CHAPTER IV

OTHER ISSUES

DRINKING WATER

4.1 Water is an elixir of life. In our country the following agencies are directly or indirectly connected with regulating, monitoring and laying down standards of water:

1. Ministry of Health and Family Welfare
2. Bureau of Indian Standards under the Ministry of Food and Consumer Affairs and
3. Ministry of Rural Development
4. Ministry of Urban Development
5. Ministry of Environment and Forests
6. Ministry of Water Resources
7. Local Bodies

4.2 The Ministry of Health and Family Welfare administers the Food Adulteration Act, 1954 and "Food" under Clause 2(v) of the Act reads as under:—

"Food" means any article used as food or drink for human consumption other than drugs and water and includes:

(a) any article which ordinarily enters into, or is used in the composition or preparation of, human food,

(b) any flavouring matter or condiments, and

(c) any other article which the Central Government may having regard to its use, nature, substance or quality, declare by notification in the official Gazette, as food for the purposes of the Act."

4.3 Surprisingly the definition does not include drinking water under the category of food. Only packaged water has been declared as food *vide* notification GSR 202(E) dated 21 March, 2001.

4.4 Indian Council of Medical Research (ICMR) informed the Committee that there is wide spread contamination of water and food items in India which is reflected in high levels of pesticides in blood, fat and human secretions, and therefore, in order to address the problem of pesticide residues in soft drinks, fruit juice and other beverages, where water is the main constituent, it is highly imperative to have a check over the quality of water which goes into their making. Thus, if we could standardize the quality of water which will go into the making of these drinks, it will address the problem to a considerable extent.

4.5 Though under the EU norms the same standards apply to all kinds of water, and there is no differentiation between packaged or drinking water, the Secretary Health during the course of evidence stated:

> "The EU norms for water applies to all kinds of water including the water that comes from tap for drinking. Whereas, our norms which we have notified and which would take effect from 1st January, apply to bottled drinking water, it is not for other water. It is because under the PFA Act, water is still not covered as an item under food category. In fact, that is a very big lacuna in the Act."

4.6 It was pointed out by the Committee as to why water has not so far been included under the definition of food when way back in 1994 the Committee on Subordinate Legislation has specifically made a recommendation in this regard, the Secretary stated:

> "Sir, you are right. There was a Committee on Subordinate Legislation of the Parliament which at a point of time recommended that even for normal drinking water, there has to be norms. But somehow or the other, water has not been added to the definition of food in PFA Act all along. I would like to submit to the Committee that now the Ministry of Health is coming forward with an amendment to the PFA Act proposing that water should be added to the definition of food. Once it is added there would be a need for a group of experts who have to sit and look at the norms that need to be fixed for the normal drinking water. As you rightly said that average citizens of the country are entitled to much safer drinking water, whatever be the source of supply and it is just not the bottled drinking water."

4.7 The Bureau of Indian Standards (BIS) an autonomous body under the administrative control of the Department of Consumer Affairs, is the national standards body of the country, which was earlier called Indian Standards Institution (ISI) and came into existence on 6th Jan, 1947 as a registered society. This set up was provided a statutory status through an Act of Parliament dated 26 Nov., 1986 and BIS came into existence as national standards body of India on 1st April, 1987. The main functions of BIS include preparation and implementation of standards, operation of certification schemes both for products and systems, organization and management of testing laboratories, creating consumer awareness and maintaining close liaison with international standard bodies. Presently more than 17000 Indian standards are in force. Out of these 12000 are voluntary and about 4500 are mandatory. There are about 118 items which are under the compulsory certification scheme of BIS.

4.8 The Bureau of Indian Standards have been laying down the standards from time to time for the natural mineral water, drinking water as well as packaged drinking water. The standards for the natural mineral water were prescribed for the first time in the year 1992 and these were revised subsequently in the year 1998. The drinking water standards were laid down for the first time in 1983 and these were revised and updated in 1991(IS 10500) and presently these standards are again under revision. The standards for packaged drinking water (IS 14543) were first formulated in January 1998, according to which the standards as far as pesticides are concerned were specified as 'below detectable level'. Based on the decision of the Drinks & Carbonated Beverages Sectional Committee, FAD 14, second amendment was issued in September, 2000 incorporating new packaging materials, new techniques etc. Thereafter, Gazette Notification, GSR No. 760(E) dated 29 September, 2000 was issued by the Ministry of Health & Family Welfare incorporating packaged drinking water standards under the PFA Rules and making the BIS certification mark on the product compulsory *w.e.f.* 29 March, 2001. However recently after the

report on the presence of pesticides was brought out by the Centre for Science and Environment—a non-governmental organisation—the standards were revised to align the standards with the Gazette notification issued on 18 July, 2003. The standards for individual pesticides have now been prescribed at 0.0001mg/litre and for total pesticides at 0.0005mg/litre. The entire chronology with respect to the standards which were prescribed by BIS are at Annexure-1.

4.9 When the Committee wanted to know as to why the EU norms were adopted, the Secretary, Ministry of Health and Family Welfare stated:

> "...Once the CSE report came out, there was a huge public outcry about the safety of bottled drinking water. Then the Central Committee of Food Standards which is a technical Committee under the PFA Act looked at the norms available in India and they found that they are inadequate. They found that these norms should be improved. The Committee had recommended to the Government that we should have better norms. So these norms have been notified."

4.10 The Committee were informed that the Committee was headed by the Director General, Health Services. While elucidating further, the Director General replied:

> "When this report came, then our standards were only below detectable limits and the method of testing detectable limits was by the Packed Column method. As you know, detection method of pesticides in water is by TLC and GLC methods. TLC method is available everywhere but the GLC method is available at some places. To be very specific, this Committee was a large Committee representing States and Central Food Laboratories and other people. The issue before the Committee was that we should have the best standards available in the whole world. We are concentrating on the issue that our people should have the best and the European norms are very high and people are paying for this bottled water. That was at the back of the mind of the experts. That is what was recommended."

4.11 On being asked whether the other norms were also considered or not, BIS stated in writing that the Technical Committee had met on 7 & 8 February, 2003 and had taken into consideration the limits laid down by WHO, CODEX, USFDA, and EU.

4.12 While further explaining the reasons for adopting EU standards, the Secretary Health informed the Committee that there are about 49 pesticides for which norms are prescribed by various countries in the world. The WHO norm for pesticides covers only 24 pesticides out of these 49 pesticides and their norms do not cover those pesticides which are found underground. So far as USEPA is concerned, the norms are prescribed for only 21 out of the 49 pesticides, whereas, the EU norms set a limit for all these pesticides. This was stated to be one of the very important factors which weighed at that time.

4.13 When asked by the Committee as to when the culture of packaged water had entered the country, the representative of BIS informed that the culture of packaged water had come to India in the eighties and in 1992 a standard was made, for natural mineral water. However, the first specification in the case of packaged drinking water was made in the year 1998. The Committee were also informed that the specification for carbonated water was specified in 1963 and the same was revised in 1973, and again in 1992.

4.14 The President of the Association of Indian Bottled Water Manufacturers informed the Committee that the manufacturers have been bottling water since 1967 and the ground water that is being used as a raw material is not priced.

4.15 The Committee were also informed that BIS is testing 32 pesticides. BIS has only 8 laboratories which are owned by them for testing various products including food items. These are:

(i) Central Laboratory, Sahibabad
(ii) Western Regional Laboratory, Mumbai
(iii) Eastern Regional Laboratory, Kolkata
(iv) Southern Regional Laboratory, Chennai
(v) Bangalore Branch Office, Bangalore.
(vi) Patna Branch Office, Patna
(vii) Guwahati Branch Office, Guwahati
(viii) Northern regional laboratory, Mohali

4.16 Facilities for packaged drinking water are available only in the Central Laboratory, Sahibabad and testing facilities for Western Regional Laboratory, Mumbai are under trial. None of the BIS laboratories are equipped with GCMS technique. Besides, BIS also utilizes the services of 9 outside private laboratories under BIS Lab Recognition Scheme for testing of various food products. Out of these 9 laboratories, only 6 laboratories can test pesticide residues upto 0.0001 mg/litre precision level. BIS further stated in writing that with the present infrastructure, 8-10 samples of pesticide residues can be tested per month in the Central Laboratory. However, testing facilities have been planned for augmentation through modernization. Presently, testing of pesticide residues requirement is applicable in sample of packaged drinking water only, amongst the samples of food and food additives received in the laboratories. The BIS also stated in writing that there is shortage of Scientific Cadre Officers, and it hampers the smooth and efficient discharge of the various activities.

4.17 The Committee were also informed by the representatives of the Ministry of Food and Consumer Affairs that when the print and electronic media had highlighted some shortcomings in the quality of the bottled water on 5th February, 2003 mentioning that residues of extremely harmful pesticides were found in popular brands of bottled water sold in Delhi and Mumbai, the Department of Consumer Affairs constituted a Committee on the same day under the Additional Secretary of the Ministry to look into the entire issue. In fact the reports in the media were based on an independent study conducted by Centre for Science and Environment (CSE), an NGO. The Committee was asked to address the issues relating to adequacy of prescribed standards for packaged drinking water and natural mineral water and their enforcement. It was also required to ascertain the effectiveness of testing facilities available with BIS. The Committee which made an in-depth examination of the working of BIS came out with the following main recommendations:—

(i) BIS should overhaul its procedures. There is a need to have greater transparency and in the light of this, draft standards, list of licensees be put on web-site and updated at monthly intervals. The possibility of placing test reports of samples drawn from factory or market on the web may also be considered.

(ii) Efforts be made to prescribe standards for the normal drinking water by making it pollution free.

(iii) The provisions of product certification in BIS Act, 1986 and BIS (Certification) Regulations 1988 are basically the same as they were under ISI (Certification Marks) Act, 1952. It needs to be considered whether those provisions, which were more appropriate for a voluntary certification system are adequate to provide safety for certifying the quality of every single/container of packaged water and ensure the safety of public health. This needs to be examined by a technical Committee.

(iv) There is also a need to review permissible limits of contaminants in other food products under PFA.

(v) Water re-charging system should be made mandatory for the industry and before renewal of license, a NOC from the concerned monitoring agencies should be obtained.

(vi) Some guidelines regarding selection of sites for installation of packaged drinking water industry are also required to ensure their location in pollution free areas.

(vii) Disposal of wastes from the water purification plants also need to be monitored.

(viii) BIS should recognize only those labs, which have NABL Accreditation.

(ix) In the European directives, it is found that frequency of sampling and analysis for water varies according to the capacity of production. Based on this, as well as comments from several scientific bodies, BIS may consider the desirability of linking the frequency of testing with the production.

(x) BIS does not pay anything towards TA/DA for participation in meetings of the Technical Committee, therefore at times it is alleged that vested interests, particularly of the big industrial houses, influence the standard formulation activity of BIS. There is, therefore, an urgent need to get over this problem.

4.18 The Committee were informed that drinking water supply is a State subject and it is, therefore, the responsibility of the State governments to provide safe drinking water to the population by abstracting surface/ground water, treating and disinfecting before supply to the community. The Union Government acts only as a facilitator in this regard. Overall water policy of the country is formulated by the Ministry of Water Resources. At Central level there are two agencies which are concerned with the supply of drinking water in the country.

4.19 In regard to rural areas, it is the Department of Drinking Water Supply under the Ministry of Rural Development and for urban areas, it is Central Public Health and Environmental Engineering Organisation (CPHEEO) under the Ministry of Urban Development & Poverty Alleviation.

DEPARTMENT OF DRINKING WATER SUPPLY

4.20 The Ministry of Rural Development (Deptt. of Drinking Water Supply) has stated in a note submitted to the Committee that the planning, design and implementation of rural water supply scheme are taken up by the States themselves. However, the Union Government extend policy, technological and financial support to the State Governments. The State Governments are to implement the rural water supply programmes as per the norms and standards for quality and quantity prescribed by the Deptt. of Drinking Water Supply. Various activities undertaken at the State/GOI level for ensuring supply of drinking water in the rural areas are coordinated by the Deptt. of Drinking Water Supply. The quality norms prescribed by the Deptt. of Drinking Water Supply/CPHEEO/BIS are to be adopted in the implementation of rural water supply schemes.

CENTRAL PUBLIC HEALTH AND ENVIRONMENTAL ENGINEERING ORGANISATION

4.21 Central Public Health and Environmental Engineering Organisation (CPHEEO), the technical wing of the Ministry of Urban Development & Poverty Alleviation deals with drinking water supply (supplied through piped network) for urban areas only. CPHEEO acts as a facilitator and helps the State Water Supply Agencies/Urban Local Bodies by way of formulating and providing technical guidelines for planning, designing, execution and operation and maintenance of water supply and sanitation projects. To provide guidance in this regard, CPHEEO brought out a manual on "Water Supply and Treatment". Third Edition—revised and updated, May, 1999. CPHEEO informed the Committee that the guideline values for physical, chemical and bacteriological parameters of drinking water that have been indicated in the manual are only recommendatory and not mandatory on the part of the State Water Supply Departments/Water Utilities to follow since water is a State subject. CPHEEO has no statutory power to set/fix up standards for drinking water.

4.22 In regard to CPHEEO guidelines, the Secretary (Ministry of Urban Development) stated during the evidence that these guidelines which include qualitative norms for supply of tap water are based on a combination of WHO and BIS standards. When asked about their views on the acceptability of EU guidelines for drinking water, a representative of the Ministry of Urban Development stated:

> "Acceptance of the EU guidelines may be slightly stricter. In our condition, it may not be possible to adopt those things. However, the WHO guidelines are universally accepted. They are in vogue in many countries. We also follow them. In certain cases, our norms are stricter than the BIS specifications. So, that way, as far as drinking water is concerned, the guidelines that are given are safe to be adopted and used".

4.23 Apart from above mentioned agencies, there are other agencies involved in monitoring of water quality in the country. They are Central Ground Water Board Central Pollution Control Board and Water Quality Assessment Authority.

CENTRAL GROUND WATER BOARD

4.24 The Central Ground Water Board is a scientific organization, functioning under the Ministry of Water Resources, with a mandate to develop and disseminate technologies and monitor and implement national policies for the scientific and sustainable development and management of India's Ground Water Resources including their exploration, assessment, conservation, augmentation, protection from pollution and distribution, based on principles of economic and ecological efficiency and equity.

4.25 Central Ground Water Board have some basic parameters which they monitor from time to time. They are pH, Electrical conductivity, Carbonate, Bicarbonate, Chloride, Sulphate, Nitrate, Fluoride, Phosphate, Calcium, Magnesium, Sodium, Potassium, Total Hardness, Silica, Iron, Boron and total dissolved solids. CGWB further informed the Committee that it also undertakes special studies on the above mentioned parameters and also parameters like Aluminium, Arsenic, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Selenium, Strontium and Zinc.

4.26 During the evidence, the Secretary, Ministry of Water Resources further stated in regard to functions of CGWB as follows:

> "Then, we do studies when we are called upon to make studies either through some complaint or by some State Governments or by some legal authority. We did a study in collaboration with the Central Pollution Control Board in April, 1999 for the National Capital Territory of Delhi and we found presence of pesticides in 15 out of 127 samples".

4.27 In this study Aldrin in 3 (max 0.078 mg/l) and Dieldrin in 12 (0.091 mg/l) samples were above WHO guidelines (0.03 mg/l). The Secretary further stated:

> "We also did a Special Study for Pesticides in Guntur District in April, 2003 in area of 640 sq. km. the principal crops there were cotton, chilly and paddy. The shallow water table there is 2-5 metres and the pesticide consumption is high. In 5 samples, the total pesticide residue which is Organochlorines was very high as compared to the allowable content of 0.001 mg as per "BIS standards". The Secretary further informed the Committee that they conducted a study and found that movement of pesticide to ground water would be there to a greater degree in cases of shallow water tables. If the water table is shallow, then pesticide would travel into the water table and contaminate it. If it is very deep, then it is unlikely to contaminate water".

4.28 CGWB has set up a network of 15000 hydrograph stations for monitoring ground water quality throughout the country. When asked about the functions of these stations, the Secretary (Water Resources) said, "These 15000 stations monitor quality, and they also monitor levels of ground water every year. The idea is that they are fairly representative in the whole country to see where the levels of ground water are going so that certainly we do not find ourselves in a situation where the ground water has gone to non-sustainable level. If there are danger signals, we should bring it to the notice of the State Government, ask them to take remedial steps. We have done that in many cases".

4.29 CGWB has made the following suggestions to check the pollution of ground water :

1. Mass awareness and education programmes would be very useful to protect ground water from pollution, particularly in areas, where recharge of ground water has been taken up and also in areas where drinking water is being supplied from wells.

2. Close coordination of various Central and State Government agencies to strengthen the Monitoring programme of ground water protection.

3. Upgradation of technology to identify potential areas where ground water can get polluted so as to ensure corrective measures in time.

4. Water quality standards should be revised as per needs and implemented strictly to ensure unpolluted ground water. The standards should be based on national priorities and technical capabilities.

5. R&D activities will have to be stepped up to develop techniques for protection and conservation of water resources. R&D programme will have to be expanded to carry out studies on pollution due to agricultural, industrial and municipal wastes.

6. The use of certain toxic materials may be prohibited or restricted. The regulations may include controls on use of chemical fertilizers and pesticides, location of landfills and sewage treatment plants, housing density and ban on deforestation.

4.30 CGWB made the following recommendations to ensure potable quality of ground water for the use by citizens:

(a) In order to ensure potable quality of ground water, there is a need for integrated approach involving public health professionals, water providers, natural resource managers, industry and the public.

(b) The polluters have to be identified and must be forced to pay for pollution.

(c) A risk-benefit approach has to be adopted in developing safety standards. Every improvement in quality increases cost. A balance has to be maintained between cost and risk.

(d) Efforts should be made to conserve water, recycling of wastewater and supplementing freshwater by desalination of sea water in coastal regions.

(e) To prevent pollution it is necessary to treat human wastes and industrial effluents before they are discharged in natural water resources. Run offs from agriculture also need to be managed.

(f) WHO guidelines may be adopted and implemented to provide safe water to all people and thereby eliminate water related diseases.

CENTRAL POLLUTION CONTROL BOARD

4.31 Central Pollution Control Board maintains 784 Water Quality Monitoring Stations mainly on the major river courses. Out of the 784 monitoring stations, 181 are underground quality stations. In this regard the Chairman, CPCB stated during the evidence that the monitoring of pesticides and residues in these underground monitoring stations are not done on a regular basis but it is done from time to time *i.e.* once in three years. This was further clarified by the Secretary (Environment & Forests) during the evidence as follows:

> "On the question of primary mandate, the CPCB has an on-going programme of testing water source samples across the country. The Chairman of CPCB has mentioned a number of stations from which it has collected samples both with respect to surface water and ground water. The reason why this is not done on a daily or a weekly basis has to do with the fact that testing of water for pesticide residue is a very time consuming and expensive process. And also, the ground water quality does not vary very much over a period of time. So, if we test it for one year, then we can be certain that, unless environment conditions change very significantly, the test results would be valid for a period of three to five years. That is why, that is not done at more frequent intervals. But there is an on-going process with respect to the monitoring of surface and ground water quality throughout the country. There are a very large number of stations from where samples are collected."

4.32 Summary of the findings of CPCB regarding pesticide pollution in ground water is at Annexure-II.

WATER QUALITY ASSESSMENT AUTHORITY

4.33 The Secretary, Ministry of Environment and Forests during his deposition before the Committee had stated, "Sir, water quality in the country is being monitored by several different agencies, namely, Central Water Commission, State Government agencies, State Ground Water Board, State Pollution Control Board, Central Ground Water Board, Central Pollution Control Board and National River Conservation Directorate.... The multiplicity of agencies involved in water quality management in the country, has led to lack of uniformity in monitoring parameters, frequency of monitoring, locational norms for sampling stations, standardisation of analytical and sampling protocols, calibration of instruments, training of technical staff, and setting up databases. In this situation, it is difficult to generate and analyse data for formulation of policies and

schemes to address issues of water quality. To remedy this problem, the Ministry of Environment & Forests constituted the Water Quality Assessment Authority with effect from 29th May, 2001. The Authority is empowered to exercise powers under Section 5 of the Environment (Protection) Act, 1986 for issuing directions and for taking measures with respect to matters referred to in clauses (ix), (xi), (xii) of section 3 (2) of the Environment (Protection) Act, 1986. These relate to:

(ix) Carrying out and sponsoring investigations and research relating to problems of environmental pollution.

(xi) Establishment of recognition of environmental laboratories and institutes to carry out the functions and restrict such environmental laboratories and institutes under the EP Act.

(xii) Collection and dissemination of information in respect of matters relating to environmental pollution.

(xiii) Preparation of manuals, codes or guides relating to prevention, control and abatement of environmental pollution.

Besides these, the Authority can, *inter-alia* direct agencies to standardise water quality monitoring methods, ensure proper treatment of waste water to restore the water quality of surface and ground waters, take up R&D activity related to water quality management and promote recycling and reuse of treated waste water.

4.34 The WQAA is still in its formation stage and is in the process of setting up various expert groups and task forces. The WQAA also informed the Committee that the mandate of the WQAA is limited to direct the concerned agencies to maintain uniformity in monitoring of national water resources. Laying down of suitable safety standards for drinking water and beverages does not however fall under the purview of the Water Quality Assessment Authority.

4.35 The Water Quality Assessment Authority has so far held two meetings; the first on 26.9.03 and the second on 14.05.03. During its first meeting it was decided to constitute an Expert Group for review of the present Water Quality Monitoring programme and suggest measures for bringing uniformity in sampling procedure, selection of parameters, frequency of monitoring, methods of analysis, data entry, data analysis and reporting so that data generated by each agency is comparable and of known quality. In this regard the Secretary (Environment & Forests) and the Chairman of WQAA stated during the evidence that the draft protocol has been finalised, and is under technical scrutiny in Ministry of Environment and Forests. Some of the important recommendations of Expert Group for its uniform implementation are as under:

(i) The recommended protocol identifies different types of stations both under surface and ground water category *viz.* baseline, Trend and Trend-cum-Surveillance/impact. This categorization is based on the extent to which the water at site is polluted, the Baseline station being the least polluted by the human activity. Number of parameters and its frequency for monitoring differs at each type of stations.

(ii) There is an urgent need for developing two referral laboratories, one with Central Water Commission and the other with Central Ground Water Board.

(iii) Quality assurance test *viz.* analytical quality control test 'within laboratory' and 'inter-laboratory' must be performed by all laboratories for ensuring reliability in data generation.

4.36 In the first meeting, it was also decided to constitute the State Level Water Quality Review Committees. In this regard it has been informed that Water Quality Review Committees are constituted in 30 States/UTs out of 35 States/UTs in the Country.

4.37 In the second meeting held on 14th May 2003 the Authority generally accepted and approved the report of the Expert Group. Water Quality monitoring Committee, Working Group, Task Force etc. were decided to be constituted for carrying out the functions and assisting the WQAA effectively. As a follow up to 2nd meeting Water Quality Monitoring Committee has been constituted to advise the Water Quality Assessment Authority on the matters relating to works of Water Quality Assessment Authority and the State Level Water Quality Review Committees. A task force is constituted to deal with development and review of water quality information and monitoring system. A Working Group is constituted to take up studies on minimum flows in rivers.

PESTICIDE RESIDUES LIMITS PRESCRIBED BY VARIOUS AGENCIES FOR DRINKING WATER

Water Quality in the European Union

4.38 As per the Council Directive 98/83/EC on the quality of water intended for human consumption which was adopted by the Council on 3rd November, 1998, the main thrust of the European Commission Directive is review of parametric values, and where necessary strengthens them in accordance with the latest available scientific knowledge. The main changes in parametric values :

* Lead : reduced from 50 µg/l to 10µg/l, 15 years transition period to allow for replacing lead distribution pipes.
* Pesticides : Values for individual substances and for total pesticides retained (0.1 µg/l/0.5 µg/l), plus additional, more stringent ones introduced for certain pesticides (0.03 µg/l)
* Copper: Value reduced from 3 to 2 mg/l
* Standards introduced for new parameters like trihalomethanes, trichloroethene and tetrachloroethene, bromate, acrylamide etc.

4.39 The Directive came into force on 25th December, 1998. Member states had 5 years *i.e.* until 25th December, 2003 to ensure that the drinking water complied with the standards set, except for Besmate (10 years), Lead (15 years) and Trihalomethanes (10 years).

WHO guidelines for drinking water quality

4.40 The World Health Organization published the first edition of "Guidelines for drinking water quality"in the years 1984 and 1985. The guidelines were revised in 1988. WHO guideline values for pesticides are given in Annexure-III

4.41 In its guidelines WHO has stated that the primary aim of the guidelines for drinking water quality is the protection of public health. The guidelines are intended to be used as a basis for the development of national standards that, if properly implemented, will ensure the safety of drinking-water supplies through the elimination, or reduction to a minimum concentration, of constituents of water that are known to be hazardous to health. It must be emphasized that the guideline values recommended are not mandatory limits. In order to define such limits, it is necessary to consider the guideline values in the context of local or national environmental,

social, economic, and cultural conditions. In regard to nature of the WHO guidelines on drinking water, it has been stated:

(a) A guideline value represents the concentration of a constituent that does not result in any significant risk to the health of the consumer over a lifetime of consumption.

(b) The quality of water defined by the Guidelines for drinking-water quality is such that it is suitable for human consumption and for all usual domestic purposes, including personal hygiene. However, water of a higher quality may be required for some special purposes, such as renal dialysis.

(c) When a guideline value is exceeded, this should be a signal; (i) to investigate the cause with a view to taking remedial action; (ii) to consult with, and seek advice from, the authority responsible for public health.

(d) Although the guideline values describe a quality of water that is acceptable for lifelong consumption, the establishment of these guideline values should not be regarded as implying that the quality of drinking-water may be degraded to the recommended level. Indeed, a continuous effort should be made to maintain drinking-water quality at the highest possible level.

(e) Short-term deviations above the guideline values do not necessarily mean that the water is unsuitable for consumption. The amount by which, and the period for which, any guideline value can be exceeded without affecting public health depends upon the specific substance involved. It is recommended that when a guideline value is exceeded, the surveillance agency (usually the authority responsible for public health) should be consulted for advice on suitable action, taking into account the intake of the substance from sources other than drinking-water (for chemical constituents), the toxicity of the substance, the likelihood and nature of any adverse effects, the practicability of remedial measures, and similar factors.

(f) In developing national drinking-water standards based on these guideline values, it will be necessary to take account of a variety of geographical, socioeconomic, dietary, and other conditions affecting potential exposure. This may lead to national standards that differ appreciably from the guideline values.

(g) In the case of radioactive substances, screening values for gross alpha and gross beta activity are given, based on a reference level of dose.

WHO Guideline Values (maximum limit) of pesticide residues in drinking water are in Annexure-III.

Indian Standard—Drinking Water—Specification by Bureau of Indian Standards

4.42 BIS published IS 10500;1983 Drinking Water Specification and subsequently this standard was revised in 1991 based on the information available about the nature and effect of various contaminants till that time. This standard was prepared with the following objectives:

(a) To assess the quality of water resources, and

(b) To check the effectiveness of water treatment and supply by the concerned authorities.

4.43 The Standard specifies physical, chemical, bacteriological and other requirements along with reference to test methods. The standard desires the absence of pesticides in drinking water. This has been detailed as follows:

Sl.No.	Substance	Requirement (Desirable Limit)	Undesirable effect outside the desirable limit	Permissible limit in the absence of alternate source
Xxix	Pesticides Mg/l, max	Absent	Toxic	0.001

4.44 The above specification of BIS is currently under revision. Proposed specification for pesticides are as follows:

Sl.No.	Substance	Requirement (Desirable Limit)	Undesirable effect outside the desirable limit	Permissible limit in the absence of alternate source
(viii)	Pesticides Mg/l, max	0.0005 total 0.0001 individual	Toxic	0.001

4.45 BIS stated that the above revision of the standard is felt necessary to upgrade the requirements of the standard and to align with the internationally available specifications on drinking water. In this regard, the following were considered:

(i) EU directives relating to the quality of water intended for human consumption (80/778/EEC)

(ii) USEPA standard—National Primary Drinking Water standard

(iii) WHO guidelines for Drinking Water Quality

4.46 BIS has stated in reply to a question that the adoption of this Indian Standard is voluntary in nature. As on date there is no BIS licence for this product.

CPHEEO's guidelines for drinking water

4.47 In the manual on Water Supply and Treatment brought out by CPHEEO, the guideline values for physical, chemical and bacteriological parameters of drinking water have been given. In the said guidelines 'acceptable' and 'course for rejection' for various parameters including pesticides have been indicated. The guideline values of pesticides in the manual are as under:

S.No	Characteristics	*Acceptable	** Cause for Rejection
31.	Pesticides (total mg/l)	Absent	Refer to WHO guidelines for drinking water quality Vol. I - 1993

NOTES :

* The figures indicated under the column 'Acceptable' are the limits upto which water is generally acceptable to the consumers.

** Figures in excess of those mentioned under 'Acceptable' render the water not acceptable, but still may be tolerated in the absence of an alternative and better source but upto the limits indicated under column "Cause for Rejection" above which the sources will have to be rejected.

4.48 BIS and CPHEEO have stated that their standards are only recommendatory and are not mandatory. The Ministry of Urban Development and the Ministry of Rural Development have also stated that the States should follow WHO/BIS/CPHEEO guidelines while supplying drinking water to the masses. In this regard it is pertinent to note that Chief Executive Officer, Delhi Jal Board informed the Committee, "Though the Act (The Delhi Water Board Act, 1998) does not lay down any parameters for drinking water, we are following IS 10500 standard at our plants for drinking water".

CONCLUSIONS/RECOMMENDATIONS

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.

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 alarm ing than this.

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.

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 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.

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.

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 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.

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.

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.

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 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.

ANNEXURE I

CHRONOLOGY OF BIS STANDARDS FOR DRINKING WATER AND THEIR ADOPTION UNDER PFA ACT

1983	:	BIS published IS 10500 : 1983 Drinking Water Specification
1991	:	First revision of IS 10500 by BIS
1992	:	BIS published IS 13428 : 1992 Packaged Natural Water Specification
1994	:	BIS Standards for Natural Mineral Water was notified under PFA Rules, 1955
1998	:	First revision of IS 13428 by BIS
1998	:	BIS published IS 14543 : 1998 Packaged Drinking Water Specification
2000	:	Ministry of Health and Family Welfare Notification No. GSR 759(E) dated 29.9.2000 (w.e.f. 29.3.2001) for Mineral Water and Notification No. GSR 760(E) dated 29.2.2000 (w.e.f. 29.3.2001) for Packaged Drinking Water—These two products to be sold under Compulsory Certification Scheme of BIS.
2001	:	Ministry of Health & Family Welfare Notification No. GSR No. 202(E) dated 21.3.2001—Central Government declared Packaged Drinking Water as an item of food.
2003	:	BIS amendment on IS 13428 : 1998 Packaged Natural Mineral Water regarding maximum limit of the pesticide residues (Individual : 0.1µg/l and total : 0.5 µg/l)
2003	:	BIS amendment on IS 14543 : 1998 Packaged Drinking Water regarding maximum limit of the pesticide residues (Individual : 0.1 µg/l and total: 0.5 µg/l)
2003	:	Ministry of Health & Family Welfare Notification No. GSR No. 554(E) dated 18.7.2003—Pesticide Residue limit in packaged Drinking Water (Individual : 0.1 µg/l and total : 0.5 µg/l)
2004	:	Notification No. G.S.R. No. 554(E) came into effect.

ANNEXURE II

SUMMARY OF FINDINGS OF CPCB REG. PESTICIDE POLLUTION IN GROUND WATER

Sl.No.	State	Location	Pesticide Pollutant (µg/l)		Remarks
1	2	3	4		5
1.	Andhra Pradesh	Bollaram—Patancheru	Aldrin Dieldrin Lindane Op-DDT	4.400 3.925 2.050 1.945	High value of pesticides
2.	Himachal Pradesh	Kala Amb	Lindane DDT Endosulfan Aldrin Dieldrin	2.093 0.272 0.323 0.458 0.092	High concns. of pesticides
3.	Himachal Pradesh	Parwanoo	Aldrin Dieldrin Lindane DDT Endosulfan	0.063 0.008 1.572 0.276 0.080	Lindane and DDT in high concns.
4.	Jharkhand	Dhanbad	BHC Aldrin Endosulfan Dieldrin DDT	4.744 1.411 1.11 0.483 7.364	High values of pesticides in water samples from tube wells as well as dug wells
5.	Karnataka	Bhadravathi	Aldrin Dieldrin Lindane DDT	0.520 110.0 18.600 280.000	Pesticides value exceeded the desirable limit
6.	Madhya Pradesh	Korba	Aldrin Dieldrin Lindane DDT	0.222 1.294 17.440 10.074	Significant concn. of pesticides attributed to their excessive use in agriculture

1	2	3	4		5
7.	Madhya Pradesh	Ratlam Nagda	Aldrin Dieldrin Endosulfan DDT BHC	2.328 0.715 1.320 1.203 15.136	Pesticide contamination in ground water at all sub-soil levels of dug wells and borewells/ handpumps
8.	Maharashtra	Chembur	Aldrin Dieldrin DDT Endosulfan BHC	1.733 0.215 0.256 0.262 7.571	Pesticide concn. not very significant. However, substantial concn. observed during October —possibly due to application of pesticides in wells at the time of plague syndrome
9.	Uttar Pradesh	Singruli	Aldrin Dieldrin Lindane DDT	1.724 1.677 12.324 3.392	High concn. of Lindane at all locations
10.	West Bengal	Durgapur	BHC Aldrin Endosulfan Dieldrin DDT	4.556 0.519 1.165 0.250 7.308	Total pesticide level at all locations exceeded the desirable limit
11.	West Bengal	Howrah	BHC Aldrin Endosulfan Dieldrin DDT	6.704 0.791 4.876 0.675 9.804	High values of pesticides in both dugwell as well as tubewell samples

Guidelines for drinking-water quality

SECOND EDITION

Volume 1

Recommendations

World Health Organization
Geneva
1993

C. Pesticides

	Guideline value (µg/litre)	Remarks
	1	2
alachlor	20[b]	for excess risk of 10^{-5}
aldicarb	10	
Aldrin/dieldrin	0.03	
atrazine	2	
bentazone	30	
carbofuran	5	
chlordane	0.2	
chlorotoluron	30	
DDT	2	
1,2-dibromo-3-chloropropane	1[b]	for excess risk of 10^{-5}
2,4-D	30	
1,2-dichloropropane	20 (P)	
1,3-dichloropropane		NAD
1,3-dichloropropene	20[b]	for excess risk of 10^{-5}
ethylene dibromide		NAD
heptachlor and heptachlor epoxide	0.03	
hexachlorobenzene	1[b]	for excess risk of 10^{-5}
isoproturon	9	
lindane	2	
MCPA	2	
methoxychlor	20	
metolachlor	10	
molinate	6	
pendimethalin	20	
pentachlorophenol	9 (P)	
permethrin	20	
propanil	20	

	1	2
pyridate	100	
simazine	2	
trifluralin	20	
chlorophenoxy herbicides other than 2,4-D and MCPA		
2,4-DB	90	
dichlorprop	100	
fenoprop	9	
MCPB		NAD
mecoprop	10	
2,4,5-T	9	

D. Disinfectants and disinfectant by products

Disinfectant by-products	Guideline value (mg/litre)	Remarks
monochloramine	3	
di-and trichloramine		NAD
chlorine	5	ATO. For effective disinfection there should be a residual concentration of free chlorine of ≥0.5 mg/litre after at least 30 minutes contact time at pH<8.0
chlorine dioxide		A guideline value has not been established because of the rapid breakdown of chlorine dioxide and because the chlorite guideline value is adequately protective for potential toxicity from chlorine dioxide
iodine		NAD
bromate	25[b] (P)	for $7x10^{-5}$ excess risk
chlorate		NAD
chlorite	200 (P)	
chlorophenols		
2-chlorophenol		NAD
2,4-dichlorophenol		NAD
2,4,6-trichlorophenol	200[b]	for excess risk of 10^{-5}, ATO
formaldehyde	900	
MX		NAD

Disinfectant by-products	Guideline value (mg/litre)	Remarks
trihalomethanes		The sum of the ratio of the concentration of each to its respective guideline value should not exceed 1
bromoform	100	
dibromochloromethane	100	
bromodichloromethane	60[b]	for excess risk of 10^{-5}
chloroform	200[b]	for excess risk of 10^{-5}
chlorinated acetic acids		
monochloroacetic acid		NAD
dichloroacetic acid	50 (P)	
trichloroacetic acid	100 (P)	
chloral hydrate (trichloroacetaldehyde)	10(P)	
chloroacetone		NAD
halogenated acetonitriles		
dichloroacetonitrile	90 (P)	
dibromoacetonitrile	100 (P)	
bromochloroacetonitrile		NAD
trichloroacetonitrile	1 (P)	
cyanogen chloride (as CN)	70	
chloropicrin		NAD

[a](P)—Provisional guideline value. This term is used for constituents for which there is some evidence of a potential hazard but where the available information on health effects is limited; or where an uncertainty factor greater than 1000 has been used in the derivation of the tolerable daily intake (TDI). Provisional guideline values are also recommended: (1) for substances for which the calculated guideline value would be below the practical quantification level, or below the level that can be achieved through practical treatment methods; or (2) where disinfection is likely to result in the guideline value being exceeded.

[b]For substances that are considered to be carcinogenic, the guideline value is the concentration in drinking-water associated with an excess lifetime cancer risk of 10^{-5} (one additional cancer per 100000 of the population ingesting drinking water containing the substance at the guide-line value for 70 years). Concentrations associated with estimated excess lifetime cancer risks of 10^{-4} and 10^{-6} can be calculated by multiplying and dividing, respectively, the guideline value by 10.

In cases in which the concentration associated with an excess lifetime cancer risk of 10^{-5} is not feasible as a result of inadequate analytical or treatment technology, a provisional guideline value is recommended at a practicable level and the estimated associated excess lifetime cancer risk presented.

It should be emphasized that the guideline values for carcinogenic substances have been computed from hypothetical mathematical models that cannot be verified experimentally and that the values should be interpreted differently than TDI-based values because of the lack of precision of the models. At best, these values must be regarded as rough estimates of cancer risk. However, the models used are conservative and probably err on the side of caution. Moderate short-term exposure to levels exceeding the guideline value for carcinogens does not significantly affect the risk.

[c]NAD—No adequate data to permit recommendation of a health based guideline value.

[d]ATO—Concentrations of the substance at or below the health-based guideline value may affect the appearance, taste, or odour of the water.

MULTIPLICITY OF REGULATORY AUTHORITIES IN INDIA

4.58 So far as soft drinks, fruit juices and other beverages are concerned, the Ministry of Food Processing Industries is the licensing authority and the Ministry of Health and Family Welfare is the regulatory authority. Likewise the multiplicity of laws, enforcement and standard setting agencies pervade the different sectors of food. This creates confusion in the minds of consumers, traders and manufacturers about overriding primacy of one provision or the other. Confederation of Indian Industry also informed the Committee that investors are shy, partly because of a myriad of complex laws which inhibits innovation and discourages value addition. A chart showing the names of the Ministries and the laws administered by them in the food processing sector is at Annexure-I. In regard to the multiplicity of laws in the food processing sector, a representative of All India Food Processors Association stated during their appearance before the Committee as follows:

> "Today when I say that laws are one of the hindrances to us, I mean that there are nine different Ministries and umpteen laws with which the food processor has to face.... We have a number of institutions and a number of standards making bodies. There is more than 8-10 standard making bodies..... but most of them do not have adequate scientific manpower. Standards are quite often knee-jerk reactions; they are not based on scientific approach; they are not transparent; they are with little or no participation of stakeholders, except of BIS; the stakeholders, the processors and the consumers are not consulted in most of the other standard making bodies. They are just Government bodies making fiats. There are many agencies for enforcement. There are a whole lot of inspectors who interpret the rules in their own way. The State Governments have their own rules. Some States like Maharashtra, West Bengal, U.P., etc. have amended PFA (Act). The municipal authorities also have their own rules. Even gram panchayats have powers in this area. So, what we need is to have one single law which covers the entire gamut so that the processor or the consumer can refer to a single law. We would like all the present laws to be repealed and merged into a single law called 'food law'; it should be a self contained legislation".

4.59 Confederation of Indian Industry (CII) informed the Committee that many organizations *viz*. Bureau of Indian Standards, Central Committee for Food Standards (CCFS) under PFA Act, Fruit Products Order (FPO) under the Ministry of Food Processing Industries. Ministry of Rural Development under 'Agmark' and Meat Food Products Order (MFPO), Export Import Council under EXIM Policy, etc. lay down standards in the food sector and the standards are different from each other and also alleged that the procedure for formulation of standards differs widely from one organization to another. CII had also pointed out the overlapping and contradictory provisions in PFA versus FPO, PFA versus Packaged Commodity Regulation Act and PFA versus Vegetable Products Order. It is the CII's view that the plethora of laws and multiple controls have led to a system which is over regulated and under administer assuring neither food safety nor quality and that we need a single integrated food law. In this regard, CII and All India Food Processors Association have made the following proposals:

* A single integrated food law with the convergence of all Central and State laws—to be called "The Food Act";
* An autonomous "Food Regulatory Authority" to recommend amendments in laws, to formulate rules and procedures and to supervise implementation;
* A "Council of Food Standards" to lay down standards and continuously upgrade them; and
* A "Food Safety Administration" for inspection and enforcement.

4.60 In regard to monitoring food contaminants, the Director, CFTRI, during his evidence before the Committee stated as under:

> "There is a need for an autonomous networking body for monitoring contaminants. Today, it is being done by various Ministries, namely, PFA is under the Ministry of Health and Family Welfare, Insecticide Act is implemented by the Ministry of Agriculture, BIS comes under the Ministry of Commerce and FPO comes under the Ministry of Food Processing Industries. Probably, there is a need for a high level autonomous body which is being everything and addresses this boldly and in a dynamic fashion".

MODERN INTEGRATED FOOD LAW

4.61 In his Budget Speech, 2002, the Minister of Finance has, *inter-alia*, stated, "A multiplicity of regulations for foods standards under the Prevention of Food Adulteration Act, the Food Products Order, the Meat Food Products Order, the Bureau of Indian Standards and MMPO, affect the food and food processing sectors. They need to be modernized and converged. The Prime Minister has decided to set up a Group of Ministers (GoM) to propose legislative and other changes for preparing a modern integrated food law and related regulations". Subsequently, a GoM was constituted by the Government to propose legislative and other changes for preparing a Modern Integrated Food Law and related regulations by converging and modernizing the existing laws and to bring about a single statute for regulation of food products. This law is expected to take into account the international scenario and modern developments so as to create an enabling environment and promote self-compliance by the Food Processing Industries. The Ministry of Food Processing Industries has been given the responsibility to service the GoM. The Ministry of Food Processing Industries has informed the Committee that it has drafted a Bill on the Modern Integrated Food Law, which is under the consideration of GoM.

Guiding Principles of Modern Integrated Food Law

4.62 Guiding principles of Modern Integrated Food Law to establish a national framework for setting food standards based on rigorous science and assessed risk and to guide all parts of the system in food.

4.63 Single window to :—

- — guide units engaged in marketing, processing, handling, transportation, and sale of food.
- — Inform Government response in respect of strategic issues like GM foods, traceability, Irradiation, Packaging etc. and in the overall context of risk assessment and risk communication.

4.64 Single reference point for standards, regulations and enforcement agencies.

4.65 Salient Features of the New Modern Integrated Food Law

1. Single reference point for matters relating to Food Safety & Standards, regulations and enforcement.
2. Covers all foods including Genetically Modified organic foods, nutraceuticals, functional foods, organic foods etc. but excluding primary foods as being defined in the proposed bill.

3. No cross referencing with other Food Laws.
4. Shift from strict regulatory regime to self compliance.
5. Gradation of penalties as per the gravity of offences.
6. mechanism for civil redressal. Provisions of deterrence through economic costs for minor offences.
7. Mechanizm for traceability.
8. Accreditation and notifying mechanism for accreditation, certification bodies and food testing laboratories.
9. Single set of standards for domestic consumption, import.
10. Independent and transparent.
11. Control through implementation of safety management systems in food chain.
12. Transparency through appeal panels.
13. More emphasis on food Category System rather than individual food products.
14. The use of science based on risk assessment, risk management and risk communication in setting up of standards.
15. Scientific and technical inputs to Government in the crisis management procedures, implementation with regard to food safety.
16. Introduction of rapid alert system in case of food emergencies.
17. Contribution to the development of international technical standards for food and sanitary and phyto-sanitary standards.
18. Consistency between international technical standards and domestic standards while ensuring high level of protection to the consumers.
19. Open and transparent public consultations, directly or through representative bodies during the preparation, evaluation and revision of food standards.
20. Risk management/enforcement taking into account the results of risk assessment.
21. Fix responsibility on food manufacturers/food business operators to ensure that a food, which it has imported, produced, processed, manufactured or distributed is in compliance with the domestic food laws.
22. Matters relating to scientific and technical assistance, scientific studies, collection of data, identification of emerging risks, networking of organisations operating in the same field etc.

FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA

4.66 Food Safety and Standards Authority of India which will provide regulatory framework for all parts of the system and notify standards, codes of practice, oversee capacity building, data generation for risk assessment and risk management, provide technical assistance and the early warning system on strategic issues concerning food.

4.67 The Authority shall for the purpose of promoting the manufacture, processing and sale of safe and wholesome food, have the duty to:

1. promote and coordinate the development of uniform risk assessment methodologies in the field of manufacture, processing and sale of food;

2. commission scientific studies necessary for the accomplishment of its tasks;

3. search for, collect, collate, analyze and summarize scientific and technical data regarding fixing of standards;

4. undertake action to identify and characterize emerging risks in relation to consumption of food and introduce rapid alert system to monitor and forward messages on the health & nutritional risks of food;

5. establish a system of network of organizations operating in the field of food;

6. provide scientific and technical assistance to the Central Government and State Governments in the implementation of crisis management procedures with regard to safety of food and setting up mechanism to recall contaminated and unsafe foods;

7. provide scientific and technical assistance to the Central Government and State Governments for improving cooperation with international organizations in the field of manufacture, processing and sale of safe food;

8. specify maximum limits for use of food additives, and maximum limits for contaminants, pesticide residues and residues of veterinary drugs;

9. ensure that the public and interested parties receive rapid, reliable, objective and comprehensive information in the field of manufacture, processing and sale of safe food;

10. undertake any other task assigned to it by the Central Government to carry out the objects of this Act;

11. the coordination and supervision of implementation of the provisions of this Act by formulating the procedures required from time to time to achieve the objects of this Act;

12. the collection of opinion and feedback from all concerned in the food chain, generating awareness of food safety matters;

13. notifying standards and guidelines, after previous publication, in relation to articles of food meant for human consumption;

14. notifying accredited laboratories and research institutions for the purposes of this Act;

15. specifying the procedure for entry and approval of any article of food imported into India;

16. notifying the procedures for the enforcement of quality control and inspection in relation to commodities intended for export;

17. notifying independent agencies for certifying industrial units which comply with food safety management systems;

18. specifying an appropriate system for enforcing various standards notified under this Act;

19. specifying the authorities for taking samples of any article of food, laying down guidelines for testing of such samples by accredited laboratories and subsequent follow up of the test results for appropriate action under this Act;

20. promoting the procedure of self-compliance by industrial units with the standards and food safety management systems;

21. notifying the procedure for registration of industrial units for the manufacture, processing and sale of safe food, the authority empowered to register such units, the fees payable therefor, the deposit of any sum as security for the performance of the conditions of such registration and the circumstances under which such registration may be cancelled or security may be forfeited;

22. laying guidelines for the continued utilisation, as far as practicable, of existing staff and infrastructure available in various Departments of the Government of India and of the State Governments dealing with various laws relating to food, to ensure better compliance with the standards and guidelines notified by the Authority under this Act.

MEETINGS OF GROUP OF MINISTERS

4.68 Two meetings of Group of Ministers have been held so far. The first meeting of GOM was held under the Chairmanship of the Minister of Law and Justice on 27.01.2003. In this meeting, the GOM had directed that the Secretary, Ministry of Food Processing Industries will call a meeting of concerned Ministries/Departments and come out with an agreed and common acceptable draft bill for the consideration of GOM in the next meeting. Accordingly, the Secretary, Ministry of Food Processing Industries convened a meeting of Committee of Secretaries on Integrated Food Law on 6.2.2003 to chalk out a common strategy for common acceptable draft bill. In this meeting, there was a consensus around the following points:

1. Need for convergence in existing laws and to modernize them is recognized.

2. In order to quickly achieve the objective of bringing about modern integrated and converged food law one possible route could be to first bring a statute enabling the setting up of an independent developmental and regulatory authority to look into all aspects of existing food laws and recommend new legislation.

4.69 The above recommendations of the Committee of Secretaries was placed before the Group of Ministers (GOM) for their consideration in the second meeting held on 18.03.2003. In this meeting, the GOM observed that two issues need to be clearly established:—

1. International experience in both legislation and instrumentality of the law needs to be studied which can then become the building block for the new law.

2. The areas of convergence and the areas of disagreement between Department of Health on the one hand *vis-a-vis* their comprehensive amendment to the PFA Act and the Integrated Food Law on the other, need to be listed out clearly for decision before the GOM.

4.70 It was agreed by GOM that Secretary, Ministry of Food Processing Industries will coordinate discussions with all Ministries represented in the GOM as well as Secretary, Law Commission and bring out a comparative chart of these issues, namely, the international experience regarding law as well as its instrumentalities.

4.71 As per the directions of GOM, Secretary, Law Commission had undertaken the exercise and recommended following:

> "The Bill prepared by the Ministry of Food Processing Industry can be taken as the base document and improvements can made to it. While revising the draft Bill the shortcomings noticed by the Ministry of Health in the working of the Prevention of Adulteration Act 1954 should be addressed and suitable provisions must be incorporated like civil penalties for contraventions of the Act instead of criminal punishments. Criminal sanctions should be restricted to contraventions of serious nature which must be tried by special courts in a summary way. Trial by Special Court as suggested by the Ministry of Health in their Concept Note on the Amendments to the Prevention of Food Adulteration Act 1954 should also be incorporated in the proposed Act. The proposed Act apart from establishing a Food Safety and Standards Authority of India should empower the Central Government to prescribe standards for food articles. The Central and State Governments shall have the power to recall any food item posing risk to health. They shall also have power to pass suitable orders to deal with any emergency. Contraventions of the provisions of the Act should be subject to civil penalty adjudged by Adjudicating officers appointed by the State Governments. Appeals will lie from the orders of the Adjudicating officer to one man Tribunals to be established by the State Governments. The Prevention of Food Adulteration Act 1954 will have to repealed and the Orders issued under the Essential Commodities Act 1955 in so far as they relate to food will be subsumed under the new Act. In other words the proposed Act will be a comprehensive standard setting legal instrument for food comparable to the international standards. The proposed Act should expressly make it clear that the mandatory provisions will not apply to the primary food producers namely the farmers so that their interests are not adversely affected by the proposed enactment. However the farmers should be encouraged to voluntarily comply with the standards specified by the Act and to facilitate this the Central Government can frame suitable schemes under the Act, offering incentives to such farmers."

4.72 Secretary, Law Commission has further stated that the bill prepared by Ministry of Food Processing Industries, if approved by the GOM, can serve as the working draft which can then be further revised by the Legislative Department keeping in mind the requirements spelt out by Ministry of Food Processing Industries and Ministry of health in their proposed amendments.

4.73 After receiving the comments of Secretary, Law Commission, Ministry of Food Processing Industries convened a meeting of Committee of Secretaries on Integrated Food Law to discuss the recommendations made by Secretary, Law Commission and to come out with an agreed draft bill. The Ministry of Food Processing Industries informed the limit that all the concerned Ministries/Departments were in full agreement with the recommendations made by the Secretary, Law Commission and approach of draft bill except Ministry of health and Family Welfare. It has further been stated that the question raised by Ministry of health and Family Welfare, as to which Ministry will deal with the proposed legislation needs to be decided by the GOM/Cabinet and this is not a legal question on which Secretary, Law Commission can give views. Comments Department of Legal Affairs are as follows:

* Parliament has necessary legislative competence to enact the proposed draft Bill, as the same comes with in the ambit of Article 246 of Constitution.

* The proposal on Integrated Food Law does not have any legal or constitutional objection.

REGULATION IN FOOD—INTERNATIONAL SCENARIO

4.74 In recent years most countries have gone in for comprehensive review of food legislation and structures responsible for administering food safety, quality and export-import issues. The direction of change has been primarily:

* movement from multi-level and multi-departmental control to single line of command;
* creation of larger entities through federation/conglomeration which facilitate inegrated response to strategic issues as evidenced by strengthening of European Union Food Safety Authority and creation of Australia-New Zealand Food Development Authority;
* Increased transparency and clarity of provisions of law with maximum information being made available to the consumer;
* a shift in emphasis from vertical to horizontal standards and from penal regime of self-regulation and consumer empowerment.

4.75 The Ministry of Food Processing Industries has stated in a written reply to a question regarding regulatory practices in other countries that most of the countries like European Union, United Kingdom, USA, Astralia, New Zealand, Malaysia, Canada, Thailand etc. have already taken steps towards establishing a single authority for laying down and regulating standards. CII also stated in their presentation to the Committee that most countries have unified food laws including Indonesia and Pakistan. CII in its international survey of Malaysia, Thailand, Indonesia, Pakistan and Turkey has observed the following practices:

* Focus on in-process quality control rather than product testing;
* Compliance rather than prosecution;
* Compounding of minor/technical violations;
* Possibility of analytical error recognized;
* Statutory protection of manufacturing process and trade secrets;
* Horizontal Food Standards and vertical standards for a few sensitive food articles (Thailand);
* Administrative Sampling (Malaysia);
* 3 tier Quality Tolerance Standards (Thailand).

Quality variation Range	Result
0-10%	Permissible
10-30%	Sub-Standard
30%	Adulterated

* High powered Screening Board to examine cases before prosecution (Thailand)
* Consultation with manufacturer (Indonesia)
* Periodic quality audits of food factories (Turkey)

CONCLUSIONS/RECOMMENDATIONS

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.

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.

ANNEXURE

MULTIPLICITY OF LAWS IN FOOD SECTOR

1	2	3
MINISTRY OF HEALTH & FAMILY WELFARE	**MINISTRY OF AGRICULTURE**	**MINISTRY OF FOOD & CONSUMER AFFAIRS**
Prevention of Food Adulteration Act, 1954 (PFA) —Prevention of Food Adulteration Rules, 1955 —Health Food Supplement Bill	Agricultural Produce Marketing Act —Milk and Milk Product Order, 1992	Essential Com. Act, 1955 Standards of Weights & Measures Act, 1976 —Packaged Commodities Rules, 1977 —Consumer Protection Act, 1986 B.I.S. Act, 1986 —VOP Control Order, 1947 —VOP (Std. of Quality), 1975 —SEO Control (Order), 1967
4	5	6
MINISTRY OF COMMERCE (DGFT)	**MINISTRY OF FOOD PROCESSING INDUSTRIES**	**MINISTRY OF RURAL DEVELOPMENT (AMA)**
Imports & Exports Regulations —Export Inspection Agency (EIA) —Tea Board —Coffee Board —Coffee Act & Rules	Fruit Products Order, 1955	Agricultural Produce Grading & Marking Act, 1937 (AGMARK) —Meat Food Products Order
7	8	9
MINISTRY OF FORESTS & ENVIRONMENT	**MINISTRY OF SCIENCE & TECHNOLOGY**	**MINISTRY OF HRD (Department of Women & Child Welfare)**
Trade in Endangered Species Act —Ecomark	Atomic Energy Act, 1962 —Control of Irradiation of Foods Rules, 1991 —G.M. & Organic Foods	Infant Milk Substitutes, Feeding Bottles & Infant Foods (Regulation of Production, Supply & Distribution) Act, 1992—Rules, 1993

OTHER ISSUES

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 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 an NGO 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 standarized 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 there-under. 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.**

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.

NEW DELHI;
January 27, 2004
Magha 7, 1925 *(Saka)*

SHARAD PAWAR,
Chairman,
Joint Committee on Pesticide Residues in and Safety Standards for Soft Drinks, Fruit Juice and other Beverages.