



Massachusetts
Institute of
Technology

D-Lab

Financing Waste Management

Trends in WWM

- Increase in waste = increase in spending
- Cost > Revenue
- Challenge is costs are often not recovered in wastes
- In developing countries - 20 - 50% of municipal budgets are spent managing wastes

Overview: Municipal/WM finance Carbon Credits

is waste management a

public
or
private

good?

public

private

Difficult to attribute the collective benefit to a single individual

Clear relationship between fees and benefits

Municipal finance principles

Economic Efficiency

Fairness (equity)

Accountability

Adequacy and Stability

Autonomy

Ease and cost of
administration

Economic Incentives

Charges

Deposit System

Subsidies

Economic Incentives

Charges

Deposit System

Subsidies

User Charges

Disposal Charges

Product Charges

Economic Incentives

Charges

Deposit System

Subsidies

Step 1: Impose Tax

Step 2: Recover fees

Economic Incentives

Charges

Deposit System

Subsidies

Economic Incentives: Effective?

- Applications have been limited
- No instance of significant improvement as a result of economic incentives
- Identifying suitable application is difficult and complex
- Economic incentives are only one element of 'control and command'

Source: UNEP, Solid Waste Management

Financial Arrangements



WM in Low-income/Marginalized Areas

- Informal, often unrecognized areas by city
- Assumption that residents may not be able/willing to pay
- Research suggests residents are willing to pay
- Formal sector not servicing these areas

WMM in Low-income/Marginal Areas

- Service Alternatives:
 - Public Participation
 - Public drops off waste @ more centralized locations, or certain time when a truck comes
 - Segregation of organics and recyclables
 - Funds from recyclables cover fees for services
 - Micro-enterprises
 - Smaller-scale enterprises that operate at house-to-house level and connect with the municipal government

Public-Private Partnerships (PPPs or P3)

- Main roles:
 - Improve efficiency
 - Reduce cost
 - Recover cost through user fees or recycling
 - Access to capital public sector doesn't have

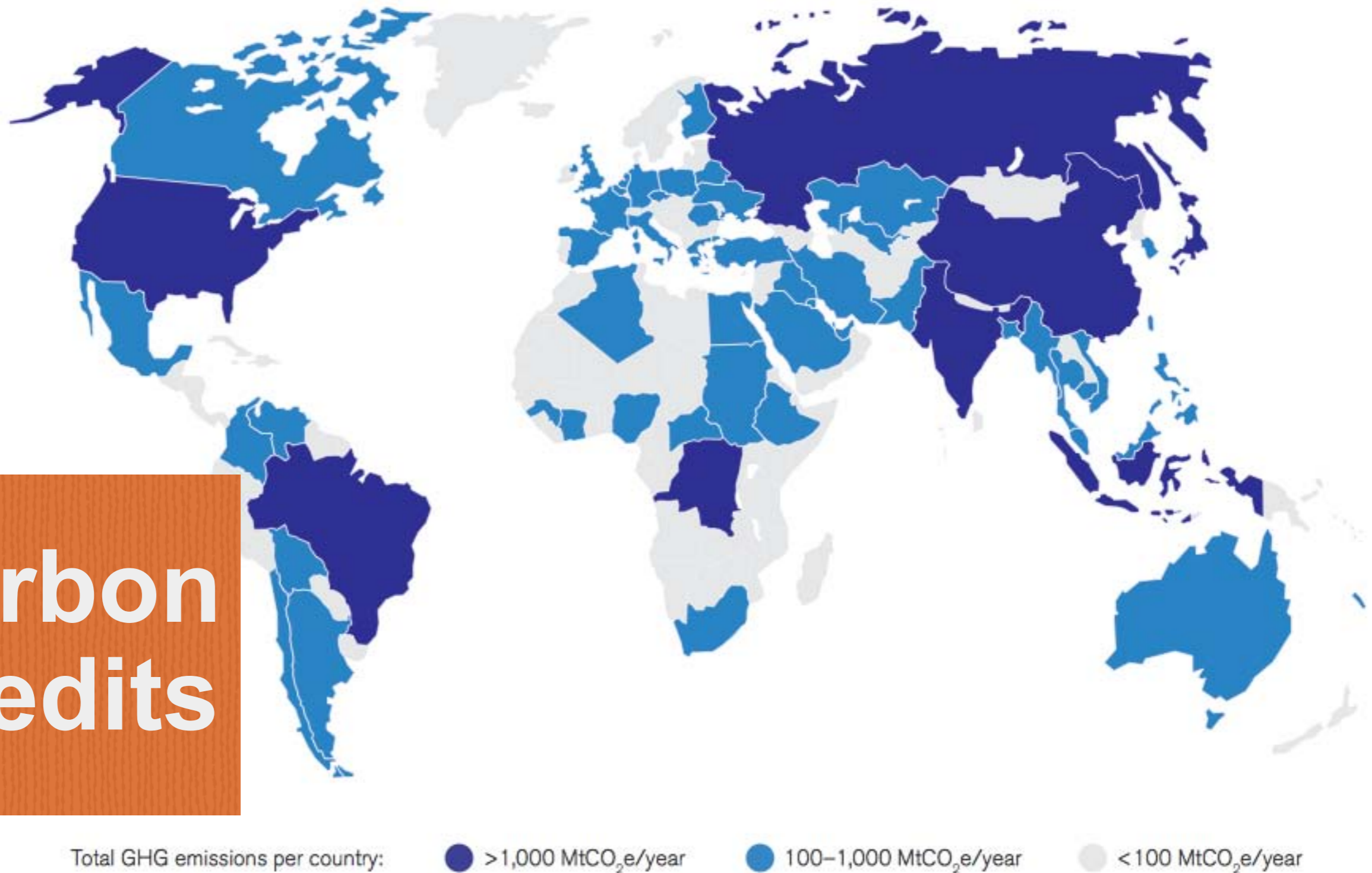
• Challenges?



What about the informal waste sector >>

Courtesy of [johnrinker](#) on Flickr. CC-BY-NC. Used with permission.

Figure 3 Greenhouse gas emissions by country¹⁴



Carbon Credits

World Bank. 2014. [State and Trends of Carbon Pricing 2014](#). Washington, DC: World Bank. CC BY. Used with permission.

video!

Carbon Control. **“How does the emission trading scheme work?”** 10 March 2012. Youtube.

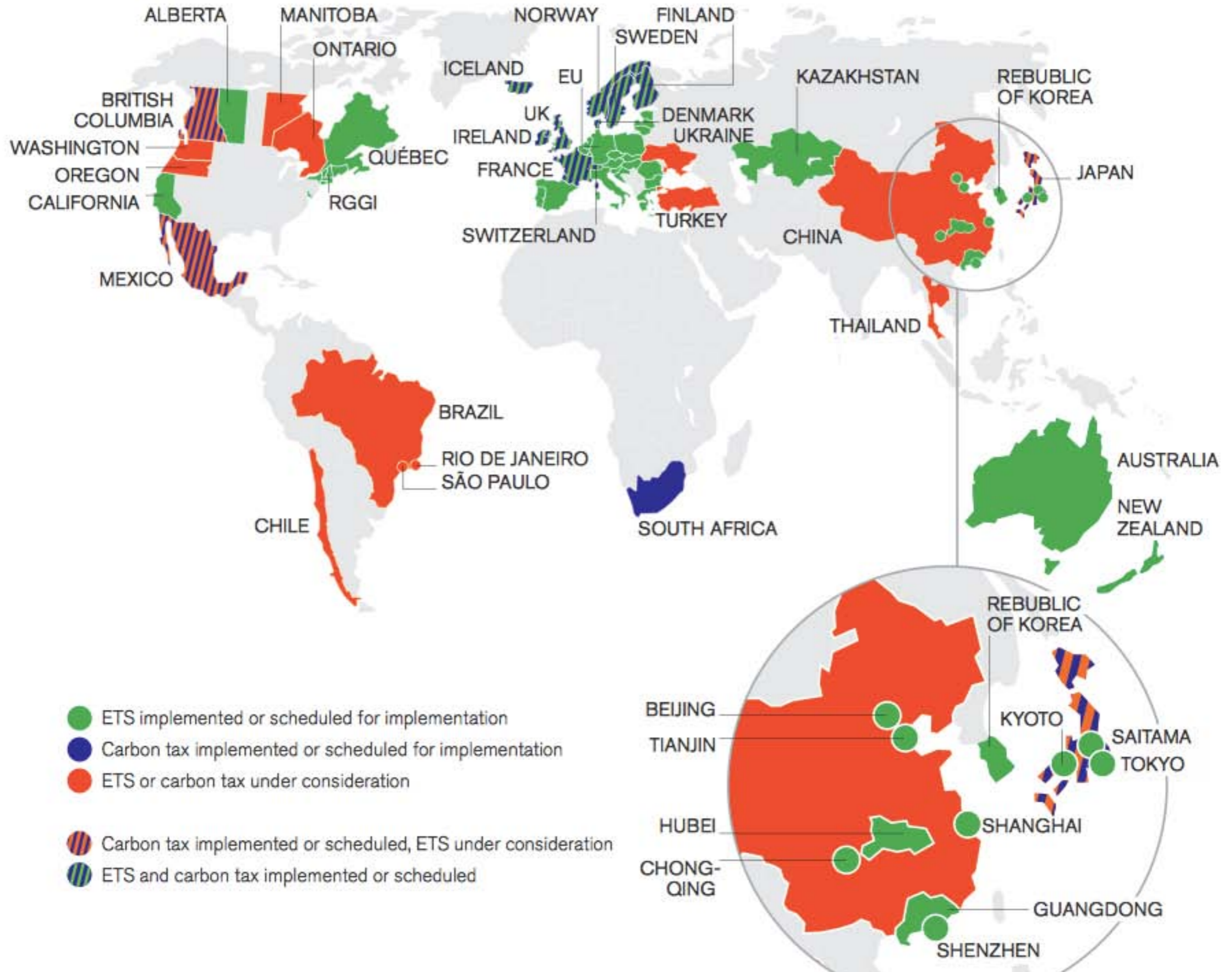
Vocabulary

Cap & Trade

Carbon Credits

Carbon Offsetting

Kyoto Protocol



video!

**Free Range. *The Story of
Cap & Trade (2009)*. 15
April 2015. Youtube.**

Reflection: Carbon Credits **PROS/CONS?**

Takeaways?

MIT OpenCourseWare
<http://ocw.mit.edu>

EC.716 / EC.786 D-Lab: Waste
Fall 2015

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