
Le Thanh Phong, H.M.J. Udo, M.E.F. van Mensvoort, Le Quang Tri, R.H. Bosma & Dang Kieu Nhan

Introduction
- High demand for fish stimulates aquaculture in VMD.
- Farmers say IAA systems are more efficient then specialised systems.

Objective:
Understand dynamics and driving factors for changes in IAA systems.

Conclusions
Doi Moi reform triggered diversification:
- In 30 year, from rice-based to IAA systems.
- 50% farms: rice, orchard, livestock, and fish (Figure 2): 90% at least 2 components.

Management differences related to farms:
- Land use intensity of fish and rice.
- Distance to market.

Income gap inside O Mon:
- Perhaps related to higher investment in fish.

Need for:
- Credit programmes.
- Training of farmers to improve skills.
- Organization of marketing networks.
- Improvement of product quality.

Results
- Stop of some traditional rice cultivars
- Start of double rice
- Rice damaged by Brown Plant Hopper
- Serious flood
- Start of: Song Hau State Farm
- Cooperative Movement
- Semi-intensive fish farms
- Introduction of HYVs rice (IR36, IR32)
- "Doi moi" policy (1986)
- Application of direct seeding rice production
- Government financial and technical support for animal and orchard development
- Linda storm (1997), flood
- Builted public dam
- Intensive fish farming
- Fingerling fish production
- Increase of pig, cattle, and poultry raising
- High price of rice, pig and fish
- Flood

Per capita income:
Number of working days and total cultivated area explained variation.
Management differences related to a.o. distance to market.

<table>
<thead>
<tr>
<th>Distance to market (km)</th>
<th>O Mon</th>
<th>Tam Binh</th>
<th>Cai Be</th>
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<td>6.6</td>
<td>13.8</td>
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Per capita income (million $ ± s.e.m.):
- O Mon: 4.3 ± 0.8
- Tam Binh: 3.1 ± 0.5
- Cai Be: 3.6 ± 0.5

Figure 1: Timeline O Mon; in other districts main events similar but chronology of technology changes different.

Figure 2. Bioresource flows of farm in Tam Binh District. (Odum symbols)
Wastes and excreta were recycled on the farm (Figure 2).

Rice field is source for:
- Family's food and cash.
- Feed for the animals and rice straw for vegetables and orchard.

Pond supplied:
- Water for fruit trees.
- Mud for nutrient source of orchard.
- Feed for pigs and poultry: water spinach, snails, or crabs.

Vegetable gardens' and fruit orchards' weeds and wastes: feed sources.

Main problems for farmers:
- Lack of capital for investments.
- Fluctuating and low market prices.

Figure 3. Ranking of well-being.
O Mon had:
- High surface ratio fishpond/orchard: 0.9; Tam Binh: 0.16; Cai Be: 0.1.
- Highest input level for fish farming.
- More rich and more poor people (Figure 3).

Farm transects common pattern: homestead with pigsty and poultry pen, surrounded by fishponds, orchard, vegetables, and distant rice fields (Figure 4).

Figure 4. Pictures of the farm transect components in Tam Binh