Regional Rice Initiative Implementation in Indonesia: *the progress and lesson learned*

by:

Dr Achmad Suryana
Director General for Food Security
Ministry of Agriculture - Republic of Indonesia

Presented as the Country Presentation on the Regional Rice Initiative
The Side Event of The 149th Session of the FAO Council Meeting
Rome, Italy, 18 June 2014
Objective:
Share knowledge and experience on Regional Rice Initiative (RRI) implementation in Indonesia

Contents:
I. RRI in Indonesia: the progress and lesson learned
II. Ten Million Ton Rice Surplus Program
III. One Million Hectare Rice-Fish Program
I. RRI Implementation in Indonesia: the Progress and Lesson Learned
A Glance of Regional Rice Initiatives Phase II Implementation in Indonesia:

**Component 1: Water and Rice/Fish System**
- Availability and Use of Aquatic Biodiversity in Rice Field Ecosystem: Case Studies in West Java and Bali
  - Research Institute for Fish Breeding Sukamandi, Indonesia

**Component 2: Biodiversity, Landscapes and Ecosystem Services**
- Assessment of Trees outside Forests in Rice Production Landscapes
  - National Consultant in collaboration with FAO

**Component 3: Management Practices**
- Increasing productivity & efficiencies in rice intensification: making choices at country level
  - NGO: FIELD AND VECO Indonesia
COMPONENT 1 RRI
AVAILABILITY AND USE OF AQUATIC BIODIVERSITY IN RICE FIELD ECOSYSTEM: CASE STUDIES IN WEST JAVA AND BALI
A. Key Findings

West Java

- 61 species of aquatic organisms
- Sundanese uses the diversity of aquatic organisms for food and livelihood
- fish, frogs, snails, reptiles and insects

Bali*

- 58 species of aquatic organisms
- Balinese collect a variety of aquatic organisms for food and feed
- All elements of this system used for livelihood

*complex, irrigated rice ecosystem “subak”
B. Lesson Learned

Rice-fish culture is important in Indonesia, has been known for years, but underestimated and undervalued its potential.

Many good reasons to support the target:
- Provide more food sources, better use of scarce resources, protect the environment, create opportunities for value added
- Increase food security, lower food expenditures, provide rural employment

Rice-fish culture needs to be promoted again understood as the precursor for rice-based aquaculture.
COMPONENT 2 RRI
BIODIVERSITY, LANDSCAPES AND ECOSYSTEM SERVICES
A. Background:

- Maintaining an **adequate tree cover** and **integrating trees and crop** in agroecosystem landscapes can provide multiple services and products, both under economic and environmental aspects.

- Although trees and rice are often seen as **incompatible**, TOF integrated in rice production landscapes can provide multiple services **mitigating stressors such as climate change, water scarcity, land degradation** helping address multiple stressors faced by rice production systems.
### B. Finding

**TOF in rice production landscapes in Asia can be found in:**

<table>
<thead>
<tr>
<th></th>
<th>Home gardens</th>
<th>Roads and streams</th>
<th>Agroforestry systems</th>
<th>Small woodlands</th>
<th>Hedges</th>
<th>Fallows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, fodder</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil productivity</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Woodfuel, timber</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Soil protection</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Incomes /job</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market adaptability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water level</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>C sequestration and storage</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Biodiversity preservation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffering T°</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
c. Next Steps

- **Replicating** and **up-scaling** the present study at national and regional level.
- Encouraging governments to promote trees presence and **agroforestry** practices in these kinds of crop systems (Agroforestry Guidelines developed by FAO, 2013).
- Assessing availability of **agroforestry planting material**, providing information on how to access it.
- Developing **catalogues of trees suitable** for each of the different rice growing situations.
COMPONENT 3 RRI MANAGEMENT PRACTICES

Increasing productivity & efficiencies in rice intensification

Making choices at field level
A. Process:

- National meeting – link to national policy, coordinate among RRI components
- Planning - set principles, choice of themes and locations *(link with component 1)*
- Curriculum development *(link with component 1)*
- Training of Trainers – Farmers Field Schools
- Case studies
- Consolidation/recommendations
Series of Activities:
Indonesia FIELD → Indramayu, West Java
B. Findings:
• On average the yield has increased with 10 – 15% compared to conventional
• One of the biggest challenges for farmers is the rapid and massive development of weeds, which is caused by the limited use of water

C. Lesson Learned:

Adaptable to:
specific conditions, locations and scales

Three key lessons
1) Increasing rice yield alone is not sufficient
2) There is no “one size fits all” or “silver bullet”
3) Sustainable production is knowledge intensive
II. Ten Million Ton Rice Surplus Program
ESTIMATION OF RICE DEMAND AND PRODUCTION 2015-2019

In 2013, Rice surplus was around 5 million tons, Main Goal: to have supply and price stability at all times.
STRATEGY OF RICE PRODUCTION

1. Increase Planting Area
2. Secure Existing Production
3. Increase Productivity
4. Empower Agriculture and Farm Financing Support Institution
5. Improve Management
6. 10 Million Ton Rice Surplus Program
MEASURES TO INCREASE RICE PRODUCTION

1. Open New Rice Field
2. Rehabilitate primary irrigation
3. Use of technology
   a. Implement System Rice Intensification (SRI) and integrated crops management
   b. Land Optimazion
   c. Use of certified high quality seeds
   d. Use of fertilizer recommendation
   e. Use of rice planting calendar
   f. Use Rice Space Row Planting “Jajar Legowo”
4. Reduce area of infected pest and diseases
5. Farmer Field School on Integrated Crops Management
6. Public-Private cooperation in rice production
Space-Row Planting System
“Jajar Legowo”

Parallel Column 2 : 1

Parallel Column 3 : 1 and 4 : 1
III. One Million Hectare Rice – Fish Culture Program (GENTANADI)
Why “Rice-fish” Culture should be developed in Indonesia?

- Rice is the main staple food and fish is one of the important protein sources;
- Rice is the important food security commodity economically, socially, and politically;
- To achieve food security, rice field should be maintained sustainably;
- To accelerate inland fish production without reducing rice production;
- To improve environmental condition in rice field ecosystem;
- To improve sustainable food security at farmers and rural levels;
Benefits of rice-fish culture

• **Full utilization of natural resources-increased productivity from paddy field:**
  – Rice production increase by 10-20%, 6-7.5 tons/ha/crop;
  – Additional production of fish/aquatic animals: 1.2-1.5 tonnes/ha.

• **Symbiotic relationship between fish and rice:**
  – Paddy field provides fish with free feed;
  – Fish fertilizes paddy with feces and improve soil structure;
  – Paddy provide oxygen and shelter for fish/crustacean.

• **Food Safety and environmental benefits**
  – Reduce chemical/pesticides/herbicides usage — less environmental impacts;

• **Social and economic benefits:**
  – Increase farmer income US$ 4.800-7.800/ha
  – Protect the rice cultivation by making it an attractive livelihood
Common fishes cultivate in paddy fields

- Tilapia
- Gouramy
- Catfish (Clarias)
- Nilem
Aquaculture Area in Indonesia (hectares) in 2012

- **Mariculture**: 176,930
- **Brackishwater culture**: 133,574
- **Freshwater Culture**: 156,193
- **Rice - Fish and Freshwater Culture**: 657,346

*Source: Indonesian Aquaculture Statistic, 2012*
Five Main Rice-Fish Producers in Indonesia, 2012

1. West Java (22,646 tonnes)
2. North Sulawesi (12,956 tonnes)
3. Bengkulu (8,646 tonnes)
4. North Sumatera (8,249 tonnes)
5. West Sumatera (7,367 tonnes)
Activities of Rice Fish Culture System in West Java

Land preparation

Rice nursery & Plantation

Fish & Prawn Stocking & Harvest
Thank You