Towards enhanced capacity of farmers and institutions in irrigation and drainage as key contributors to sustainable food production and poverty alleviation in the Philippines

Mona Liza F. Delos Reyes¹
Bart Schultz²

¹PhD, University Researcher, University of the Philippines Los Banos
²Prof. Em., IHE Delft Institute for Water Education, Delft, the Netherlands

Outline of the Presentation

• Materials and methods
• Level of attained benefits from irrigation
  — Crop production
  — Food sufficiency
  — Economy
  — Poverty
• State of irrigation development
• Irrigation improvement initiatives
• Laws and institutions for farmers’ involvement
• Key areas for increasing production and income
• Capacity enhancement needs

Rice production & sufficiency
Materials and Methods

1. Analysis of data at the country level
   - Level of attained benefits from irrigation
     - Crop production
     - Food sufficiency
     - Economy
     - Poverty
   - State of irrigation
   - Laws and institutions for farmers’ involvement

2. Analysis based on field surveys/walkthroughs
   - Irrigation improvement initiatives
   - Key areas for increasing production and income
   - Capacity enhancement needs

Rice production & sufficiency

Materials and Methods

Irrigation Systems

Luzon
- Balanac RIS
- Sta. Maria RIS
- Agos RIS
- Lower Chico RIS
- Pampanga Delta RIS
- Angat-Maasim RIS
- Sta. Cruz RIS
- Sulib CIS

Mindanao
- Tago RIS
- Palalan CIS
- Kaulayanan CIS
- Balingasag RIS
- Manupali RIS
- Lacson CIS
- Karpa CIS
- Maligaya CIS
- Tagkiling drip irrigation
- Cabadbaran-Taguibo RIS
- MAP IS

Visayas
- Mainit RIS
Rice production and sufficiency
• Avg. production: 18.82 MT
  ➢ 76% from irrigated area
• Avg. area harvested: 4.71 Mha
  ➢ 69% is irrigated area
• Avg. yield: 4.4 (irrigated); 3.1 (RF)

• Avg. SSR: 90%
• Avg. import: 1.18 MT
• Avg. yield: 4.4 (irrigated); 3.1 RF

Self-sufficiency in other crops
• Garlic: 13%
• Peanut: 27%
• Coffee: 42%
• Mungbean: 54%
Economy and Agriculture

- GDP growth rate: 6.6%
- Main driver: Services & Industry

Agriculture
- 1.3% avg. growth rate
- 10% of GDP
- 25% labor force
- Low productivity

Poverty

Poverty Incidence

- Poverty Incidence: 18.1% (20M)
- Subsistence level: 5.9%
- Highest PI: farmers 31.6%
State of Irrigation Development

Irrigation service area

- Irrigable: 3.13 Mha
- w/ irrigation: 64% (2.01 Mha)

Irrigation performance

Irrigated area

- NIS (% O&M, 2010-2020)
  - Range: 66 – 88%
  - Avg WS: 76%
  - Avg DS: 74%

- CIS (% O&M, 2012-2020)
  - Range: 55 – 68%
  - Avg WS: 63%
  - Avg DS: 59%
Irrigation interventions

1. National level
   • NIS Rehabilitation and Improvement Project
   • Small River Impounding Project
   • Climate Change Adaptation Works

2. System level
   • Water reuse and conjunctive use
   • Minor irrigation schemes
   • Alternate wetting and drying (AWD)
   • Segmental cropping, rotational irrigation
   • Shifting of cropping calendar
   • Crop diversification

Irrigation intervention photos

11

Irrigation Interventions

Conjunctive use

Spring water

Minor irrigation scheme

Spring water
### Legal basis for farmers involvement

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>PD 552 Amendments on the NIA Charter. To give NIA power to delegate the partial or full management of NIS to duly organized farmers organizations</td>
</tr>
<tr>
<td>1975</td>
<td>Creation of the Farm Systems Development Corporation (FSDC). To promote organization and assist IAs; to develop small low-lift pump irrigation schemes</td>
</tr>
<tr>
<td>1976</td>
<td>Pilot project transferring the responsibility, ownership, and management of small-scale irrigation systems to farmers groups</td>
</tr>
<tr>
<td>1980</td>
<td>Implementation of Participatory Approach Program of NIA; adoption of farmer participation in all CIS and, subsequently, in NIS</td>
</tr>
<tr>
<td>1987</td>
<td>The creation of the Bureau of Soils and Water Management (BSWM). To develop small water impounding irrigation systems</td>
</tr>
<tr>
<td>1991</td>
<td>Enactment into law (Republic Act 7607) of the Magna Carta of Small Farmers</td>
</tr>
</tbody>
</table>
Legal basis for farmers involvement

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Transfer of NIA to the Department of Agriculture (DA); launch of the DA shallow tubewell irrigation project</td>
</tr>
<tr>
<td>1997</td>
<td>Passage of Agriculture and Fisheries Modernization Act (AFMA). To accelerate and complete the turnover of O&amp;M and management of secondary canals and on-farm structures of NIS to the IA. Start of implementation of IMT program</td>
</tr>
<tr>
<td>2014</td>
<td>Transfer of the NIA to the Office of the President</td>
</tr>
<tr>
<td>2018</td>
<td>Passage of the Free Irrigation Service Act (RA 10969) Mandanas Ruling full devolution of CIS to LGUs</td>
</tr>
</tbody>
</table>

Key areas for increasing production & income

- Increasing rice yield: 4.4 → 6-8 t/ha
  - Management of production factors
- Increasing cropping intensity: 150 → 180-200%
  - Irrigation expansion
  - 0.92 M ha is RF; 40% not planted during dry season
  - irrigation modernization
  - Drainage system
  - Crop diversification

System issues
Irrigation modernization

Diversion structures

17

Irrigation modernization

Capacity enhancement: Farmers

18
Key areas for increasing production and farmers' income

• Increasing rice yield: 4.4 → 6-8 t/ha
  ➢ Management of production factors

• Increasing cropping intensity: 150 → 180-200%
  ➢ Irrigation expansion
    ❖ 0.92 M ha is RF; 40% not planted during dry season
  ➢ irrigation modernization
  ➢ Drainage system
  ➢ Crop diversification

Capacity enhancement

Farmers’ level

❖ canal operation at the system level and working principles of flow control structures
❖ logical combinations of structures, canal operation objectives and their farming goals
❖ development planning for irrigation modernization
❖ diversified cropping and HVC production
❖ postharvest handling and food processing
Capacity enhancement

Institution level

- synergy among agriculture offices and the NIA
- arrangement with other water right holders
- IA's role in monitoring and acceptance of completed projects
- revisiting of standard O&M budget
- access to market and postharvest/processing facility

Thank you