Warehouse Receipt Financing using Blockchain
Maharashtra State Warehousing Corporation

- Widest Warehousing Network in India:
  - 200 centers
  - 1400+ Warehouses
- Owned + Leased Warehouses – 1400
- Total Capacity 21 Lac MT

**Before introduction of Blockchain based Warehouse Receipt Finance:**
- Warehouse Receipt Finance in last 3 Years – Rs. 867.57 Cr.
- 82% of BC-WRF Finance is to Traders and 18% to Smallholder Farmers

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Capacity (MT)</th>
<th>Traded MT</th>
<th>Stored MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-17</td>
<td>17.01</td>
<td>11.86</td>
<td>18.91</td>
</tr>
<tr>
<td>2017-18</td>
<td>18.91</td>
<td>16.46</td>
<td>20.53</td>
</tr>
<tr>
<td>2018-19</td>
<td>20.53</td>
<td>16.64</td>
<td>16.64</td>
</tr>
</tbody>
</table>

2016 - 2019

MSWC-CAPACITY

- 82% to Traders
- 18% to Farmers
Post Harvest – the need for Warehouse Receipt Finance

Typical Sowing-Harvesting-Sales Cycle

- Distress Sell
- Sowing
- Harvesting
- Crop Loan

- BC-WR Finance
- Delayed Sell
- Storage
- Sowing
- Harvesting
- Crop Loan

- BC-WRF Intervention

**Secured**
- Asset (Crop) Backed Loan

**Avoids**
- Distress Sale

**Income**
- > 40%

# NIAM Research
Broken components in Warehouse Receipts Finance Market

**MANUAL ECOSYSTEM**

- <5% of Crop Loan
- 10X potential

**HIGH INTERMEDIARY COST**

- CMA*
- Repository

**LOW GRASSROOT IMPACT**

- 5%
- 95% to Traders

*Collateral Management Agency

**Key Points**

- Rs 15 Lakh Crore of Agri Loan
- Rs. 50K crore is WHR finance
- 10X potential
- <5% of Crop Loan
- CMA*
- Repository
- 5%
- 95% to Traders

* Collateral Management Agency
Integrated Digital Lending via Blockchain based Warehouse Receipts Finance

1. Borrowers
2. Digital Lending Mobile Application
3. Asset Custodian Node (Warehouse e.g.)
4. Bank Node
5. Oracle Node – Automated Price/ M2M
6. Commodity Trading Platform

In future if Legal provisions are available

Verifier Node (Audit Oracle)

Tokenization Transaction Processing
The Process

Existing Manual System (Turn around Time in Days)

1 → 1 → 1 → 1-3 → 7-15

Blockchain based Warehouse Receipts Financing Network

1 → 1 → 1 → INSTANT LOAN DISBURSEMENT
Benefits

- Unlock Capital
- Deferred Sale
- Access To Finance
- No Distress Sale
- Higher Income
- Low Cost
- Doorstep
- Real Time

Lenders

- Better Risk Management
- Business Expansion
- Low Cost

Fraud Risk
- Portfolio Concentration Risk
- Cost of Acquisition
- Cost of Underwriting

Farmers

- Deferred Sale
- Access To Finance

Government

- Warehouse Storage Data
- Food Security Program
- Reduced Intermediation

Trader: 37%
Farmer: 63%

2020-21
Current Stage

- **Pilot 1**
  - (21/Jan – 27/Apr)
  - No of centres: 5
  - Warehouses: 16
  - Category: Farmers

- **Pilot 2 (With MSC Bank)**
  - (28 May – 31/Aug)
  - No of Centres: 7
  - Warehouses: 22
  - Category: Farmers

- **Full Fledged Access**
  - (23/10-Till Date)
  - No of centres: 193
  - Warehouses: 1400+
  - Category: Farmers

**Total Loans to Farmers** – Rs. 20 Cr.
**No. of Borrowers** - 928
Appendix
<table>
<thead>
<tr>
<th>Commodity</th>
<th>Approved Loan Amount (Rs.)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gram</td>
<td>16,000,363</td>
<td>32%</td>
</tr>
<tr>
<td>Red Gram</td>
<td>14,895,622</td>
<td>30%</td>
</tr>
<tr>
<td>Paddy</td>
<td>12,125,200</td>
<td>24%</td>
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<tr>
<td>Turmeric</td>
<td>4,082,177</td>
<td>8%</td>
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<tr>
<td>Soybean</td>
<td>2,510,200</td>
<td>5%</td>
</tr>
<tr>
<td>Oil Seed Cake</td>
<td>300,000</td>
<td>1%</td>
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<tr>
<td>Maize</td>
<td>213,310</td>
<td>0.4%</td>
</tr>
<tr>
<td>Jowar</td>
<td>130,000</td>
<td>0.3%</td>
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<tr>
<td>Wheat</td>
<td>64,700</td>
<td>0.1%</td>
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<tr>
<td>Coriander</td>
<td>56,700</td>
<td>0.1%</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td><strong>(Rs.) 50,378,272</strong></td>
<td><strong>100%</strong></td>
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</table>
# Blockchain’s Superior Approach

<table>
<thead>
<tr>
<th></th>
<th>Whrrl</th>
<th>WDRA</th>
<th>Existing manual System</th>
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</thead>
<tbody>
<tr>
<td>eNWR</td>
<td>🟢</td>
<td>🟢</td>
<td>🟥</td>
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<tr>
<td>Digital Lending</td>
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<td>🟥</td>
<td>🟥</td>
</tr>
<tr>
<td>Online Marketplace</td>
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<td>🟢</td>
<td>🟥</td>
</tr>
<tr>
<td>Online Lot Booking</td>
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<td>🟥</td>
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## Digital Delivery of Services

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<td>Collateral Monitoring</td>
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<tr>
<td>Receipt/Lending Fraud Risk Control</td>
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<td>🟢</td>
<td>🟥</td>
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<tr>
<td>Collateral Fraud Risk Control</td>
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## Security & Fraud Risk Control

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<tbody>
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<td>Accreditation Requirement</td>
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<td>Deposit/Net Worth</td>
<td>🟢</td>
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<td>🟢</td>
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<tr>
<td>Accreditation Rules</td>
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<td>🟢</td>
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<tr>
<td>Intermediary System</td>
<td>🟢</td>
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<td>🟢</td>
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</tbody>
</table>
1. **Digital BC-WRF Blockchain Platform**
   - Blockchain powered electronic BC-WRF platform of warehouses & banks.
   - Eliminates/Reduces risk of
     - Fake/Duplicate Receipts
     - Multiple Lending
     - Lending beyond warehouse capacity

2. **Digital Lending App**
   - Near Real Time Digital Loan against wide range of commodities.
   - Farmers have option to apply for loan using Mobile App, PC, Warehouse Terminal

3. **E-Trading Platform**
   - Tradeable Receipts
   - Market Linkage at Warehouse
   - Loan Transfer from Seller to Buyer on sale of commodities

www.WHR.loans