Many Thanks!

Authors
• Sarika Jain (World Biogas Association), Ricardo Cepeda-Márquez, Kathrin Zeller (C40 Cities – Food, Water and Waste Programme)

Contributors
• Anaerobic Digestion and Bioresources Association UK, Eastern Research Group, Italian Composting and Biogas Association (CIC), City of Copenhagen, City of Oslo, Seoul National University, Auckland Council, City of Cajica

Editorial Board
• Ricardo Cepeda-Márquez, Johnny Stuen, Brian Guzzone, Juha Antti Kalevi Seppala, Dr. Mario A. Rosato, Ollie More, Håkan Rylander

Sponsors: Bioman, Montello, Sesa, ESE Oslo
The report in synthesis

There is no new research in this report

- wants to be a practical guide, not an academic study
- brings together lots of previously dispersed information
- wants to give examples and experiences to help cities find their way
- understands the constraints cities are under, politically and financially
- provides advice on various technologies and not just AD
- offers help and to bring cities together to support each other
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Chapter 1: Sources and Impact of Food Waste
Why is food waste a problem?

- Greenhouse gas emissions
  - 8% of global emissions
- Nutrient loss
  - 52% of agricultural land
- Sanitation
  - 13-33% openly dumped
- Water footprint
  - 3 times volume of Lake Geneva
- Ecological impacts
  - Intangible
- Economic impacts
  - 2.6 trillion dollars
A pause to reflect on climate change
Burning fossil fuels will still be predominant way to produce energy.

So if we cannot reduce fossil fuels quickly we have to implement other strategies to reduce GHG emissions.
I wonder if we are sometimes in denial?
Sources of Food Waste

- Manufacturing
- Wholesale and retail
- Food services
- Households

Chapter 2: Food Waste Prevention
Food and Materials Hierarchy

PREVENTION
- Waste of raw materials, ingredients and product arising is reduced - measured in overall reduction in waste

OPTIMISATION
- Redistribution to people

REDUCTION
- Sent to animal feed

RECYCLING
- Waste sent to anaerobic digestion; or
- Waste composted

RECOVERY
- Incineration of waste with energy recovery

WASTE

DISPOSAL
- Waste incinerated without energy recovery
- Waste sent to landfill
- Waste ingredient/product going to sewer

Most preferable option
Least preferable option
What can cities do?

- Quantification and characterisation of food waste
- Engagement and reporting
- Organisation - level initiatives
- Regulatory initiatives
- Raising awareness and communication policies
Chapter 3:
Food Waste Collection
Unique collection case studies

- Auckland, New Zealand
- Cajica, Colombia
- Copenhagen, Denmark
- Hartberg, Austria
- Milan, Italy
- Minneapolis, USA
- New York, USA
- Oslo, Norway
- Seoul, South Korea
Chapter 4: 
Food Waste Treatment
### Comparison Table

#### TABLE 8: COMPARISON OF TECHNOLOGIES TABLE

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>SUPPORTS FOOD WASTE REDUCTION</th>
<th>COST SCALE 1-5 (LOW TO HIGH)</th>
<th>ENERGY PRODUCTION</th>
<th>NUTRIENT RECOVERY</th>
<th>CAN BUILD SOIL ORGANIC MATTER</th>
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</table>
Chapter 5: Anaerobic Digestion
What AD can do for your City

Renewable energy
Climate change
Circular economy
Air quality
Food security
Health and sanitation
Economic development

One tonne of food waste from a supermarket/restaurant can drive your car 852 km!
Overview of AD

• What happens inside a digester and an AD plant
• Examples from all around the globe
• Financial considerations
  • Capital cost
  • Operating cost
  • Income streams
• Health and safety
• Establishing good practice
Chapter 6: Products of AD
Products

- Biogas cooking and lighting
- Biogas boilers
- Electricity
- Heat
- Biomethane
  - To grid
  - For use as vehicle fuel
- Digestate/compost
- Carbon dioxide
- Cooling
A pause to reflect upon desertification and topsoil loss

So we must get all the organic carbon and humus back to soil that is possible.
Chapter 7:
Policy recommendations, barriers and implementation
Policies to support

- Targets
- Policies to meet targets
  - Pricing GHG emissions
  - Renewable Energy Incentives
- Waste Management Policies
  - Pay As You Throw
  - Organics to landfill ban
  - Recycling requirements
- Capital Grants
5 Actions cities can take today

- Undertake large scale food waste awareness and prevention campaigns
- Require businesses to separately collect food waste
- Monitor and measure
- Provide separate collection of food waste to households
- Require use of food in line with the food and drink material hierarchy

There is no need to reinvent the wheel, there are great experiences available shown in the report.
Thank You!

The report is now available for download at:

David Newman
President W.B.A.
dnewman@worldbiogasassociation.org
www.worldbiogasassociation.org