CHAPTER IV

CONSUMER PROTECTION THROUGH STANDARDIZATION

Tirunelveli District had been an agricultural area throughout its history. The district is a major producer of rice, coconuts, bananas, spices and forest-based products. The district's livestock and poultry populations are amazing. The district is a home to almost fifty percent of the buffalo population of Tamil Nadu. Since it is a coastal district, Tirunelveli is also involved in fishery development and production. For the period 2005–2006 the total inland fish catch was 1,874 tonnes, and the total marine fish catch was 7,014 tonnes. The district is also rich in minerals, with a total of 407 mines and quarries. Limestone, granite and garnet sand are some of the minerals mined or produced in the district. Major industries include textile, food and forestry products. A Special Economic Zone was introduced at Nanguneri in 2001. A pharma park and windmill spare-parts and television-manufacturing factories have been planned in this Special Economic Zone. The Tamilnadu Industrial development Corporation (TIDCO) has planned a Rs 700-crore high-tech industrial park in Nanguneri in association with INFAC Group and Axes Technologies Inc of the US. The state government is planning light manufacturing, design and assembly facilities, modern infrastructure facilities and amenities in this SEZ to attract a workforce from around the world.

Right to Safety is one of the basic rights of consumers. Standardization plays an important role as a safety measure.\(^1\) It makes selling and buying functions easy and more effective. Mostly, buying and selling of products is done on the basis of grade or mark. If quantity, size, quality of goods is already known, only price remains to be negotiated. The goods which are not standardized, should be bought and sold by inspection. It limits the scope of market. If the goods are standardized and graded, the customers even living far from the seller or distributor can buy goods only by seeing sample, standard name. If the goods are not standardized, there remains possibility for the customers to be cheated on the one hand and seller cannot earn goodwill on the other. The role, importance and advantages of standardization in marketing is analyzed from the viewpoint of seller, customer and society.

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The importance and advantages of standardization of consumers’ point of view are as follows. Customers can buy standardized goods easily.\(^2\) The customers need to inspect all the goods which are not standardized or graded. The customers can buy standardized goods without looking, inspecting or by looking sample or from description. Using method, instruction and composition of standardized goods are given; this makes the consumers feel easy to use. Necessary repair facility also is provided for some goods. Customers do not have to suffer cheating from seller with standardized goods. They can remain protected from adulteration and exploitation from seller. As quality of the goods is already known, standardization minimizes quality related risk. Since quality, measure, size of the product is known, the customers can buy goods with fair price after studying the market price. Customers can get short description and information about standardized goods through advertisements, other buyers and different sources. The customers become able to take proper buying decisions as they can get information about prices, relative advantages, durability etc. of standardized goods.

The importance and advantages of standardization from seller’s point of view are as follows.\(^3\) The goods which are standardized become very easy for sellers to sell. No inspection is needed to sell such goods; they can be sold out only by looking sample or description. The sellers do not have to bother about showing sample or giving description if they are graded. Determining standard of products and grading them is the foundation of an organized, open and wider market. This develops and expands market of any products. As the products are not needed to be inspected, the customers even of far-off places send purchase order on the basis of standard, grade, size, measurement etc. As the standardized goods have ready-market and fluctuation of price may be exceptional, banks easily accept such goods as security to provide loans. As standardized goods have certain quality, quantity and price, goodwill of the sellers of such goods increases. They can earn more profit from selling high quality goods.

Society also got different benefits from standardized goods.\(^4\) The importance and advantages of standardization from the point of view of society are as follows: The society can

get standard quality goods at lower price from mass production of the same standard and same grade goods. As the producers and trade associations publish information and messages about standardized goods in business bulletins, newspapers etc. conscious society know everything about the quality, standard, measurement, using method of the goods etc. There does not remain any risk for the society to be cheated by the sellers in buying standardized goods. Every buyer knows the quality, standard and price of the goods. The society remains protected from any adulteration in the standardization goods. When demand for standardized goods increases, the firm should to intensify the process of production and distribution. For doing so more manpower is needed. The unemployed of the society can get employment in the firm. Hence the society can increase income and make their living standard better from employment.

Standardization of product is an important measure taken by the government to protect the consumer from lack of quality and varying standards of goods. In India these standards are achieved through Bureau of Indian Standards which is earlier known as the Indian Standard Institution. It has the responsibility of laying down the standards for industrial and consumer goods on a scientific basis and certifying the goods that meet the prescribed quality and standards. Very important measures have been taken by the government to protect the consumers from lack of quality and varying standards of goods by creating standards institutions:

For this purpose, the government has established Bureau of Indian Standards (BIS) for standardization of Industrial and Consumer goods. BIS certifies the goods that meet the standards and prescribed quality of ISI. The government undertakes regular and surprise inspections. Testing of samples is done for conformity of licensee's performance. A consumer can also complain to the BIS office if the certified product is not up to the mark. Creation of AGMARK for standardization of agricultural products has been done. This AGMARK is implemented under the Agricultural Produce Act 1937. Creation of Hall mark is a very important step in standardization with regard to the sale of gold ornaments in Tamilnadu and particularly in Tirunelveli District. Recently another phenomenon known as Ecomark is being implemented with a view of maintaining a healthy ecosystem to live in.

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The Bureau of Indian Standards (BIS) is the national Standards Body of India working under the aegis of Ministry of Consumer Affairs, Food & Public Distribution, Government of India. It was established by the Bureau of Indian Standards Act, 1986 which came into effect on 23 December 1986. The Minister in charge of the Ministry or Department having administrative control of the BIS is ex-officio President of the BIS. The organization was formerly known as the Indian Standards Institution (ISI), set up under the Resolution of the then Department of Industries and Supplies No. 1 Std.(4)/45, dated 3 September 1946. The ISI was registered under the Societies Registration Act, 1860. As a corporate body, it has twenty five members drawn from Central or State Governments, industry, scientific and research institutions, and consumer organizations. Its headquarters are in New Delhi, with regional offices in Kolkata, Chennai, Mumbai, Chandigarh and Delhi, and twenty branch offices. It also works as WTO-TBT enquiry point for India. BIS is a founder member of International Organization for Standardization (ISO). It represents India in ISO, the International Electrotechnical Commission, the International Telecommunication Union and the World Standards Service Network.

One of the major functions of the Bureau is the formulation, recognition and promotion of the Indian Standards. As on 31 March 2008, 18446 Standards formulated by BIS, are in force. These cover important segments of economy, which help the industry in upgrading the quality of their products and services. BIS has identified fourteen sectors which are important to Indian Industry. For formulation of Indian Standard, it has separate Division Council to oversee and supervise the work. The Standards are regularly reviewed and formulated in line with the technological development to maintain harmony with the International Standards.

To support the activities of product certification, BIS has a chain of eight laboratories. These laboratories have established testing facilities for products of chemical, food, electrical and mechanical disciplines. Approximately, 25000 samples are being tested in the BIS laboratories every year. In certain cases where it is economically not feasible to develop test facilities in BIS laboratories and also for other reasons like overloading of samples, equipment being out of order, the services of outside approved laboratories are also being availed. Except

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for the two labs, all the other labs are accredited. It operates a laboratory recognition scheme also. Product Certifications are to be obtained voluntarily. For, some of the products like Milk powder, Drinking Water, LPG Cylinders, Thermometers etc., certification is mandatory because these products are concerned with health and safety.

All foreign manufacturers of products who intend to export to India are required to obtain a BIS product certification license. Towards this, BIS launched its Product Certification Scheme for overseas manufacturers in the year 1999. Under the provisions of this scheme, foreign manufacturers can seek certification from BIS for marking their products with BIS Standard Mark. If or otherwise, the foreign manufacturer has not signed an MOU with BIS, it has to set up a liaison office in India with the permission of Reserve Bank of India. Otherwise, an authorized representative or agent needs to be appointed by the foreign firm. Indian importers who intend to get Certification Mark may apply for the license.


National Institute of Training for Standardization (NITS) is a training institute of BIS which is set up in 1995. It is functioning from Noida, Uttar Pradesh, India. The primary activities of NITS are In-House and Open Training Programme for Industry, International Training Programme for Developing Countries and Training Programme to its employees. The relevance of this organization in the context of the study is that this has a Grievance Cell. If any customer reports about the degraded quality of any certified product at Grievance Cell, BIS HQs, BIS gives redressal to the customer. The investigator discussed with a college counselor about the functioning of this organization. He is aware of the scheme of ISI but he is not aware of the grievance forum that exists and the possibility of getting remedy in case of products not having the promised quality.

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8 Ibid.
9 Ibid.
Koolakadai Bazaar in Tirunelveli Town is famous for Jewellers as quite a number of them are located in that area. Of late, new jewellers have started mushrooming in other parts of Tirunelveli with big and air conditioned show rooms. It is important to note that recently leading jewellers of Chennai and other parts of Tamilnadu have recognized Tirunelveli as a potential place for their sales. It was pointed out during a seminar by a consumer of gold ornaments, that the criteria used for calculating additional charges for damage the process of making and the charges for making are mysterious and not understandable as the jewelers do not follow any clear cut guidelines. Consumers are at the benevolence of the owners of jewelers. Gold and other ornaments do not come under a commodity that is purchased every day rather once a year or just before functions such as marriage, naming of the child, etc. Every purchase is a new experience for a customer and so he or she is kept at dark. Moreover the price of these materials varies every day and sometimes even every hour. There is also lot of fluctuation in price – price goes up for a few days and suddenly starts dropping down. In this context, it is important to look into the history of the process of hallmark of gold and other precious ornaments.

A hallmark is an official mark or series of marks struck on items made of precious metals such as platinum, gold, silver and palladium. Hallmarking is Europe's earliest form of consumer protection. In a more general sense, the term hallmark can also be used to refer to any distinguishing characteristic or trait. Historically, hallmarks were applied by a trusted party: the 'guardians of the craft' or nowadays by an assay office. Hallmarks are a guarantee of certain purity or fineness of the metal as determined by formal metal (assay) testing. Hallmarks are often confused with "trademarks" or "maker's mark". Hallmarks are not the mark of a manufacturer to distinguish his products from other manufacturers’ products, which is the function of trademarks or makers' marks. To be a true hallmark, it must be the guarantee of an independent body or authority that the contents are as marked. Thus, a stamp of '925' by itself is not, strictly speaking, a hallmark, but is rather an unattested fineness mark.

Notwithstanding the hallmarking systems themselves, many nations require, as a prerequisite to official hallmarking, that the maker or sponsor itself mark upon the item a

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responsibility mark and a claim of fineness. Responsibility marks are also required in the United States. Nevertheless, in nations with an official hallmarking scheme, the hallmark is only applied after the item has been assayed to determine that its purity conforms not only to the standards set down by the law but also with the maker’s claims as to metallurgical content. In some nations, such as the UK, the hallmark is made up of several elements including: a mark denoting the type of metal, the maker/sponsor's mark and the year of the marking. In England, the year of marking commences on May 19, the Feast Day of Saint Dunstan, patron saint of gold- and silversmiths. In other nations, such as Poland, the hallmark is a single mark indicating metal and fineness, augmented by a responsibility mark known as a sponsor's mark in the United Kingdom. Among a group of nations which are signatories to an international convention known as the Vienna Convention on the Control of the Fineness and the Hallmarking of Precious Metal Objects, additional, optional, yet official marks may also be struck by the assay office. These have the effect of easing import obligations among and between the member states. Signatory countries have a single representative hallmark which would be struck next to the Convention mark which represents the metal and fineness.

The control or inspection of precious metals was an ancient concept of examination and marking, by means of inspection stamps or punch marks. The use of hallmarks, at first, on silver has a long history dating back to the fourth century AD and represents the oldest known form of consumer protection. A series or system of five marks has been found on Byzantine silver dating from this period though their interpretation is still not completely resolved. However, from the Late Middle Ages, hallmarking was administered by local governments through authorized assayers. These assayers examined precious metal goods, under the auspices of the state, before the good could be offered for public sale. By the age of the Craft Guilds, the authorized examiner’s mark was the “master’s mark” which consisted frequently of his initials and/or the coat of arms of the goldsmith or silversmith. At one time, there was no distinction among silversmiths and goldsmiths who were all referred to as orfèvres, the French word for goldsmith. The Master Craftsman was responsible for the quality of the work that left his workshop, regardless of who made the item. Hence the responsibility mark is still known today in French as le poinçon de maître literally "the maker's punch." In this period, fineness was more or less

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13 Ibid.
standardized in the major European nations at twenty karats for gold and twelve to thirteen lots for silver, but the standards could only be partly enforced owing to the lack of precise analytical tools and techniques.

Modern hallmarking in Europe appears first in France, with the Goldsmiths statute of 1260 promulgated under Etienne Boileau, Provost of Paris for King Louis IX. A standard for silver was thus established. In 1275, King Philip III prescribed, by royal decree, the mark for use on silver works, along with specific punches for each community's smiths. In 1313, his successor, Philippe IV expanded the use of hallmarks to gold works. In 1300 King Edward I of England enacted a statute requiring that all silver articles must meet the sterling silver standard (92.5 percent pure silver) and must be assayed in this regard by guardians of the craft who would then mark the item with a leopard's head. In 1327 King Edward III of England granted a charter to the Company of Goldsmiths, marking the beginning of the Company's formal existence. This entity was headquartered in London at Goldsmiths' Hall from whence the English term "hallmark" is derived. In the UK the use of the term "hallmark" was first recorded in this sense in 1721 and in the more general sense as a mark of quality in 1864. In 1424, the French Archbishop Jean de Brogny, after having consulted with a council of eight Master Goldsmiths from Geneva, enacted a regulation on the purity and hallmarking of silver objects following the French standards for application in Geneva. Although gold was certainly used for articles, the regulation was silent on gold standards and its hallmarking.

Although hallmarking in the Swiss territories dates back to Geneva in the 15th century there was no uniform system of hallmarking in Switzerland until 1881. Before that time, hallmarking was undertaken at the local level by the Swiss cantons. With the introduction of the Swiss system of hallmarking in 1881, there was uniformity throughout the nation. Today in Switzerland, only precious metal watch cases must be hallmarked. Perhaps this attests to the significance of watches to the Swiss economy. The hallmarking of other items including silverware and jewelry is optional. In 1355, individual maker marks were introduced in France, which concept was later mirrored in England in 1363, adding accountability to the two systems. In 1427, the date letter

14 Ibid., p. 67.
15 Ibid., p. 70.
system was established in France, allowing the accurate dating of any hallmarked piece. In 1478, the Assay Office was established in Goldsmith’s Hall. At this time, the date letter system was introduced in England. In 1697, a higher standard of silver, known as the Britannia standard (95.8 percent silver) was made compulsory in Great Britain to protect the new coinage which was being melted down by silversmiths for the silver. The Sterling standard was restored in 1720.

In the modern world, in an attempt at standardizing the legislation on the inspection of precious metals and to facilitate international trade, in 1973 a core group of European nations signed the Vienna Convention on the Control of the Fineness and the Hallmarking of Precious Metal Objects. Those articles, which are assayed and found to be in conformity by the qualifying office of a signatory country, receive a mark, known as the Common Control Mark (CCM), attesting to the material's fineness. The multi-tiered motif of the CCM is the balance scales, superimposed, for gold, on two intersecting circles; for platinum, a diamond shape and for silver a mark in the shape of the Latin letter "M".

The Hallmarking Act 1973 made Britain a member of the Vienna Convention as well as introducing marking for platinum, a recognized metal under the Convention. All four remaining assay offices finally adopted the same date letter sequences. The latest changes in 1999 were made to the UK hallmarking system to bring the system closer into line with the European Union. Under this latest enactment, the date letter is no longer a compulsory part of the hallmark. As it now stands, the compulsory part of the UK hallmark consists of the sponsor or maker's mark, the assay office mark, and the standard of fineness (in this case silver, 925 parts in 1000). The Hallmarking Act was amended in July 2009 to include palladium from January 2010. Punching, markings using laser, methods of assay, touchstone method, x-ray fluorescence are some of the marking techniques that are found in practice.

In other parts of the country awareness about the necessity of hallmarking is organized through trainings and programmes. The following is one such a programme held in Chandigarh. Marking the five-day hallmark awareness week which began today in the northern

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17 Ibid.
18 The New Indian Express, BIS Hallmarking Awareness Week Begins, dated 6 December 2011.
region, the Bureau of Indian Standards (BIS) representatives of today addressed the concerns of about 150 Tricity-based jewellers over hallmarking certification. Putting forth jewellers' recommendations, General Secretary of Chandigarh Jewellers Association, Raj Kumar, said that although BIS has now come up with two gold hallmarking centres in the city, they were still dependent on Delhi centres for assaying silver ornaments. Kumar further averred that the cost of certification, as specified by BIS, ranges between Rs 20,000 and Rs 25,000 across different states, which is too high for a period of three years. Besides, there are no security provisions at the centres. In case an article gets misplaced, the jeweller needs to bear the brunt. Kumar also said that the under a new set of standards, IS1 51829, which will be introduced by BIS shortly, the equipments at all the eleven testing centres across the country will be upgraded to enhance accuracy. Also, faculty crunch at the centres will be addressed to ensure safety of the gold and silver articles. It was observed while speaking to a few consumers that they give importance to the credibility and hospitality of the sellers more than the hallmarking. With the coming in of purely business oriented groups who base themselves on impressive advertisements, attractive new models and spacious show room facilities the consumers were found to be changing their purchase options of jewellery.

Keeping the festival season in mind, Bureau of Indian Standards (BIS), Western Regional Office, Mumbai had organized an Awareness Week on hallmarking of gold jewellery from 26 to 30 September 2011 through an umbrella of activities like organization of jeweller awareness programme, two day artisan training programme, nukkad nataks and other publicity initiatives through print and electronic media. The awareness week on hallmarking was mainly focused to spread awareness about the benefits of BIS hallmark among all stakeholders and to alert consumers against victimization of irregular gold quality. Harshawardhan Patil, Minister, Co-operation Parliamentary affairs, Government of Maharashtra conveyed his best wishes for the success of hallmarking awareness week organized by Bureau of Indian Standards. Devendra Mohan, Deputy Director General, Western Regional office while welcoming the eminent speakers, guests and the participants expressed hope that the programme will enable dissemination of valuable information on hallmarking of jewellery to all sections of the society namely consumers, jewelers, assaying and hallmarking centers and the people at large.

19 The Hindu, An Awareness Week on Hallmarking, dated 20 September, 2011.
Alka Panda, IAS Additional Director General BIS who inaugurated the awareness programme, in her key note address gave a brief history of the hallmarking scheme. Earlier in his address, Vasant Mehta, Chairman, Indian Institute of Gems and Jewellery, Mumbai and Former Chairman Gems and Jewellery Export Promotion Council in his speech emphasized that BIS should take up every measure to ensure that the scheme is made mandatory. Ashok Minawala, member and former chairman, All India Gems and Jewellery Trade Federation said that all concerned stakeholders like government, BIS and jewellery industry should work in collaboration with each other to ensure best practices in the industry. He added that, the consumers are very informed today and hence jewelers have to be responsible and concerned about quality and caratage. The seminar was attended by about 250 delegates from consumers, industry, government and media groups.

The Bureau of Indian standards (BIS), which ensures standardization, marking and quality certification of gold and silver metals, organized an awareness week on hallmarking between 14 and 18 November of 2011. The awareness week, a maiden initiative by BIS, was conducted in the eastern parts of the country. The objective was to raise awareness among the jewellers about the benefits of being a BIS Hallmark licensee. The BIS had been sensitizing consumers to buy BIS Hallmarked jewelry to prevent their victimization. This was important in the context of consumer awareness and protection more than sensitization of the artisans.

Hallmarking of Gold Jewellery was launched in April 2000 on a voluntary basis. The scheme is operated through BIS network of Regional and Branch Offices all over the country. The scheme aimed at providing third party assurance to consumers on the purity of gold or its fineness. Under the scheme jeweler had to obtain Hallmark licence from BIS to get his jewellery hallmarked from a BIS recognized Assaying & Hallmarking Centre. The scheme thus does not grant self marking rights to jewelers. The Hallmarking Centres are recognized by BIS after ensuring that the Centre has required infrastructure for Assaying and Hallmarking of gold jewellery in addition to security and safety of the same.

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20 The Times of India, BIS Launches Programme to Create Awareness about Hallmarking, dated 11 November 2011.
During the year 2006 a market survey was conducted by BIS on non-hallmarked jewellery in sixteen selected cities to ascertain the purity of gold sold to the customers.\textsuperscript{21} The main objective of the market survey was to test the purity of non-hallmarked gold sold in the market in order to gauge awareness among the consumers about purity of gold sold in the country. Based on analysis of the data of the Survey Report it was found that out of 162 samples taken, sixteen samples passed the test and 146 samples failed. Thus only 9.88 percent samples were found to be of claimed purity and 90.12 percent samples were not found to be of claimed purity. In the light of the outcome of the survey, an urgent need was expressed for setting up of a number of Gold Hallmarking/Assaying Centres in the country to create country-wide infrastructure to test the purity of the gold and protect consumers from sale of inferior quality of gold. Till June 2008, 5740 Jewellers have been certified by BIS for hallmarked gold jewellery and 426 jewellers for hallmarked silver jewellery/artifacts. 106 Assaying and Hallmarking Centres have been recognized by BIS for certifying gold jewellery articles and approximately 419 lakh gold jewellery items have been hallmarked.

In order to create infrastructure across the country, a Plan Scheme was sanctioned to provide Central assistance at fifteen percent of the cost of equipment and machinery subject to a ceiling of Rupees fifteen lakhs per centre.\textsuperscript{22} However, the financial incentive for North East and special category states had been increased to thirty percent of the cost of machinery and equipment subject to a ceiling of Rupees thirty lakhs. The first instalment of fifty percent assistance was released after obtaining BIS recognition and the balance after one year of successful operation of the Centre. The Scheme which was initiated as a pilot project for setting up of thirty five centres under the Tenth Five Year Plan has now been extended to Eleventh Five Year Plan. Since Gold Hallmarking is a recently introduced scheme, with a view that consumers must benefit, a series of programmes need to be organized in Tirunelveli District.

There are complaints about the quality of gold sold by jewellery shops. The following is a case of consumer complaint No 65/ 2008 of Suresh from NGO Colony in Tirunelveli city.

\textsuperscript{21} Evaluation Report of the Tenth Plan Scheme of Hallmarking of Gold Jewellery, Department of Consumer Affairs, New Delhi, 2009.

\textsuperscript{22} Government of India, Department of Consumer affairs, Gold Hallmarking, New Delhi, 2009, p.10.
against M/s Joy Alukkas Traders India Private Limited at Tirunelveli Town.\textsuperscript{23} The complainant purchased jewels on 3 August 2007 in the above jewellery shop. He purchased four items of jewels by invoice No SAL 9989 dated 3 July 2007 for a total price of 34,494/- and paid the cash in full. The complainant wore the bracelet. When it was closely scrutinized, after few days in the presence of relatives it came to light that the second and fourth links of the chain within the hook links of the bracelet, there were stealing strings which were less in sight. After verification it was confirmed and it weighed 15.250 grams and the opposite party had collected Rs.14,641/= for the said item alone. In order to increase the weight of the above item, opposite party by its expertise introduced steel strings within the golden links in the bracelets. The weight shown was not of gold and includes the weight of steel strings also. The complainant was put to shame in the midst of the public who were invited for the function. The complainant issued a legal notice to the opposite party on 12 November 2007 and after receiving the same, the opposite party promised to redress the grievance if any. In compliance with the request, the complainant went to the opposite party but the opposite part was irresponsible. Hence he has filed this complainant to direct the opposite part to provide a new bracelet of twenty two carrot gold make and to pay Rs.25,000/= as compensation for the pain caused to him, and to pay Rs.5,00,000/= as damages for the mental agony and sufferings caused along with the cost of the proceedings. It was concluded in the judgement that the opposite party had sold defective bracelets to the complainant and hence the complainant is entitled for the relief as prayed for. In the result the complainant is allowed and the opposite party is directed to pay Rs.75, 000/= as compensation for selling a defective goods and to pay Rs. 5000/= towards cost of the proceedings.

With the view to raise the awareness level of consumers in Tirunelveli and Tamilnadu at large, the investigator came out a series of articles on the difficulties and problems faced by consumers through the Tamil magazine Aval Vikatan and the Tamil news paper Dinamani. Aval Vikatan compiled the articles and published it by name Nugarvor Rajangam meaning the kingdom of consumers.\textsuperscript{24} It was recommended that Hall Marking should be made mandatory for all Gold ornaments and also it was suggested that BIS must make periodical checkups on all gold shops. It was also found that the rate for wastage and making charges differ from shop to

\textsuperscript{23} District Consumer Disputes Redressal Forum, Tirunelveli, Order on Consumer Complaint No 65/2008, dated 16 May 2011.
shop. BIS has no man power to check and control malpractices in these regards. And therefore it was suggested that Government has to come up with suitable legislation to control Gold price.

Good quality food has been man's main endeavor from the earliest days of human existence. Nutritional status, health, physical and mental faculties depend on the food we eat and how we eat it. Safety of food is a basic requirement of food quality. Food safety implies absence or acceptable and safe levels of contaminants, adulterants, naturally occurring toxins or any other substance that may make food injurious to health on an acute or chronic basis. Food quality is considered as a complex characteristic which determines the value or acceptability by consumers. In India, food marketing systems are not well organized and developed as compared to other developed nations. This is due to many factors such as growing population, lack of resources to deal with pre-and post-harvest losses in food, etc. Many countries have a food control system, to protect their population against unsafe, adulterated, or otherwise poor quality food. In India we have Food Act, AGMARK, etc to ensure quality food products. But still there are many lacunae and also there exists lack of awareness about food safety and the like among consumers. Grading of food products in terms of physical, chemical and biological properties is one of the most important activities to assure food safety for the consumers. AGMARK Grading and Standardization is a Central Sector scheme started with the objective for promotion of grading and standardization of agricultural and allied commodities under Agricultural Produce (Grading & Marking) Act, 1937. Quality standards for agricultural commodities are framed based on their intrinsic quality. Food safety factors are being incorporated in the standards to compete in world trade. Standards are being harmonized with international standards keeping in view the WTO requirements. Certification of agricultural commodities is carried out for the benefit of producer/ manufacturer and consumer. Certification of adulteration prone commodities namely butter, ghee, vegetable oils, ground-spices, honey, wheat, atta etc. is very popular. Blended edible vegetable oils and fat spread are compulsorily required to be certified under AGMARK.

AGMARK is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India. The AGMARK is legally enforced in India by the

The term Agmark was coined by joining the words 'Ag' to mean agriculture and 'mark' for a certification mark. This term was introduced originally in the bill presented in the parliament of India for the Agricultural Produce (Grading and Marking) Act. The entire system of Agmark, including the name, was created by Archibald Macdonald Livingstone, Agricultural and Marketing Advisor to the Government of India, from 1934 to 1941. He was supported by a staff of several hundred. The system was designed to benefit local growers throughout India who were, in the absence of a certification as to quality, exposed to receiving less for their produce from dealers than its true worth. Apart from this, there exist the following Agmark standards and regulations. Agricultural Produce Grading and Marking Act, 1937, Schedule Appended to AP (G&M) Act 1937, General Grading and Marking Rules, 1988, Commodity Grading and Marking Rules, List of commodities for which AGMARK Grade Standards have been formulated and notified under the Agricultural Produce (G&M) Act 1937, Organic Certification, Manual on Standards of Paddy, Manual on Standards of Wheat, AGMARK Standards and Regulations, Manual on Standards of Maize, Manual on standards of Mustard and Rapeseed. Agricultural Product (Grading and Marking ) Act, 1937 was also amended in 1986.

The AGMARK certification is employed through fully state-owned AGMARK laboratories located across the nation which act as testing and certifying centres. In addition to the Central AGMARK Laboratory (CAL) in Nagpur, there are Regional AGMARK Laboratories in eleven nodal cities such as Mumbai, New Delhi, Chennai, Kolkotta, Kanpur, Kochi, Guntur, Amiritsar, Jaipur, Rajkot, Bhopal. Each of the regional laboratories is equipped

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26 Government of India, Department of Agriculture and Cooperation, Agricultural Produce (Grading and Marking) Act, 1937 (Act No. 1 of 1937) (as amended up to 1986), New Delhi, p.3.

27 Personal Interview with Murugesan, R., Agricultural Officer, Palayamkottai, dated 10 January 2011.
with and specializes in the testing of products of regional significance. Hence the product range that could be tested varies across the centres. The testing done across these laboratories include chemical analysis, microbiological analysis, pesticide residue and aflatoxin analysis on whole species, ground spices, ghee, butter, vegetable oils, mustard oil, honey, food grains like wheat, wheat products like atta, suji, and maida, gram flour, soya bean seed, Bengal gram, ginger, oil cake, essential oil, oils and fats, animal casings, meat and food products.

The following opinions emerged in a discussion with the proprietor of a supermarket. He said that eighty per cent of the consumers knew about AGMARK by name and seventy per cent were aware about the AGMARK products. But fifty five per cent of the consumers who had awareness on AGMARK products belonged to high-income group. He added that thirty four per cent of the sample consumers had purchased AGMARK produce either ghee or vegetable oil or spices powder and about sixty per cent purchased AGMARK products from departmental stores. He has found that sixty per cent of AGMARK products users belonged to high-income group; Overall satisfaction of consumers was higher for ghee followed by vegetable oil. He reported that AGMARK satisfied the customers in terms of quality. In terms of the factors influencing the preference for AGMARK products, he attributed purity first followed by price and availability. Non-availability in most of the groceries and high price of AGMARK products were perceived as major reasons for not purchasing AGMARK products by the non-users of the same. According to him, fifty percent of consumers felt that the prices of AGMARK products were higher. He was sure that nearly ninety per cent of AGMARK consumers could be retained in the event of increasing price even up to per cent. He came out with the suggestion that consumer packs with AGMARK labels should be made available in all the departmental stores for which specific space should be allotted to increase the consumer information and awareness.

Ecomark or Eco mark is a certification mark issued by the Bureau of Indian standards, the national standards organization of India to products conforming to a set of standards aimed at the least impact on the ecosystem. The marking scheme was started in 1991. One of the purposes of the mark is increasing awareness among the consumers towards reducing environment impact. The mark is issued to various product categories and the development of

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28 Personal Interview with Jayaprakash, Proprietor, Aryas Supermarket, Palayamkottai, dated 10 January 2011.
29 Report of CUTS Centre for International Trade, Economics & Environment, Why was India’s Ecomark Scheme Unsuccessful? Jaipur, 2006, p.2.
standards for more products is in progress. The Ministry of Environment & Forests, Govt. of India have instituted a scheme on labelling of Environment Friendly Products through Gazette Notification No. 71 dated 21st February 1991. The scheme is operating on a national basis and provides accreditation and labelling for household and other consumer products which meet certain environmental criteria along with quality requirements of the Indian Standards for that product. The Scheme is known as "ECOMARK". Any product which is made, used or disposed of in a way that significantly reduces the harm it would otherwise cause to the environment, are categorized as environment friendly product. The scheme is voluntary and invites participation from common citizens and concerned industrial sectors in the larger interest of environment.

The following are the specific objectives\textsuperscript{30} of the ECOMARK scheme. It provided an incentive for manufacturers and importers to reduce environmental impact of products. It supported and rewarded genuine initiatives by companies to reduce adverse environmental impact of their products. It helped in assisting consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions. It ensured citizens to purchase products which have less harmful environmental impacts. Ultimately it improved the quality of the environment and encouraged the sustainable management of resources.

The Ministry of Environment & Forests had constituted two committees namely Steering Committee and Technical Committee to identify product categories, develop criteria and to coordinate related activities.\textsuperscript{31} The Bureau of Indian standards helped in assessing and certifying products and drew up a contract with the manufacturer, allowing the use of the label, on payment of a fee. The terms of committees was set for three years or until reconstituted.

The functions of Steering Committee\textsuperscript{32} were selection of the logo for ECOMARK, Activities related to creation of mass awareness for promotion and acceptance of the scheme, Determining the product category to be taken up under the scheme, Coordinating ways of ensuring that industry is actively involved in the scheme, Securing the involvement of other Ministries, Government Departments, Industry Associations and other Non-Government Organizations and

\textsuperscript{30} Ibid., p.14.
\textsuperscript{31} International Journal of Pharma Medicine and Biological Sciences, ECOMARK Scheme in India, Vol. 1, No. 2, October 2012.
\textsuperscript{32} Ibid.
consumer organizations, Formulation of strategies for future development of the scheme, Identifying institutions in India or outside which are engaged in the standardization of any article or process or improvement of quality of any article or process and recommending assistance to build consumer awareness, Promoting programme of comparative testing of products by consumer organizations and disseminate their results to the general public, Supporting any research for the formulation of ECOMARK products in the interest of consumer groups.

The Composition of the Steering Committee was as follows. The Secretary of the Department of Environment and Forests is the Chairman and the Secretary, Ministry of Industry, the Secretary Department of Civil Supplies, the Secretary Ministry of Chemicals and Petro-Chemicals, the Secretary Ministry of Agriculture, the Secretary Ministry of Information and Broadcasting, the Director General of Technical Development, the Director General of CSIR, the Director General of Health services, The Development Commissioner of Small Scale Industries and the Chairman of Central Pollution Control Board as members and the Officer In-Charge of ECOMARK in the Ministry of Environment and Forests as the Member Secretary. Besides above, Central Government shall nominate not more than five non-officials to represent the interests of industry, consumer groups or other NGOs of which at least two will represent consumer groups.

The functions of the Technical Committee were the Identification of specific products for classifying as environment friendly, reviewing the existing State of knowledge and the environmental criteria being followed in other countries, recommending the most appropriate criteria and parameters to designate various products as environment friendly, reviewing various technologies available for determining criteria, recommending various laboratories and analysis for products assessment to the MoEF, evaluation of Environmental Import of products, reviewing implementation of the scheme by BIS, setting up sub-committee for each product category, and setting up of expert panels to advise it for specific products. The functions of Bureau of Indian standards were assessment of the product for ECOMARK, certify the product for award of the Ecomark, review, suspend or cancel or license, for the use of Ecomark, inspect and monitor the industries.

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33 Ibid.
34 Report of CUTS Centre for International Trade, Economics & Environment, *Why was India’s Ecomark Scheme Unsuccessful?* Jaipur, 2006, p.15. 
The following procedure of Certification and Licensing was followed. For certification under ECOMARK scheme the manufacture shall apply testing of products which fall under the notified categories along with fee set by BIS. The testing and certification shall be carried out by BIS. The label shall be awarded for a minimum period of one year and shall roll forward annually. The following criteria have been fixed as parameters to be considered for determining product for ECOMARK. Production process including source of raw material are viewed. Natural resources are given preference. The likely impact on the environment of the product is given due consideration. Energy conservation in the production of product is given weightage. Effect and extent of waste arising from the production process is taken into account. Disposal of the product and its containers are looked into. Utilization of the waste in the production process and the possibility of recycling are given importance. Suitability for packaging is another important factor deserving attention. Lastly biodegradability of the product is also considered.

The Pollution Control Board has identified 192 industries in the State which come under purview of this criteria and are being pursued to obtain ECOMARK certification in the large interest of the environment. These identified industries are from textile, vegetable oil and soap & detergent sector. Some governments give incentive measures to protect the eco-system. For example as per notification issued by Govt. of Madhya Pradesh Department of Housing & Environment, Dated 28 August 1998 all such industries which have been awarded ECOMARK label for their products shall be given an exemption of 50 percent fee in the consent/renewal of consent under Water Act / Air Act. The Ministry of Environment & Forests has so for identified 16 products categories to be covered under the scheme of ECOMARK. The products are soaps and detergents, paints, paper, food items, food additives and preservatives, wood substances, textiles, batteries, lubricating oil, packaging, plastics, aerosols, cosmetics, pesticides, drugs, electronic goods, vegetable oils etc.

However, even after twenty one years in existence, the Indian Ecomark Scheme had not caught the fancy of the consumer or the industry. Only twelve manufacturers of various products like paper, pulp, leather and wood particleboard had till now applied and got the Ecomark licence. Furthermore, the licencees hardly use the Ecomark symbol ‘matka’ on their

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35 Ibid., p.17.
36 Ibid., p.18.
37 Ibid., p.55.
package as none of them found any benefit by the same. Thus the scheme that was formulated to recognise environment friendly products was yet to gather momentum.

Water is an essential component in our life and it is found in a very large quantity on the earth. Without water, there is no living plant and animal. The water consumed by human beings originated in various forms and from various sources. Lately, the popularity of bottled mineral water has increased due to the increasing contamination of water resources. Natural mineral water is that clearly comes from underground sources. It is distinguished from ordinary drinking water because it is characterized by its content of certain mineral salts and their relative proportion and the presence of trace elements of other constituents. Besides that, natural mineral water is also defined as groundwater that obtained directly for human consumption from drilled or natural sources from underground water. Nowadays lifestyles have moved most of the population towards the portable and convenient bottled mineral water. A lot of bottled mineral water brands are available in the market ranging from high end names like Aquafina, Bisleri, etc. Today's consumer has lots of choices thereby making it necessary for the manufacturer of bottled mineral water to come out with unique strategies to stay up to date in this highly competitive market. Drinking bottled mineral water has become an importance habit in people's everyday lives. Whatever be the reason, the trend towards consuming bottled water is predicted to increase in the coming years. Bottled water has been steadily growing over the past three decades due the dynamic sectors of the food and beverage industry. Water has endurances and sales appeal in any food service segment. It is also free of sugar, calories and alcohol, and outruns juice, coffee and soda as a beverage for all day parts.

Bottled mineral water consumption in the world is increasing by an average seven percent each year, inspite of the fact that bottled mineral water has a higher price. The convenience of bottled water that can be easily purchased at retail outlets and easy to get rid of is the major factor leading many to purchase bottled mineral water. These factors have led to the increasing global production of bottled water, from estimated 142 billion liters in 2002 to over 173 billion liters in 2006. Danone, Nestle, Coca-Cola and PepsiCo are the world's top four bottled mineral water companies. Although Coca-Cola and PepsiCo are known as the big carbonated soft drinks manufacturers, they have also noted the potential in the bottled mineral

water market and have been developing their brands and capabilities in this market. Although major consumers of bottled water are in Europe and North America, the most promising markets are in Asia Pacific with an annual growth rate of fifteen percent. The increase in consumption in global market with the high income people is mainly due to the increasing awareness of the health preserving properties of water, both in its basic, hydrating function as well as a source of precious minerals.

There is high interest on the quality of groundwater all over the world due to severe problems of water stress and deterioration of water quality. The quality of groundwater highly depends on the composition, the mineralogy, recharging water and reactivity of the geological formations in aquifers, the impact of human and industrial activities and the environmental parameters that can bring effects to the geochemical mobility of certain substances. Groundwater forms part of the natural water cycle and constitutes a major portion of the cycle. Groundwater comprises of water from springs or from wells and boreholes and is used to catch water from the aquifers by means of pumps. Deep wells or boreholes provide usually water of excellent bacteriological quality. Groundwater is therefore often used without any treatment, except physicochemical ones to reduce hardness or eliminate off flavors and odors. The water pumped from boreholes or shallow wells, however, is easily exposed to pollution and contamination. Depending on the type of aquifer, the type of soil and its protective effect against pollution, the physicochemical characteristics of the water, and the levels of the microbial flora is very low. Groundwater contamination gives major implications to human's health and the environment in urban areas. The groundwater in polluted urban areas is often contaminated by heavy metals and contains a wide variety of organic compounds, all of which have a major effect on the water supply and the environment. In this chemical world, the pollutants that occur in our environment can be classified into two categories such as natural and synthetic. The natural pollutants are derived from the decay of plant substances, flow of water through rocks that contain fossil fuel and transportation as air or water borne components derived from volcanic eruptions or forest fires. Similar compounds, as those released naturally, may also be derived as a synthetic by product from anthropogenic sources. Rapid industrial development in the last few years has added huge loads of pollutants to our groundwater aquifer.\(^{39}\) It is also

\(^{39}\) Ibid.
postulated that the progress of industries has led to increased emission of pollutants into ecosystems.

Mineral water represents a good source of nutrition which is necessary for the needs of human body. Mineral water always contains various minerals and trace elements and can be defined as water containing minerals which are natural compounds formed through geological processes or other dissolved substances that alter its taste or give it therapeutic properties which gives good healing to any disease. Human beings required minerals for nutrition, growth, sustaining body functions and well being. These minerals have various effects on the human's health. The demand for natural mineral waters is increasing due to the increasing of pollution in drinking water. The quality of drinking water is significant for health in both developing and developed countries worldwide. Mineral water is drawn from underground sources such as a bore holes or a springs. Mineral waters are different regarding to their composition and content in minerals. Natural mineral water that comes from the groundwater is the most valuable freshwater resource on the earth and it plays an important role in drinking water supply all over the world and is often preferred for drinking water supply and it deemed to be the best water for the consumption of human.

Natural mineral waters have long been used for medical purposes. The term natural mineral water is defined as it originates in an underground water table or deposit, it differs from treated water in its original purity that is bacteriologically healthy and its content of minerals, trace minerals and other constituents, which must remain constant. Only natural mineral water has the characteristics that benefits human health. Natural mineral water can be sparkling or still. During bottling, the carbon dioxide that causes carbonation also can be natural or added. Bottling is done at the source and treatments to make partial changes to the composition of or purify natural mineral water bacteriologically are prohibited.

Mineral water run across highly mineralized rocks. The geological sources of natural mineral water are known as aquifers, which can be from different types, and they differ greatly in terms of their depth, horizontal extent, composition, and permeability. Water filtering underground flows slowly through deep permeable rocks and sediments and diffuses into the

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empty interstitial space of the rocks. Water picks up minerals and other elements depending on the chemical make-up of the strata while passing through the underground strata. This is why they have higher concentrations of minerals and trace minerals than other kinds of water. Natural mineral water is characterized by its mineral content, trace elements or other constituents and, where appropriate, by certain effects, also by being in its original state, both conditions having been preserved intact because of the underground origin of the water which has been protected from all risk of pollution. The composition, temperature and other essential characteristics of natural mineral water must remain stable at source within the limits of natural fluctuation. In particular, they must not be affected by possible variations in the rate of flow. Mineral waters may be gaseous or non gaseous. Disinfections are not allowed in terms of treatment. The only treatment authorized is filtration or decanting and the addition or removal of carbon dioxide. Mineral waters are of underground origin, protected from contamination, and microbiologically wholesome, present a peculiar and constant chemical composition, and have favorable effects on health. To ensure it is safe, they must be bottled at source and checked containers.

Over the past twenty five years, bottled mineral water had climbed into a position of power in Tirunelveli district as well as in the world market. The general interest in bottled mineral water began in the late 1970s and concerns about tap water safety developed. By the 1980s, with a vigorous promotion campaign by processors of bottled water, retail sales increased and the bottled mineral water market grew faster than any other major beverage category. By the late 1990s, the bottled mineral water market was growing three times faster than soft drinks. The world market of bottled mineral water had grown quickly and is considered as a global billion dollar business. Bottled water consumption had been steadily growing up the last three decades in Tirunelveli district as well as at the global level and it is one of the fastest growing and the most dynamic sector of all the food and beverage industry.

Moreover fresh water is insufficient, and resources are unevenly distributed throughout the Tirunelveli district. Places like Tisayanvilai the potable water is almost nil. On the one hand sea water intrusion is taking place. On the other hand good water is supplied through pipes from Manimuthar dam. In such places with scarce water resources, consumption of bottled mineral

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41 Ibid.
water is a growing practice. Growing population and the population shift from rural to urban areas had increased the consumption of bottled water. Bottled mineral water had become a healthier choice than tap water for many people because they believe that bottled mineral water contains fewer contaminants, or dislike the taste of chlorinated tap water. Therefore, the annual consumption of bottled drinking water in Tirunelveli had become substantial. For health concern, there is increasing attention on the quality of bottled drinking water. It is also stated that the dramatic increase in the consumption of bottled water had been attributed to the consumers' concern over increasing water pollution and their objection to offensive tastes and odours such as chlorine from municipal water supplies and bacterial contamination.

Nowadays, many people living in town areas were increasingly consuming bottled mineral water because it is seldom associated with naturalness, objection to unpleasant tastes and odors from municipal water supplies and because bottled mineral water is often regarded as safer as and healthier than tap water. Furthermore, the efficient marketing and advertising strategies followed by the bottled water producers enhanced this consumption. An evidence is the fact that especially high income consumers buy bottled water as a healthy alternative to other beverages, to improve their diet and health. Bottled water is called the packaged water that is commercially available for human consumption. Bottled mineral waters have always been regarded as a voluptuary good, something between a soft drink and a dietary or medical aid with a limited importance in human diet. It is also claimed that the increasing use of bottled mineral water makes it obvious to consider it an important element of the human diet, with special regard to children in lactation age.

Bottled mineral water can be defined as water that is intended for human consumption and is sealed in bottles or other containers with no added ingredients except that it may contain safe and suitable anti-microbiological agents. Most bottled mineral waters are groundwater, bottled with or without some treatment process such as filtration and sterilization. Bottled mineral water is widely consumed because it is inexpensive, readily available, tastes better, contains fewer impurities and confers a higher social status on the consumer than tap water. Apart from the use of bottled water as drinking water, it has found wide usage in infant formula preparation and reconstituting other foods, for cleaning contact lenses, for skin care and for filling humidifiers.
Labels on bottled mineral waters are regulated by legislative norms. Labels contain information about the producer and the production brand name, production lot, bottling date, bar code, the words respect the natural environment, nominal content, authorization, purchase proof, consumer service toll-free number. The label or the bottle must also show a regular hexagon or a circle with an abbreviation indicating the material of the container. This kind of information guides the consumers in the choice of the water which best meets their requirements. The label also reports some basic rules for a correct storage of bottled mineral water namely keep in a cool, dry, clean and odorless place, away from light and heat sources. After opening, the bottle must be closed carefully, in order to maintain the original characteristics.

The standards for bottled water are subject to mandatory certification under the Prevention of Food Adulteration Act, the law enforced by the Health Ministry in India. BIS has published three standards on water for human consumption: one for drinking water; one for packaged natural mineral water; and one for packaged drinking water other than mineral water. The standard for packaged natural mineral water was drafted in 1992 by the Drinks and Carbonated Beverages Sectional Committee and amended in 1998 by a panel of government health and scientific representatives and a consumer organization by name Consumer Guidance Society of India. Requirements for pesticide residues were revised as not detectable on the basis of comments received. Codex and WHO standards were also considered during this process. Several studies conducted by consumer organizations raised questions about compliance with these mandatory standards. A study by VOICE found that a large number of manufacturers of bottled water were not adhering to quality specifications. Authorities were notified and quality checks were introduced. It was reported that in the survey conducted by the Centre for Science and Environment (CSE) on pesticide residues in bottled water sold in Delhi and Mumbai. Findings revealed that all brands tested except one contained elevated levels of residues, including some samples with up to 104 times the EU norms for acceptable levels. These findings led BIS to create a committee to address the adequacy of existing standards for packaged drinking and mineral water, the effectiveness of testing facilities, the alignment of standards with

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43 Ibid.
international norms, and the links between BIS standards and the Prevention of Food Adulteration Act.

The committee included input from VOICE and other consumer NGOs. Committee findings concluded that the scope and applicability of the standard not suitable for the detection and quantification of low-level pesticide residues in drinking water. Comparative analysis of BIS norms for pesticide residues was conducted. The list of pesticides detectable by Indian test methods is exhaustive and includes many pesticides. Analysis showed that the Indian standard for pesticide residue norms did not meet the international best standard. Pressure from consumer organizations was the main key in getting BIS to recognize the need to upgrade this standard and begin the revision process. 45

In addition, analysis also determined that the existing Indian standard for packaged drinking water was not harmonized with EU norms which are considered the best in the world.46 This sparked public discussion and the creation of a Joint Parliamentary Committee to look into broader issues of food safety. Committee recommendations included adoption of a pro-active approach toward keeping standards dynamic and at the same level as international standards, including creation of an alert system to flag emerging problems before they assume threatening dimensions. The principal recommendation to governments from this case study is to develop regulations to ensure that standard setting procedures are made more democratic, transparent, accountable and dynamic.47 Other key recommendations are cited in Consumers International’s forthcoming manual on standards representation.

It is a normal practice that all hotels are charging more than the MRP printed on the label for mineral water bottles. It is interesting to note the judgement of the Delhi High Court in this regard. The Delhi High Court has ruled that hotels and restaurants can charge more than the MRP on bottled mineral water and other packed products.48 The Court held such extra price charged by hotels and restaurants is justified because they also provide ambience and services to their customers.

46 Ibid.,
48 The Delhi High Court Judgement, Wp(C) Nos. 9528/03 and 13775-14072/2005, dated 5 March 2007.
In addition to bottled mineral water, people use lot of soft drinks these days and it is important that quality is maintained in the soft drinks. In Tirunelveli district, there exists the coco-cola soft drinks company in Gangaikondan, near Tirunelveli. Cases against such companies are filed because they fail to maintain quality. The following is such a case of defect in the soft drinks supplied. One Nagoor Meeran of Melaseval village, has bought a sprite 200 ml soft drink from a petty shop at Melaseval village on 24 April 2010. When the he tried to open the crown of the bottle, he found a dead cockroach inside the bottle. Nagoor Meeran sent legal notice to Coco cola company who was the manufacturer of the said bottle and also to the dealer and retailer. They have not sent any reply. Hence he filed a consumer complaint in CC No 105/2010 claiming compensation of Rs. 1,00,000/=. After enquiry the court held that the company was liable to pay Rs.30000/= as compensation with Rs.3000/= as cost.

Right to healthy environment is yet another basic right of consumers. Western Ghats and the river Tamiraparani plays a vital role in preserving a healthy environment in Tirunelveli district. In fact, the Tamiraparani is a symbol of Tirunelveli culture and civilization and an identity of the far south of India. In Tamil and Sanskrit literature of earlier times, the Pandyas were referred to as the rulers of the land where the Tamaraparani flowed. Tamiraparani is the chief river of the district which has a large network of tributaries which includes the Peyar, Ullar, Karaiyar, Servalar, Pambar, Manimuthar, Varahanathi, Ramanathi, Jambunathi, Gadananathi, Kallar, Karunaiyar, Pachaiyar, Chittar, Gundar, Aintharuviar, Hanumanathi, Karuppanathi and Aluthakanniar. The two rivers of the district which are not linked with Tamiraparani are the Nambiar and the Hanumanathi of Nanguneri taluk. The Tamiraparani is spelt differently as Tampraparani, Tamraparni, Tamiravaruni, etc. The river is mentioned as the Porunai nathi in Tamil poetic literature. It gets recognition and is referred to as the renowned one in Sanskrit literature references to which are as old as that of the Puranas and Epics. The meaning and origin of the name Tamiraparani is reasoned out differently. Bishop R. Caldwell, in his book, A

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50 Personal Interview with Fr.Antony Cruz, Tamirabharani Conservation Movement, Tirunelveli, dated 20 January 2011.
51 Personal Interview with Fr.Antony Cruz, dated 20 January 2011.
History of Tinnevelly discussed the various interpretations of the word ‘Tamiraparani’ at length. According to him the meaning of the name Tamiraparani in itself is sufficiently clear, but its application in this connection is far from being self-evident. Tamara means, red, parani means parana, a tree which has leaves. Tamiraparani might, therefore mean a tree with red leaves, but, this is a strange derivation for, the name of a river and the ideas naturally suggest itself that some events or legends capable of explaining the name lies beyond. He further discussed the similarity of the name Tamiraparani and of the old name of the present Sri Lanka which was called in olden days as Tambrabane and tried to find out the political, cultural and anthropological intercourse of the land of the river with that island. He concludes that it seems more natural that Tamiraparani, the tree with the red leaves should have been first the name of a tree, then of a town, then of a district and then of a river (it being not uncommon in India for villages to adopt their names from remarkable trees). Some scholars interpret the name Tamiraparani as Tamiram (Copper) + Varuni (stream or river). They ascribe this origin as the bed of the river is of red soil and when the water flows on the red soil it gives a copper like appearance. The Greeks of the Ptolemy’s time refer to this river as Solen.

The river Tamirabarani and the city Tirunelveli are found to be used as synonyms by the local people. Tamirabarani is one of the symbols of Tamil culture and history; referred in Tamil literature as Porunai nathi. The main river originates on the eastern slopes of Western Ghats in Tirunelveli district which is situated between latitudes 8°30'N and 9°18'N and longitudes 77°07'30"E and 78°15'E. The origin of Tamirabarani and its principal springs are situated at the peaks called "Aduppukkal Mottai", "Agasthiyamalai" (Periya Pothigai) and "Cherumunji Mottai", with an altitude of 1725 metres above MSL; it traverses a length of about 125 km passing through Tirunelveli and Thoothukudi districts before it confluences with the Gulf of Mannar region of the Bay of Bengal. The river is fed by both southwest and the northeast monsoon periods and is seen in full spate twice a year if both the monsoons do not fail. The main river drains with its springs and tributaries with the total catchment area of about 4500 sq.km with the total river basin area of 5942 sq.km. Most of its extensive catchment area lies in the

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52 Caldwell, Robert., op.cit., p.35.
eastern slopes of Western Ghats; the river enjoys the full benefit of both the monsoons which makes the river perennial and prone to heavy floods, especially during the northeast monsoon periods. The average rainfall of the river basin area is 1082 mm (northeast 565 mm; southwest 233 and summer and winter 284 mm) with the annual average temperature of 25.5°C - 34.4°C (20.9°C min, 39°C max). Population density of the river basin is 362 persons per sq.km against the state average of 428 persons per sq.km.

Pollution of surface and ground water is a major problem in Tirunelveli district due to rapid urbanization and industrialization. The large scale urban growth due to increase in population and migration of people from rural areas to urban centres had increased domestic effluents while industrial development manifested either due to setting up of new industries or expansion activities resulting in generation of copious volume of industrial effluents. Clean and adequate water supply is a necessity for the health of all living organisms and ecosystems, including people and their activities. Water quality monitoring was one of the highest priorities in environmental protection policy to control and minimize the incidence of pollutant-oriented problems, and to provide water of appropriate quality to serve various purposes such as drinking water supply, irrigation, recreational and industrial; and to protect the valuable freshwater resources to safeguard public health. Ascertaining the quality is crucial before use for various purposes. Traditional approaches to assess water quality are based on a comparison of experimentally determined parameter values with existing guidelines. However, it does not readily give an overall view of the spatial and temporal trends in the water quality in a watershed. The classification, modelling and interpretation of monitoring data are the most important steps in the water quality assessment; the quality is difficult to evaluate from a large number of samples each containing concentrations for many parameters. The index method was initially proposed by Horton in 1965. Since then, the formulation and use of indices has been strongly advocated by agencies responsible for water supply and control of water pollution. The concept of Water Quality Index (WQI) is based on the comparison of the water quality parameters with respective to regulatory standards and gives a single value to the water quality

of a source, which translates the list of constituents and their concentrations present in a sample. It is a mechanism for presenting a cumulatively derived numerical expression defining a certain level of water quality. WQI is a numeric expression used to transform large quantities of water characterization data into a single number and it is a measure of how the water quality variables compare to the water quality guidelines or objectives for a specific site. The WQI has been considered as one criterion for surface water classifications, based on the use of standard parameters for water characterization. It is basically a mathematical means of calculating a single value from multiple test results. The index result represents the level of water quality in a given water basin. WQI assess the appropriateness of the quality of the water for a variety of uses such as habitat for aquatic life, irrigation, recreation, drinking water etc. It is considered more appropriate for disseminating information to general audiences.

Rapidly increasing urbanization and industrialization activities along the banks of the river Tamirabarani and adjoining areas have adversely influenced the quality of the water resource. Tamirabarani is the main receptor of domestic and sewage discharges of both the districts added to these direct discharges from the bank side; industries which consist of untreated or semi-treated effluent and solid wastes also increase the pollution incidence throughout the basin area. Number of scholars have studied the pollution status of the perennial river Tamirabarani which includes; water quality profile; domestic and industrial pollution; toxic impacts; conservation and restoration of catchment areas; pollution load; sewage mixing and coliforms; industrial impacts; urbanization. There is no previous classification study based on the WQI scores on the river Tamirabarani. The recent studies were undertaken to enumerate water quality as well as spatial and temporal variations of the perennial river using mathematical aggregation of water quality index as an indicator of the environmental quality and to classify the river basin based on the International (WHO) and Indian standards.

Pollution in the Tamirabarani river is attributed to the in-stream activities like higher washing, bathing, sand mining, animal cleaning etc., runoff from agricultural fields, livestock discharges and from rural and urban areas, whereas the quality was mainly deteriorated by

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various organic inputs along the river course through canals which consists of domestic wastes, sewage discharges without treatment, open defecation, hospital wastes and dumping of garbage wastes at the bank areas.\textsuperscript{57} It is also clearly indicated that water quality was decreasing during the summer period.

Having come to know about the need for cleaning the river bed of the Thamirabarani river, different clubs functioning at schools and colleges have come forward on several occasions to clean the same. For instance the Government Industrial Institute at Pettai, Tirunelveli has recorded the cleaning activity in their diary of activities during the year 2011-12.\textsuperscript{58} Thamirabarani river belt at Papanasam was cleaned as part of environmental awareness camp on 5 February 2011.\textsuperscript{59} Environmental cleaning programme was conducted in the place in and around Papanasam. Poly bags and other rubbish were removed and the entire area was cleaned to make the place free from pollution. Ninety volunteers assisted the cleaning programme. And food was provided to all the Volunteers.

The following report speaks about the awareness of the police officials and the Tirunelveli city police force in the cleaning of the Thamiraparani river.\textsuperscript{60} Commissioner of Police Karuna Sagar has announced that the Tirunelveli City Police would be involved in cleaning the Tamirabharani, lifeline of the southern districts, on every Saturday. Flagging off the cleaning of thorny bushes and the garbage dumped on the western banks of the perennial river near the Collectorate, Karuna Sagar, said that the river, which was quenching the thirst of several millions of population in the southern districts, had been polluted seriously due to a range of factors. To prevent the sacred river from becoming another Cooum, the public, voluntary organisations and the students should join hands. To spearhead this initiative, the Tirunelveli City Police would involve themselves in cleaning the Tamirabharani on every Saturday, the Commissioner of Police announced. Backed by five earth movers, around 200 policemen and others participated in the cleaning exercise. Parish priest of St. Adaikkalamatha Church, Tirunelveli Town, Rev. Fr. Antony A. Cruz, President of Tamirabharani Conservation Movement Rev. Fr. Joseph Kennedy, Deputy Commissioner of Police, Tirunelveli City, Jayabalan were present. This Tamirabharani Conservation Movement is a spontaneous response

\begin{itemize}
\item \textsuperscript{57} Ibid.
\item \textsuperscript{58} Annual Report 2011-2012, Government Industrial Institute at Pettai, Tirunelveli, dated 22 January 2012.
\item \textsuperscript{59} The Hindu, Thamirabarani River Belt at Papanasam cleaned, dated 6 February 2011.
\item \textsuperscript{60} The Hindu, Police Step in to Conserve Tamirabharani, dated 10 June 2012.
\end{itemize}
of volunteers who are interested in creating a healthy and safe environment of the river bed. It is not a registered body. It has not envisaged creation of funds for the protection of the river. It should be made into a people’s movement with participation of large number of local residents. It is the suggestion of the President that it should be registered with representatives from various local level organizations and government funding should be obtained to protect the environment so that it can come out with concrete plans of action.

Collector G. Prakash banned sand mining activities in Tamirabharani following a representation from Mayor A.L. Subramanian and the ‘gram sabha’ meeting boycott by the residents of Suththamalli village panchayat in protest against the uncontrolled quarrying of sand in their village. After the sand depot was opened recently in a place close to the infiltration wells of Suththamalli, Corporation officials refused to go ahead with the pre-project activities of two drinking water schemes, which were recently announced by the Minister for Local administration, M.K. Stalin. As a Corporation team, led by Mayor Subramanian, tried to inspect the ongoing sand mining near the infiltration wells supplying drinking water to the Corporation, they were threatened not to enter the sand depot. The Mayor, after leaving the spot, said he would discuss the issue with his colleagues and officials before submitting a memorandum to the Collector, “on whose permission the sand depot was opened”. Subramanian along with a team of officials and a couple of councillors, who met Prakash, pointed out that the local body was not in a position to execute two drinking water schemes due to the sand mining near the infiltration wells. The Collector said that sand mining had been terminated at Suththamalli to enable the Corporation to sink new infiltration wells in Tamirabharani for the drinking water schemes for wards nineteen, twenty six and twenty seven at the cost of Rupees sixteen crore and wards eight to ten on an outlay of Rupees four crore. Meanwhile, the gram sabha meeting convened at Suththamalli village panchayat witnessed sloganeering and subsequent boycott by villagers in protest against the sand mining. When the meeting was convened at Suththamalli as part of the May Day celebrations, residents of the civic body expressed their displeasure over the official nod given for opening a sand depot in their hamlet. The villagers said mining of sand with heavy equipments beyond the permissible level in the points close to the infiltration wells would badly affect the quality of water as there was no sand

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bed to naturally purify the ‘white gold’ stagnating around the wells. Hence, the Collector should ban sand mining activities in the areas close to the infiltration wells of Suththamalli and initiate immediate steps to remove the unauthorised road laid across the perennial river to enable the trucks to reach the sand depot. The villagers alleged that no royalty was paid to Suththamalli panchayat to mine the sand and raised slogans against rampant sand mining even as they boycotted the gram sabha meeting.

Later a total ban on sand mining was enforced in Tamirabarani. On 27 September 2010, the Madurai Bench of the Madras High Court today directed the Tamil Nadu government to furnish a detailed report on sand mining in Tamiraparani river, a major source of irrigation in two southern districts. After hearing series of accusations relating to sand mining on a PIL petition, Justices P Jyothimani and S Nagamuthu directed PWD officials to file a report after an inspection and posted the case to 29 September 2010 for further hearing. Observing that there was indiscriminate sand mining in the river in Tirunelveli and Tuticorin districts, the court had on 19 October 2010 stayed mining of sand in the entire length of the river, which irrigates one lakh hectares. The petitioner Vaikunta Raman has alleged large scale illegal mining of sand from the river in the two districts. Veteran CPI leader R Nallakannu appeared in person and pleaded with the judges to save the perennial river. He submitted that at Thozhappan Pannai mining site, the government had permitted to take 54417 units of sand in six months but daily 100-150 lorry loads, carrying up to four units, were mined. The heavy machines used had dug sand up to thirty metres, he claimed. This had badly hit the farming operations. Besides a 150-year-old bridge near the site had become weak and could collapse any time, he contended. The CPI leader also said officials were filing cases against bullock cart men and small tractor owners who mined small quantity of sand for own purpose while those who exploited the resources were freely allowed.

Plastic shopping bags, carrier bags or plastic grocery bags are a type of shopping bag made from various kinds of plastic. In use by consumers worldwide since the 1960s, these bags are sometimes called single-use bags, referring to carrying items from a store to a home. However, reuse for storage or trash is common, and modern plastic shopping bags are increasingly recyclable or biogradable. In recent decades, numerous countries have introduced

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62 The New Indian Express, High Court Declines to Lift Stay on Sand Mining, dated 28 September 2010.
legislation restricting the sale of plastic bags, in a bid to reduce littering and pollution. American and European patent applications relating to the production of plastic shopping bags can be found dating back to the early 1950s, but these refer to composite constructions with handles fixed to the bag in a secondary manufacturing process. The modern lightweight shopping bag is the invention of Swedish engineer Sten Gustaf Thulin. In the early 1960s, Thulin developed a method of forming a simple one-piece bag by folding, welding and die-cutting a flat tube of plastic for the packaging company Cello plast of Norrkoping, Sweden. Thulin's design produced a simple, strong bag with a high load-carrying capacity, and was patented worldwide by Celloplast in 1965. From the mid-1980s onwards, plastic bags became common for carrying daily groceries from the store to vehicles and homes throughout the developed world. As plastic bags increasingly replaced paper bags, and as other plastic materials and products replaced glass, metal, stone, timber and other materials, a packaging materials war erupted, with plastic shopping bags at the center of highly publicized disputes. Although few peer-reviewed studies or government surveys have provided estimates for global plastic bag use, environmental activists estimate that between 500 billion and 1 trillion plastic bags are used each year worldwide.

Traditional plastic bags are usually made from polyethylene, which consists of long chains of ethylene monomers. Ethylene is derived from natural gas and petroleum. The polyethylene used in most plastic shopping bags is either low density or more often high density. Color concentrates and other additives are often used to add tint to the plastic. Plastic shopping bags are commonly manufactured by brown film extrusion. Some modern bags are made of vegetable-based bioplastics, which can decay organically and prevent a build-up of toxic plastic bags in landfills and the natural environment. Bags can also be made from degradable polyethylene film. However, most degradable bags do not readily decompose in a sealed landfill and represent a possible contaminant to plastic recycling operations. Plastic shopping bags could be made from polyactic acid, a biodegradable polymer derived from lactic acid, although this is not widely used. In general, biodegradable plastic bags need to be kept separate from conventional plastic recycling systems. According to Vincent Cobb, a manufacturer of reusable

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64 Ibid.
65 Ibid.
bags, each year millions of discarded plastic shopping bags end up as litter in the environment when improperly disposed of. The same properties that have made plastic bags so commercially successful and ubiquitous—namely their low weight and resistance to degradation—have also contributed to their proliferation in the environment. Due to their durability, plastic bags can take centuries to decompose.

On land, plastic bags are one of the most prevalent types of litter in inhabited areas. Large buildups of plastic bags can clog drainage systems and contribute to flooding, as occurred in Bangladesh in 1988 and 1998 and almost annually in Manila. Littering is often a serious problem in developing countries, where trash collection infrastructure is less developed than in wealthier nations. Plastic bags were found to constitute a significant portion of the floating marine debris in the waters around southern Chile in a study conducted between 2002 and 2005. If washed out to sea, plastic bags can be carried long distances by ocean currents, and can strangle marine animals.

Some large store chains have banned plastic shopping bags in the U.S. and the U.K. Heavy-duty plastic shopping bags are suitable for reuse as reusable shopping bags. Lighter weight bags are often reused as trash bags or to pick up pet feces. All types of plastic shopping bag can be recycled into new bags where effective collection schemes exist. By the mid-2000s, the expansion of recycling infrastructure in the United States yielded a seven percent annual rate of plastic bag recycling. This corresponded to more than 800,000,000 pounds (360,000 tonnes) of bags and plastic film being recycled in 2007 alone. Each ton of recycled plastic bags saves the energy equivalent of eleven barrels of oil, although most bags are produced from natural-gas-derived stock. In light of a 2002 Australian study showing that more than sixty percent of bags are reused as bin liners and for other purposes, the seven percent recycling rate accounts for 17.5 percent of the plastic bags available for recycling. According to the UK’s Environment Agency, seventy six percent of British carrier bags are reused. An estimated ninety percent of individuals reuse some plastic bags, and fifty six percent of individuals reuse all plastic shopping bags.

67 Ibid., pp.123-130.
Plastic bags cause many minor and major issues in geographical terms. The most general issue with plastic bags is the amount of waste produced. Many plastic bags end up on streets and are aesthetically displeasing. When disposed of properly, they take many years to decompose and break down generating large amounts of garbage over long periods of time. If not disposed of properly the bags can pollute waterways, clog sewage systems and have been found in oceans affecting the habitat of animals and marine creatures. Lightweight plastic bags are also blown into trees and other plants and can be mistaken for flowers by animals affecting their diet.

Several countries, regions, and cities have enacted legislation to ban or severely reduce the use of disposable plastic shopping bags. Outright bans have been introduced in some countries, notably China, which banned very thin plastic bags nationwide in 2008. Several other countries impose a tax at the point of sale. In 2002, India banned the production of plastic bags below twenty microns in thickness to prevent plastic bags from clogging of the municipal drainage systems and to prevent the sacred cows of India ingesting plastic bags as they confuse it for food. However, enforcement remains a problem. In Tirunelveli district also the use of plastic bags has been officially banned but it is found that everybody is using plastic bags without any restriction.

Though the Central Government, based on the guidelines of the Supreme Court, had enacted ‘Solid Waste Management Act 2000’ and instructed the State Governments to implement it scrupulously, it was not executed in any of the province. When the Union Government made some amendments in the ‘Recyclable Plastic Products Use and Sale Act 1999’ and formulated new regulations in 2003, the plastic product manufacturers of Tirunelveli district strictly started following the norms.

The Tirunelveli District Collector M. Jayaraman made it clear that non-recyclable and non-degradable plastic products should not be used in marriage halls, teashops, eateries and hotels within the corporation limits from 1 January 2010.\textsuperscript{68} The ban on the non-recyclable and non-degradable plastic products being largely used in the marriage halls, teashops, eateries and hotels comes into effect from the New Year. The super markets, textile showrooms and other business establishments using these products should stop using it from 1 April 2010. The

\textsuperscript{68} \textit{The Hindu}, Ban on Non-recyclable Plastic from January 1, dated 6 December 2009.
Tirunelveli Collector Mr Jayaraman made a call to all to work towards liberating the entire district from this highly dangerous waste, posing serious threat to the environment. He organized a meeting with the representatives of business establishments at the Collectorate. Moreover the Tirunelveli Municipal Corporation recently came forward to send the plastic waste being generated within its jurisdiction to a private cement manufacturing unit to be used as a supplement fuel. Jayaraman announced that these wastes being brought to the collection centres would be purchased at the rate of Rupee one per Kilogram. He instructed the officials and representatives of urban and rural local bodies to conduct a series of awareness programmes on the issue.

The Tirunveli Municipal Corporation council unanimously passed a resolution ratifying the District Collector’s recent order that banned the manufacture, storage, sale and use of non-biodegradable plastic products with the thickness of twenty micron and below this specification. In a bid to make the district plastic-free, Collector M. Jayaraman, in association with the Department of Environment, recently issued orders to send the plastic waste to a cement manufacturing unit located on the outskirts of Tirunelveli to be used as supplement fuel along with the regular fuel, coal, in the manufacture of cement. Since the Municipal Corporation has to give its nod for the ban that has been enforced with the objective of improving the environment, a resolution was placed before the Council meeting held on Wednesday. The resolution was passed unanimously.

The Corporation officials, in a bid to enforce its decision on the plastic ban, confiscated non-recyclable and non-degradable plastic products such as carry bags and cups from the shops in and around Tirunelveli Junction bus stand on Wednesday. As the Corporation Council had decided to impose a ban on the manufacture, sale and use of non-recyclable and non-degradable plastic products such as carry bags and cups in the areas under its jurisdiction from June 1 onwards, the urban local body convened a meeting of the manufacturers and the traders to explain to them about the ban and also to appeal to them to abide by the corporation's resolution. Subsequently, awareness rallies and human-chains were organized in various parts of the city to create awareness among the public. Moreover, pamphlets were also distributed in this connection. Since most of the traders were flouting the corporation's ban on use of non-

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recyclable and non-degradable plastic products, the corporation's Thatchanallur Zone officials swung into action on Wednesday and seized the plastic carry bags and plastic cups from the shops. The officials told them to use either paper cups, paper bags or cloth bags. The officials said that if the shop keepers dared to defy the ban, then fine up to Rs. 3,000 will be imposed on the violators. Meanwhile, the Plastic Products Manufacturers’ Association, which met here on Wednesday, has decided to produce only polythene bags with forty micron and above as a mark of supporting the ban.

The Tirunelveli Chapter of Tamil Nadu and Pondicherry Plastic Manufacturers and Merchants’ Association has appealed to the district administration to reconsider its decision to ban manufacture and sale of non-recyclable and non-degradable plastic products from January 1 as it would totally destroy the livelihood of more than 15,000 families. Speaking to reporters its State president G. Sankaran said that plastic had become a part of the life in the age of consumerism as there was no replacement for this synthetic material in the packaging industry. The affordable cost, durability, easy to manufacture, attractive colour etc. had given the plastic several advantages than any other material in the industry. While the plastic products did not pollute the environment during manufacture and usage, the problem started when they were thrown away on streets by consumers. Though the consumers discard wood, steel, rags, waste paper, sanitary napkins and vegetable waste improperly, the blame for choking drainage and irrigation channels is put on non-recyclable and non-degradable plastic products, as these materials float on water attracting everyone’s attention. Moreover, the State Government was announcing special incentives for plastic product manufacturing industry and efforts were on to establish a plastic raw material manufacturing unit in one of the southern districts. However, the district administration has announced the ban on the non-recyclable and non-degradable plastic products from January 1, which will badly cripple 250-odd small and medium size plastic product manufacturing units, which feed more than 15,000 families directly and indirectly. Instead of banning these products, the administration should consider implementing the ‘Solid Waste Management Act 2000’ and the ‘Recyclable Plastic Products Use and Sale Act 2003, which will certainly provide a viable solution to this problem.

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News papers carry reports of rallies and other activities undertaken to create awareness about the problems in the use of plastics. For instance, National Cadet Corps of various schools took out an anti-plastic awareness rally at Palayamkottai on 16 October 2012. NCC cadets of MDT Hindu College Higher Secondary School, Tirunelveli Junction, St. John’s Higher Secondary School, and St. Ignatius Convent Girls’ Higher Secondary School, participated in the rally carrying placards displaying anti-plastic messages. They appealed to the passersby not to use ‘use and throw’ plastic products that seriously polluted the environment, especially the land. The rally that started from St. John’s Higher Secondary School traversed St. John’s College Road, St. Xavier’s Cathedral, South Bazaar and District Central Library to reach the starting point again.

There is yet another report about the anti plastic cycle rally. NCC cadets of St. John’s College, Palayamkottai, took out an anti-plastic awareness cycle rally. Jointly organized by Tamil Nadu Pollution Control Board and the NCC Unit of St. John’s College, the rally started from the college premises. The cadets distributed pamphlets explaining the adverse effects of plastic products on the environment and groundwater table.

To create awareness among the public on environment conservation, Green Brigade students of various schools here took out a rally in Palayamkottai on 6 June 2010. Holding placards and raising slogans, students from St. Xavier's Higher Secondary School, Christhuraja Higher Secondary School, Child Jesus Higher Secondary School and St. Ignatius Convent Higher Secondary School took out the awareness rally from VOC Grounds, Palayamkottai, which was organised by Isha Foundation. Minister for Environment, Youth Welfare and Sports T.P.M. Maideen Khan flagged off the rally in the presence of Tirunelveli MLA N. Maalairaja.

The ‘World Environment Day’ was celebrated here on Tuesday with cycle rally and human chain, in which Mayor Vijila Sathyananth and others participated. Vijila flagged off the cycle rally at VOC Grounds, Palayamkottai to mark the ‘World Environment Day’. Girl students from various schools here participated in the cycle rally that traversed Rose Mary Matriculation

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72 The Hindu, NCC Cadets Take out Anti-plastic Rally, dated 17 October 2012.
73 The Hindu, Anti-plastic rally, dated 19 December 2009.
74 The Hindu, Environment Conservation Rally, dated 7 June 2010.
75 The Hindu, World Environment Day Celebrated in Tirunelveli, dated 6 June 2012.
Higher Secondary School, St. John's College and South Bazaar before reaching VOC Grounds. The participants distributed pamphlets stressing the need for completely prohibiting the use of non-recyclable plastic products and creating awareness on dengue. On behalf of Tirunelveli Corporation, a human chain was organized on the North High Ground Road in which Ms. Vijila, Deputy Mayor P. Ganesan alias Jeganathan, Commissioner in-charge, T. Mohan and others participated.

On 22 March, 2010, students of some of the schools and colleges in Tirunelveli took out a procession here on Monday in connection with the World Water Day and to create awareness among the public on the need for conserving water sources and using the ‘white gold' judiciously. After being flagged off by Collector M. Jayaraman from VOC Grounds, Palayamkottai, the participants holding placards with the messages on water conservation, reached Jawahar Grounds after traversing South Bazaar and Samathanapuram. Members of Rotary Club of Tinnevelly also conducted a road show and organised a ‘walk for water’ in view of the World Water Day.

It is worth mentioning that Kanyakumari is declared as plastic free district because of the strict enforcement of the law. The Kanyakumari Collector Rajendra Ratnou Solid waste management committees were set up in six tourist places to create awareness among the people to prevent use of plastics and segregation of non-recyclable plastics in their areas. Inaugurating an awareness rally at Kanyakumari on Thursday, he said that five-member committee had been formed in all wards of Nagercoil and Padmanabhapuram municipalities, Kanyakumari, Suchindurum and Thirparappu town panchayats and Vellancode village panchayat in Chitaral. He pointed out that around 1.20 lakh tonnes of solid waste was being generated every day in India. In Kanyakumari district, 1,000 to 1,500 kg of non-recyclable waste was being generated every day. Non-recyclable plastic was first used as a co-fuel in Associated Cement Company at Kymore in Madhya Pradesh in March 2008. Based on the success story, it has been decided to use non-recyclable waste from Tirunelveli and Kanyakumari districts as co-fuel in India Cements at Thazayuthu in Tirunelveli district. Under co-processing of plastic waste in cement kiln programme, it has been decided to collect five tonnes of plastic waste from these districts every

77 The Hindu, Kanyakumari to Become Plastic Free District, dated 1 November 2009.
day and use as a co-fuel in India Cements. The authorities could save one per cent of the total fuel used in the factory by burning non-recyclable waste. This was an eco-friendly fuel. The Assistant Engineer of Tamil Nadu Pollution Control Board, P.Kirubanantha Rajan, said that the solid waste management committees would ensure to convert the district in to plastic free in the next two months. A massive awareness rally would be conducted at five places in Nagercoil on 9 November. The Chief Education Officer has requested to conduct slogan writing competition to stress the need to create awareness on preventing use of non-recyclable plastics in all schools through out the district and the District Collector would distribute prizes to the winners in December. He also sought the co-operation of the people for the successful implementation of the programme with an ultimate aim to declare Kanyakumari as plastic free district. What is most striking is the fact that not only the consumer clubs in schools and colleges but other clubs such as eco clubs and National Cadet Corps join in this venture of preserving the environment from pollution.

In Tirunelveli district milk is an essential food component for both young and old. Dairying, by playing a significant role in strengthening rural economy had brought about socio-economic transformation in Tirunelveli district. Small farmers, marginal farmers and downtrodden constitute majority of milk producers. Dairying has vast potential to generate employment and has helped in poverty alleviation in the rural belt of Tirunelveli district. Dairying provides definite and regular income and employment to millions of rural families throughout the year, especially to women thereby improving the quality of their life. The milk producers in the Tamilnadu State in the Co-operative sector on an average get daily income of Rs.329.00 lakhs collectively (Rs.1,20,085 lakhs annually) for the milk they pour to the dairy societies which indicate the importance of this sector in the rural economy. While India is the largest milk producing country in the world, Tamil Nadu is one of the frontline States in milk production and ranks as number one in the country in the coverage of more than 50 percent of revenue villages under Co-operative ambit. There are 8012 functional primary milk societies with 22.09 lakhs members. During 2008-09, average milk procurement by Dairy Co-operatives was 26.30 lakhs litres per day. On 12 February 2009, a record milk sale of 11.03 lakhs litres was

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79 Ibid., pp.57-59.
achieved in the history of Chennai Metro Dairies.\textsuperscript{80} The market shares of Dairy Co-operatives had increased considerably and Aavin brand holds the major market share in Tamil Nadu. 8012 Milk Producers’ Societies including 1408 Milk Producers Co-operatives exclusively for women and sixty one Primary Milk Consumer Co-operative societies are functioning in Tamil Nadu.

In Tirunelveli Consumers’ requirements and preferences are given due importance by Tamil Nadu Co-operative Milk Producers' Federation Ltd., to supply quality products in the brand name of Aavin. Toll free No.18004253300 has been provided to contact the consumer cell of the Federation at Nandanam functioning round the clock to lodge the grievances and steps are taken to redress the grievances immediately. Milk Parlours functioning for about 16 hours to cater to the needs of the consumers have been opened. To fulfill customers’ needs, special campaigns for sale of monthly cards were organized during the month of April 2008. Pro-biotic Curd was introduced in Chennai market.

Most people in Tirunelveli are resigned to drinking milk diluted with water which not only reduces the nutritious value of the beverage but also poses risk to health. More laboratories are needed to test milk. Tirunelveli being largely a vegetarian society relied on milk rather than meat for its nutritional needs.

A glass (250ml) of unadulterated whole milk gave around 146 kcals; eight grams of fat and protein with 257 mg of calcium.\textsuperscript{81} Calcium and other vitamins and minerals in milk made it an important part of a healthful diet for people of all ages. The benefits of drinking milk included strengthening bones, improved cardiovascular and oral health. Milk was found to be most commonly diluted with water - this not only reduced its nutritional value, but contaminated water caused additional health problems. The other adulterants used were mainly starch, sodium hydroxide (caustic soda), sugar, urea, hydrated lime, sodium carbonate, formalin, and ammonium sulfate.

The Indian Council of Medical Research had reported that milk adulterants had hazardous health effects.\textsuperscript{82} The detergent in milk caused food poisoning and other

\begin{thebibliography}{99}
\bibitem{80} Ibid.
\bibitem{81} Raj Kumar,M., \textit{Milk and Dairy sector in India}, New Delhi, 2004, p.79.
\bibitem{82} \textit{India Today}, UP Seizes Deadly Cocktail Peddled in Delhi as Milk, dated 23 August 2010.
\end{thebibliography}
gastrointestinal complications. Its high alkaline level damaged body tissue and destroyed proteins. Other synthetic components caused impairments, heart problems, cancer or even death. While the immediate effect of drinking milk adulterated with urea, caustic soda and formalin was gastroenteritis, the long-term effects were far more serious. Urea led to vomiting, nausea and gastritis. Urea was particularly harmful for the kidneys, and caustic soda was dangerous for people suffering from hypertension and heart ailments. Formalin caused more severe damage to the body like liver damage. The health impact of drinking milk adulterated with these chemicals was worse for children. Caustic soda harmed the mucosa of the food pipe, especially in kids. The chemical which contained sodium, acted as slow poison for those suffering from hypertension and heart ailments.

Officials of the Directorate of Public Health and Preventive Medicine periodically conduct raids on the milk that was being supplied to consumers. On 22 July 2008 they conducted State-wide raids on branded and unbranded milk following reports of large-scale sale of adulterated milk by unlicensed vendors in Tamil Nadu. The day-long raids were conducted by the officials on milk processing plants of major brands as well as village milk cooperative societies, milk collection centres, chilling centres, retail shops, and milk parlours. The officials also conducted checks at the Ambattur and Madhavaram dairies of Aavin and lifted milk samples. Over 1,500 litres of milk kept in unhygienic containers for sale after the expiry date was destroyed by officials. Action was also taken against unlicensed vendors. In Madurai, 850 litres was destroyed, 200 litres in Ambattur Municipality, 175 litres in Cuddalore and 140 litres in Dindigul as they were found to be either adulterated or stored in unhygienic conditions. In Tirunelveli district, milk being taken to an Aavin chilling centre in an unsealed can was seized. Aavin officials were informed about the seizure. T. Jeyakumar, Joint Director of Public Health, who was also the State Health Authority for Prevention of Food Adulteration, told The Hindu that the department received complaints of adulterated milk being sold from consumer organisations and individuals from across the State.

The teams were asked to examine every institution processing, transporting or selling milk, whether or not there was a suspicion of adulteration. Officials were asked to take action as

per Prevention of Food Adulteration Act, 1954, and Tamil Nadu Public Health Act, 1939. He said urea, tissue paper, animal fat, sodium bicarbonate, soap powder and starch were mixed with milk to increase its density and whiteness. The collected samples were sent to the Directorate’s food analysis laboratories located in Guindy, Thanjavur, Palayamkottai, Salem and Coimbatore. The reports, expected to be ready in about twenty days, would be sent to the local health authority and to the State Authority. The State Authority then sanctioned prosecution against offenders. The maximum punishment was life imprisonment, especially in cases where the adulterant is life-threatening of if it had already caused death or disability. The minimum simple punishment was imprisonment for three months or a fine.

On 17 June 2004, Tirunelveli Corporation officials seized 100 litres of milk of various brands for not bearing the date of manufacturing and batch number on the packets. The officials, led by the City Health Officer, N. Chandramohan, and the Food Inspector, A.R. Sankaralingam, raided several shops in Tirunelveli and Palayamkottai after the Corporation Commissioner, D. Chandrasekaran, received complaints from the public and members of the Consumer Protection Council about the milk packets being sold in the market without manufacturing date and batch number. The milk samples had been sent for analysis and cases would be registered against the sellers and the manufacturers if they were found to be adulterated, the Corporation sources said. The milk packets were later destroyed.84

In order to check the quality of milk being supplied by various companies, including Aavin and other milk vendors to the consumers within the corporation limit, a team of Corporation officials, led by Corporation Health Officer Janaki Ravindran conducted surprise raids in various places on 22 July 2008.85 The team, which started its operation early in the morning, intercepted more than 150 vendors and seized over 1,000 litres of adulterated milk from them after verifying the quality with lactometer. The entire quantity of impure milk was destroyed later. The team then descended on more than forty shops, canteens in some of the hospitals and colleges at Pettai, Tirunelveli Town, Tirunelveli Junction, Vannarpet, New Bus- Stand at Vaeinthaankulam to check the quality of milk being served by them. Three vans carrying milk were intercepted and samples were collected. Four samples – two from leading

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84 The Hindu, Milk Packets Sans Date, Batch Number Seized, dated 18 June 2004.
85 The Hindu, Quality of Milk Checked in Districts, dated 23 July 2008.
brands and the remaining two from the vendors - were collected and sent for analysis. The team also collected Rs. 8,220 from the vendors, who failed to get license from the corporation for selling milk.

On 25 April 2011 Tirunelveli Corporation officials conducted surprise checks at various points on Monday to ascertain the quality of milk and sent one of the suspected samples for analysis. According to Food Inspector A.R. Sankaralingam, quality of milk was checked at KTC Nagar, Maharaja Nagar and Thiyagaraja Nagar and one sample, suspected to be adulterated, was sent for analysis. As seven milk suppliers were found to be not holding valid license, the accreditation fee of Rs. 305 was collected from them to provide the license immediately.

Standardization, a very familiar term, consists of the process of formulating, issuing and implementing standard. The consumer, in the past, was merely an end user or the one who just consumed the product. What the consumers in the past expected from goods and services were very simple. They expected only quality, safety, performance, effectiveness, reliability and interchangeability of the products and services. This is no longer true with the consumers of the twenty first century. Their expectation is not limited to what had been described above. The modern consumers ask for more. They are concerned about the environment, health and safety, ethics as well as management system. The consumers now care for the well being not only of themselves but of the consumers in other countries as well. Therefore, it becomes harder for the manufacturers and service providers to respond to the demand of the modern consumers.

Going through the principle of standardization, one can see the role of the consumers and the benefits they can derive. Consumers must take part in standardization and in all procedure, whether the preparation of standards, or the conformity assessment at both national and international level. This would help to make sure that standards can actually be put into good use, worthy of investment and implementation. In the standardization procedure of all countries, it is already a common practice to build up consumer confidence by involving consumers in the

86 The Hindu, Officials Check Milk Quality, dated 26 April 2011.
process. The issue rests rather on the role fulfillment of the consumers. In some countries however, consumers may not be able to fully take up the role, probably because of the lack of opportunities given to them or their own level of performance. It is therefore the duty of all players in standardization, especially the government to help by giving them support and knowledge. In some cases, the government may need to apply laws, particularly when safety and sanitary matters are the issue.

Standardization becomes important in the control of the shrinking world that knows no borders. Trading has become highly competitive and consumers highly smart. It may be said that, for today as well as for the future, the market belongs to the consumers. This is the time when no countries can stand alone. They all need to trade and exchange with each other. Consumers in one country may have different demand or taste from another. However, on safety and sanitary issues, it must be emphasized that each and everyone in this world deserves the same level of protection. There are some requirements of the global market which also support the new trend for the consumer expectation worldwide. The World Trade Organization (WTO) was established in 1995 to ensure smooth, predictable and free flow of trade. Under WTO, the Agreement on Technical Barriers to Trade (TBT), which is aimed to reduce impediments to trade resulting from the differences of national regulations and standards of the member countries, requires that the international standards should form the basis for the development of national regulations and standards. The TBT Agreement urges the standardizing bodies of WTO members to accept the Code of Good Practice for the Preparation, Adoption and Application of Standards to ensure that regulations and standards do not create unnecessary obstacle to trade. Thus, with the obligations of WTO Agreement, international standards have a significant role to play in the world trade. Standardization has been proved to be a useful means to raise the consumers confidence and to reduce obstacles to trade as aimed by the WTO agreement. However, the role of standardization is more than ensuring quality of goods. Standardization also plays a key role in helping environmental restoration, at the same time preserving natural resource. Furthermore, standardization is flexible and responsive to the rapid technological advancement which allows innovation in product and service development. Above all, standardization can create transparency in the cross-border exchange of goods and services.

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However, standards to be beneficial to all are standards which are developed by consensus- i.e. standards which are agreed to by all parties concerned. One of the parties whose voice is imminent in the standards development process is the consumer. It is believed that standards will never be able to respond to the real need of consumer without their representation in the standards development. With regard to the consumers in Tirunelveli District it can only be said that the process of becoming aware of the need for standardization has begun in a few pockets here and there and there is a long way to go. Lot of concerted and systematic efforts is needed to make consumers aware of the need for standardization.