

- In order to create an increasing demand for food safety in the community, it is necessary for consumer organizations to continue their efforts towards consumer awareness in an objective and scientific manner. This should in turn enable government to give the subject a higher priority and allocate greater resources for improved protection measures.
- Appropriate websites should be developed by all stakeholders for dissemination of reliable information on food safety matters. The authorities should assist in collection of appropriate data for risk analysis, data on emerging food hazards, epidemiological data, dietary intake data etc. and establishment of such data banks.

## **APPENDIX 1**

### **GIST OF PRESENTATIONS MADE DURING THE WORKSHOP**

#### **Inaugural Session**

**Dr C Gopalan**, President, Nutrition Foundation of India, New Delhi, welcomed the delegates and stressed the importance of ensuring that the foods consumed are safe. The problem is acquiring newer dimensions as the agricultural practices are changing, newer processing technologies are being introduced, and novel foods like Genetically Modified Foods are released. The multidisciplinary, intersectoral group of the type present today needs to discuss not only the manifestations of lack of food safety but also the steps that need to be taken to improve the scenario in terms of infrastructure requirements, policy dimension, education and extension activities, and the corrective measures that need to be taken in protecting the consumer and ensuring safety in the food chain.

**Mr. D Gustafson**, FAO Representative, while extending greetings from the FAO provided an interested outsider's view that throughout the world food safety is increasingly becoming a hot topic. The food safety systems are under unprecedented challenge due to a variety of reasons such as urbanization, globalization, changing nutrition intakes and growing consumer awareness. With newer insights most of the industrial countries have taken several measures to further strengthen their systems. He stressed the importance of Risk analysis and use of preventive approaches.

**Mr. Raj Malik**, former Chief, Food Quality and Standards Service, FAO, Rome stressed that besides health and economic implications, food safety is a matter of National Security. Unlike in the developed countries where food safety issues receive high priority, in developing countries there is much lower priority given to matters pertaining to food safety. Thus, the measures to control food safety are often ineffective, tardy and halfhearted. Although efforts were made in India as back as in 1981 to evolve a National Strategy for Food Control and a model system proposed, it was never implemented. As food safety problems can arise at any stage in the food

chain, he called for protection of food sector from production to consumption, following the Risk Analysis approach consisting of Risk Assessment, Risk Management and Risk Communication. According to him there is no “zero” risk in terms of science.

### **Inaugural Address**

**Dr SP Agarwal**, Director General of Health Services, New Delhi in his inaugural address stated that the current set up of the Central Committee of Food Standards is indeed multidisciplinary and multisectorial. Unwholesome food endangers public health either in a self-limiting and mild manner or it may in many cases become life threatening. Improving hygienic quality of foods, better processing technologies, education of food handlers and other risk communication approaches can prevent this. The Food Control agencies play a key role. He called for greater interaction between the Government, consumer and the industry. Dr Agarwal also informed the workshop about the steps being taken by the Health Ministry to create a new infrastructure on Food safety such as establishment of the Food and Drug Bhavan, strengthening of Food Laboratories with acquisition of modern equipment through a World Bank Project. He welcomed the workshop and stated that the government would look forward to its recommendations.

### **Keynote Address**

**Dr Ramesh V Bhat**, formerly of the National Institute of Nutrition, Hyderabad delivered the Key note address on “Health Implications of Food Safety in the Indian Context”. He presented various food borne disease outbreaks that have been described in India during the last three decades, the problems encountered with the traditional and newer adulterants in foods, the recent concerns on genetically modified foods such as the imported Corn Soy blend, transgenic mustard, Golden GM rice and GM Potato. He recalled the various bodies dealing with food safety matters available in the country and ways of networking them for better results. He presented the following ten-point programme of “way ahead”: (i.) Keep the ancient Indian tradition and culture of Food Safety alive and propagate it widely (ii.) Develop an effective and integrated National Food Control System (iii.) Harmonize and integrate various Food Laws and implementation of food control measures in a coherent manner through out the country. (iv) Introduce a science based Risk Assessment System appropriate in the Indian context (v.) Strengthen surveillance of Food borne disease System and monitoring of natural toxicants, environmental contaminants, adulterants, proper use of additives (vi.) Create a strong research base in areas of Food Safety, Quality Control, Food toxicity, Improved methodologies for detection; introduce use of official methods, strengthen Analytical Quality Assurance, strengthen Check sample programme, strengthen system for Accreditation of Laboratories (vii.) Creation of a strong data base of food safety, quality; hygiene based on surveillance and monitoring studies, exports rejections, potential economic implications, etc. (viii.) Initiate a Quality Literacy movement to improve the quality foods produced through Agriculture/ Aquaculture (ix.) Network and build alliances in the area of Food Safety and Quality in the country (x.) Cooperate internationally through participation in Codex activities.

## **Presentations**

**Dr K S Manja**, Director, Directorate of Life Sciences, Defense research & Development Organization, New Delhi made a presentation on “Microbiological Safety of Food and Food Borne Infections”. He gave an account of various traditional and new technologies for, making food sterile. He cited future threats from the minimal processing hurdle technologies, non-thermal processing, and possibility of development of cold pockets during storage. He referred to several emerging microbial food hazards and spoke about the need for greater vigilance through a modern food control system. The suggested strategies to control food borne infections referred to by him include proper sanitary and phytosanitary measures, post harvest care of raw materials, reliable HACCP practices and serving freshly prepared food in community feeding.

**Prof. Indira Chakravarty**, Director-Professor, All India Institute of Hygiene and Public Health, Kolkata highlighted the role of street foods informal sector in meeting the nutritional requirements of a vast majority of consumers particularly in the lower bracket of the economic scale. She presented her experiences in ensuring safety of street foods and plans for appropriate intervention programmers in future, specially in major cities of Mumbai and Delhi .The Kolkata intervention model developed with the help of the Kolkata Municipal Corporation, the Kolkata Police, Hawkers Union, Researchers and Consumers potential is based on the utilization of existing infrastructure of the city. Critically monitoring the quality of raw materials and cooked foods along with water were the most essential factors in ensuring food safety.

Industry perspectives and the actions initiated to ensure safety of foods in the Hotels and Restaurants sector were provided by **Ms Malini Rajendran**, Deputy Secretary General, Federation of Hotel & Restaurants Association of India, New Delhi. According to her there is a need for proper monitoring and controls at three levels, viz., i) primary level of raw material production by the farmers and the live stock owners, ii) the secondary level of processors of meat, fish, milk, spices and included packaging and iii) the tertiary levels of cooking and serving at the Hotels and Restaurants. The critical areas identified by her included the design of the kitchens, transportation of materials, quality of ice used and the importance given to hygiene. A clear road map and action plan to ensure food safety in the catering sector was provided by her which included preparation of a manual for use by the industry, developing resources and capacity to teach and train personnel nationwide, starting of regular and online certification programmes and incentives and awards for implementing food safety.

**Dr. G. Venkataramani**, Director, Ministry of Food Processing, New Delhi, while chairing a session on “Food safety and Public Health” stressed the need for a comprehensive and holistic legislation, which takes care of the aspirations of all stakeholders. He asked the experts to decide on the sensitive issues and fully supported the establishment of an autonomous body for the purpose.

In order to provide wholesome food through Railway catering, **Prof. Pushpa Sunderaraj** of the Lady Irwin College, Delhi presented the studies undertaken by the college and referred to the improvements suggested by them. The major undesirable practices include lack of proper refrigeration, inadequate cleaning and hygienic practices, rodent infestation, improper waste disposal. HACCP studies provided a basis for suggesting improvements not only from the microbiological angle, but also on the repeated usage of frying oil. Food safety awareness programmes conducted through video shows, demonstrations and spreading proper messages on various aspects of food safety including personal hygiene and sanitation are required to be replicated in many places throughout the railway network.

**Dr D Kanungo**, Medical Toxicologist from Central Insecticide Board & Registration Committee, Faridabad provided an overview of pesticide residues in foods. According to him all pesticides do not leave residues and all residues do not have ill effects. The real problems are in the indiscriminate use of chemical pesticides, non-observance of waiting period prior to marketing after application in the field, use of substandard pesticides, wrong usage, and improper disposal practices. While advocating judicious use of pesticides as outlined in the Insecticides Act 1968, he advocated appropriate washing, peeling of fruits and vegetables and appropriate cooking to minimize the hazards.

**Mr. Sanjay Chaudhuri**, Consultant, Ministry of Health, and New Delhi informed that food is a good indicator of environmental pollution. The ever increasing industrial pollution and the subsequent threat from pollutants such as heavy metals, poly chlorinated biphenyls, dioxins, polycyclic aromatic hydrocarbons etc posed a serious threat to food safety. Instead of allowing contamination to take place and then look for solutions, he called for the involvement of all stakeholders to prevent the pollution of the environment. He cited various regulations such as the Insecticide Act, Environmental Protection Act, Hazardous Waste Management and Handling Act, Water and Air pollution Acts etc which are all meant to check or control such pollution. The strategies suggested by him include prevention of generation of pollutants and contaminants, disposing hazardous materials and wastes in an environmentally sound manner, development of an integrated National Food Contamination Monitoring Programme by forming strategic alliance for GAP, GMP, GHP, HACCP across agro/food production and processing sector, and establishing “pollution containment and prevention” as a national policy.

The need to ensure safety of Genetically Modified (GM) foods was stressed by **Dr Rakesh Mittal**, DDG (SG) of the Indian Council of Medical Research, New Delhi. The possible health hazards that could arise from GM foods include allergenicity, antibiotic resistance and potential toxicity. Unlike in the USA, GM foods such as rice and maize are used as staple in India and thus require special attention with regard to safety. Safety of milk, meat and eggs derived from animals receiving GM feed ingredients needs to be studied. He informed that no ill effects attributable to consumption of GM foods in peer reviewed journals have been published so far, which according to Dr Mittal, may also be due lack of active surveillance. Some of the measures suggested by the ICMR which are under active consideration by the Government include, strengthening coordination mechanism by way of establishing a National Gene Technology Regulator, role for Ministry for Health in application, commercial release and post market surveillance; inclusion of GM foods under PFA Act and Rules, strengthening food control

mechanism for GMOs through existing food inspection system of Ministry of Health, approval of GM foods by CCFS, Labeling, transparency in decision making, and Capacity building to assess and detect GM foods.

**Mr. DS Chadha** former ADG (PFA) and currently Technical Advisor, Confederation of Indian Industry, New Delhi provided an overall view of the Food control Systems in India- the Food Laws and Regulation and their implementation. He referred to the duplication and lack of coherence in the food control system. He provided statistics to indicate that though the food adulteration percentage had declined over the years, the acquittal rate has also increased from 7.5% in 1960 to 62.3% in 1999. He cited the efforts made since 1964 to revamp the food control system in India and provided a gist of reports of the various committees and conclusions of the workshops. He also referred to the draft Food Safety and Standards Bill 2003 of the Ministry of Food Processing and the PFA (Amendment) Bill 2002 of the Ministry of Health. The suggested recommendations include; i.) quality and safety should be built online with adoption of GMP, HACCP and Risk Analysis, ii) develop linkages of Industry with research institutes and academic bodies iii) arrange appropriate training in GMP/HACCP. iv) Keep consumers organizations informed v) participate actively in Codex work vi) introduce transparency vii) develop technical manpower viii) scrutinize international finding through scientific groups.ix) review existing food laws and regulations and harmonize them with Codex as necessary. He was of the opinion that generally speaking, the formation of an autonomous Food Safety Authority or a Board supported by a Scientific Committee and Food Standards Council should go a long way in improving the situation. The Authority or the Board should work at a policy and monitoring level and the day-to-day implementation of food control measures should be left with the state and local body authorities.

**Professor Manubhai Shah**, Chairman Emeritus, Consumer Education & Research Centre, Ahmedabad provided the consumer perspective on Food Safety. He reminded the workshop that his organization published information on analytical results of foods only after providing an opportunity to the manufacturers so that they could respond to them. Further, the test results are also provided to respective food control laboratories. He advocated i) adopting a holistic view on food safety and consumer protection rather than going in piecemeal basis ii) Providing sufficient time to manufacturers to upgrade technologies to conform to revised standards and fix deadlines iii) Developing Indian standards rather than depending on borrowed standards iv) Withdrawing unsafe products from market and even households and returning money either voluntarily or recalled through court action.v) Empowering BIS to do the job more effectively. He stated that the imprisonment for the violators is not the solution and instead punitive damages for the “unjust enrichment” could well be the answer. Overall, he favored a systemic change through the establishment of an autonomous body for the purpose.

**Dr S K Saxena**, Chairman, Technical Advisory Committee of the All India Food Processors Association, New Delhi, presented the objectives and operations of various developmental agencies. The agencies and Orders operating in the area include the APEDA, MPEDA, BIS, EIC, AGMARK, FPO, M&MPO, MFPO, NHB, Spices Board, Coffee Board, Tea Board, Coconut Development Board, NBB, TRIFED, NAFED, State tribal as well as Cooperative Federations and the Quality Council of India with agencies such as NABCB (Board of Certification),

NABAT (Board of auditors) and NABL (Lab accreditation). He explained how the roles of these agencies have a strong bearing on improving and ensuring the safety and quality of food.

**Dr Y.K.Gupta**, Director, Indian Toxicological Research Centre, Lucknow provided an overview of the Risk Analysis. The three components of food safety are the preventive (safety assurance), Predictive (Risk analysis) and Emergent hazard management (Foodborne diseases). He further explained the various components of Risk analysis and highlighted the need for development of resources and expertise for this discipline in the larger interest of consumer protection and food safety.

**Prof. Sriram Khanna**, Managing Trustee, VOICE, elaborated the concept of “Transparency” and defined it as the public availability of information on all the rules, procedures and practices used to produce a food product in the entire chain from farm to table. He demanded that there should be written manuals, public access through Internet or other means including access to hospital records. He suggested that certain changes in the system need to be initiated urgently. Some examples are; defaulters to be made liable to civil and not criminal prosecutions, including concept of traceability, empowering consumers, evolving a hassle free system to recognize consumer organizations to lift samples, product recall, fine to be levied in proportion to business turn over, providing compensation to consumer etc. According to him the major issues in the current context include reorganization and upgrading of the system, traceability, hygiene legislation, labeling and antibiotics residues.

The importance of Risk communication for gaining trust was stressed by **Prof Vineeta Narula** of Lady Irwin College, New Delhi. Risk communication is essential not only between Risk Assessors and Managers, but also among all parties involved. The educational programmes in this regard need to be developed by both Government and private sectors. Gathering risk intelligence is also essential.

Chairing a session on Recent Developments **Dr B K Nandi**, Senior officer, FAO Regional Office, Bangkok highlighted the importance accorded his organization to access to safe and nutritious food. Food Safety is a high priority subject area in which FAO is the lead agency.

**Dr. Sanjeev Anand**, National Dairy Research Institute, Karnal impressed upon the need to develop science based food control system focused on consumer protection and new quality and safety requirements. The areas requiring attention include the basics, i.e. personal hygiene, non conformance, breach of procedures, communication in the workplace, prevention of recurrence, transport (vehicles loading, securing), developing food safety plans, safety audit and follow up including result communication, implementation and corrective action. He also stressed the need of adopting newer tools of Biotechnological techniques examples of which include, bioluminescence, impede measurements, nucleic acid based techniques such as PCR, Ribotyping, Microassay, use of wearable computer. Generation of data relevant to India and providing them to Codex is equally important. He pleaded for the creation of Food safety network, clearer role for consumer organizations, stringent implementation of food laws, and strengthening of National Codex Committees. Establishment of global links with the Food net of the CDC, FDA and USDA, Pulsenet of the National computing network to combat foodborne illness of the USA, Food safety net of Canada and the GPHIN (Global Public Health Intelligence

Network of the WHO are important tools to enhance our knowledge and improve our system. Some of the initiatives already taken in India include the KVK/TTC based training programmes, Development of Risk analysis models, Dairy sector Taskforce on Food safety and the drawing up of curriculum and text on food safety by the Health Ministry.

**Dr Kishore Anand**, Deputy Director, Export Inspection Council, New Delhi outlined the steps taken by the Export Inspection Council in ensuring the safety of foods exported from India. In view of globalization, liberalization and post WTO scenario, the need for ensuring food safety has assumed special significance. The role of EIC inspector has changed from consignment inspection to quality assurance during the processing of food through HACCP starting from raw to finished products. EIC currently covers egg, milk, honey, poultry and meat for export. Voluntary certification has been introduced in Tea, Fruit and Vegetables, Spices, Basmati rice. The processing plants necessarily need to have GMP/GHP/HACCP, minimum test facilities, waste disposal and effluent treatment mechanisms, record keeping system, competent manpower for testing of products. This is monitored by the EIC officials with supervisory visits and corporate audits. On receiving complaints from abroad units are placed on alert, frequency of inspection increased, production stopped in some cases and corrective action taken. He pointed out the need for action to avoid duplication in the roles of various official certifying agencies so as to bring about coherence and improved efficiency.

**Smt Debi Mukherjee**, former ADG (PFA), Ministry of Health, New Delhi in her presentation highlighted some of the recent developments on measures of food safety control in countries like Brazil, Canada, EU, Ireland, Japan, Malaysia, New Zealand, U.K and U.S.A, consequent upon signing of the WTO agreements specially SPS and TBT giving recognition to Codex Standards. The main emphasis was on integrating the mandatory regulatory system with preventive and education strategies that protect the whole food chain. The ideal Food control system should include effective enforcement of mandatory requirements, training and education, community outreach programmes, promotion of voluntary compliance, and introduction of preventive approaches like HACCP. Building trust and confidence of importers and consumers in the integrity of food system is absolutely essential. The public resources need to be efficiently utilized. The industry should bear the responsibility for safety while Government should assume an audit or oversight role. Notable features from foreign experiences worth emulating in India include: the Brazilian example of involving community workers in the programme by imparting training to them; Canadian model of involvement of both Agriculture and Health and Ministries as well as coordination among the central, provincial and tertiary governments; Irish model of Science based statutory independent Food Safety Authority accountable to the Health Minister along with a consultative committee; Japanese example of education of consumers and of school children; Norway's example of having an "Act on the Coordination of Food Central" to coordinate the food inspection activities of municipalities and local bodies with directions from the central agency; Creation of a food Safety Authority, a semi-autonomous agency within Ministry of Agriculture bringing together food regulatory functions of Ministry of Agriculture (for exports) and Ministry of Health (for domestic market) and the newly created portfolio of the Minister for Food Safety, in New Zealand shows the importance and priority given to this programme.

**Mr. Raj Malik** chairing the Session on “The Way Ahead” presented a road map for the future, calling for a review of the food safety scenario in the country at the highest level. The broad objectives of a food control system include consumer protection, development and protection of food system, facilitation of trade, risk communication and prevention. The challenges for the system listed by him include: Emerging food borne hazards; urbanization and change in consumers perception and life style; growing consumer awareness; changing and innovative technologies; complexity of the food production/distribution system involving millions of farmers, middlemen, street vendors and international trade; and need for harmonization, transparency and science based risk assessment and management.

Mr Malik also stressed the need for reinforced participation by health sectors in risk assessment and standard setting. Making distinction between risk assessment and management, required clearer definition of the roles of each ministry and need for evolving better mechanism of coordination and accountability. Strengthening of inspection agencies at the Central, State and local body levels was a recognized need. Identification of experts at National level, greater application of preventive measures, objective assessment of resources needed for improved performance and strengthening links with international organizations are some of the important issues demanding attention All these issues need to be discussed within the gambit of a national strategy so that a clear action plan can emerge for improving the food control system. Evolving a national strategy is essential about decision making on science and transparency platform, eliminate regulatory duplication, improved coordination and inspection across the food system, setting priorities based on data, monitoring and audit. He favored the establishment of a New Autonomous Agency and suggested the workshop to recommend the development of a suitable organizational framework to implement an integrated food control system covering the entire food chain.

**Mr U P Khobaragade**, Commissioner, Food and Drug Administration, Maharashtra, while co chairing the session on “Way Ahead”, referred to the revised Food legislation prepared by the Ministry of Health awaiting clearance by the Government. Admitting that there are problems in implementation of the food laws and prosecution is not effective in curbing the menace of food adulteration, he exhorted that the society needs to be proactive and there should be an increase in social consciousness of the community.

Intervening during discussions Prof Manubhai Shah called for introduction of compulsory Nutrition labeling. Smt Debi Mukerjee referred to the newspapers reports regarding the establishment of a Food safety expert committee by the Ministry of Consumer Affairs. The workshop agreed that such developments called for a need for coordination and a national strategy to strengthen the system avoiding duplication of effort. In general it stressed the need for urgent action to reorganize the food control system on an integrated basis covering the entire food chain.