RICE OPTICS
Land, Water, and Markets in Emergent Rural-Urban Topographies of Vietnam and Nigeria

Malika Leiper and Ryan Thomas
### World’s Most Produced Agricultural Commodities

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Production (millions of tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td></td>
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<tr>
<td>Rice, paddy</td>
<td>650,424,514 tons</td>
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<tr>
<td>Fruit Primary</td>
<td></td>
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<tr>
<td>Roots and Tubers, Total</td>
<td></td>
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<tr>
<td>Maize</td>
<td></td>
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<tr>
<td>Vegetables Primary</td>
<td></td>
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<tr>
<td>Coarse Grain, Total</td>
<td></td>
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<tr>
<td>Sugar cane</td>
<td></td>
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<tr>
<td>Cereals (Rice Milled Eqv)</td>
<td></td>
</tr>
<tr>
<td>Cereals, Total</td>
<td></td>
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</tbody>
</table>

Source: FAO
NIGERIA
Population (2017): 200,040,854
Total Area: 923,768 km²
Area harvested for rice: 49,126 km²
Rice Yield: 20,079 harvested grain/ha

VIETNAM
Population (2017): 94,569,072
Total Area: 331,212 km²
Area harvested for rice: 77,085 km²
Rice Yield: 55,476 harvested grain/ha

Source: FAO
“Like many staple commodities rice is in a confused state after the green revolution. Potential yields were completely transformed in short term and then they were extended with varying intentions and levels of clarity.

So you have huge misuse of inputs causing huge health impacts across production systems. Once you’ve used pesticides to kill predatory system you end up in a system where you’re addicted to chemical inputs.

People are starting to realize that, fundamentally, the land can’t sustain such a steroidal output of yield improvement for more than a few years.”

-Nicholas Spencer, CEO of Ibis Rice
Sustainable Rice Production in Cambodia
DES 3329 Emergent Urbanizations / Commodity Chains Group / Rice

1960

IR6 or 'Miracle Rice' variety is first introduced in the Philippines and India.

CSIRAC Consulative Group on International Agricultural Research is founded.

1971

First Global Commodity Crisis. End to the "Golden Age" of post-War economic growth.

1974

World Trade Organization (WTO) forms.

2000

United Nations adopts Millennium Development Goals (MDGs).

2007-8

World Food Price Crisis.

2019

European Union imposes tariffs on rice from Cambodia and Myanmar for three years by Italy's request for their producers to gain protection on price affected by imports.

2017

Thailand's Prime Minister, Samak Sundarat, proposes the formation of OPEC (Organization of Rice Exporting Countries).

South Sudan Famine.

2015

MDGs expire. UN adopts "Sustainable Development Goals (SDGs).

The Green Revolution

The Long Green Revolution

Rice Production in Millions of Tons

Rice Prices in Dollars per Ton
Federal Rice Research Station established

National Seed Service established with assistance from FAO

Presidential Task Force on Rice Established

Rice import tariff set to 100% to encourage domestic production

Presidential Initiative on Increased Rice Production, Processing and Export is launched

Coalition for African Rice Development is launched with aim of doubling rice production in Sub-Saharan Africa over next 10 years

Source: FAO
ITALY 173,008

SUDAN 9,643

MALI 9,416

GAMBIA 11,384

NIGERIA 36,353

SUDAN 9,254

ERITRA 20,176
Public
- Department of Agriculture and Rural Development
- Research Institutes and Universities

Private
- Export companies
- Farmer Cooperatives
- Food Industry

- Profitability: Net income from rice
- Labor Productivity
- Productivity: Grain Yield

- Water Productivity
- Nitrogen-use Efficiency
- Phosphorous-use Efficiency

- Greenhouse gas Emissions
- Pesticide Use

SUSTAINABILITY

- Worker Health and Safety
- Child Labor
- Women Empowerment

Food Safety

Social

Environmental

Economic
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