

## OBSERVATIONS/CONCLUSIONS/RECOMMENDATIONS

Sl.No.	Para No.	Observations/Conclusions/Recommendations
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1.	1.89	<p>As regards the first terms of reference of the Committee, the Committee would like to divide it in two components, the first one is the qualitative (detection and identification) aspect and the second is the quantitative one (estimation and confirmation). So far as qualitative aspect is concerned, the Committee are of the view that CSE findings are correct on the presence of pesticide residues in carbonated water in respect of three samples each of 12 brand products of Pepsico and Coca-cola analyzed by them. CSE tested 36 samples for 16 organochlorine pesticides, 12 organo phosphorus pesticides and 4 synthetic pyethroids, which together constitute a list of 32 most commonly used pesticides in India. CSE detected the gamma isomer (Lindane) in all the 36 samples and three other isomers of hexachlorocyclohexane (commonly called HCH or BHC) in some of the samples at varying levels. DDT and its metabolites were detected in 29 out of 36 samples. Among the organo phosphorus ones, chlorpyrifos was detected in all the 36 samples in varying concentrations and malathion in 35 out of the 36 samples at different levels. None of the four synthetic pyrethroids was found in any of the 36 samples.</p>
2.	1.90	<p>The Committee have however, noted that 19 of the 36 samples came from one bottling unit in Jaipur, 15 from one bottling unit in Hapur Tehsil in Ghaziabad, one from a bottling unit in Jodhpur and one from bottling unit in Mathura.</p>
3.	1.91	<p>CFL-CFTRI (Central Food Laboratory at Central Food Technological Research Institute, Mysore) and CFL, Kolkata (Central Food Laboratory, Kolkata) analyzed independently samples of the same 12 brands collected and sent to them by Directorate General of Health Services. Both laboratories also detected the presence of organochlorine and organophosphorus pesticide residues. The presence of pesticide residues, therefore, is a common scientific finding of all the three laboratories. The Committee would, therefore, conclude that CSE stands corroborated on its finding pesticide residues in the carbonated water. So far as non-detection of malathion by the two laboratories is concerned, the Committee attribute the same to the variations in different batch numbers, manufacturing locations and also the dates of collection and analysis. The absence of malathion in the Mysore and Kolkata analysis have been scientifically explained by CFTRI. GCMS method</p>

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has been applied to confirm the absence of malathion, reinforced by spiking samples and analysis. The Committee also note that the presence of malathion was also reported by the laboratory under the Central Pollution Control Board and Shriram laboratory (Bangalore) and hence out of the five laboratories three had detected malathion in the samples tested by them.

4. 1.92 With regard to the quantitative aspect, the results of CSE on the one hand and CFL-CFTRI and CFL, Kolkata on the other vary widely. The Committee have no hesitation in admitting that as explained by different experts who deposed before the Committee, variations in an analytical research is a well known factor. It can arise due to host of other factors such as differences in (a) the manufacturing locations, (b) date of manufacture, (c) batch number of products, (d) temperature conditions of storage at the stocking place/retail end, (e) the laboratories due to the differences in the analytical techniques/procedures, (f) structural stability and (g) characteristics of the chemical molecule in question etc. In the instant case, there have undoubtedly been variations in the samples which had different batch numbers and also were manufactured at different locations. Though all the three laboratories have employed the same analytical procedure namely US Environmental Protection Agency Method 8081A for organochlorine and 8141A for organophosphorus pesticide, differences have been noticed in the way the procedure was performed as enumerated in Annexure X, with the result that the differences could be significant.
5. 1.93 Moreover, CFL of CFTRI was able to apply GC Mass spectrometry combination for confirmation of its results—the importance of which has been highlighted by a number of experts who appeared before the Committee. Besides, though CSE has reported that the concentration level of pesticide identified in carbonated water was far in excess of the limit laid down in EU directives, however, the Committee are of the view that comparing residue level in any article of food on a percentage basis could have been avoided because EU norms were not adopted at that point of time in our country. The results of CFL, Mysore and CFL, Kolkata however come closer to each other in terms of the number of times the total pesticides level exceeded the EU limit, in the specific batches. For the results to be compared in the quantitative terms, all the three laboratories should have adopted the same protocol in the design, conduct and interpretation of results of the study. Besides, CFL-CFTRI and CFL Kolkata are among the four laboratories established under the Prevention of Food Adulteration Act, 1954 with a mandate to carry out the functions entrusted under the PFA Act, as amended and notified on 30 December, 2002. The broad jurisdiction of these four laboratories has been notified under the PFA Rules, 1955. These are therefore approved and authorized laboratories to conduct food

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analysis including beverages and packaged drinking water. In addition CFTRI under which CFL functions has been accredited by NABL for both chemical and biological testing. CFTRI is also an ISO/9000:2000 certified organization. On the other hand CSE has not cited any accreditation from NABL or certification from ISO (International Standards Organization) to support its analytical competence. This aspect was highlighted by several organizations in their evidence and presentations before the Committee particularly CII, FICCI, ICMR and CPCB. CFL, Kolkata also does not have accreditation from NABL. Accreditation is a formal recognition of the competence of a testing laboratory and gives credence for data acceptance—a fact which has been recognized internationally also.

6. 1.94 The European Union in fact has a long list of guidelines and directives concerning the performance of analytical methods and interpretation of results. (Council Directive 96/23 EC). The importance of adopting confirmatory methods for arriving at the authenticity of the results is equally important, since as per the EU Directive also confirmatory methods for organic residues or contaminants provide information on the chemical structure of the analyte. Consequently, methods based only on chromatographic analysis without the use of spectrometric detection are not suitable on their own for use as confirmatory methods. The fact however remains that such a test was not done by CSE. Moreover, it would have been appropriate if the evaluation of tests was conducted on the same samples by two or more laboratories in accordance with the predetermined conditions. The Committee note that although the pesticide residues were found in all the test reports with quantitative variations, however, while citing EU norms/limits for pesticides, the CSE adopted the USEPA method for analytical purposes. The Committee feel that CSE could have adopted the EU specified methodology to reach a final conclusion of pesticide residues and its follow up.
7. 1.95 Though the results of the Central Pollution Control Board which had conducted an independent testing through their laboratory, come closer to the findings of CFL-CFTRI and CFL, Kolkata, the percentage reported by Shriram laboratory which had tested only one sample each of Coca Cola and Pepsi is quite high. In view of the fact that these laboratories also did not test identical samples and the dates of manufacturing as well as locations are different, the quantitative results reported by them cannot be compared.
8. 1.96 The Committee, however, find that the CSE findings are correct on the presence of pesticide residues in carbonated water strictly in respect of the 36 samples of 12 brand names analyzed by them. The Committee also appreciate the whistle blowing act of CSE in alerting the nation to an issue with major implications to food safety, policy formulation, regulatory framework and human and environmental health.
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9. 2.170 The Committee note with deep concern that the soft drink (Carbonated water/Sweetened Aerated water) industry in India with an annual turnover of Rs. 6000 crores is unregulated. It is exempted from Industrial licensing under the Industries (Development and Regulation) Act, 1951 and gets a one time license to operate from the Ministry of Food Processing Industries under the Fruit Products Order (FPO), 1955 and a no objection certificate from the local government and the State Pollution Control Board.
10. 2.171 What further dismays the Committee is the fact that whatever action has been taken recently by the concerned Ministries is only as a result of the findings of an NGO with respect to the presence of pesticides in the soft drinks rather than any systematic approach based on scientific studies. For instance the Ministry of Health and Family Welfare which is a nodal Ministry for laying down standards of safety for all food items suddenly became alive to the entire issue only after Centre for Science and Environment—NGO based in New Delhi published its report on the presence of pesticides in soft drinks on 5th Aug., 2003. It issued a draft notification No. GSR 685 dated 26.8.2003 prescribing the same standards for soft drinks, fruit juices and other beverages as prescribed for packaged drinking water which were notified again after the Report by the same NGO was made public and under which EU norms for individual and total pesticides have been prescribed, without trying to ascertain as to how under the same notification soft drinks could be clubbed with fruit juices particularly when the MRLs fixed in the case of raw fruits and vegetables happen to be much higher under the existing provisions of the PFA Act, 1954. The Ministry did not take the opinion of the Central Committee on Food Standards (CCFS), which is a statutory Committee under the Act for laying down standards for various food items. This step of the Ministry according to their own admission was in a way unprecedented. The plea taken by the Ministry, therefore, that it had issued the said notification under the provisions contained in the bye-laws and section 23 of the PFA Act because the matter was of public importance, is not at all acceptable to the Committee. The Ministry further submitted that Government approved the draft notification on 14.8.2003 and issued the same on 26.8.2003, in between JPC was also constituted to look into the matter. Though normally the time allowed for inviting objections is 90 days but under the aforementioned draft notification only 30 days were allowed, with the result that the JPC had to intervene and take up the matter with the Government, which agreed to extend the date by 31.12.2003. The Draft notification naturally resulted in raising concerns about the feasibility and practicability of implementing these identical standards for soft drinks and fruit juices, from not only the Chambers of Industry representing the manufacturers of the soft drinks, fruit juices and other ready-to-serve beverages but also from the other Govt. Agencies viz. Ministry of Food Processing Industries, APEDA and CFTRI etc.
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11. 2.172 The Committee therefore, feel that in future the modifications in the standards should not be done in haste but should only be taken after full scientific studies based on proper risk assessment and after holding wide consultations in the CCFS and its sub-committees where the Ministries, experts, scientists, trade and industry, farmers' representatives, consumer organizations as well as the States/UTs are represented. Moreover, keeping in view the vital issue of the health of the population of our country, the revision of standards has to be an ongoing and regular process which should draw the serious attention of all the concerned ministries and particularly of the Ministry of Health and Family Welfare which is at the center-stage for administering food laws and implementation of various health programmes.
12. 2.173 The Committee are of the view that Codex matters are of very serious nature under WTO regime. It is therefore necessary that Indian delegations are not under prepared and should have the required technical qualification and experience to discuss complex technical matters in Codex meetings. The Committee therefore, desire that scientists must head the Codex teams representing India in all Codex meetings and these should not be headed by the bureaucrats from different ministries as is the present practice, since the latter often lack required professional/technical knowledge and do not have expertise and relevant experience. It is also desirable that all position papers on all agenda papers are submitted to the Head of the Govt. Department before the Codex meetings. The technical experts, must submit detailed independent reports to the Government, after attending Codex meetings.
13. 2.174 The Committee note that soft drinks under the PFA Act, "A01.01" are defined as Carbonated Water meaning potable water impregnated with carbon dioxide under pressure and may contain other ingredients such as sugar, liquid glucose, dextrose, invert sugar, fructose, honey, fruit and vegetable extractives and permitted flavouring, colouring matter, preservatives, emulsifying and stabilising agents etc. The major ingredient of soft drinks is water which accounts for 86%-92% of the total soft drink composition. Besides water, soft drinks contains sugar varying from 5 to 10%, carbon dioxide, acids like citric acid, phosphoric acid and malic acid which are added to balance and the concentrate. It is however extremely surprising that though water is the major constituent, so far neither it has been defined properly nor the standards laid down either under PFA, FPO or BIS certification scheme are monitored and enforced effectively. The only stipulation with regard to the water mentioned under FPO in the Second Schedule Part 1 (A) is that the water used in the manufacture shall be potable and if required by the Licensing Officer it shall be got examined chemically and bacteriologically by any recognized laboratory, but the same has not been defined. Further FPO mentions limits of poisonous metals
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(lead, copper, arsenic, tin, Zinc etc.) in fruit products but makes no mention of pesticide residue levels either in the water used in the manufacture of juices or in the beverages. The norms about quality and standard for the potable water that is used by the soft drink manufacturers has not been prescribed. The irony is that only at the time of issuing the license, a certificate from a recognized laboratory is insisted upon. The other condition that is stressed upon is that the premises should be maintained in a hygienic way. Similarly, under the Prevention of Food Adulteration Act, 1954 and Rules 1955, under item A.01.01 of Appendix B, water under the category of carbonated water only mentions that water has to be potable but no quality standards except for the microbiological contaminant standards for the final soft drinks are specified. Like FPO, PFA also does not specify any standards for inorganic and organic chemicals and pesticides for soft drinks.

14. 2.175 Apart from these two mandatory regulations, there is also a voluntary specification of BIS for Carbonated beverages (IS 2346:1992). It specifies the quality of water to be used in the manufacturing of soft drinks which should meet the water quality standard for the processed food industry IS 4251:1967, which in turn specifies standards for bacteriological, physical and chemical tolerances but does not mention pesticides. It is only recently that the Ministry of Health and Family Welfare issued notification No. GSR.554(E) Dated 18.7.2003 prescribing standards of 0.0001mg/litre for individual pesticides and 0.0005 mg/litre for total pesticides for the packaged drinking water which are in conformity with the standards of EU and these norms have already been enforced w.e.f. 1.1.2004. The packaged drinking water has also been brought under the definition of 'Food' in the year 2001. The same norms however, have been prescribed in the notification issued on 26.8.2003 for the soft drinks and other beverages on the plea that water is the main constituent in these. From the depositions made before the Committee by the Coca-Cola, Pepsico, Delhi Jal Board, Indian Bottled Water Manufacturers Association and a few others including the Ministry of Health and Family Welfare, it was made amply clear that it is not difficult to meet the new norms for water since most of the manufacturers have already installed the requisite equipment which is not very costly and they are already meeting the new standards. In fact the Bottled Water Manufacturers Association as well as the Ministry of Health & Family Welfare, had also clarified that the processing charges involved in processing the water are almost negligible. The Committee were also informed by a number of experts that the technology for removing the pesticides from water already exists and these can be removed to any level.
15. 2.176 The Committee are of the view that Carbonated beverages cannot be clubbed with fruit juices, because these are different products with different specifications and the existing law already differentiates

between these products. Moreover, the soft drinks do not form part of the nutritious diet, and though the present per-capita consumption of the soft drinks is not much in our country as compared to other countries like United States or European countries, but the trend towards more consumption is gradually growing in the entire Asian region and in future can expand to a significant extent in India also. The Committee are therefore, of the considered opinion that the water used in manufacturing the soft drinks should be in conformity with the new norms which have already been notified under notification No. GSR 554(E) dated 18.7.2003 so that the consumers are not deprived of the best standards.

16. 2.177 Though it has been stated by some manufacturers of soft drinks that there is a possibility of pesticides entering into the beverages through sugar, the Committee are not inclined to accept the same and desire that this requires to be investigated in detail. The following may be considered while investigating:
- According to the Package of Practices provided by Extension Departments, most of the sugarcane farmers are using only three to five types of pesticides. Most of the pesticides in sugarcane cultivation are used at the time of pre-planting stage, planting stage and first six months of crop growth (February to June). In case there is any insect or disease attack on the crop, two or three types of pesticides are used till harvesting. This time gap between spray of pesticide and sugar extraction only results in degradation of pesticides. According to Current Science Vol. 85, No. 10 25th Nov., 2003, under tropical conditions microbial activities in soil are high, hence degradation of pesticides is also faster. According to sugar technologists, the refining process of sugar from sugarcane juice involves boiling, clarification by lime, sulphur dioxide gas, centrifugation of massecuite to remove molasses and sugar crystal. Sugar produced by crystallization is a process, which itself ensures the purity of the product and reduces impurities like dust, dirt and pesticide residues. According to United States Department of Agriculture's Pesticide Data Program (USDA-PDP) supplemented with information from Food and Drug Administration Centre for Food Safety and Applied Nutrition (FDA/CFSAN) on Organophosphorus Chemicals on Food Crops, "a knowledge of highly refined nature of sugar and syrups supported by the limited residues data mentioned above is the basis of assumption that negligible residues of pesticides would be expected to occur in sugar and syrups".
17. 2.178 This indicates that the number of pesticides present in carbonated water and the levels may not be from the sugar source.
18. 2.179 Carbonated water manufacturers have already mentioned before JPC that they have foolproof process to select and treat the sugar and this treatment is uniform worldwide to ensure good quality sugar syrup for the products. These companies are already purifying the

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sugar syrup with Hot Carbon Treatment Process, which is effective in reducing most of the pesticide residues to below detectable level or below 0.1 ppb levels. The Committee feel that sugar, therefore, can not be the only source of pesticide residues.

19. 2.180 If the pesticides could be controlled to a large extent by adopting new water standards for packaged drinking water and also by subjecting sugar syrup through hot carbon process, the only other ingredients through which there is a chance of pesticides entering is either through the concentrate or other acids or flavours and colours etc. which also constitute about 3-4% of all the ingredients used in the manufacture of the soft drinks. So far as concentrate is concerned, it is not subjected to any quality testing by the Government laboratories under PFA.
20. 2.181 So far as other ingredients are concerned, their percentage is not significant. The Committee therefore opine that in case the standards of water are strictly adhered to and the entry of pesticides could be checked to a large extent by prescribing MRLs for all the pesticides which are used in the case of sugarcane, this problem can be tackled to a large extent. The Committee have observed from the oral/written evidence tendered before them that EU and others have formulated their norms keeping in view their environment, agricultural practices, pesticide usage, etc. The Committee have also noted that EU norms are not based on any toxicological criteria or any realistic basis, but are a surrogate for zero. Moreover, these norms are often used as non-tariff barriers by the European countries against the developing nations, to protect their agriculture, trade and industry. For various agro-based products EU standards for produce within the European Union are much liberal compared to products imported from developing countries—for example, the different MRL standards for cane sugar vs. beet sugar and apple vs. mangoes, etc. The Committee, therefore, recommend that India should formulate its own food standards, which are based on scientific criteria, protects the interest and health of its people and are in keeping with the internationally acceptable norms. The Committee therefore recommend that standards for carbonated beverages, which are best suited for the Indian conditions need to be fixed in the overall perspective of public health. These standards should also be stringent enough. The reason that the other countries have not fixed such limits, should not dissuade our law makers in attempting to do so, particularly when a vulnerable section of our population who are young and constitute a vast national asset are consuming the soft drinks. In Committee's view therefore, it is prudent to seek complete freedom from pesticide residues in sweetened aerated waters. 'Unsafe even if trace' should be the eventual goal.
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21. 2.182 The other area of concern to the Committee is the use of ground water by the soft drink manufacturing companies as well as bottled water manufacturing companies. The Committee find that though these companies are extracting huge amount of ground water but they are not being charged anything for using the water. The only charges that they pay is a petty amount as water cess which is being levied by the State Pollution Control Boards under Water (Prevention & Control of Pollution) Cess Act. States also do not seem to have uniform procedure in this regard as in some States, industries located in the industrial development areas are charged for use of ground water at rates decided by the concerned States and in others there is no such practice. Though the Secretary, Ministry of Water Resources tried to put forth the legal position in this regard before the Committee by stating that no charges can be levied on the use of ground water because legally speaking the land and the resources located under it belong to the owner who is free to use his assets in the manner he likes, but in view of the recent judgement delivered by the Hon'ble High Court of Kerala on 16.12.2003 in the case of Plachimada plant of Coca Cola India, the stand taken by the Secretary loses relevance. The Hon'ble High Court has opined in no uncertain terms that the use of water is free only in case the same is used for the domestic or agricultural use by the owner and since ground water belongs to the public, its commercial use has to be adequately restricted and even in the absence of any law governing ground water, the Panchayat and State are bound to protect ground water from excessive exploitation. The Secretary however had assured the Committee that in future perhaps the water if used for commercial and industrial purpose will have to be charged. The Committee, however, note with utter dismay that the Central Ground Water Authority (CGWA) which has been constituted as an authority on the directions of the Hon'ble Supreme Court of India, taking into consideration the urgent need for regulating the indiscriminate boring and withdrawal of ground water in the country, has so far hardly taken any concrete steps to properly regulate or coordinate effectively the extraction of ground water for industrial purposes. Taking into account that the water level in many parts of the country is getting depleted alarmingly, the Committee desire that this requires to be properly regulated so that at least on account of indiscriminate use of water for commercial purposes the level does not go down further. The Central Ground Water Authority must take immediate steps in this regard and also impress upon the State Governments to do so without further loss of time. The Committee note that water being a State subject, the central legislation cannot be enacted unless the concerned state legislatures pass a resolution and only a few states have enacted laws to regulate over-exploitation of ground water. The Committee desire that the Ministry of Water Resources must pursue the matter vigorously with the States and impress upon them

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the need to regulate water particularly for commercial purposes and also fix the price for water after taking into account the price being charged for water which is being used for domestic purposes.

22. 2.183 In India a variety of pesticides have been used for the last several years both in the agriculture as well as health programmes and these include the environmentally persistent organochlorine compounds such as DDT, BHC, Aldrin, Endosulphan etc. There is already published scientific work by the National Institute of Nutrition, Hyderabad and National Institute of Occupational Health which has established that long term consumption of DDT can cause reproduction disorders in women, cause chronic disorders and also cause different types of cancers. Pesticides such as DDT, Endosulphan and Dieldrin have been assigned oestrogenic potencies. Other than the scientific papers published, there have been flood of reports both in the print and electronic media on the harmful effects of pesticides. The most recent media report is on Endosulphan in cashew plantations in Kasargode district of Kerala, which has caused a variety of health problems in a few villages in the area ranging from cerebral palsy to congenital neurological disorders. Besides the harmful effects of pesticides, it has also been alleged by CSE that the other major ingredients of soft drinks namely, carbon dioxide, certified sweetners like aspartame, saccharine, acesulfame-K etc. and flavouring agents such as caffeine and phosphoric acid are also injurious to health.
23. 2.184 At present however no survey has been carried out to establish the daily intake of various food items including water, soft drinks and other beverages, which can be used for deciding the intake rate of pesticides. There is therefore an urgent need to initiate research studies on total exposure. Surveillance studies to identify high risk area, seasons, foods, high risk population groups etc. to pesticide residues especially organochlorines need to be undertaken in different agro-climatic zones of the country. The data needs to be combined with dietary intake studies. Thus exposure assessment from multiple exposure routes needs to be calculated so as to qualify the aggregate exposure. The Committee therefore suggest that in order to achieve this, a co-ordinated research project should be undertaken by the ICMR involving CSIR, Indian Agricultural Research Institute, National Institute of Occupational Health, National Institute of Nutrition, Vector Control Research Center and various other research centres. It is expected that building up of a vast data base on pesticide residues, its occurrence in food and environment, total intake by humans along with the long term effects of pesticides on the health will go a long way in taking appropriate control measures.
24. 2.185 The Committee find that soft drink companies are selling non-caffeinated soft drinks in every country besides the caffeinated ones
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including the United States and all countries in Europe. In India their production of non-caffeinated soft drinks is very little, as only Limca, Sprite and Mazza are stated to be non-caffeinated. Though the soft drink manufacturers have contended that more non-caffeinated products can be made available in India also provided there is a demand from the consumers, the Committee desire that at least option should be made available to the consumers to choose between the two. It is therefore desirable that all brands should include caffeinated and non-caffeinated drinks. They also desire that there should be no difference in the quality of products being marketed in India as compared to those which are being sold in the USA or other European countries.

25. 2.186 The Committee have been informed that Drink and Carbonated Beverages Sectional Committee FAD 14 which is BIS Technical Committee have decided to revise IS 2346-1992 which are standards for carbonated beverages and make it more broad based. In their report, the Technical Committee has advocated for restricting the use of caffeine in carbonated beverages as has already been done by some countries like Australia and China. They have also desired that the label on the caffeinated beverage must include advisory statements to the effect that the beverage contains caffeine and the same is not recommended for children, pregnant or lactating women and individuals sensitive to caffeine. The Committee desire that this recommendation be implemented based on best practices globally regarding caffeine regulations and its effects on human health. However, the Ministry may consider bringing down the present limit of 200 ppm in carbonated beverages as prescribed under PFA.
26. 2.187 The Committee were informed that due to operation of Coca Cola and Pepsico plants at Plachimada in District Palakkad in Kerala, agricultural operations have badly been affected. It has been alleged that operations of these plants have resulted in causing pollution of water, depletion of ground water, reduced yield in crops, skin disorders and other ailments among the inhabitants. The allegations have mainly been made against the Hindustan Coca Cola Beverage Private Ltd. plant at Plachimada. The High Court of Kerala, where a case was filed by the Perumatti Gram Panchayat against the company has delivered the judgement on 16.12.2003 according to which the extraction of ground water even at the admitted amounts has been declared illegal. An expert Committee has also been appointed by the High Court of Kerala on 20th December, 2003 to study the entire matter and file a report. The Committee were however informed that the application of the company regarding alternative source of water as well as power is pending with the State Government for the last more than four years. The Committee strongly recommend that the entire issue should be resolved and the company should also take into account the strong sentiments of the local people and various environmental

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issues positively. The State government must intervene in this regard and take necessary steps to resolve this serious issue. The Committee have been informed that the Hon'ble Supreme Court of India has constituted recently a Monitoring Committee on Hazardous Waste Management. One of the terms of reference of this Committee serviced by the Ministry of Environment and Forests is to oversee the implementation of hazardous waste management and submit a report to the Court on quarterly basis. It has jurisdiction over the entire country. The Committee suggest that implementation of discharge of effluent sludge in Palakkad and Plachimada be also monitored by the above Monitoring Committee.

27. 2.188 The Committee also find that though huge amount of ground water is being extracted by both the Coca Cola and Pepsico plants at Plachimada and Palakkad respectively, but the efforts made in recharging the water are not commensurate enough. While the Hindustan Coca Cola plant is recharging the water to the extent of 50% of the total water used, the position is far from satisfactory in the case of Pepsico plant which is recharging merely 10% of the total water used. Taking into account the importance of preserving our ground water resources which are vitally important for all sections of society, the Committee strongly recommend that provision in this regard needs to be incorporated in the relevant Act making it mandatory for those who use the water for commercial purposes to recharge ground water to the maximum extent possible.
28. 2.189 The Committee note that more than half of the total plants of Coca Cola India and Pepsico India Holding Private Limited are franchisee owned plants. Out of 52 plants of Coca Cola India, 25 are franchisee owned plants. Pepsico India has 21 Franchisee owned plants out of a total of 38 plants in India. They also note that all bottlers of Coca Cola company whether franchisee or company owned have signed Standard International Bottlers Agreement (SIBA) which is uniform across the world and the quality control system for the company owned and franchisee owned plants is the same. However, Pepsico India has not even signed the agreement and have stated that Franchisee bottlers are liable for their business and the company has no responsibility in respect thereof. Thus even though franchisees bottlers are required to adhere to quality control specification and other standards of parent company, they have no legal liability over their action and inaction.
29. 2.190 The Committee consider these explanations tendered by Pepsico and Coca Cola India unsatisfactory in the context of the findings of Pesticide residues in their brand of soft drinks. The Committee feel that the existence of a bottlers agreement can not absolve the producers and marketers of their responsibility towards ensuring freedom from contamination of the beverages sold to the consumers. Whether its own bottling units or a franchisee bottling units, it is the

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absolute responsibility of the brand owner who selects the bottlers, provides the processing technology quality know-how, the concentrate and finally markets the end products, to ensure that consumers get a product which is in conformity with the prescribed norms of quality and safety. The Committee therefore, recommend that onus for maintaining the quality should lie with the parent companies/brand owners and its compliance should be ensured.

30. 2.191 Fruit juice and other Beverages are covered under Clause 2 (d) of the Fruit Products Order, 1955 as fruit products. As per FPO, fruit juices are defined as unconcentrated liquid product extracted from ripe fruit and may contain portions of the pulp and other cellular matter natural to the fruit. FPO specifies that percentage of fruit juice in the final product should not be less than 85% and total soluble solids in the final product by weight should not be less than 10%.
31. 2.192 Other beverages under FPO mentioned as ready-to-serve fruit beverages including aerated water containing fruit juice or pulps, should have a good flavour and be free from objectionable taints and flavours and show no sign of fermentation. FPO specifies that minimum percentage of fruit juice in the final product i.e. ready-to-serve beverages should be 10% and minimum percentage of total soluble solids in the final product (by weight) should be 10%.
32. 2.193 Carbonated water, Sherbat, Fruit drinks and fruit nectar, flavoured milk and lassi are some of examples of ready-to-serve beverages.
33. 2.194 Like soft drinks, the fruit juice and other beverages manufacturing industries are issued license under FPO, 1955 and their quality is enforced through PFA Act, 1954.
34. 2.195 Besides minimum sanitary and hygienic requirements other conditions required for grant of licence under FPO is that water should be potable. BIS has formulated standards for fruit juice, alcoholic and non-alcoholic beverages which are voluntary in nature.
35. 2.196 As already commented earlier Draft Notification No. GSR 685 dated 26.8.03 issued by the Ministry of Health & Family Welfare as a sequel to the detection of pesticides residues in soft drink samples, besides soft drinks prescribes pesticide limit for fruit juice and other beverages also. The Committee are unable to understand the logic behind clubbing of fruit juice and other beverages with soft drinks.
36. 2.197 Fruit juices are multi-component systems where water is an ingredient but not the main ingredient. Ready-to-serve beverages are mainly derived from agriculture products like fruit, tea, coffee, milk for which MRLs for pesticides prescribed in PFA are many times higher. The technology like reverse osmosis, micro filtration ozonation etc. which are used for purifying water cannot be used for fruit juice, milk and milk products. Further more, water in fruit juices derive essentially
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from the fruits and raw horticulture and plantation produce which identifies with the fruit juice. Under PFA 1954, MRLs of pesticide in fruit and vegetable products, which are the raw material for preparation of fruit juice, vary from 0.1-30.0 mg/kg. The Committee have been informed by the representatives of Ministry of Food Processing Industries, All India Food Processor's Association, that it is not technologically feasible to bring down the present level of pesticide residue in fruit and vegetable to 0.0001 ppm as stipulated in draft notification. The Committee are surprised with the argument advanced by the Ministry of Health and Family Welfare that in the process of washing, peeling, cutting and extraction of juice pesticide residues are removed. The above statement of the Ministry of Health & Family Welfare is completely vague and illogical and not based on any scientific assessment. It does not indicate as up to what level the pesticides are removed by the above process. It seems the Ministry of Health & Family Welfare is merely concerned with laying of standards without scientifically assessing as to whether they can be achieved to the desired levels and enforced properly.

37. 2.198 It seems, it is only after Committee's repetitive query to the Ministry of Health and Family Welfare about the rationale of clubbing fruit juice and other beverages with soft drinks that the wisdom seems to have dawned upon the Ministry of Health & Family Welfare as they have now stated in their latest reply that tea and coffee based drinks are not likely to meet the requirements for pesticide residues for packaged drinking water. They had also asked the Bureau of Indian Standards which is in the process of revising standards (IS2346:1992) for carbonated beverages *vide* their letter No. P.15021/8/2003-PH(Food) dated 31.12.2003 to make it more broad based and not to include products containing fruit and vegetable juices in the revised standards. This letter has however, been withdrawn recently according to Ministry as it was not approved at the appropriate level in the Ministry.
38. 2.199 Secretary, Ministry of Food Processing Industries, representatives of All India Food Processors Association and others have drawn the attention of the Committee towards non-availability of any technology in the world to reduce pesticide residues to the level of 0.0001ppm from the present levels in fruits and vegetables. The representatives of Ministry of Food Processing Industry in the 49th meeting of CCFS held on 26th Sept., 2003, have also raised objections on laying down of standards for processed food and vegetable products under PFA which, as alleged by them, were not even properly reflected in the minutes of the meeting.
39. 2.200 Fruit juice and other ready-to-serve beverages have nutritional value. Even if some technology is developed to clean them from the pesticide residues, the Committee are not sure whether the nutritional value of the raw products used for extracting juices will be ultimately retained in the fruit juice as well.

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40.	2.201	<p>Soft drinks market is dominated by two global giants with access to state-of-the-art technologies and techniques and thus would be expected to show the way to better food safety. Fruit juices and beverages are primarily in the small and medium sectors and are labour intensive. There are millions of fruit and vegetable farmers who provide the raw materials and thus constitute a principal support base to the fruit juices and beverages units. Given the current levels of pesticide residues allowed in raw fruits and vegetables, and given the socio-economic ground realities, the fruit juices and beverages industry needs to be treated differently compared to the carbonated water sector. The same standards cannot apply to them equally. Pesticide residues in food are a phenomena related to agricultural practices as they enter the soil and plant systems and work their way into the food chain. It is not a manufacture related issue and, therefore, it will not be fair or proper to apply the carbonated water and packaged water (pesticide) residue levels to the fruits and vegetable juices and such beverages.</p>
41.	2.202	<p>The Committee, therefore, recommend that standards notified under draft notification for pesticide residue should not be made applicable for fruit juice and other beverages.</p>
42.	2.203	<p>The Committee note that Ministry of Food Processing Industries have sent samples of fruit and vegetable juice and beverages to CFTRI, Mysore for testing the presence of pesticide residue and also asked National Institute of Nutrition, Hyderabad to assess the daily intake and safe limits of these products.</p>
43.	2.204	<p>The Committee desire that on the basis of test results of CFTRI, Mysore and assessment from National Institute of Nutrition, Hyderabad, steps may be taken in consultation with CCFS for fixing residue limits of pesticide residue in fruit juice and beverages based on consumption pattern and safe limits (ADI).</p>
44.	2.205	<p>The Committee also recommend that institutions like ICMR, National Institute of Nutrition, CFTRI etc. should evolve database taking into account our food habits with regard to consumption of processed and non-processed food, level of contaminants, and pesticides in these food products, their conformity with acceptable daily intake, usage of pesticide in agriculture and public health programme and based on their database. Standards for fruit juice and other beverages may be fixed after due deliberations in CCFS. Incidentally, European Directive (97/41/EC) provides for a system to set MRLs in processed products and composite foodstuffs, based on the MRLs fixed for raw agricultural products. Such guidelines may also be consulted.</p>
45.	2.206	<p>The Committee note that Indian consignments of food products being exported from India have many a time been rejected merely on account of defective packaging. Due to high cost of packaging,</p>

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food processing industries, which are mainly in the small scale sector, have not been able to adopt state-of-the art technology. In view of stringent norms for packaging of export products and the inability of our food processing units to adopt state-of-the-art technology for packaging, the Committee recommend that Public Sector Undertakings like Hindustan Machine Tools etc. may be asked to make available cost effective packaging technology for the food products being exported by food processors in small scale units.

46. 2.207 The Committee note that fruit products advisory Committee of the Ministry of Food Processing Industries has proposed amendments to Fruit Products Order, 1955, which, as stated by them are being vetted by the Ministry of Law and Justice. From the details of amendments, the Committee find that they mostly pertain to labeling, microbiological requirements, methods of analysis, sampling defects and contaminants. No mention of pesticide residue in food products and legal definition of potable water has been made in the proposed amendments. In view of the need for setting of pesticide residue limit in fruits, vegetables and other food products on a scientific basis and setting quality standards for potable water, the Committee desire that necessary provisions for defining potable water and setting of pesticide residue limits in fruits, vegetables/juices may also be incorporated in the proposed amendments, in consultation with CCFS.
47. 3.40 The health and environmental problems arising from pesticide use in developing countries have received wide spread recognition. The Food and Agriculture Organisation (FAO) of United Nations has adopted the International Code of Conduct on the Distribution and Use of Pesticides (the FAO Code) to address the issues. The earlier code has been amended to include a section on Prior Informed Consent (PIC) to enable governments to prohibit imports of certain hazardous pesticides. Many of the organochlorine pesticides are included in the Persistent Organic Pollutant (POP) category and are to be phased out gradually.
48. 3.41 Pesticides sustain food production and control vector born diseases. They are vital for crop production and instrumental in continuous increase in food production. The consumption of pesticide in India is one of the lowest in the world. India uses a low amount of 0.5 kg/hectare pesticide compared to 7.0 kg/hectare by USA, 2.5 kg/hectare by Europe, 12 kg/hectare by Japan and 6.6 kg/hectare by Korea. However, despite the low consumption of pesticides, India has more problem of pesticide residues *vis-a-vis* other countries and these have entered into food products and underground water because of non-prescribed use of chemical pesticides, wrong advice and supply of pesticides to farmers by vested interests, non observance of prescribed waiting period, pre-marketing pesticide treatments during storage and transport, use of sub-standard
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pesticides, effluents from pesticide manufacturing units, continued use of persistent pesticides for public health programmes; lack of awareness and lack of aggressive educational programmes for farmers/consumers.

49. 3.42 Ministry of Agriculture regulates the manufacture, sale, import, export and use of pesticides through the 'Insecticide Act, 1968' and the rules framed thereunder. Central Insecticide Board (CIB) constituted under Section 4 of the Act advises Central and State Government on technical matters. The Registration Committee (RC) constituted under Section 5 of the Act approves the use of pesticides and new formulations to tackle the pest problem in various crops. The monitoring of pesticide residues levels in food comes under the purview of Union Ministry of Health and Family Welfare.
50. 3.43 While the Registration Committee (RC) registers pesticides for their usage, the MRLs in food commodities are prescribed by Ministry of Health and Family Welfare under the PFA (Act), 1954 and rules framed thereunder. The maximum residue limit (MRL) for pesticide is the maximum concentration of a residue (expressed in mg per kg) which is legally permitted in food commodities. MRL is established taking into account the toxicological data of the pesticide as well as that of the residues on crops under Good Agricultural Practices (GAP).
51. 3.44 At present 181 pesticides are registered in the country. The Committee, note with dismay that out of 181 pesticides, MRLs for 71 pesticides only have been fixed under the PFA Act, 1954.
52. 3.45 Out of these thirty-two pesticides are still left for which MRL is yet to be fixed. Of these 32 pesticides, registration data for 24 pesticide is stated to have already been submitted by the Registration Committee to the Ministry of Health & Family Welfare. The Committee desire that MRLs for these 24 pesticides may be fixed without any further delay. As regards 8 pesticides, the Committee take serious note that no data is available and therefore CODEX norms are being adopted for the time being. The Committee, therefore, desire that the Registration Committee should call for the data from manufacturers in due course of time and furnish the same to Ministry of Health & Family Welfare so that MRLs for these can also be fixed without further delay.
53. 3.46 The Committee were anguished to note that pesticides were being registered by the Registration Committee even when no MRLs had been fixed. It is only after the CSE came out with their report on presence of certain pesticides in the bottled water in the month of February, 2003, that a decision was taken by the Ministry of Agriculture in the meeting chaired by Secretary, Agriculture in June 2003 to discontinue this practice. The Committee desire that this should now be strictly enforced. In order to rule out any possibility
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of registering the pesticide by way of notification/rule, the Committee recommend that Insecticide Act 1968 should be suitably amended by inserting a suitable clause in this regard.

54. 3.47 The Committee also desire that a review of existing MRLs of the pesticides may be made at regular intervals, in the light of scientific developments and revision of ADI, if any. There is scope to exceed acceptable daily intake (ADI) if high MRLs have been set because ADI is a safety milestone and should not be allowed to be breached and the basic purpose of setting realistic MRLs is to ensure that we remain well within allocated ADI for that pesticide.
55. 3.48 The pesticides which were being used before 1971 *i.e.* prior to coming into force of the Insecticide Act, 1968 and rules 1971 were included as "deemed as registered pesticides". The Committee note that many of the MRLs of the "deemed registered pesticides" have not been fixed so far. The reasons given by the Ministry of Agriculture, for not fixing MRLs for deemed pesticides, that at that time, their usage data was not complete, is not convincing as the Committee feel that even if this data at that time was not complete or available, Registration Committee should have asked the manufacturers of these pesticides to supply the data and fix their MRLs. Though many of the deemed pesticides are already phased out, the Committee desire that MRLs of deemed pesticides which are still in use may be fixed without any further delay.
56. 3.49 The Committee note that waiting period for deemed pesticides are not mentioned on the leaflets due to non-availability of the residue data on the crops in which the products are applied. To overcome the gap, the Registration Committee has constituted an expert group to examine data available with the pesticide industry and the Registration Committee so as to recommend the waiting period. The Committee desire that in the light of recommendations of expert group regarding waiting period, steps may be taken to ensure that the same is invariably mentioned on the leaflets. Farmers should also be educated to observe the prescribed waiting period.
57. 3.50 The Committee note that residues of certain pesticides like DDT, Lindane, which are totally banned for use in Agriculture and permitted for restricted use in health programmes only, have been found in food and vegetable products. Also due to aerial spray of Endosulphan in Kasargod area in Kerala, the inhabitants suffered health problems. The Committee have been informed that use of Endosulphan has since been banned in that area.
58. 3.51 The Committee also find that neither the Ministry of Agriculture nor Ministry of Health & Family Welfare have any data about the usage of banned pesticides in the States since inception. The Committee wonder as to how the Ministry of Agriculture which have made claims before the Committee towards Integrated Pest Control
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Programme are monitoring the very use of pesticides in the absence of such vital data. It does speak volumes about the apathetic attitude of the various functionaries. The Committee however desire that Ministry of Health and Family Welfare in coordination with the Ministry of Agriculture should impress upon the State Governments the imperative need of strictly adhering to the guidelines for usage of DDT, Lindane and other restricted pesticides for health programmes only. The farmers too need to be educated properly in this regard.

59. 3.52 The Committee desire that strict punishment may be provided to the offenders who are found selling banned/restricted pesticides. It has been noted that steps have already been taken by the Ministry of Agriculture by making provision in the Insecticide Act, 1968. The Committee desire that proposal for the amendment to the Act may be expedited so that the farmers in the country get quality pesticides.
60. 3.53 To educate the farmers about ill-effects of the pesticides, need-based use of chemical pesticides and correct application techniques, an integrated pest management programme has also been started by the Government. Integrated Pest Management (IPM) is an eco-friendly approach for pest management that encompasses cultural, mechanical, biological methods and need based use of chemical pesticides with preference to the use of bio-pesticides, bio-control agents and indigenous innovation potential. Ministry of Agriculture has established 26 Central IPM Centres during VIII plan in states and one UT. Six new IPM centres were established in 6 states during X Plan. These centres are supposed to conduct Farmers Field Schools (FFSs); Season Long Training (SLT) in major crops; provide grants for establishment of State Bio-Control Laboratories (SBCLs); undertake awareness campaign through public media and prepare and distribute IPM Packages of Practices.
61. 3.54 The impact of IPM is reported to have presumably led to reduction in consumption of chemical pesticides from 65,462 MT during 1994-95 to 47,020 MT during 2001-02. There is a marginal increase in the trend towards use of bio-pesticides from 219 MT during 1996-97 to 902 MT during 2001-02.
62. 3.55 As integrated pest management programme cannot replace the use of pesticides, the Ministry of Agriculture through ICAR has also started an All-India Coordinated Research Project on Pesticide Residues in 1984-85. This programme is aimed to develop protocols for safe use of pesticides by recommending good agricultural practices, based on multi-locational supervised field trials. It is supposed to advise on proper waiting period and pre-harvest intervals so that the residues in the food commodities remain well within the prescribed safe limits (MRLs). Another major thrust has been on monitoring pesticide residues in agricultural produce through 17 co-operative centres. As this programme is confined to monitoring
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of pesticide residues in raw agricultural produce only its impact has not been fully forthcoming.

63. 3.56 No agency regularly monitors pesticide residues in market samples or undertakes diet basket surveys to assess actual exposure of consumers from pesticide residues in food or water and project health risk, if any. Such activity comes under the purview of Ministry of Health but no comprehensive regular monitoring programme is being conducted in the country. The Committee feel that such monitoring of food commodities requires to be done extensively and on yearly basis.
64. 3.57 The Committee desire that steps to encourage the use of bio-pesticide, production of bio-control agent and promoting organic farming etc. need to be taken more vigorously.
65. 3.58 The Committee find that the presence of pesticide residues in some cases could have an effect on our exports. The major hurdle which an average farmer faces on this account is firstly that there are inadequate testing facilities which are presently available in the country and secondly the charges for the same are exorbitant ranging from Rs. 4000—Rs. 5000 per sample. The necessity and importance of setting up more laboratories have already been highlighted by the Committee elsewhere in the Report. The Committee however once again reiterate that the existing infrastructure of laboratories may further be strengthened and the services may be offered to the farmers at affordable rates.
66. 4.49 Water is an elixir of life and its importance as an item of food needs hardly to be spelt out. It is however, most disconcerting to note that even after fifty years of the enactment of the Prevention of Food Adulteration Act, 1954, the necessity of including it under the definition of 'Food' has not been felt. This is despite the fact that the recommendation to this effect had been made by no less than a Parliamentary Committee on Subordinate Legislation, way back in 1994. The Ministry cited resource constraint as the main cause for non-implementation of this recommendation. The fact remains that almost a decade has elapsed and the Ministry has still not taken any concrete steps in this regard. This therefore, speaks volumes about the concern that the Ministry of Health has in our country towards the health of the people. It is, therefore, not surprising that no legal standards for monitoring the quality of ordinary drinking water have so far been prescribed under the Act. It is only recently that the wisdom seems to have dawned upon the authorities who have at last realized now that there is a big lacuna in the Act which needs to be remedied by way of amendment which they are contemplating to bring forth. The Committee recommend that section 2(v) of the PFA Act which defines 'Food' should be amended without further loss of time.
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67. 4.50 The Committee are equally alarmed to note that though the culture of packaged drinking water came to India in the eighties, the first time that any standards were laid down by the Bureau of Indian standards—a national body for standards, was only in 1998 *i.e.* almost after a decade. During this period no check whatsoever was being exercised on the quality of water being sold by the manufacturers of this water by the authorities. The manufacturers, therefore, took full advantage of such an unregulated regime by charging heavily for the water which, according to the admission of the BIS itself, was being sold after filling the bottles from the municipal water without any processing ! Even in 1998 when the standards were laid down, these were only voluntary in nature. The limits of pesticides prescribed under these were 'below detectible limit' and were not even quantified. It was only in 2001 that the packaged water was brought under the compulsory certification scheme of the BIS and included under the definition of 'Food' *vide* GSR No. 202(E) dated 21 March, 2001. The Committee wonder whether the situation could be more alarming than this.
68. 4.51 It is only recently that when the CSE brought out a report on 4th February, 2003 with respect to the presence of pesticides in some samples of bottled water and highlighted the hazardous effects of such pesticides on human health in their report, that the Technical Committee of BIS thought of convening an urgent meeting and recommended new standards. These standards were ultimately notified by the Ministry of Health and Family Welfare under Notification No. GSR. 554(E) dated 18th July, 2003 and have already been implemented *w.e.f.* 1.1.2004. The limits prescribed for individual pesticides has now been prescribed at 0.0001mg/litre and for total pesticides it is 0.0005 mg/litre.
69. 4.52 The Bureau of Indian Standards, which was given a statutory status by an Act of Parliament, came into existence as a national standards body of India on 1st April 1987 and is mandated to prepare and implement standards, is another body which needs to be strengthened. Though it is supposed to monitor the quality of various food products by getting the same tested, the reality is that it hardly has any laboratories of its own. The Committee note that it has only eight laboratories out of which only one laboratory is equipped to test pesticides. None of these laboratories is equipped with GCMS technology and none of these is accredited by NABL, which is indicative of the type of technical competence which these laboratories have! BIS also has a system of recognizing private laboratories and has nine laboratories under this scheme out of which only six are equipped to test the pesticides. The number of samples drawn by these laboratories are negligible and in no way related to the quantum of production. The Bureau is also saddled with the problem of shortage of technical manpower which in turn has adversely affected its monitoring operations. Non official experts
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are however, not attending the meetings of the Bureau because they do not get allowances. This needs to be looked into. The Committee, also strongly advocate that a thorough review of the working of this organization should be taken up forthwith with a view to removing all the bottlenecks which are hampering its operations and should be headed by an eminent scientist who can infuse dynamism in its working so that it becomes a national standards body in the real sense of the term. The various recommendations made by the Committee which was appointed on 5th August under the Chairmanship of the Additional Secretary, Department of Consumer Affairs, are of important nature which the Committee fully endorse and the same should be implemented fully.

70. 4.53 The Committee also fail to understand as to what is the rationale for BIS to monitor 32 pesticides. Many other pesticides which are otherwise found in the ground water do not appear among these, while those which are unlikely are included. The Committee recommend that this list needs to be reviewed with a view to including all relevant pesticides which are actually found in water sources in the country. There is also an urgent need to establish more state-of-the-art laboratories and suitably increase the number of samples handled by them.
71. 4.54 The Committee find that the drinking water supply is a State subject and, therefore, it is primarily the responsibility of the respective State Governments to provide safe drinking water to the people. The Central Government acts only as a facilitator in this regard. At the Central level there are two agencies which are concerned with the supply of drinking water in the country. It is the Department of Drinking Water Supply under the Ministry of Rural Development in regard to rural areas and Central Public Health and Engineering Organization under the Ministry of Urban Development and Poverty Alleviation for urban areas. Though the norms for quality of water have been laid down by both these agencies, these are only recommendatory in nature. The implementation part vests with the State Governments. Besides these two, there are a host of other agencies which are operating water quality network in the country. These include the Central Ground Water Board/Authority, Central Pollution Control Board, Central Water Commission, Public Health Department, Water Supply Authorities, Industries and Educational Research Institutes. It is, however, noted that all these agencies are working more or less independent of each other and there is hardly any co-ordination among these. The result is that at present there seems to be total confusion as one agency does not know what the other is doing and very often there is a great deal of overlapping. The Committee note that in order to address this problem of multiplicity and with a view to bringing the various agencies on a single interactive platform, an initiative has been taken by the Government by constituting Water Quality Assessment

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Authority on 29th May, 2001. The Committee however, find that though under the notification this Authority has been empowered with a number of functions with regard to the water management including drawing action plans for quality improvement in water bodies and monitoring the implementation of different schemes, so far not much headway has been made as only two meetings of the Authority have been held so far. The Committee have their doubts as to whether the Authority will act as an effective apex body so far as monitoring the quality of water is concerned, since it does not seem to have been empowered to take any legal action against other agencies in case of any type of default. The Committee, therefore, strongly recommend that there should be a single organization at the apex level which should be responsible for enforcement and monitoring the quality standards for the drinking water in the country and the role of all other agencies should be defined clearly so that there is no scope of any ambiguity left so far as their respective functions are concerned. This apex body should be able to effectively exercise control over others so that close co-ordination and uniformity in approach could be achieved.

72. 4.55 Since there is enough scientific data to prove that most of the serious diseases and deaths particularly in rural areas, are caused due to the unsafe drinking water, it is the primary duty of the State to make safe drinking water available to the people. The Committee find that BIS is revising the standards for drinking water and has recommended the same standards for drinking water as are now applicable in the case of packaged drinking water. Though these standards are only voluntary, the Committee wonder as to what is the scientific basis for adopting such standards, particularly when there are hardly any state-of-the-art laboratories of BIS which are presently equipped to test the pesticide residues in water. The Committee are of the considered view that norms for drinking water should be formulated based on scientific studies and should be such which are achievable. It is at the same time very essential that these standards are made legally enforceable. Earnest efforts in this regard must be initiated immediately.
73. 4.56 The Committee take serious note of the fact that in the constitution of the Central Ground Water Board there is no representative of the Central Insecticides Board and likewise in the latter, there is no representative from the Central Ground water Board. In the absence of these, the Committee fail to comprehend as to how the authorities are monitoring the levels of pollution in the water or for that matter even allowing registration of the pesticides. The Committee desire that this lacuna needs to be addressed immediately.
74. 4.57 Finally, the Committee would like to record their displeasure on the weakness of the enforcement system which has resulted in the appearance of spurious brands of packaged drinking water in the market. This menace has to be dealt with on the lines of the sure (none is spared), swift (fast processing of case) and severe (deterrent
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punishment) approach proposed by the Mashelkar Committee to curb the spurious drugs menace in the country. The Prevention of Food Adulteration Act as recommended in the last Chapter of this report should be suitably amended. Surveillance of drinking water quality has to be a continuous exercise.

75. 4.76 The Committee find that there are multiplicity of laws and regulations dealing with the food safety standards in our country, which is evident from the fact that there are about eight ministries which are dealing with the food laws. This has resulted in many standard making bodies like BIS under the BIS Act, CCFS under the PFA Act, The Ministry of Food Processing under the FPO, Ministry of Agriculture under 'AGMARK' etc. The position with regard to the multiplicity of agencies in the case of drinking water has already been highlighted by the Committee in the earlier chapter. What is of deep concern to the Committee is the fact that very often these bodies are working independent of each other and there is hardly any co-ordination among these. Such a situation has obviously resulted in loose administration and enforcement of the various laws, with the result that consumer is the ultimate sufferer. The concern in this respect was rightly expressed by a number of organizations/bodies/experts who deposed before the Committee. The need to converge all the present laws and to have a single regulatory body was also strongly impressed upon by almost each of them.
76. 4.77 The Committee note that the Ministry of Food Processing Industries are already seized with the problem and the entire issue of an integrated food law and a single Authority is being looked into by a Group of Ministers. The Ministry of Food Processing Industries which is serving the Group of Ministers has already drafted a Bill on the Modern Integrated Food Law. The Bill provides a framework for integration of the existing food laws to bring harmony and convergence in their areas of operation. It also provides for the establishment of an independent Food Safety and Standards Authority of India, which shall be responsible for ensuring availability of safe and wholesome food for human consumption by fostering the use of science in the food industry. Though this is a well conceived notion which will help harmonize various existing food laws, the Committee are unhappy to note that so far not much headway has been made in this regard, as the Group has met only twice since it was constituted. They therefore desire that expeditious steps be taken in this regard to finalize the Bill, without further loss of time by giving it top priority, as it concerns public health and food safety in India.
77. 4.78 There are some other related but vital issues which cropped up during the examination of the subject before the Joint Parliamentary Committee and the Committee would not be doing justice if the recommendations relating to these are not made. These are enumerated as under:—
1. The Committee note that at present, neither there are sufficient number of laboratories in the country nor are these adequately

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equipped. There are only four Central Food Laboratories now to cater to the entire country. The Committee therefore, strongly recommend that in a country of the size of India there should be an adequate number of modern, world class food analysis laboratories accessible to aggrieved consumers, at affordable charges. The Committee therefore, urge the Government to constitute a Task Force of experts to assess the present situation and recommend measures to (a) upgrade and strengthen the infrastructure in the existing laboratories under the Central and State Governments, (b) assess the need for new dedicated world-class laboratories, (c) ensure that these laboratories have appropriate recognition/accreditation necessary to be respected in the international fora and in the courts.

The Government of India should go for NABL accreditation of all its laboratories responsible for testing of foods for all the parameters specified under various food laws. At least two laboratories which must have international recognition should be set up so that results of foreign laboratories should be cross checked to ensure the quality of foods. It is also important that Indian testing methodologies should not be inferior in any sense in comparison to CODEX, WHO, ISO or AOAC in order to ensure the safety and credibility of Indian products in the market. The laboratories should also have the facilities to test the antibiotic residues, heavy metal contamination and other toxic contaminants in the food items. Testing manuals should be developed for all the parameters and products that are covered under Indian food laws. In case any variation is required in the existing standardized methodologies, this must be specified in the manual itself. The laboratories should also be well equipped with competent qualified personnel in all the States/UTs.

2. India is fortunate to have substantial reserves of bio-diversity. While vigorous efforts are on by the CSIR and other institutions to explore them for new therapeutic agents, hardly any attention is being given to scouting for new plant protection substances. Farmers can be weaned away from using banned and polluting synthetic pesticides, if better, safer and affordable alternatives are made available to them. The Committee strongly recommend to the Government to establish an initiative in the nature of a five year National Mission to explore the bio-diversity sources of India through a nationwide R & D network to search for eco-friendly pesticides. The CSIR can be an appropriate agency to mount and lead such a mission, acting in co-operation with the Ministry of Agriculture, Ministry of Science & Technology, Ministry of Environment & Forests and their agencies, State Government institutions, relevant academic institutions and private business houses.

3. In order to avoid panic reactions to revelations of the recent type, the Committee suggest that a national conference may be held annually to discuss results of annual formal and non-formal surveys . A status report/white paper on food standards and safety should be made available to the public every year. Government may identify a suitable agency which could be entrusted with this task, acting in co-operation with all stakeholders, both government and non-government.
4. There must be a code of conduct for disseminating the results of an investigation either from a NGO organised or from a laboratory or anyone else. Today for example if a survey is done or a study conducted, or an analysis with respect to spurious food item is suddenly taken up, there is no code of conduct for reporting it in an orderly fashion. In order to avoid such a situation, the Committee recommend that the results must be validated so as to ensure transparency.
5. The code of conduct should include a process of self-regulation in the industry in terms of their in-house analysis at regular intervals in accordance with the standardized parameters. This may include in the current context pesticides, heavy metals, chemical toxicants, pathogens and synthetic additives. The manufacturers have to be absolutely responsible for maintaining standards. Any deviation from the set standards for beverages, fruit juices and other related products must be dealt with strictly after verifying the records, with an immediate disclosure of the Processing Centre. It must also be ensured at the same time that the verification is fool-proof, unambiguous and transparent.
6. A mandatory Food Recall System should be established and companies should be made accountable for selling sub-standard and harmful products in the market which must be destroyed in the presence of authorities. Withdrawal notices must be issued in media to inform citizens so that they should be made aware about the unsafe products. In order to check adulteration in the food items, the Government should not hesitate in taking help of NGOs. The Government must also improve surveillance and monitoring the quality of the food.
7. Building confidence measures are equally important for the consumer. It is therefore essential that the product must have a logo on it displaying that the product is safe. It is this logo that the consumer, whether literate or illiterate, must look for on the product. Consumers need not be aware of the AGMARK, PFA, BIS etc. Such a logo must be obligatory on all food packages either processed or fresh as a guarantee from the supplier or the manufacturers. This should be applied to the imported food products as well. In case it is not there, the local distributor or supplier must put the same and take the responsibility. In case these requirements are flouted by putting a wrong information regarding the safety of the product, the concerned manufacturing unit should be closed immediately

and the sale of that product should be banned. If necessary provisions in the relevant Act need to be incorporated to this effect, the same must be done without further loss of time. It is also important that the information regarding the Batch Number, Date of Manufacture, Expiry Date etc. must be indicated on the label and not on the container as is the present practice, as the container can be thrown after use, whereas the label can be preserved and digitized. In the case of proprietary food products, the detailed label declaration about the ingredients including the nutritional information should be made mandatory, so that sensitive consumer groups which may include allergic people, diabetic, children, etc. can take their own decision for consumption of the food items.

8. The Committee also desire that there should be 50% representation from the Central and State levels in various R&D policy making bodies and the remaining 50% should be equally divided among the representatives of the farmers' cooperatives, consumer bodies, industrial bodies particularly small scale industries as they are the main stakeholders.
9. The Committee have observed that there is no proper enforcement mechanism for regulating food laws. The number of samples drawn as well as the Inspectors are almost negligible as it has been reported that on an average in each State 10 to 20 samples are drawn per month and the number of Inspectors likewise on an average ranges between 20 to 50 per State. This needs to be suitably augmented. The information with regard to the samples lifted by the Inspectors along with the results must be available in each State on the website on monthly basis.
10. Clause 43 of PFA stipulates that there shall be no advertisement of any food which is misleading or contravening the provisions of PFA Act, 1955 or the rules made thereunder. Despite the detection of pesticides in the samples of soft drinks by CSE, CFTRI and CFL, Kolkata, Cola Companies have been giving wide publicity in the electronic media stating that their products do not contain any pesticides and are fully safe for human consumption. The Committee feel that claims made by the Cola companies in their advertisement tantamount to misleading the public as their products do contain pesticides which have ill effect on human health in the long run.

78. 4.79

The Ministry of Health & Family Welfare have expressed their inability to restrict the advertisement by Cola companies on the plea that MRL for pesticides have not been prescribed for carbonated beverages under PFA Rules, 1955 and in the absence of which there is no provision to restrict the advertisement from these products. The Committee feel that it is the responsibility of the Ministry of Health to ensure that no misinformation is spread by any company with regard to their products. The Ministry of Health & Family Welfare should have invoked the relevant provisions of the Prevention of Food Adulteration Act, 1954, in this regard.