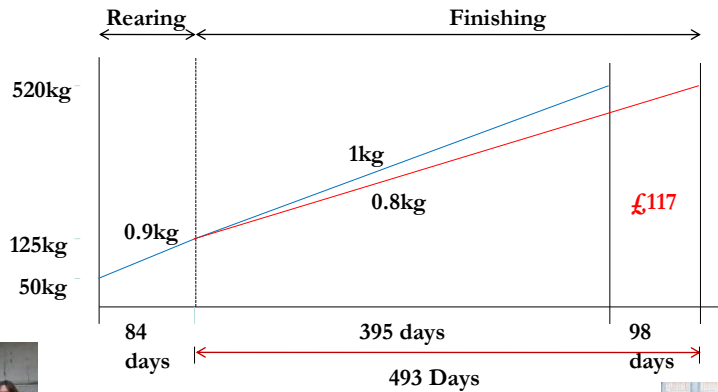


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Target Performance



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Proven Method to Improve Performance

- **Define**
 - » Structure, attitude, behaviour, undesired effects
- **Measure**
 - » Performance, capabilities, high/low/med values
- **Analyze**
 - » Primary factors impacting performance, profit, why
- **Improve**
 - » Changes that will result in distinct benefits
- **Control**
 - » Governance required attain/maintain improvements



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St. Kitts: Sweet Potatoes



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Caribbean Roots and Tubers



- Important crops from domestic and export perspectives
- Increase production of root and tuber crops in six Caribbean countries through improved production, handling, processing, and marketing
- Simultaneously develop and test a guide for analyzing and upgrading the performance of value chains
- Produce outcomes that include improvements in
 - » Domestic and regional economic performance
 - » National and the regional food security



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Value Chain Issues

- Easy crop to grow, difficult crop to grow well
 - » Few avenues for producers to improve their skills
- Opportunities to increase production (*significantly*)
 - » Management of weevils by hilling and pheromone traps
 - » Irrigation during the dry season
- Improved post-harvest management
 - » Curing and storage
 - » Transportation and handling
- Market opportunities
 - » Domestic *retail and roadside stands*
 - » Value added *sweet potato fries*
 - » Domestic and export



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Next Steps

- Develop upgrading strategies
 - » Interventions: what, how, why
- Secure necessary resources
 - » Training and support
 - » Effective infrastructure
- Implement required activities
 - » Who, where, timelines
- Implement improvements
 - » Pilot and measure effectiveness
 - » Report and reiterate
 - » Communicate results to industry



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Conclusions

- Avoidable waste per se – *food, energy, personnel, etc.*
 - » Is a symptom of an incorrectly aligned system
 - » Impacts prices, economy, environment, food security
- In developed countries, majority of food waste occurs at consumer level
 - » Exacerbated by management decisions along the value chain
- In developing countries, the majority of food waste occurs at (or closer to) primary production
 - » Exacerbated by management capabilities and infrastructure
- Improving the management of agri-food value chains can significantly increase food security and economies



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Thank you

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