In Search of an African Green Revolution

African Fertilizer Summit
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Norman E. Borlaug
President
Sasakawa Africa Association
## Green Revolution: Changes in Factors of Production in Developing Countries of Asia

<table>
<thead>
<tr>
<th>Year</th>
<th>Adoption of Modern varieties</th>
<th>Fertilizer Nutrient Use</th>
<th>Tractors millions</th>
<th>Cereal Production million t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wheat M ha / % area</td>
<td>Rice M ha / % area</td>
<td>Irrigation million ha</td>
<td>million t</td>
</tr>
<tr>
<td>1965</td>
<td>0 / 0%</td>
<td>0 / 0%</td>
<td>94</td>
<td>5</td>
</tr>
<tr>
<td>1970</td>
<td>14 / 20%</td>
<td>15 / 20%</td>
<td>106</td>
<td>10</td>
</tr>
<tr>
<td>1980</td>
<td>39 / 49%</td>
<td>55 / 43%</td>
<td>129</td>
<td>29</td>
</tr>
<tr>
<td>1990</td>
<td>60 / 70%</td>
<td>85 / 65%</td>
<td>158</td>
<td>54</td>
</tr>
<tr>
<td>2000</td>
<td>70 / 84%</td>
<td>100 / 74%</td>
<td>175</td>
<td>70</td>
</tr>
<tr>
<td>2005</td>
<td>72 / 87%</td>
<td>102 / 76%</td>
<td>178</td>
<td>77</td>
</tr>
</tbody>
</table>

Source: FAOSTAT, March 2006 and author's estimated on modern variety adoption, based on CIMMYT and IRRI data.
World Cereal* Production–Areas Saved Through Improved Technology, 1950-2000

CEREAL PRODUCTION

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (million tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>650</td>
</tr>
<tr>
<td>2000</td>
<td>1,900</td>
</tr>
</tbody>
</table>

LAND SPARED
1.1 billion ha

LAND USED
660 million ha

* Uses milled rice equivalents
Source: FAO Production Yearbooks and AGROSTAT
High-Yield Agriculture & Forestry Will Help Protect African Wildlife
Comparing Green Revolution Asia with Sub-Saharan Africa

**ASIA**
- Irrigated agriculture
- Good transport infrastructure
- Public input supply and grain marketing boards
- Many production subsidies
- Large unmet commercial market demand

**AFRICA**
- Rainfed agriculture
- Poor transport infrastructure
- Market-driven input supply and grain marketing systems
- Few production subsidies
- Small unmet commercial market demand
Lack of Infrastructure Is Killing Africa

Kilometers of paved roads per million people in selected countries

| Country          | Km   | | Country          | Km   |
|------------------|------|-----------------|-----------------|
| USA              | 20,987| | Guinea           | 637  |
| France           | 12,673| | Ghana            | 494  |
| Japan            | 9,102 | | Nigeria          | 230  |
| Zimbabwe         | 1,586 | | Mozambique       | 141  |
| South Africa     | 1,402 | | Tanzania         | 114  |
| Brazil           | 1,064 | | Uganda           | 94   |
| India            | 1,004 | | Ethiopia         | 66   |
| China            | 803  | | Congo, DR        | 59   |

Source: Encyclopedia Britannica, 2003
Sasakawa-Global 2000
Reaching Africa’s Small-scale Farmers with Improved Technology

Funded by the Nippon Foundation of Japan

Started in 1986
Build Commercial Smallholder Farm Sector

- Focus first on high potential farmers
- Improve productivity of basic food crops
- Reduce commercial costs
- Diversify farm enterprises
- Add more value to primary production
Sasakawa-Global 2000
Maize Demonstration Yields

* Primarily using hybrids
Consumption of fertilizer nutrients per hectare of arable land in selected countries, 2002

Source: FAOSTAT, July 2004
Nitrogen Inputs Into China’s Cropping, 1952-2000

Nitrogen nutrients, M tonnes

1952 60 70 80 90 2000

Fertilizer

Organic recycling

Biofixation

Atmospheric deposition
Integrated Soil Fertility Management

- Demonstrate and disseminate integrated soil fertility practices to smallholder farmers
- Develop smallholder input delivery systems
- Social investments in land and watershed rehabilitation through food-for-work programs
Conservation Tillage

- Restores organic matter
- Saves labor & fuel
- Controls weeds
- Reduces erosion
- Conserves moisture
Improve Efficiency of Fertilizer:

Use

Supply
Build Smallholder Input Retailer Systems

- Business development assistance
- Multiple products & services
- Commercial credit lines
- Technical advisory services
- Custom service providers
Africa has the potential to irrigate 20% of its arable land.

Only 4% is currently irrigated.

Small-scale systems generally are the most cost-effective.
"As long as farming remains marginally rewarding, young men and women will drift away from the rural areas to increase the battalions of the urban poor.

The idea, therefore, that African agriculture should be based only on a half hectare holding is, to say the least, unappetizing.

I want to see the evolution of young, emergent, commercial farmers who will be holding, not a half hectare of land, but 5 to 10 to 20 hectares of land, and for whom the city will have no big attraction."

Olusegun Obasanjo

President Olusegun Obasanjo
Federal Republic of Nigeria
“You Cannot Build Peace on Empty Stomachs.”

John Boyd Orr
Nobel Peace Laureate
First FAO Director General