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A Study on Instillation of Quality Culture Principle of TQM at BAMUL

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Abstract

Total Quality Management (TQM) plays an important role in improving productivity and product quality and employee's development in the dairy industry. This paper seeks to learn about TQM applications in BAMUL, conducting research to evaluate the features of Comprehensive Quality Culture Instillation at BAMUL. A comprehensive literature review suggests that there are some important aspects of TQM such as Quality Culture, Employee Focus, Focus on Performance which includes Continuous Development, Customer Focus, Strategic Competitiveness Management, Performance Safety Management, Food Security Management System, Improved Productivity. Therefore, for this purpose of research the Quality Culture has taken in the above-mentioned factors for how BAMUL instilled quality culture in the Dairy. The dairy industry itself focuses on high-quality milk - high quality as shown by the low numbers of somatic cells - to ensure highly productive healthy storage products developed. In this article we had again taken 5 subfactors of the QUALITY CULTURE INSTILLATION's main factor, survey has been done from the employees of the organisation. A questionnaire was designed in the five-point Likert Scale to evaluate Comprehensive Quality Culture is properly instilled by the BAMUL.

Key Words: Total Quality Management, Total Quality Management factors, Quality Culture, Quality Management.

Introduction

In the current competitive environment, the survival of organizations depends on their ability to progress continuously as expected by customers (Sun, 2000). Gitlow and Gitlow (1987) define quality as exceeding customer needs and expectations throughout product life. Quality is defined as compliance with requirements (Crosby, 1992), suitability for use (Juran, 1988a), compliance with and / or customer expectations (Parasuraman et.al., 1985), disability avoidance (Crosby, 1984) etc. there were various theories surrounding the word "quality", all authors agree that quality is one of the "essential elements of success" in order to achieve competitiveness in

organizations. Quality has grown beyond the concept of "customer satisfaction with products and services" to the idea of "creating value for all stakeholders" (Karapetrovic and Willborn, 2002). In this context, business efficiency as a whole replaces the small goal of meeting customer specifications to improve the performance of the entire system. Customer expectations for quality products and services have prompted organizations to adopt the Comprehensive Quality Management System (TQM). Proponents of overall quality management claim that TQM can be applied to any organization and can lead to improved products and services, reduced costs, more satisfied customers and staff, and improved financial performance (Easton and Jarrel, 1998). Strong research shows that TQM improves organizational performance (Powell, 1995). As a result of this relationship, many companies have acquired overall quality management and have become more interested in TQM-related processes. In fact, TQM has been adopted in a variety of fields including manufacturing, services, health care, government and general administration. The success of TQM depends largely on the achievement of internal and external customer satisfaction. Internal customer satisfaction is a prerequisite for achieving external customer satisfaction (Oakland, 1989). Therefore, TQM can be easily defined as “managing an entire organization to be successful in all kinds of products and services that are important to customers” (Sharma, 1997). It can be said that the participation of the whole organization in planning and implementing continuous quality improvement (Shortell et al., 1995). Manufacturing organizations are more likely to experience better employee relationships, customer satisfaction, efficiency and business efficiency through TQM (Terziovski and Samson, 1999). In many Indian organizations, quality has emerged as an important strategic issue because of the challenges posed by globalization and freedom. Many organizations have taken the TQM route to address these challenges. Many organizations have obtained ISO 9000 certification and QS 9000 to improve the quality of their products and services. These certifications and the implementation of TQM combined became a major management movement. Through the liberation process, India has embarked on a wide range of policy initiatives to provide an ideal environment for industrial investment and growth.

TQM in Indian Dairy Industry

India is the largest dairy country in the last decade. This is a time when milk is considered a staple food for everyone, Quality plays an important role in the Indian dairy industry from a food safety perspective. After 1992, thanks to an agreement between the World Trade Organization (WTO) & General Agreement on Tariffs and Trade (GATT), the world has become an open market for all products. However, in order to regulate global quality standards for every product, the International Standard Organization (ISO) has obtained various standards such as ISO: 9001 quality management, ISO-22000 food safety management etc; which have a direct impact on the Indian dairy industry. And all of these values are being updated from time to time in view of increasing consumer demand and food security. Pressured by business stability and growth in open markets around the world, the Indian Diary Industry has automatically embraced this challenge and today, India is not only the world's largest milk producer but also the largest exporter of dairy products to many. countries. Today Gujarat Co-Operative Milk Marketing Federation Ltd. (GCMMF), a well-known Amul brand, has reached 15th place in the World Dairy Industry in terms of its solid milk. However, the question comes to everyone's mind, how can this and that happen in such a short time? Similarly, credit goes to the various management tools used in the Indian Dairy Industry where TQM has played a very important role. TQM itself combines three main features namely. Total Quality Control (TQC), Total Employee Involvement (TEI) and Complete Waste Disposal (TWE). The combination of these three combinations has helped to achieve Quality Assurance in the Indian Diary Industry. The name itself justifies the quality assurance of milk and dairy products from the consumer's point of view. At the same time as strict human safety laws are being introduced, Quality Assurance has become compulsory in the whole food processing industry and the dairy industry is an integral part. So, quality assurance is the key to the success of the

Indian diary industry in sustainable business growth. The same can be achieved and maintained through TQM processes.

Introduction to BAMUL

In the year 1958 January 1st a Pilot scheme to cater the Bangalore Milk Market, Dept of Animal Husbandry, State of Mysore started Milk Processing facilities and Veterinary Hospital at National Dairy Research Institute (NDRI).The Bangalore Milk supply scheme came into existence as an independent body in the year 1962, With the great efforts by the then Honourable Minister for Revenue and Dairying, Govt. of Mysore Sri M V Krishnappa, A joint venture of UNICEF, Govt. of India and Govt. of Mysore dedicated Bangalore Dairy to the people of Karnataka State on 23rd January 1965 by the then Honourable Prime Minister Late Sri Lal Bahadhur Shastri. The Bangalore Dairy scattering over an area of 52 Acres of land, The Dairy had an initial capacity to process 50,000 litres of milk per day. In the year 1975 December Bangalore Dairy underwent structural change, handed over to Karnataka Dairy Development Corporation (KDDC). Rural Milk scheme of Mysore, Hassan and Kudige districts was started under Operation Flood-II and then transferred to Karnataka Milk Federation (KMF) in May 1984 as a successor of KDDC. To meet the growing demand for milk by the consumers of Bangalore city, the capacity was increased to 1.5 lakh litres per day under the Operation Flood-II during 1981 and later increased to 3.5 lakh litres per day under Operation Flood-III during 1994. Now Meg a dairy with a capacity to process 6 lakh litres of milk per day expandable to 10 lakh litres of milk per day has been buit.

In 1958 on January 1st the Bangalore Dairy Market Experiment Scheme, Department of Animal Husbandry, State of Mysore established dairy processing centers and veterinary hospitals at the National Dairy Research Institute (NDRI). an independent body in 1962, through the concerted efforts of the then Minister of Revenue and Dairy, the Government. by Mysore Sri M V Krishnappa, UNICEF Joint Venture, Govt. of India and the Government. of Mysore donated the Bangalore Dairy to the people of Karnataka Province on 23 January 1965 by the then Prime Minister Late Sri Lal Bahadhur Shastri. With Bangalore Dairy spread over an area of 52 hectares, The Dairy had the initial capacity to process 50,000 liters of milk per day. In December 1975, Bangalore Dairy underwent a structural change, and was granted the Karnataka Dairy Development Corporation (KDDC). The Rural Milk scheme for Mysore, Hassan and Kudige regions was started under Operation Flood-II and transferred to the Karnataka Milk Federation (KMF) in May 1984 as a KDDC supporter. To meet the growing demand for milk by Bangalore city consumers, the volume was increased to 1.5 lakh per day under Operation Flood-II during 1981 and later increased to 3.5 lakh liters per day under Operation Flood-III by 1994. Now Meg has been built with the capacity to process 6 liters of milk per day which can be extended to 10 liters of milk per day.

Vision

Model Co-Operative Milk Dairy in India

Mission

Ushering Rural prosperity in the lives of Member milk producers.

III. Review of Literature

1. **Mamta Patel et.al (2015)**, discussed the advantages and disadvantages that the Indian Milk Industry faces such as low quality, milk safety and energy efficiency. The purpose of this study is to use the PDCA (Plan-Do-Check-Act) method to assess the causes affecting the production and quality of the dairy industry. After reviewing the literature they discovered TQM features such as senior management commitment (Leadership), Provider Quality Management, Customer Focus and Staff Partnership to assess quality in the dairy industry. They identified the management of inefficiency and poor technology as the biggest problems of the Indian Milk Industry and recommended that if all aspects of TQM were systematically aligned the concept of TQM and PDCA Deming would provide a competitive advantage to the Indian dairy industry and would result . to achieve high productivity and profitability.

2. **Dar Schniederjans a nd Marc Schniederjans (2015)**, seeks to explore the relationship between TQM Social and Technology Quality management materials by collecting data from 58 respondents of production organizations at a high level. Identify various aspects of Community-Based Management such as Quality Training, Integrated Collaboration and Long-Term Supplier Relationships; Technical features such as JustIn -Time Management and Design Design and Structural Features such as Organizational Size, Organizational Work and Management Behavior Assessment for Learning Quality Management and New Structural Framework Details. They concluded that the aspects of Public Quality Management are closely linked to innovation and there is a balanced relationship between Public Quality Management and Professional Quality Management. In addition their research shows that the positive relationship between quality management and renaming is governed by the results of organizational size, function and management ethics.

3. **Neha Kalra and Anoop Pant (2013)** reviewed Key Achievements for Comprehensive Quality Management in the Indian Automotive Industry. Data was collected from manufacturers, suppliers and subcontractors of automotive associations in the National Capital Region of India. Identify 8 Key Success Keys Like Policy And Strategic Planning, Process Management And Control, Customer Focus And Satisfaction, Staff Focus, Knowledge Management, Quality Leadership, Provider Focus And Satisfaction And The Business Outcome Of The Organization. Among the three CSF CSFs such as policy and strategic plan, quality leadership and customer focus and satisfaction are identified as the most important factors in the automotive industry to generate high value and profitability.

4. **Fuzi Abusa (2011)** examined the impact of TQM implementation on Organizational Performance in developing country like Libya by selecting six different industry groups like: food, minerals, electronics and engineering, chemical, textile and furniture and cement and building materials. The extent of TQM application for selected industry groups was evaluated by using the TQM elements like Top Management Commitment, Customer Focus, Supplier Quality Management, People Management, Process Management and Continuous Improvement. Research questions were framed based on these six TQM elements. Among the six investigated TQM elements, Top Management Commitment is of critical importance in the success of TQM implementation and concluded that overall Competitive Position, Production Performance Improvement, Customer Focus, People Management, Process Management and Financial Improvement including Sales Growth and Profit Growth were achieved by Top Management Commitment only.

5. **Faisal Talib et.al (2010)**, conducted a Pareto Analysis by identifying the list of Critical Success Factors for Service Industries. An examination of 39 TQM studies on CSF's resulted in listing of 60 CSF's by different researchers and practitioners of service industries. A Pareto Analysis was conducted on these 60 CSF's to sort out vital few CSF's for service industries according to their frequency of occurrences and 21 CSF's of TQM were extracted, among these 21 CSF's Top Management commitment was occupied first position followed by customer focus. These vital few CSF's were found to be key factors in almost all the research papers and are repeatedly

used by the different researchers and concluded that Total Quality Managers and practitioners should focus on these 21 vital few CSF's to gain competitive advantage in the Service Sector.

6. **Mujbil Al-Mrsumi(2009)**, examined the TQM practices adopted by five dairy processing units of Jordan. Investigation was conducted on the basis of five point Likert scale for TQM factors like Instilling Quality Culture, Focus on Employee, Focus on Operations including Continuous Improvement, Focus on Customers and Strategic Competitive Advantage. TQM factors for each company were considered as the Independent variables and the Quantity in tons of milk were considered as the dependent variable and the coefficient of correlation was used to measure the relationship between the TQM factor and quantity in tons of milk and identified that the most modern dairy processing units has achieved the highest score while the oldest and least modern scored the minimum and concluded that the correlation coefficient has a direct and consistent linear relationship between the quantity in tons of milk and TQM factors.

STATEMENT OF THE PROBLEM:

TQM refers to the management methods used to enhance quality and productivity in business organisations especially dairy industry i.e BAMUL and how it is an important tool to improve the overall quality and production of the product in BAMUL. This study aims to understand the TQM practices adapted and how it improved the overall in BAMUL. In order to examine TQM in selected unit, I have identified nine TQM factors to enhance quality in BAMUL and also I had selected one principle among nine i.e Instilling quality culture, how BAMUL has instilled Quality culture in it.

1. Instilling quality culture
2. Total Employee involvement
3. Continuous improvement
4. Customer focus
5. Strategic and systematic approach
6. Process centred
7. Integrated System
8. Fact based Decision Making
9. Communication

The above Nine factors were considered, through which the extent of the application of TQM in each company is measured. A questionnaire is designed based on the above-mentioned quality culture factors.

4. **Need of the Study**

The Department of HRM and Operation management can play vital role in implementing and maintaining a TQM process. HR Managers are responsible for recruiting high quality employees, continual training for the development of those employees, and the creation and maintenance of the reward systems. Thus TQM controls processes, that are central to achieving the dramatic cultural changes, often required for TQM to succeed. Tailoring the TQM cultural development program to the firm's circumstances is essential in overcoming resistance to

change and moving beyond simple compliances with total commitment to TQM. Hence a study was undertaken at BAMUL to obtain new insight into the effectiveness of TQM, how best quality culture instilled in it.

OBJECTIVES OF THE STUDY:

1. To study the quality culture has been instilled properly or not in selected unit.

2. To analyse and interpret the TQM practices are followed in the selected unit to improve the quality and productivity of the product.

FORMULATION OF HYPOTHESIS:

Null hypothesis (H0): BAMUL has not instilled Quality culture.

Alternative hypothesis (H1): BAMUL has instilled Quality culture.

RESEARCH DESIGN: SAMPLE AND SAMPLING TECHNIQUE:

RESEARCH DESIGN: SAMPLE AND SAMPLING TECHNIQUE:

The study was conducted by selecting BAMUL milk processing unit and 100 respondents from quality control department of dairy were selected to examine instillation of Quality Culture. In order to collect data from respondent's simple random sampling technique was used.

DATA COLLECTION:

The data is collected through primary and secondary sources. Primary data is collected by using questionnaire consisting of statements on certain factors like:

1. Instilling quality culture

2. Total Employee involvement

3. Continuous improvement

4. Customer focus

5. Strategic and systematic approach

6. Process centred

7. Integrated System

8. Fact based Decision Making

9. Communication

Secondary data is collected through Journals, magazines and from the website of National Dairy Development Board.

STATISTICAL TOOL: To analyse Quality Culture factors coefficient of variation is used for the purpose of the study. Chi Square Test ($\chi 2$) = **(O-E)2 /E**.

Chi Square Test is the test that the variance of a normally distributed population has given value based on sample based on a surveyed sample variance. In comparison, the coefficient of variation with observed value and expected value. Expected value smaller value is said to be more efficient and vice versa. Therefore, the variation with greater percentile implies that they are instilling Quality Culture in BAMUL.

SCOPE & LIMITATIONS OF THE STUDY:

1. The study focuses on nine factors of TQM namely Instilling quality culture, Instilling quality culture, total Employee involvement, continuous improvement, Customer focus, Strategic and systematic approach, process centred, integrated System, fact based Decision Making, Communication. Main focus on Instilling Quality Culture.

2. The study was confined to BAMUL of KMF only.

3. The data was collected from the members of quality control department of select milk processing units.

4. The sample size used for the study is one whole unit of dairy.

TQM can be summarised as a management system for a customer-focused organisation that involves all employees in continual improvement. It uses strategy, data and effective communications to integrate the quality discipline into the culture and activities of the organisation. Many of these concepts are present in modern quality management systems, the successor to TQM. Here are the 9 principles of total quality management.

1. **Instilling quality culture**: Here team members genuinely care about the quality of their work, and making decisions based on achieving that level of quality.

The BAMUL has maintained quality culture by applying these 7

Aspects.

a. **Define and outline company values-** Encouraging the employees to adopt a mindset that every product they working on, regardless of which stage they touch it, eventually will be used on a family member. This approach establishes a holistic nature to quality culture that will impact all the aspects of the business-from product development all the way to commercialization practices**.** In this aspect Th BAMUL is Defining and outlining the company values to their employees. So they can establish a holistic nature to quality culture that will impact all the aspects of the business-from product to all the way to commercialisation practices.

b. **Train Employees in quality culture-Training is** worthwhile investment that pays dividends over the course of company development. BAMUL had adept teams are formed through taking part in various aspects of training, including activities that reinforce the values of quality culture within the BAMUL.BAMUL had giving training for teams to develop new skills that can be used to improve upon products and processes.

c. **Pursue Quality instead of chasing compliance-** People want to feel like they're doing something that matters, and if team is responsible for developing and producing dairy products, everyone involved is doing something that matters. BAMUL had maintaining quality of products instead of going for compliance. BAMUL main agenda is to maintain the quality in the production..

d. **Implement document control early on-** Document control refers to the policies and procedures that should be in place to ensure that there is organisational accountability for records and other data. Early document can often

catch errors and faults that can then be corrected while still in the early stages, making it easier to keep track of things. BAMUL had implemented documentation control at the early stage of the process.

e. **Communicate clearly with regulators-** Planning and building system according to quality standards, risk of noncompliance is high and will eventually be uncovered at some point in the process. So BAMUL communicate clearly with regulators with employees.

f. **Seek end user feedback- A great** way to enhance quality culture, while also ensuring product meets quality standards, is by soliciting end-user feedback. This feedback is valuable to process and it can help to catch design flaws that even most critical engineers may have missed.

g. **Use a right -sized QMS- QMS** that is far too light to cover every one of their procedures. In these instances, BAMUL had an idea for a device to use regulatory requirements involved.

2. Total Employee involvement

All the employees are participating in working toward common goals. Total employee commitment be obtained after fear has been driven from the work place, when empowerment has occurred and BAMUL provided the proper environment. High performance work systems integrate continuous improvement efforts with normal business operations. BAMUL is having self-managed work teams are one of the forms of empowerment.

3. Continuous improvement

A main aspect of TQM is continual process improvement. Continual improvement drives an organisation to be both analytical and creative in finding ways to become more competitive and more effective at meeting stake holders expectations. BAMUL adapted TQM which focuses on continuous improvement of its processes resulting in high quality products and services and continuous improvement of principles like customer focus process improvement and total involvement.

4. Customer Focus

This Total Quality Management principle puts the focus back on the people buying the product or service. Customers determine the quality of product. If product fulfils a need and lasts as long or longer than expected customers know that they have spent their money on quality product. BAMUL had aligned it's objectives with customer needs, BAMUL communicate with customers, measure satisfaction, and use results to find ways to improve processes.

5. Strategic and systematic approach

The International Organisation for Standardisation (ISO)describes this principle as "Identifying, understanding and Managing interrelated processes as system contributes to the organisation 's effectiveness and efficiency in achieving its objective."

A critical part of the management of quality is the strategic and systematic approach to achieving an organization's vision, mission, and goals. This process called strategic planning or strategic management, includes the formulation of a strategic plan the integrates quality as a core component.

BAMUL providing people with the proper training and resources that will help them complete their individual steps in the process.

BAMUL continually improving processes and products, and upgrading equipment as necessary to reach the quality goals.

BAMUL recognizing, acknowledging and rewarding the innovations and process improvements.

6. Process Centred

A fundamental part of TQM is focus on process thinking. A process is a series of steps that take inputs from suppliers and transform into output that are delivered to customers. The steps required to carry out the process are defined, and performance measures are continuously monitored in order to detect unexpected variation.

BAMUL has process flowcharts to define and delineate clear roles and responsibilities so everybody knows who does what at certain times.

BAMUL is having visual action plan so everybody can easily see the specific activities that need to be completed to achieve the desired result.

Through this technique BAMUL analysing and measuring current activities to see where improvements can be made or where steps in the process are creating bottlenecks.

7. Integrated System

Although an organisation may consist of many different functional specialities often organised into vertically structured departments, it is the horizontal processes interconnecting these functions that are the focus of TQM.

1. Micro-processes add up to larger processes, and all processes aggregate into the business processes required for defining and implementing strategy. BAMUL has made Everyone must understand vision, mission, and guiding principle as well as the quality policies, objectives, and critical processes of the organisation. Business process must monitored and communicated continuously.
2. An integrated business system may be modelled after the Baldrige Award criteria and/or incorporate the ISO 9000 standards. Every organisation has a unique work culture, and it is virtually impossible to achieve excellence in its products and services unless a good quality culture has been fostered. Thus, BAMUL has made an integrated system connects business improvement elements in an attempt to continually improve and exceed the expectations of customers, employees, and other stakeholders.

8. Fact Based Decision making

In order to know how well an organisation performing, data on performance measures are necessary. TQM requires that an organisation collect continuously collect and analyse data in order to improve decision making accuracy, achieve consensus, and allow prediction based on past history.

9. Communication

Every body in the organisation needs to be aware of the plan, strategies, and methods will be used to achieve goals. If the organisation don't have a good communication plan there is greater risk of failure. BAMUL is using this aspect as.

a. Established an official line communication from higher authority to lower employees, so that all employees know about the updates, new process and policy changes.
b. BAMUL is involving employee's decision making where possible to improve the productivity.
c. BAMUL making everybody in every department understand their roles.

BAMUL had applied TQM principles to their organisation very well, So BAMUL has received various quality standard certificates.

1. The Union is certifying for Food Safety Management System, ISO 22000:2005 by M/S standards Australia International Global, Mumbai.
2. BAMUL has been certifies for 22000:2005 and ISO 9001:2000 for Quality Management and Food Safety System.

BAMUL has received the various AWARDS for productivity and quality of the production. The following awards were received by the BAMUL.

1. Bureau of Energy efficiency, Government of India granted BAMUL has been awarded 2nd place for achievement in Energy conservation for the year 2005 in Dairy sector.
2. BAMUL has been awarded 1st place in best Safety Industrial Boiler award for Boiler maintenance in the year 2007 conferred by Karnataka safety Council, Government of Karnataka.
3. BAMUL has been awarded 2nd place for the achievement in Energy conservation for the year 2008-09 in Dairy Sector, conferred by Karnataka Renewable Energy Development Ltd (KREDL), Government of Karnataka.
4. The National Productivity Council (NPC) of Govt. of India has conferred "Best Productivity Award "For 5 TIMES.

Quality and Food safety in BAMUL

Quality in Everything we make

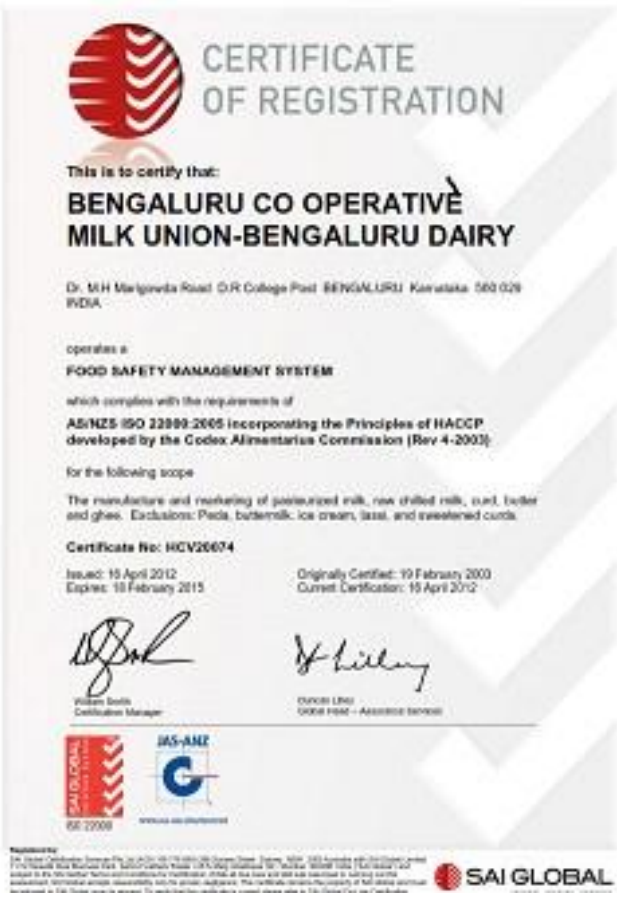
product Bangalore Dairy is committed to being a trusted, delicious source of milk and milk products for family. BAMUL fortunate to server with the best products, and earn place by holding to the highest standards every day.

BAMUL committed to quality- the quality of procured milk, BAMUL products, BAMUL brands, BAMUL services and BAMUL way of doing business.

Food safety is one of the BAMUL's top priorities in their milk processing facilities. To ensure BAMUL meeting the highest safety standards, BAMUL conducting employees training in plants, perform regular and ingredient testing and offer continuing education to formers about milk quality and clean milk production.

Favourite dairy milk and milk products remain healthy, safe and wholesome is are the consumers right to expect from favourite product. So, right at the heart of what we do is this principle, protecting consumer confidence in

top notch products. That means working with regulators to develop some of the India's most stringent food safety and quality standards. which is something from which BAMUL wins recognition in India, and proud of.



CERTIFICATE OF REGISTRATION

This is to certify that:

BENGALURU CO OPERATIVE MILK UNION-BENGALURU DAIRY

Dr. M.H Marigowda Road D.R College Post BENGALURU Karnataka 560 029 INDIA

operates a

FOOD SAFETY MANAGEMENT SYSTEM

which complies with the requirements of

AS/NZS ISO 22000:2005 incorporating the Principles of HACCP developed by the Codex Alimentarius Commission (Rev 4-2003)

for the following scope

The manufacture and marketing of pasteurized milk, raw chilled milk, curd, butter and ghee. Exclusions: Peda, buttermilk, ice cream, lassi, and sweetened curds.

Certificate No: HCV26674

Issued: 16 April 2012
Expires: 18 February 2015

Originally Certified: 19 February 2003
Current Certification: 16 April 2012

William Smith
Certification Manager

Duncan Lihou
Global Head – Assurance Services

IAS-ANZ

ISO 22000

SAI GLOBAL

Analysis of Instilled Quality culture in BAMUL

Table-1: Opinion by employees on Defining and outlining company values

Sl. No	Opinion	No. Of Respondents	% of Respondents
1.	Yes	82	82%
2.	No	16	16%
3.	Cannot Say	2	2%
	Total	100	100%

Table-1 shows that 82% of the employees responded their opinion as defining and outlining company values is their in the BAMUL,16% of the employees not accepting BAMUL is Defining and outlining the company values, and 2% of the employees not shred any.

Table-2: Opinion of employees about Training Employees in quality culture

Sl. No	Opinion	No. Of Respondents	% of Respondents
1.	Yes	73	73%
2.	No	22	22%
3.	Cannot Say	5	5%
	Total	100	100%

Table-2 shows that 73% of the employees responded their Training Employees in quality culture in the BAMUL,22% of the employees not accepting BAMUL is Training Employees in quality culture, and 5% of the employees not shred any.

Table-3: Opinion about Pursuing Quality instead of chasing compliance

Sl. No	Opinion	No. Of Respondents	% of Respondents
1.	Yes	88	88%
2.	No	8	8%
3.	Cannot Say	4	4%
	Total	100	100%

Table-3 shows that 88% of the employees Opinion about Pursuing Quality instead of chasing compliance is their in the BAMUL,8% of the employees not accepting BAMUL is Pursuing Quality instead of chasing compliance, and 4% of the employees not shred any.

Table-4: Opinion about Communicate clearly with regulators

Sl. No	Opinion	No. Of Respondents	% of Respondents
1.	Yes	67	67%
2.	No	25	25%
3.	Cannot Say	8	8%
	Total	100	100%

Table-4 shows that 67% of the employees responded their opinion as Communicate clearly with regulators is their in the BAMUL,25% of the employees not accepting BAMUL is Communicate clearly with regulators, and 8% of the employees not shred any.

Table-5: Opinion about Seek end user feedback

Sl. No	Opinion	No. Of Respondents	% of Respondents
1.	Yes	62	62%
2.	No	26	26%
3.	Cannot Say	12	12%
	Total	100	100%

Table-5 shows that 62% of the employees responded their opinion as Seeking end user feedback is their in the BAMUL,26% of the employees not accepting BAMUL is Seeking end user feedback, and 12% of the employees not shred any.

Hypothesis testing

H0: BAMUL has not installed quality culture.

H1: BAMUL has installed quality culture.

Variables	Yes	No	Cannot say
Defining and outlining company's values	82	16	2
Training employees in quality culture	73	22	5
Pursuing quality than compliance	88	8	4
Communication with regulators	67	25	8
Seek end user feedback	62	26	12
Total	372	97	31

Observed values (O)	Expected values(E)	(O-E)2	(O-E)2 /E
74.4	33.33	1,686.74	50.60
19.4	33.33	194.04	5.82
6.2	33.33	736.04	22.08
100			**78.50**

Test statistics

Particulars	Frequency
Chi-square	78.48
Difference	4
Standard significance	0.05

Interpretation: From the data we can observe chi square value is positive 78.50. Therefore, null hypothesis is rejected and alternative hypothesis is accepted.

Conclusion:

Total Quality Management (TQM) is a tool, used to implement organizational and sustainable development. The principle of TQM adopted by the BAMUL for their sustainable development outlined in our study. In this study Total Quality Management in Karnataka Milk Federation with special reference to BAMUL has instilled Quality Culture in their organisation well. In the above study we have taken Instilling Quality Culture in the Organisation principle, which is having 7 aspects and we have taken only 5 aspects for the study. Opinion by employees on Defining and outlining company values, Opinion of employees about Training Employees in quality culture, Opinion about Pursuing Quality instead of chasing compliance, Opinion about Communicate clearly with regulators, Opinion about Seek end user feedback these five aspects are satisfied by the BAMUL. We sampled 100 employees, and evaluated whether the Total Quality culture is instilled (f=74.4) was equal to the quality culture is not instilled (f=19.4) and not result(f=6.2). The data was analysed by using a Chi Square goodness of fit test. The Null hypothesis was Rejected $\chi 2(1)=78.48, p \leq 0.05$. More than half of the employees responded that instilled quality Culture in BAMUL. Finally, we conclude that BAMUL has instilled Quality Culture in the Organisation perfectly.

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