

## **COVER PAGE.**

### **CUSTOMIZE IT THE WAY YOU WANT**

*Include:*

- Title of the Report/Project: Storing defrosted water from blast freezer and reusing it
- Quality Circle Name: Sessui
- Organization Name: Future Farms Pte ltd t/a Rooster Poultry
- Team Members' Names and Designations: Refer to Acknowledgement
- Date of Submission:21/09/26

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## **Acknowledgements**

*Recognition of individuals or groups who contributed to the success of the project.*

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**Team Leader:** Imtishal Ali

**Team Facilitator:** Taufiq Ali

### **Team Members:**

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## Executive Summary

*Brief overview of the project, including objectives, methodologies, outcomes, and key achievements.*

The project focuses on the recovery of water and conservation of water resource. The department (processing plant) uses approximately 668,000 litres of water per day, both in processing and plant washing. Team saw the usage of water and the dollar value of buying water before the use of boreholes. Team used the QC tools with PDCA management strategy to solve the problem identified. Team saw that we use blast freezer which consumes 140,000 litres of water in 24 hrs and after defrosting process, the water goes into the drain. Team decided to reuse the defrosted water from the blast freezer to store it in tanks and reusing it for processing plant washing which uses 240,000 litres of water in 24 hrs. In this way team is ensuring to conserve the over usage of ground water and avoiding excess wastage of water.

# 1. Introduction

## 1.1 Organisational Profile

*Summary of organisation.*

*Future farms Pte Ltd t/a Rooster Poultry is a chicken poultry producing company in Fiji which is owned by BSP Life (60%), and FNPF (40%). The Company is actively engaged in Quality Circles and other productivity tools.*

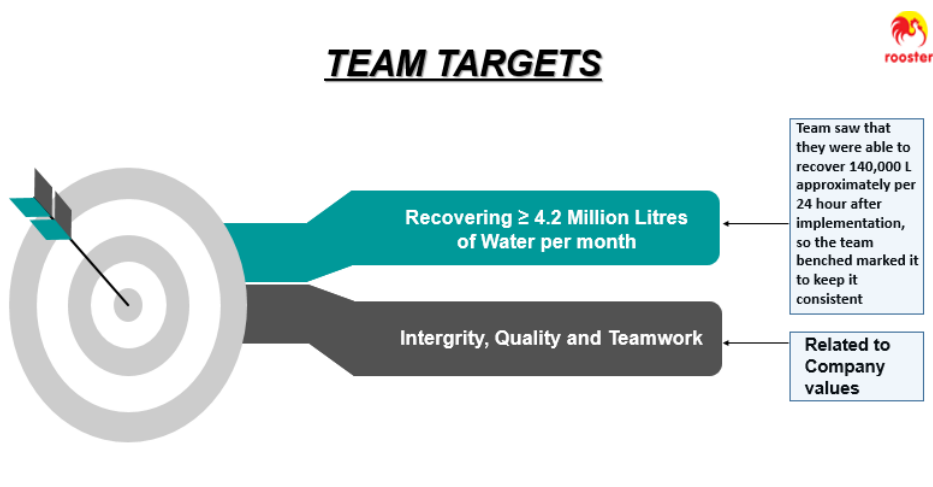
## 1.2 Background of the Project

*Description of the problem or issue to be addressed.*

*Issues Highlighted: Water shortage in storage tanks, DCI placed around the plant, Staff unavailability- Engineering, Lack of space in plant, Unwanted downtime.*

## 1.3 Objectives of the Project

*Specific objectives that the Quality Circle aimed to achieve.*



## 1.4 Scope of the Project

*Boundaries and limitations of the project.*

Some of the boundaries or limitations of the project was that it was taking time out to implement the project due to processing done during the day and engineers were required to be present during processing. Team were dedicated and took time out after hours.

## 2. Project Methodology

### 2.1 Project Approach and Phases

*Description of project phases from start to completion and list of tools and techniques used for each phase. Include information on the formation of the team and member selection criteria.*

*Team used PDCA as a management strategy, QC tools used were; Gantt Chart, Decision Matrix, Fishbone Analysis*

### 2.2 Project Milestones

*Details on the project schedule.*

| PDCC                    | Company Name                                                                                                                                    | Future Farms Limited T/A Rooster Poultry |         |          |          |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------|----------|----------|
|                         | Project Year                                                                                                                                    | 2025                                     |         |          |          |
|                         | Months                                                                                                                                          | September                                | October | November | December |
|                         | Project Task                                                                                                                                    |                                          |         |          |          |
| PLAN                    | <ul style="list-style-type: none"><li>Project Identification</li><li>Project Selection</li><li>Data Collection</li><li>Target setting</li></ul> |                                          |         |          |          |
| DO                      | <ul style="list-style-type: none"><li>Implementation of Action Plan</li></ul>                                                                   |                                          |         |          |          |
| CHECK                   | Result Evaluation & Comparison                                                                                                                  |                                          |         |          |          |
| ACT                     | <ul style="list-style-type: none"><li>Project Standardization</li></ul>                                                                         |                                          |         |          |          |
| Review & Sustainability | <ul style="list-style-type: none"><li>Check for Sustainability</li></ul>                                                                        |                                          |         |          |          |

### 3. Project Analysis

#### 3.1 Problem Identification

*Details on how the problem was identified and selected.*

Problem was identified at first and Decision matrix (unweighted) was used against a criteria and scores were given (1-being low score and 5-being high score). The highest score was used as an project idea to work on.

#### 3.2 Target Setting

*Explanation on how target(s) were set.*

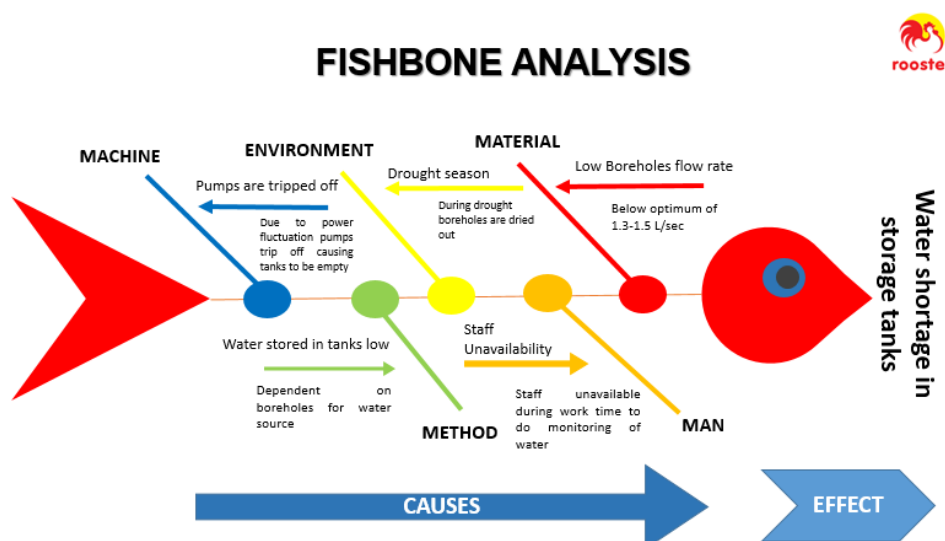
*Targets were set based on the data collected. We collected the data and took the average as a benchmark.*



#### 3.3 Cause Identification

*Description of methods used to collect data relevant to the problem and how causes were identified.*

*To identify the cause of the problem the team used Fish bone analysis.*



## 4. Solution Development

### 4.1 Possible Solutions

*Overview of possible solutions.*

| CAUSES      | DESCRIPTION                                                                                                   | CORRECTIVE ACTION                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAN         | Staff unavailable during work time to do monitoring of water due to breakdowns in plant or staff absenteeism. | Headcount to be fulfilled with trades personnel and staff resourcing. Absenteeism to be managed by Supervisors or justified.                                        |
| METHOD      | Dependent on boreholes to generate water                                                                      | Finding other methods of water source:<br>1. Borehole water<br>2. Buying water from Water Authority<br>3. Blast freezer defrost water reused                        |
| MACHINE     | Due to power fluctuation pumps trip off causing tanks to be empty                                             | Power backup (Generator), and consistent monitoring at intervals                                                                                                    |
| MATERIAL    | Bore holes having flow rates below optimum rate of 1.3-1.5 L/sec                                              | Source out new boreholes with fast flow rates but requires right time and placement of chicks as it will disturb due to noise during drilling process of boreholes. |
| ENVIRONMENT | During drought seasons, boreholes are dried out                                                               | Source out new boreholes with fast flow rates but requires right time and placement of chicks as it will disturb due to noise during drilling process of boreholes. |

### 4.2 Solutions Evaluation

*Explanation of how solutions were evaluated.*

*Solutions were evaluated based on practicality, skills availability, effectiveness & efficiency, and ease of implementation.*

### 4.3 Solution(s) Selection

*Explanation of how final solution(s) were selected.*

#### DECISION MATRIX



| CRITERIA/PROJECT TYPE<br>(Benefit Ranking 1-5) | EASE OF IMPLEMENTATION | SKILLS AVAILABILITY | EFFECTIVENESS & EFFICIENCY | PRACTICALITY & VIABILITY | TOTAL | RANKING  |
|------------------------------------------------|------------------------|---------------------|----------------------------|--------------------------|-------|----------|
| SCORE                                          | 1-5                    | 1-5                 | 1-5                        | 1-5                      |       |          |
| Water source or storage                        | 3                      | 5                   | 4                          | 4                        | 16    | <b>1</b> |
| Workshop Construction/ 5S                      | 1                      | 3                   | 4                          | 3                        | 11    | <b>5</b> |
| Staff Resourcing                               | 3                      | 4                   | 4                          | 4                        | 15    | <b>2</b> |
| Seeking approval for upgrade                   | 2                      | 3                   | 4                          | 3                        | 12    | <b>4</b> |
| Minimizing downtime                            | 3                      | 4                   | 3                          | 3                        | 13    | <b>3</b> |

Rating: 1- Very low; 2- Low; 3- Medium; 4- High; 5- Very high

## **5. Project Implementation**

### **5.1 Implementation Plan**

*Detailed plan on how the selected solution(s) were implemented.*

*An area was selected before the list of equipment to be used was made. Team assigned the plumbers and team members to be engaged in placing the tank and directing the pipes to the tank.*

### **5.2 Monitoring and Control**

*Measures taken to monitor progress and ensure control over the project.*

*Weekly meetings were held to measure progress against the Gantt chart prepared by the team.*

### **5.3 Challenges Faced**

*Challenges encountered during implementation and how they were addressed.*

Some of the challenges faced of the project was that it was taking time out to implement the project due to processing done during the day and engineers were required to be present during processing. Team were dedicated and took time out after hours.

## 6. Project Implementation Results

### 6.1 Tangible Results

*Description of the quantitative outcomes of the project.*

| <b>TANGIBLE RESULTS</b>                                   |                                     |                   |
|-----------------------------------------------------------|-------------------------------------|-------------------|
| YEAR                                                      | 2025 (50 days after implementation) | 2026 (Forecasted) |
| Water Saving from borehole extraction (L)                 | 7,000,000 L                         | 51,100,000 L      |
| Electricity Saving from pumps                             | \$ 534.60                           | \$ 2,861.90       |
| MONETARY VALUE (\$) @ \$5.40/1000 L if Water is Purchased | \$37,800.00                         | \$275,940         |
| TOTAL                                                     | \$273,078.10                        |                   |



This is about saving our resources (water reserves) seeing that 7 boreholes have dried off in past 5 years. The team was concerned mostly in our resource sustainability, while giving rest of 2.4 hrs./day to the pump usage and assisting marginally by \$ 2,861.90 / year. Also considering if we had to buy the water from WAF which would have saved a total of \$273,078.10 / year

### 6.2 Intangible Results

*Description of the qualitative outcomes of the project.*



### 6.3 Sustainability Plan

*How the changes and improvements will be sustained over time.*

This project has been standardized by the management and added into the SOP, as defrosted water from blast is daily collected into tanks and used in the cleaning process of the processing plant.

## **7. Lessons Learned**

### **7.1 Key Takeaways**

*Important lessons learned during the course of the project.*

*To save water or reuse the resource in order to conserve your natural resources. If Natural resources are not taken care off or mis-used, resource may decline.*

### **7.2 Recommendations**

*Suggestions for future Quality Circle projects or for further improvement of the current process.*

Team is looking on other possibilities where resources can be saved and that would benefit the team and as an organisation also, such as installation of more solar panels to save power and carbon foot prints.

## **8. Conclusion**

*Summary of the overall experience, project success, and its impact on the organization.*

*The project was an eye opener for the team as we saved the water and reused it in another process rather buying water and conserving water that would have been used from boreholes. Conserving water in the earth helps the team to use boreholes even longer.*

## **9. Appendices**

*Include any additional materials such as charts, graphs, raw data, or detailed analyses.*

No other material was used

## 10. References

*List of references, if any, used during the project or report preparation.*

*No reference used just previous data collected as bench marking process and comparisons made against post implementation.*