Rationale

- Rice is a staple food for Lao people
- In Laos, rice production is focused for food security and commercialization
- Seed is key factor for increase rice productivity, using good seed can increase rice productivity up to 30%
- For commercialization, it is necessary to use R3 or good seed
**Seed production system**

NAFRI: RRC, LNTRC, HRC, TSN and PNG. For Khao Khai Noi, Houaphanh and Xiengkouang Pro.

DTEAP Center, Private sector, Farmer seed production group...

---

**Problems and risks for rice seed production**

- Low seed quality and quantity due to limitation of in charge persons, management and inspector (100% management by seed multiplication unit (Few people are responsibility for large area))

- No sustainable use of budget for seed production budget

- So new mechanisms for rice seed production is developed: Seed group as cooperative, Work in groups but individuals person or household (groups) responsibilities
Structure of old and new system comparison

Old system

New system

Seed multiplication unit
Physical and chemical quality unit

RRC

Seed production group
Board
Field Inspector
Quality Inspector
Seed service Inspector
Finance Inspector
General Inspector

3 people + 2 people ≠ 16 seed committees and 44 producers (0.5-2 ha/producer)

Risks arising in the field will go to the responsible of the group
It reducing the investment from RRC

Estimate seed production cost for 1 ha
(Old system)

Invest (kip) for 1 ha
Selling in seed (kip)
Profit from seed (kip)
Selling in grain (kip)
Profit from grain (kip)

10,180,000
12,000,000
1,820,000
7,500,000
6,000,000

(2,000,000)
(4,000,000)

In case of seed do not pass seed standard then sell in grain
In some season, there is affected by flooding, dry, insect pest, diseases damage ..... Lost funding
Objective to establish new system in seed production

1. To reduces the risk of seed production investment in field management ➔ To secure sustainable of budget seed production
2. Increase quality and quantitates seed production
3. Income generate for both RRC and seed producers

➢ Establish seed production group (RRC staffs and farmers)
➢ Establish seed production committee

Structure seed production committee

Board

- Field inspector
- Quality inspector
- Seed service committee
- Finance committee

General inspector

ยังไม่ชัด
ว่าถึงขั้นตอนที่ต้องทำการวิเคราะห์ผลผลิต
Seed production structure of new system

Implementation

- Producers are responsible for all techniques relative to seed production (follow the contract)
- Committees control seed quality of whole seed production system
- RRC purchase after passing seed quality
  - RRC do processing, packing, marketing
**Implementation**

**Contact between RRC and producer**

RRC provide seed, paddy field ... and technical training related seed production

---

**Key rules in the contract**

1. Producers must strictly follow the seed production techniques in accordance with the technical guidelines in each step and ensure the quantity and quality of the seeds in accordance with the standards.

2. Producers are responsible for all investments, such as, soil improvement, weeding, Irrigation canal cleaning, soil preparation (plowing, harrowing), hand-planting, hand-harvesting, and so on.

3. Producers who do not pass seed standard for 2 consecutive seasons will not be allowed to continue produce.

4. Producers produce R1 seed that do not pass the standard will be fined 500,000 kip per block (1/4 ha)
Key quality standards

- Producers must strictly follow the seed production techniques in accordance with the technical guidelines in each step and ensure the quantity and quality of the seeds in accordance with the standards.

<table>
<thead>
<tr>
<th>Standard details</th>
<th>Breeder seed</th>
<th>Foundation seed (R1)</th>
<th>Registration seed (R2)</th>
<th>Certified seed (R3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purity (minimum %)</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>Germination (minimum %)</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Moisture content (maximum %)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Foreign mater (maximum %)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other rice seed per 500 g (maximum)</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Weed seed (maximum %)</td>
<td>0</td>
<td>0</td>
<td>0.05</td>
<td>0.10</td>
</tr>
<tr>
<td>Red rice per 500 g (maximum)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Results from using new system

1. Seed production system in RRC is improved, resulting seed produce by RRC has high quality and increase quantity
2. Seed marketing is increased, resulting increase income both for RRC and producer compare to the beginning to create a group.
3. Although the quantity of seeds does not increase much, but the money increases because we have quality sold out.
4. Importantly, money does not pay for labor to manage field, because we buy rice seed from groups to grade, pack and sell
5. In 2020, fund is increased about 900 million compare to WS 2017 and producer can get profit 8-40 millions/year.
Rice production in RRC 2016-2020

DS2016-17 and WS2017 were before setting new mechanism of rice seed production.

Revolving capital for rice production in RRC 2016-2020

DS2016-17 and WS2017 were before setting new mechanism of rice seed production.
Estimated profit of seed production produced by producers and seed unit for 1 ha

Area of rice growing and profit for one year of producers

Source: interview producers(n=13)
Conclusion

- From implementation of new system for rice seed production, resulting:
  - New mechanism, producer respond 100% for investment to produce seed.
  - Improving seed production system and sustainable
  - Reduce risk in field investment by government
  - This system is supporting MAF policy on sustainable use of seed production funding

Propose and suggestion

- Improve rice seed committee
  - Coordination between institute, departments, provincial....
  - Seed booking system
- Setting of rice committee
- Suggest to other center of NAFRI or DTEAP use this new mechanism in their center