THE GLOBAL AGRICULTURAL IMPERATIVE FOR A HEALTHY SUSTAINABLE WORLD
CONSUMER TRENDS AROUND THE WORLD
MILLENNIALS AND WOMEN DRIVING CHANGE
WHAT DOES THIS MEAN FOR OUR FOOD SYSTEM?

PEOPLE

RETAILERS

FOOD PROCESSORS & PACKAGERS

AGGREGATORS & TRADERS

FARMERS

RANCHERS

FORESTERS

FISHERS

AGRICULTURAL SERVICE PROVIDERS

FINANCIAL SERVICES & RISK MANAGEMENT
ENABLING POLICY ENVIRONMENT
POLICIES FOR PRODUCTIVE SUSTAINABLE AGRICULTURE

- R&D AND EXTENSION
- TECHNOLOGY
- PRIVATE-SECTOR INVOLVEMENT
- CULTIVATE PARTNERSHIPS
- TRADE
SUSTAINABLE AGRICULTURE...

ENHANCES ENVIRONMENTAL QUALITY

IMPROVES THE LIVES OF PRODUCERS & SOCIETY AS A WHOLE

SATISFIES HUMAN NEEDS

SUSTAINS THE ECONOMIC VITALITY OF AGRICULTURE
PRODUCTIVITY IS DIFFERENT FROM...

OUTPUT
GROSS AMOUNT OF CROPS
OR LIVESTOCK PRODUCED

YIELD
AMOUNT OF OUTPUT
PER UNIT OF PRODUCTION
TOTAL FACTOR PRODUCTIVITY (TFP) MEASURES CHANGES IN THE EFFICIENCY WITH WHICH INPUTS ARE TRANSFORMED INTO OUTPUTS.
HOW DOES PRODUCTIVITY GROW?

PRODUCTIVITY IS IN THE GENES

PRODUCTIVITY FROM SEED TO FEED

HEALTHY PRODUCTIVE PIGS
STRATEGIES FOR MEETING GLOBAL DEMAND

- LAND EXPANSION
- EXTEND IRRIGATION
- INPUT INTENSIFICATION
- TOTAL FACTOR PRODUCTIVITY
Sources of Growth in Agricultural Output

Sources of Growth in Global Agricultural Output, 1961–2015

*Depicts data for the most recent ten-year period. **Depicts data for the most recent five-year period.
Sources of Growth in Agricultural Output: 

High-Income Countries, 1961–2015

*Depicts data for the most recent ten-year period. **Depicts data for the most recent five-year period.

Sources of Growth in Agricultural Output

LOW-INCOME
TRACKING PRODUCTIVITY: THE GAP INDEX™

Source: Food Demand Index is from Global Harvest Initiative (GHI) (2018); Agricultural Output from TFP Growth is from USDA Economic Research Service (2018).
Productivity for Nutrition

Fresh Strawberries-U.S. Domestic Supply and Retail Value, 1990–2016

- Domestic Supply
- Retail Value ($/Pound)
FOOD WASTED = NUTRIENTS LOST

Daily Per Capita Food Waste by U.S. Consumers, 2007–2014 (annual average)

- 38.9% Fruit, vegetables, mixed fruit and vegetable dishes
- 17.1% Dairy
- 13.5% Meat and mixed meat dishes
- 12.1% Grains and mixed grain dishes
- 8.0% Sweets, condiments and other foods and dishes
- 3.5% Salty snacks
- 2.8% Soups
- 2.0% Potatoes and mixed potato dishes
- 1.4% Nuts and seeds
- 0.7% Eggs and mixed egg dishes

## FOOD WASTED = PRODUCTIVITY LOST

### AGRICULTURAL INPUTS AND RESOURCES USED TO PRODUCE WASTED FOOD (U.S.)

<table>
<thead>
<tr>
<th>Resource</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Cropland</td>
<td>30 million acres</td>
</tr>
<tr>
<td>Irrigation Water</td>
<td>4.2 trillion gallons</td>
</tr>
<tr>
<td>Pesticide</td>
<td>780 million pounds</td>
</tr>
<tr>
<td>Fertilizer (Nitrogen, Phosphorus, Potash)</td>
<td>5.6 billion pounds</td>
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</tbody>
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TRANSFORMING FOOD AND AGRICULTURE

CONSUMERS

ENVIRONMENT

PRODUCERS
HARVESTING ZINC FOR HEALTHY SOILS, CROPS & PEOPLE

➢ Addressing zinc deficiency, a form of “hidden hunger”
➢ Promoting agronomic biofortification & soil fertilization of staple grains
➢ Doubled zinc levels in harvested grain

The Mosaic Company
HarvestPlus
A NEED FOR SEEDS AND SEED SYSTEMS

➢ Improving micronutrient content of sorghum and millet
➢ Strengthening research capacity through partnership
➢ Tailoring seed systems for small producers

Corteva Agriscience™
ICRISAT
MECHANIZATION IS A PATH TO PRODUCTIVITY

➢ Expanding affordable mechanization services for small producers in Nigeria
➢ Creating access to commercial markets
➢ 100,000 farmers will benefit
MOOVE OVER COWS; GOATS GOT MY DAIRY!

A MODEL FOR HEALTHY AG SYSTEMS

THE NATURE CONSERVANCY
GAP REPORT® GOES DIGITAL!

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