Cut to Crush Delay in Sugarcane Supply Chain

STUDENT COMPETITION
The HUMLOG Challenge

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India is the 2nd largest producer of sugar in the world next to Brazil.

In the year 2017-18 the sugar quantity produced was 32.32 Mn tonnes.

Sugarcane farmers and their families, numbering over 35 million, constitute about 7 percent of the rural population.

Farmer’s suicide account 7.4\% of total suicide in India and growth rate is 5-6 \%.

12000 Maharashtra farmers have committed suicide in last 3 years, Uttar Pradesh sugarcane farmers due approx. 100 billion from mill’s side.
Problem Identified: **Cut to Crush Delay in Sugarcane Supply Chain**
Why to bother about ‘Cut to Crush’ delay time?

**Sugar content** in sugarcane starts decreasing after harvest. Hence, sugarcane must be crushed in Mill quickly!

Indian sugar mills lose around 5-10 kgs of sugar for each 110kgs of sugar produced.

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**Decrease in Sugar with Increase in delay**

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<thead>
<tr>
<th>Cut to Crush Delay Time</th>
<th>Sugar Recovery From Sugarcane</th>
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<tbody>
<tr>
<td>1</td>
<td>5</td>
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Proof Of Research

Primary Research

- 107 responses received from farmers through google forms and telephonic conversation
- Telephonic interviews with industry experts

Secondary Research

- Articles
- Newsletter
- Research paper
- Report

Proof Of Research

Harvesting Problems

- Availability of harvesters in time: 29
- Labor Availability/Management: 47
- Other (Crop Diseases, Floods, Wages): 17
- None: 4

Causes of Lag in sugarcane transport

- Harvesting the crop: 23
- Improper Logistic Services: 36
- Waiting in mills for weighing: 27
- Warehousing before transported: 16
- Other: 2
Supply Chain Stages and corresponding issues

- **Harvesting**
  - Labour management and lack of machinery results in longer harvest time
  - Non-adherence to pre-booked crushing time slot

- **Transportation**
  - Non-availability of timely logistic services from mill or third party service providers

- **Weighing in Mill**
  - Huge queue of vehicles outside mill to weigh the sugarcane
  - Poor scheduling and communication between farmers and mills

- **Crushing in Mill**
  - Poor maintenance and operations management by mill
  - Unexpected Shutdowns and delay in cane procurement
  - Mills do not operate with optimum capacity
Solution

Industry Resource Planning Software Application (IRP)
1. Integrated Digital Platform

2. Increase Collaboration

3. Systematic Functioning

4. Data for Decision/Policy Making

Why IRP?
What IRP can do?

1. Avail Services
2. Register Grievances
3. Monitor Entire Supply Chain
4. Collect Data for Policy Making
Solution Architecture:
Implementation Plan:

1. Government budget
2. Third party collaboration for IT infrastructure
3. Integration and registration of stakeholders
4. Awareness and digital literacy
5. Small scale to large scale implementation and improvements
Thank you