Situation of Rice breeding and Production seed production in Lao PDR

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Introduction

- Rice is the staple for about half of the world’s population,
- Increasing of population, but planting areas are decreased
- Government policy:
  - In 2015: 4.2 mill. tons
  - In 2020: not less 5.2-5.5 mill. tons
- Market needed (quality and quantity)
Introduction (cont.)

- Production problem
  - Soil not fertile
  - Climate change
  - Drought and flood
  - Disease and pests

This manual defines principle of rice research and production system such as basic seed, Foundation Seed, Registration Seed and Certified Seed).
Research components

❖ Short term
  • observation and evaluate local varieties and introduce direct to farmers use
  • Introduce varieties/fixed lines from other research centre in country and abroad

❖ Long term: develop new varieties
  • Crossing
  • Select segregated and fixed from research centre in country and abroad
Rice Research Objective

- High yielding,
- Resistance to diseases and pests,
- Wide adaption,
- Good quality,
1. Crossed & F2, F3-F6 Selection
2. Evaluation of Fixed Lines Developed By RCCR C and from IRRI
3. Develop Aromatic Rice in Collaboration with Kaset sat Kampheng sene, Thailand and IRRI
4. Farmer Participatory in Varietal Selection
5. Seed Multiplication of Promising Lines
Plan of Breeding Activities

**Responsible Agency:**

**Breeder Seed:**
N-ARC, TSN-SMC, PNG-SMC and LNT-SMC

**Foundation Seed:**
TSN-SMC, PNG-SMC, LNT-SMC, SNSs and PAFO/DAFEO (on station and on farm in collaboration with farmers)

**Registered and Certified Seed:**
TSN-SMC, PNG-SMC, LNT-SMC, SNSs and PAFO/DAFEO (on Station and farm in collaboration with farmers)

**Plan of Breeding Activities**

- **B Seed**
- **Foundation Seed:** 45-50 tons
- **Registered Seed:** 3000 tons
- **Certified Seed:** 55,000-60,000 tons

**Production:**
Ordinary Farmers
Research Center

- Northern Region
  1. LNT-SMS
  2. HK-SMS
  3. NTN-SMS
- Central Region
  4. PC-SMS
  5. N-SMS
  6. N-ARC
  7. NH-SMS
  8. TK-SMS
  9. VP-SMS
  10. TSN-SMS
- Southern Region
  11. PNG-SMS
  12. ND-SMS
Characterization
Evaluation for Utilization
“Kam Niew Hom”
Black Rice Variety
Foundation Seed
Kainoi Leuang, Scentered Rice, Origin from Huaphanh Province
Breeder Seed Multiplication of Released Variety

TDK8
Foundation Seed Multiplication
TDK1-Sub1, in collaboration with University of California and IRRI
Achievement 1991-2011

Improved varieties were released:
1993: TDK1, TDK2
1994: PNG1
1995: PNG2
1997: TDK3
1998: TDK4, TSN1, NTN1
2000: TDK5
2002: TDK6, TDK7*, PNG3
2003: TDK8, TDK9*, TDK10, PNG5*
2009: TDK11*, TSN5*, TSN6*, TSN7* and Homesavan*
Rice Seed production System

National Agriculture Research Center

Foundation Seed (R 1)

Registered Seed (R 2)

Certified Seed (R 3)

Contact Farmers

Rice Grower all over country And Private Company

Seed Multiplication Center

Seed Multiplication Center
Seed Distribution

Research Institution
- Extension Companies
- Or NGO organization
- Or Farmer Group
- Individual Farmer

Import Country
- Extension Companies
- Or Retailer shop
- Individual Farmer
# Seed Distribution System

<table>
<thead>
<tr>
<th>Seed distribution System</th>
<th>Type of seeds /planting materials supplied</th>
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<tbody>
<tr>
<td>Informal</td>
<td>Rice, both traditional and improved varieties</td>
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<tr>
<td></td>
<td>Local/traditional varieties of corn, vegetables, legumes and other major crops (jobs tear, paper, mulberry)</td>
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<tr>
<td></td>
<td>Plantation Crops: Banana &amp; Papaya</td>
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<tr>
<td>Formal</td>
<td>Improved varieties of rice</td>
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<td></td>
<td>With government project: seed distribution for field trial</td>
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<tr>
<td>Company-based</td>
<td>Vegetable seeds: cucumber, long bean, chili, Chinese mustard, mushroom etc.</td>
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<tr>
<td></td>
<td>Other crops such as corn/maize, peanut, morning glory, jobs’ tear and papaya</td>
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<tr>
<td></td>
<td>Mostly improved/hybrid varieties</td>
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</tbody>
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Rice seed storage
Thank you