LEVERAGE FINANCIAL OPTIONS FOR SUSTAINABLE DEVELOPMENT

THE CASE OF

UNIDO RESOURCE EFFICIENT & CLEANER PRODUCTION PROGRAM (RECP) AND VN SAT CREDIT LINE – PILOT PROJECT IN RICE SECTOR IN VIETNAM

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UNIDO Vietnam

Asia-Europe Sustainable Development Goals and Financing: No Longer Business As Usual

Hanoi, 6-7 September 2017
Living Beyond Means

How many Earths does it take to support humanity?

- Business as usual
  Earth Overshoot Day: June 28, 2030

- Carbon emissions reduced 30%
  Earth Overshoot Day: September 16, 2030

www.globalfootprinting.org
21 Nov 2016
Resource Efficient and Cleaner Production

- Finding and implementing ways to
  - Improve productive use of materials, water and energy
    - Thereby
  - Reduce the generation of waste, effluent and emission
    - Thereby
  - Improve well being of employees, consumers and community

Thereby
- Improve resource efficiency
- Minimize waste
- Improve human wellbeing

⇒ Virtuous cycle
BACKGROUND ...

UNIDO-UNEP program on Resource Efficiency and Cleaner Production

5 years of collaboration with rice milling companies in Vietnam

- CP audits: short term recommendations and impacts
- Technological/process improvements including Business Case development and facilitation of access to finance
**NEED TO WORK AT VALUE CHAIN LEVEL**

- **SUPPLYING**
- **FARMING**
- **PROCESSING**
- **WHOLESALE & RETAILING**
- **CONSUMPTION**

VnSAT credit line for millers allows to work on the interaction miller/farmer

Requires specific framework with farmers
JOINING FORCES ALONG THE RICE VALUE CHAIN

1. Cleaner Production
   - STEP 1: Identification of technical optimization solution
   - STEP 2: Business case & investment proposal development
   - STEP 3: Access to finance

2. Advanced Cleaner Production

3. Value Chain Eco-Innovation
   - With VNCPC & Sofies technical support (RECP Program, UNIDO)
   - With BIDV support and VnSAT Credit Line (VnSAT, World Bank)
### Projected Cash Flows

Scenarios: Investment in an upgrade of the processing line in Factory 2, an upgrade of the buildings in Factory 2 (higher roof), a new building in Factory 3, a new production line in Factory 3 - Average case

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>TOTAL in VND</th>
<th>TOTAL in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment</strong></td>
<td>219'000'000</td>
<td>0</td>
<td>240'000'000</td>
<td>0</td>
<td>3'728'320'600</td>
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</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>140'302'702'463</td>
<td>11'489'127'273</td>
<td>89'175'902'567</td>
<td>56'265'593'038</td>
<td>89'000'000'000</td>
<td></td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td>55'475'843'038</td>
<td>3'000'000'000</td>
<td>89'000'000'000</td>
<td>240'000'000</td>
<td>2'197'423</td>
<td></td>
</tr>
<tr>
<td><strong>Profit</strong></td>
<td>84'826'859'425</td>
<td>8'499'127'273</td>
<td>58'175'902'567</td>
<td>30'265'593'038</td>
<td>88'000'000'000</td>
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</tr>
</tbody>
</table>

### Cumulated Differential in VND

<table>
<thead>
<tr>
<th>Year</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative differential</td>
<td>156'494'000</td>
<td>171'983'000</td>
<td>187'472'000</td>
<td>202'961'000</td>
<td>218'450'000</td>
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</table>

### Cumulated Differential in USD

<table>
<thead>
<tr>
<th>Year</th>
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<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative differential</td>
<td>6'610'560</td>
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</tbody>
</table>

### Number of years to reach equilibrium

1 to 2 years

### Cumulative Differential

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<td>171'983'000</td>
<td>187'472'000</td>
<td>202'961'000</td>
<td>218'450'000</td>
</tr>
</tbody>
</table>

### Net Present Value with 30% Discount Rate (NPV)

<table>
<thead>
<tr>
<th>Year</th>
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<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV 30%</td>
<td>-6'324'156'962</td>
<td>-4'539'000'000</td>
<td>-2'958'000'000</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Net Present Value with 20% Discount Rate (NPV)

<table>
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<th>Year</th>
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<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV 20%</td>
<td>-6'324'156'962</td>
<td>4'324'156'962</td>
<td>56'360'983'038</td>
<td>57'500'983'038</td>
<td>55'475'843'038</td>
</tr>
</tbody>
</table>

### Net Present Value with 10% Discount Rate (NPV)

<table>
<thead>
<tr>
<th>Year</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV 10%</td>
<td>-6'324'156'962</td>
<td>4'324'156'962</td>
<td>56'360'983'038</td>
<td>57'500'983'038</td>
<td>55'475'843'038</td>
</tr>
</tbody>
</table>

### Scenario: Investment in an upgrade of the processing line in Factory 2, an upgrade of the buildings in Factory 2 (higher roof), a new building in Factory 3, a new production line in Factory 3

- Positive Differential
  - Investments: 240,000,000 USD
  - Revenues: 140,302,702,463 VND
  - Costs: 55,475,843,038 VND

- Negative Differential
  - Investments: 240,000,000 USD
  - Revenues: 140,302,702,463 VND
  - Costs: 89,000,000,000 VND

### Projected Cash Flows

- **Scenario**:
  - **Investment in Factory 2**: 89,175,902,567 VND
  - **Investment in Factory 3**: 89,175,902,567 VND
  - **Investment in additional Paddy dryers**: 240,000,000 USD

### Costs Associated with Investment in Factory 2

- Variation in raw material costs
- Additional income from selling rice bran
- Additional income from selling rice husks
- Increase in profit due to increase in production volume and portfolio
- Additional income from selling rice bran from de-husking phase
- Additional income from selling rice bran from polishing phase
- Investment in additional Paddy dryers
- Investment in Husk Storage
- Investment in Factory 3
- Investment in Factory 2

### Gains Associated with Investment in Factory 2

- Additional income from selling rice bran
- Variation in raw material costs
- Increase in profit due to increase in production volume and portfolio
- Additional income from selling rice bran from de-husking phase
- Additional income from selling rice bran from polishing phase
- Investment in additional Paddy dryers
- Investment in Husk Storage
- Investment in Factory 3
- Investment in Factory 2

### Costs Associated with Investment in Factory 3

- Variation in raw material costs
- Bank loan amount Inv Factory 3 (60%)
- Bank loan amount Inv Factory 2 (60%)

### Gains Associated with Investment in Factory 3

- Additional income from selling rice bran
- Variation in raw material costs
- Bank loan amount Inv Factory 3 (60%)
- Bank loan amount Inv Factory 2 (60%)

### Terminal Value

- 5'893'716'410 VND
- 4'539'000'000 VND
- 3'494'486'109 VND
- 4'521'543'342 VND
- 2'631'527'844 VND
- 1'184'625'000 VND
- 1'665'247'624 VND
- 775'200'000 VND
- 7'190'359 VND

### Expansion and Upgrade of Louis Rice Company

**Louis Rice Company**
16 Truong Dinh, phuong 6, Quin 3, Hoi Chi Minh
[http://louiserice.vn](http://louiserice.vn)

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**Document references**

**Writer**: Soles & VNCPC

**Date**: July 20th 2017

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**Disclaimer**

The net present value (NPV) is only financial information to evaluate if a project is feasible. A positive net present value means that the investment creates value, whereas a negative value means that the investment lowers it.

The net present value (NPV) is a key financial criterion used to evaluate an investment proposal.
**QUESTION 1 - DOES THE RECP TECHNICAL ASSISTANCE FACILITATE APPLICATION TO VnSAT CREDIT LINE?**

→ Does it provide the relevant documents?
→ Does it provide the relevant level of details?

✔ According to BIDV, the business case development tools provide the key elements of context and the financial data required in an investment project analysis (e.g. NPV, TRI, etc.) with the right level of details.

Example in Pilot 1: *By using the RECP business development tools, Louis Rice Company*

- specified its investment project in terms of planning
- expressed it in the financial terms required by the credit line
- listed the element of context necessary for an external to understand the overall project
QUESTION 2 - TO WHICH KIND OF MILLERS THE CREDIT LINE APPEARS TO BE THE MOST BENEFICIAL?

→ Who are the relevant targets of the credit line in order to optimize its impact at value chain level?
→ What are the limitation of the VnSAT credit line noticed on the field
✔ millers for whom the rate of the VnSAT credit line is lower than the rate of their usual loan.
✔ millers in phase of transition towards diversification, exportation
✗ millers with high “bargaining power” (Interest rate of VnSAT credit line not competitive for these companies)
✗ Process of approval appears to be “too” long
QUESTION 3 - IS THE CREDIT LINE DESIGNED IN ORDER TO PROMOTE WIN-WIN MODEL BETWEEN FARMERS & MILLERS?

→ Does the credit line really has an impact at value chain level, specifically on the model of interaction between farmers and millers

✔ Good support to raise awareness on the need to develop sustainable relationship between farmers and millers
LESSONS LEARNT

- Holistic approach:
  - RECP, business case and investment facilitation
  - Whole value chain

- Involve DFIs/banks right from the beginning

- Not relevant to add formal requirements

- Target “forward-looking” companies: commitment and leadership

- Internalize/Optimize the DFIs credit line process
Thank you!

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