Turning tragedy into opportunity: water management solutions for flood-recession and dry-season agriculture in Nigeria

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Introduction

• On June 3\textsuperscript{rd} – 9\textsuperscript{th}, the IFPRI team – Hiro Takeshima & Ephraim Nkonya – conducted consultation meetings in Anambra, Benue and Kogi states with:
  • state agricultural development officials
  • Small and large-scale irrigators
  • Farmer groups
  • Project leaders
  • Technical staff in government and private companies conducting irrigation
Introduction (cont’d)

- The major research questions addressed
  - What irrigation projects/programs worked well in the past and which did not?
  - Why some irrigation projects/programs worked or did not?
  - What are the returns to irrigation compared to rainfed agriculture?
  - What AWM solutions could be used to address constraints to dry season farming and recession farming?
Results

- **Irrigation history**

- **1970s-1990s** – large irrigation schemes managed by River Basin Development Authorities (RBDAs) or by the States
  - A total of 162 dams were constructed by 1990 with capacity to irrigate 725,000 ha
  - Performance of large scale irrigation was low. FAO (2005) estimate only 32% of installed capacity was used for irrigation
  - Farmers were not involved in the planning and management of irrigation schemes
Farmers have traditionally been practicing irrigation during the dry season in the flood plains (fadamas) using water manually drawn water from shallow wells or streams of the Niger, Sokoto, Rima, Benue and Yobe rivers.

Government started supporting small irrigation thru Fadama I project in the early 1990s.

Small-scale irrigators account for ~70% of irrigated area.

Both traditional & Fadama I irrigation systems have been working well.
Irrigation opportunities in central & Southern Nigeria
Irrigation opportunities in Central & Southern Nigeria

- High rainfall in Central & southern zone

Rainfall (mm/year)

- Maine
- Soroa, Yobe
- Maiduguri
- Kano
- Makurdi
- Lagos
- Port Harcourt
Irrigated crops more profitable than rainfed crops

US$000/ha

Southern  Central  Northern

Rainfed crops  Irrigated crops
Increasing urban population ➔ high domestic demand of ag products

% rural population

y = -0.6804x + 65.236

Vertical linkage with high-end grocery stores could help farmer groups capture prime markets.
High value crops are women crops

- Pepper, okra, tomato, etc were reported to be women crops
  - Due to their high labor intensity
  - Need for delicate handling

- Such orientation implies greater chance of irrigation lifting women out of poverty – even if they own small pieces of land
Challenges of irrigation & flooding in Central and Southern Nigeria
Low irrigation experience

- Dry season irrigation is limited in all three states largely due to lack of tradition & experience to use irrigation.
- “there is no water shortage in Southern Nigeria, instead there is shortage of agricultural water management skills”, Matthias Moro – retired irrigation officer, Benue state.
Extension messages by AEA in Nigeria

- Improved seeds: 56%
- Inorganic fertilizer: 18%
- Agrochemicals: 10%
- Planting: 10%
- Organic fertilizer: 1%

Note: No advisory services on markets & irrigation.
Weak capacity for collective action on irrigation

In each of the three states (Anambra, Benue & Kogi), there are groups of irrigators. The groups have the following challenges:

- **Amount of money** contributed for irrigation development and maintenance is either zero or small.
- **Advisory services on AWM & marketing** is very weak in all three case study states. In each there is only one irrigation engineer, no mkt advisory service.
- Participation of women – even for government supported projects is limited. Example Benue
Distribution of 292 pumps in Benue & irrigated area of beneficiaries

<table>
<thead>
<tr>
<th>Percent</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiaries</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Area</td>
<td>90</td>
<td>10</td>
</tr>
</tbody>
</table>
State government investment in irrigation development & flood control

- In all three case study states, focus of investment in irrigation development is on small-scale irrigation.

- **Limited investment in flood control.** The limited budget to flood control is mainly for urban population and allocated following serious flooding – “fire brigade investment”

- Existing dams constructed in locations not meant to control flooding.
The way forward

- More data collection required. We are working with:
  - Albert Odukwe – Anambra state
  - Thomas Edeh – Benue state
  - Engr Joseph Ogbe – Kogi state

- To collect LGA-level data on:
  - **Socio-economic data**: population, ag prod’n, labor, farming practices, access to credit & extension services, farmer typologies, inventory of irrigation implemented in each LGA
  - **Biophysical data**: rainfall, salinity, siltation, etc
Way forward (cont’d)

- Analyze secondary data to better understand irrigation & flooding aspects
- Consultation with policy makers on country strategies to turn flooding tragedy into dry season irrigation
C'est à votre tour