SUSTAINABLE URBANIZATION
The Future of Food

John Mandyck
Chief Sustainability Officer
United Technologies Corporation

This presentation contains no technical data.
POOPULATION GROWTH

7B TODAY

URBANIZED
54%

POPULATION GROWTH

9.6B 2050

URBANIZED 66%

DATA DRIVES DECISIONS
FOOD FOOLISH

THE HIDDEN CONNECTION BETWEEN FOOD WASTE, HUNGER AND CLIMATE CHANGE

John M. Mandryck Eric B. Schultz
AGRICULTURE
The largest human endeavor on Earth

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Using >38% of ice-free land

An elephant weighs about 1 metric ton. Now imagine 1.3 billion healthy elephants happily standing on each other in one pile. That's what we're losing and wasting from the food supply chain each year.
FOOD WASTAGE TYPES

Cereals (excluding beer)

Vegetables

Fruits (excluding wine)

Starchy Roots

Oil Crops & Pulses

Fish & Seafood

Meat

Milk & Eggs (excluding butter)

1/9 PEOPLE DO NOT HAVE ENOUGH FOOD

Source: UN News Centre (2013, October 1). One in Eight People Worldwide Still Chronically Hungry, UN Report Finds.
805 million people remain chronically undernourished

2 billion suffer from micronutrient deficiencies (hidden hunger)

100 million children under the age of 5 are underweight
HIDDEN HUNGER CAN COST A COUNTRY 1% OF GDP
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INDIA

1% OF GDP IS $20 BILLION = INDIA’S FOOD WELFARE PLAN
COST OF FOOD LOSS AND WASTE

$2.6 TRILLION
ECONOMIC

Subsidies

$119

Value of lost and wasted food

$936

(IN $ U.S. BILLIONS, FAO, 2014)
SOCIAL

Health $153

Livelihood loss $333

Risk of Conflict $396

(IN $ U.S. BILLIONS, FAO, 2014)
ENVIRONMENTAL

- Biodiversity: $32
- Land & soil: $73
- Water scarcity: $164
- Other: $122
- GHG emissions: $305

(IN $ U.S. BILLIONS, FAO, 2014)
Source: Food and Agriculture Organization of the United Nations, Food Wastage Footprint Impacts on Natural Resources, 2013.
3.3B metric tons of CO₂ per year

IF FOOD WASTE WAS A COUNTRY

Greenhouse Gas Emissions

Source: Food and Agriculture Organization of the United Nations, Food Wastage Footprint Impacts on Natural Resources, 2013.
CO$_2$ OVER 200 YEARS = 26% INCREASE IN ACIDITY

Source: IPCC Fifth Assessment Synthesis Report, 2014
1.3% of the world’s freshwater is available as surface water in rivers, lakes, ice and snow.
WATER IN WASTED FOOD > WATER USED BY ANY NATION
5.4 gallons of water = single head of broccoli
FRESH GREEN VEGETABLES WILL LAST LESS THAN TWO DAYS AT 30°C/86°F
IF EMERGING ECONOMIES ADOPTED

COLD CHAIN TECHNOLOGIES
TO THE LEVEL OF DEVELOPED COUNTRIES,

THEIR GHG EMISSIONS FROM FOOD WASTE COULD BE REDUCED BY MORE THAN 50%
India: The World’s Bananas Supply

Produces 28%

Exports 0.3%

An upgraded cold chain infrastructure could:

- Grow India’s banana exports from 3,000 to 190,000 containers.
- Provide an additional 95,000 jobs and benefit as many as 34,600 smallholder farmers – many of whom lack access to a reliable electricity source.
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John M. Mandyck
Eric B. Schultz
“I would spend every bit of my money and political will to make sure that every girl was educated.”

Catherine Bertini

Professor of Public Administration and International Affairs, Maxwell School of Citizenship and Public Affairs

Former Executive Director of the United Nations World Food Programme