

Food Waste and Global Population Dynamics

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Hunger – A Global Issue



Hunger is the world's No.1 health risk.

It kills more people every year than AIDS, malaria and tuberculosis combined.

HUNGER

AIDS,
MALARIA
AND TB



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<http://www.wfp.org/hunger/stats>

Overview

- Several factors will contribute to changes in global population dynamics, food demand, and food waste over the next few decades. Urbanization, water demand, arable land usage, technology, and food waste all will play a major role in food insecurity by the year 2050.



Outline

- Global Population Dynamics
- Urbanization
- Water Demand
- Food Waste
- Available Arable Land
- Technology Needs – Agriculture and Food Waste



Global Population Dynamics

- 2010 – just under 7 billion people on earth
- 2050 – population grows to over 9 billion
- Aging population
 - 2010 – 8% over age 65
 - 2050 – 19% over age 65



Urbanization

- In 2008, urban population exceeded rural population for the first time
- UN projected that there will be a growth of more than a billion urban people from 2010 to 2025, while there will be essentially no growth in the rural population
- Therefore, the proportion of the global population not producing food will continue to grow
- Middle and upper income populations with more varied dietary choices are also likely to grow where changes in demand also bring major changes in agriculture and in the supply chain.



Urbanization

- Urbanization brings major changes in demand for agricultural products due to:
 - increases in urban populations
 - changes in their diets and demands
- Urbanization also contributes to changes in how demands are met and in the farmers, companies, corporations, and local and national economies who profit or lose.
- Urban and rural food security is also impacted by urbanization.



Water Demand

- Water and
 - Health
 - Education
 - Poverty
 - Need



Water and Health

- 90% of all diseases are due to unsafe drinking water, inadequate sanitation, and poor hygiene
- At any given time, half of the world's hospital beds are occupied by patients suffering from a water-related disease.
- The weakest members of communities are the most vulnerable; every day water-related diseases claim the lives of 5000 children under the age of five

Water and Education

- Water-related diseases cost 443 million school days a year.
- More than 150 million school-age children are severely affected by waterborne parasites like roundworm, whipworm, and hookworm. Children who suffer from constant water-related illnesses carry the disadvantages into school.
- “Over half of all schools worldwide lack safe water and sanitation, jeopardizing the health and education of millions of schoolchildren. Most of the 115 million children currently out of school are girls. Many are denied their place in the classroom by lack of access to decent toilets at school, or the daily chore of walking miles to collect water.”

Water and Poverty

- In sub-Saharan Africa alone, 40 billion hours of labor are wasted each year carrying water over long distances.
- Access to clean water is the foundation for all other development. People are trapped in poverty when the majority of their time is used for water collection and the bulk of household income is spent on water and water related illnesses.
- "Water management is a key factor in the global battle to remove the scourge of extreme poverty and to build secure and prosperous lives for hundreds of millions of people in the developing world."





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Water and Need

- Nearly 1 billion people do not have access to clean drinking water



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Living Water International (www.water.cc)

Food Waste

- Globally, 1/3 of all food is wasted
 - 1.3 billion tons annually
- Food is wasted or lost throughout the supply chain
 - initial agricultural production to household consumption
- In medium- and high-income countries, food is primarily wasted at the consumption stage, meaning that it is discarded even if it is still suitable for human consumption.
- Significant losses also occur early in the food supply chains in the industrialized regions.
- In low-income countries food is lost mostly during the early and middle stages of the food supply chain; much less food is wasted at the consumer level.

Food Waste

- Food losses and waste in low-income countries
 - financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems.
- The food supply chains in developing countries need to be strengthened
 - small farmers need help with access to technology to organize, diversify and upscale their production and marketing.
- Investments in infrastructure, transportation, food industries and packaging industries are also required. Both the public and private sectors have a role to play in achieving this.

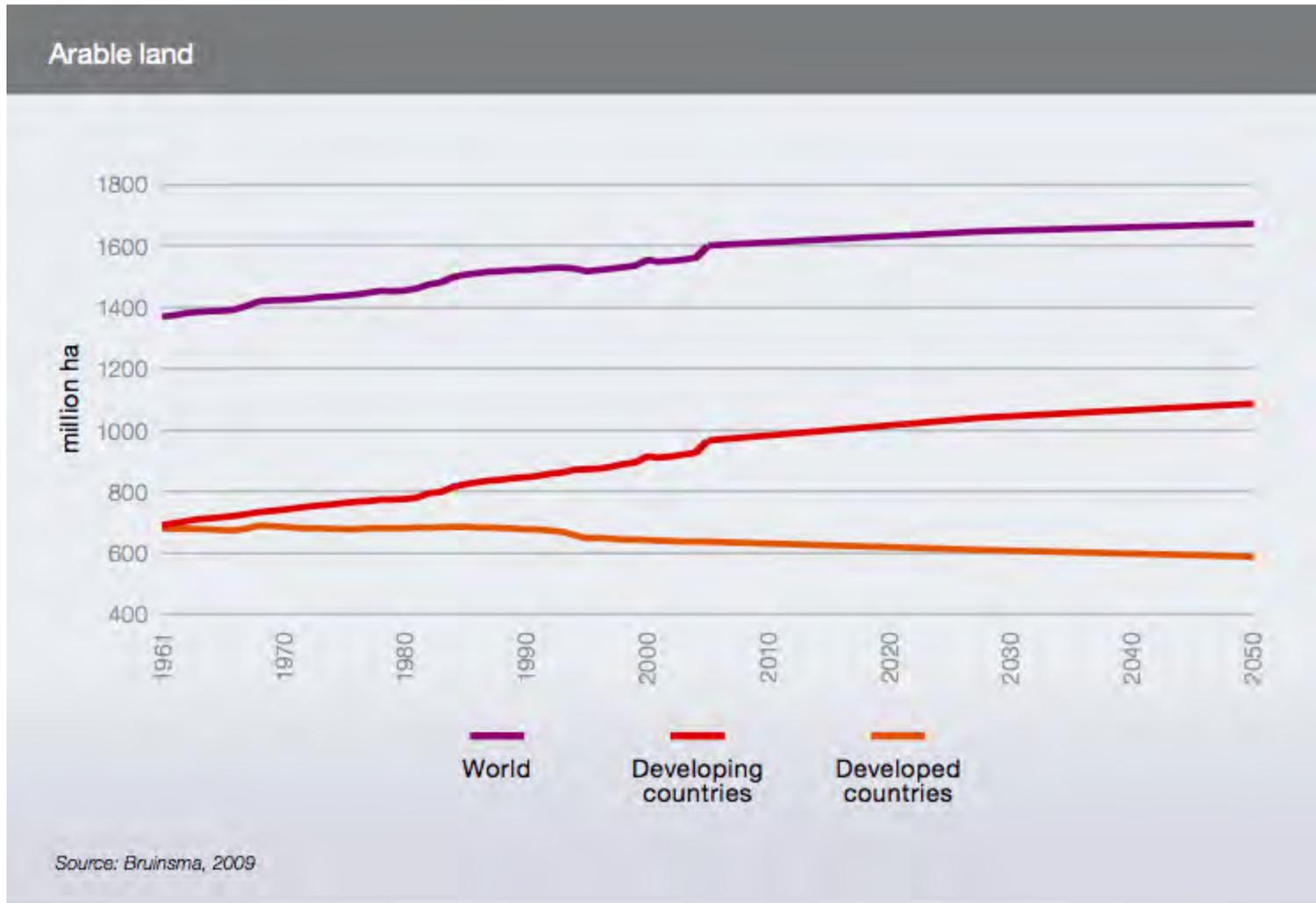
Food Waste

- The causes of food losses and waste in medium/high-income countries are:
 - mainly related to consumer behavior
 - lack of coordination between different actors in the supply chain.
 - Poor consumer purchase planning and expiring 'best-before-dates' also cause large amounts of waste, in combination with the careless attitude of those consumers who can afford to waste food.
- Food waste in industrialized countries can be reduced by raising awareness among food industries, retailers and consumers.
- There is a need to find good and beneficial use for safe food that is presently thrown away.



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Arable Land



Arable Land

- To meet food demands by 2050, food production must increase by efficiency (yield) and expanded acreage.
- Arable land would expand by:
 - 70 million ha (or less than 5 percent)
 - Almost all of the land expansion in developing countries would take place in sub-Saharan Africa and Latin America.

Technology Needs – Agriculture and Food Waste

- Agriculture can contribute to hunger reduction not only in producing food to meet the greatest needs, but also in job creation, economic productivity, and supporting rural livelihoods.
- This will require investments in:
 - 1) investments in sectors strongly linked to agricultural productivity growth, such as rural infrastructure (**roads**, ports, power, **storage** and **irrigation** systems)
 - 2) investments in institutions for farmers (**research** and **extension** services, land tenure systems, **veterinary** and **food safety control systems**, insurance and risk management)
 - 3) non-agricultural investment to bring about positive impacts on human wellbeing, including targeted **food safety nets**, social programs and cash transfers to the most needy.