THE NEED FOR AN INTERNATIONAL APPROACH – THE ROLE OF FAO AND WHO

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Content

Summary

In the globalizing world, no single country can operate in isolation and ensure food safety for its citizens. It is therefore essential to manage food safety at the international level. The shared knowledge at the international level enables effective food control and food safety management at the national level. In this context, the roles played by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) are critical. FAO and WHO jointly generate scientific advice in food safety through the activities of renown expert bodies (risk assessment) as well as

provide a neutral, intergovernmental forum for negotiating international food standards (risk management options) in the form of the FAO/WHO Codex Alimentarius Commission.

1. Introduction

In the globalizing world, the interdependence of countries in the food supply is increasing. According to FAO trade statistics, the value of trade in agricultural products was estimated US$552 billion in 2005. A principal concern of national governments is that food imported from other countries should be safe and not jeopardize the health of consumers. Consequently, governments of importing countries have introduced mandatory laws and regulations to eliminate or minimize such threats.

In this context, it has become imperative to address the matters related to food safety and quality at the international level – to complement and assist in the actions taken by national governments that carry the primary responsibility to ensure food safety for their population. If all countries harmonized their food laws and adopted and implemented internationally agreed standards, a similar level of health protection could be achieved without creating unjustified technical barriers to trade. In addition the development of international risk assessments and food standards will benefit developing countries which do not have sufficient resources to conduct develop necessary risk-based measures. They can use international standards as a basis for their national measures, ensuring the same level of health protection in local as in exported food. This is sometimes referred to as the food safety win-win situation, ensuring safer food for domestic market as well as increasing potential for food export.

The basis for the existing international system for achieving food safety, as agreed by Member States in the Codex Alimentarius Commission, is the risk analysis framework. Risk analysis consists of three processes: risk assessment, risk management and risk communication (see Figure 1). One of the important principles of food safety risk analysis is the functional separation between risk assessment and risk management, in order to avoid the conflict of interest and to ensure that food control measures be taken on sound scientific evidence on the most neutral and objective basis possible. Therefore at the international level the activities in food safety risk assessment and in risk management are implemented by distinct bodies although there are regular and institutional interactions between these two. Sections 2.1.2 and 2.3.3 describe the international undertakings in risk assessment and risk management respectively.

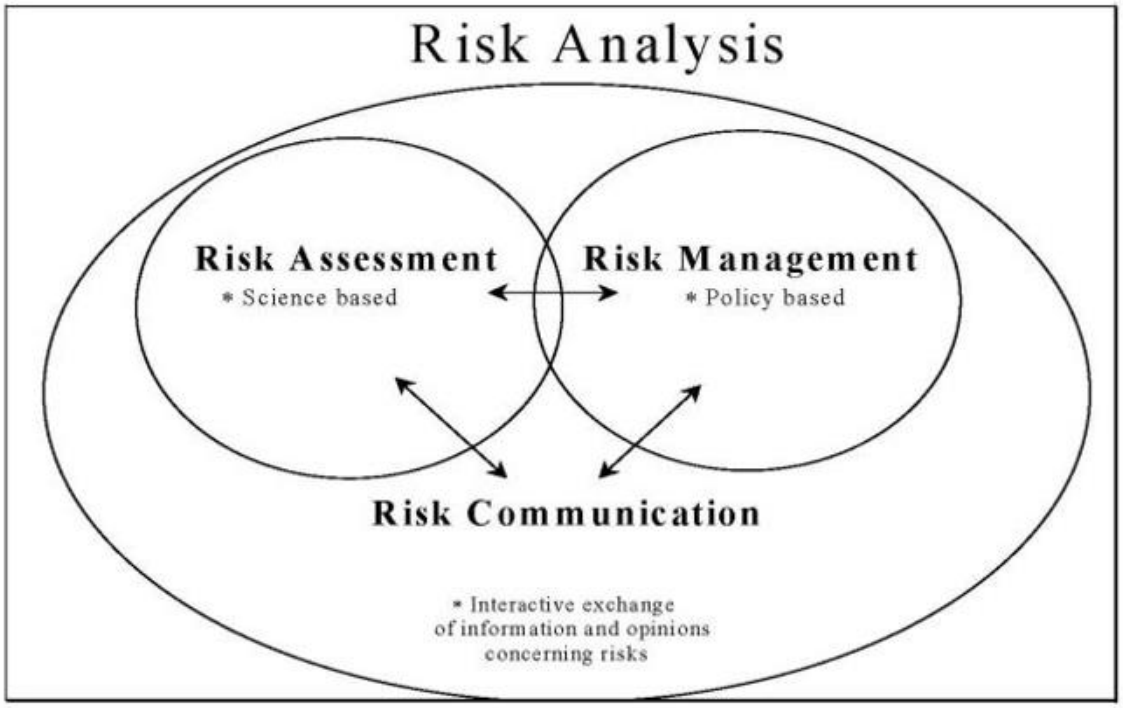

Figure 1. The WHO/FAO Food safety Risk analysis framework

2. Food Safety Risk Assessment at the International Level

FAO and WHO are the two principal specialized agencies of the United Nations which host the secretariats for the permanent or ad hoc expert bodies that provide scientific advice to the *Codex Alimentarius Commission* (see Section 2.1.3) as well as to members states of FAO and WHO.

The administration and operation of these expert bodies are described in the FAO/WHO Framework for the Provision of Scientific Advice. This publication describes procedures that are currently followed in relation to the provision of scientific advice on food safety and nutrition to Codex and Member Countries.

Experts participating in FAO/WHO expert bodies are selected after open calls for experts, based on their documented scientific credentials. Experts accepted are placed on a roster from which they are selected to each meeting, according to their specific expertise. The selection of members for each meeting is made after a careful consideration of the scientific credentials of the various candidates, and a balance of scientific expertise in different areas and other experience that is considered essential considering the items on the agenda of each meeting.

Among these expert bodies, some details on the Joint FAO/WHO Expert Committee on Food Additives (JECFA), Joint FAO/WHO Meetings on Pesticide Residues (JMPR), Joint FAO/WHO Expert meetings on Microbiological Risk Assessment (JEMRA) are described below. Besides, FAO and WHO also convene ad hoc expert consultations on specific subjects. These included *inter alia* food derived from biotechnology,

antimicrobial resistance.

2.1. Joint FAO/WHO Expert Committee on Food Additives (JECFA)

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) is an international expert scientific committee that is administered jointly by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). It has been meeting since 1956, initially to evaluate the safety of food additives. Its work now also includes the evaluation of contaminants, naturally occurring toxicants and residues of veterinary drugs in food.

To date, JECFA has evaluated more than 1500 food additives, approximately 40 contaminants and naturally occurring toxicants, and residues of approximately 90 veterinary drugs. The Committee has also developed principles for the safety assessment of chemicals in food that are consistent with current thinking on risk assessment and take account of recent developments in toxicology and other relevant scientific areas such as microbiology, biotechnology, exposure assessment, food chemistry including analytical chemistry and assessment of maximum residue limits for veterinary drugs.

JECFA normally meets twice a year with individual agendas covering either (i) food additives, contaminants and naturally occurring toxicants in food or (ii) residues of veterinary drugs in food. The membership of the meetings varies accordingly, with different sets of experts being called on depending on the subject matter.

JECFA serves as an independent scientific committee which performs risk assessments and provides advice to FAO, WHO and the member countries of both organizations, as well as to the Codex Alimentarius Commission (CAC). The requests for scientific advice are for the main part channeled through the Codex Committees on Food Additives (CCFA), on Contaminants in Foods (CCCF) and on Residues of Veterinary Drugs in Foods (CCRVDF) in their work to develop international food standards and related texts.

In its work JECFA follows the principles for the safety assessment of food additives and contaminants in food, as laid out in Environmental Health Criteria 70, and all subsequent general considerations as published in the reports of the meetings. For food additives and veterinary drug residues, JECFA normally establishes ADIs on the basis of available toxicological data and other information. Specifications for the identity and purity of food additives are also developed, which helps to ensure that the commercial product is of appropriate quality, can be manufactured consistently, and is equivalent to the material that was subjected to the toxicological testing. For contaminants and naturally occurring toxicants, levels corresponding to 'tolerable' intakes such as the provisional maximum tolerable daily intake (PMTDI) or the provisional tolerable weekly intake (PTWI) are normally established when there is an identifiable no-observed-effect level. When a no-observed-effect level cannot be identified, the Committee aims to provide other advice depending on the circumstances and the data available. For veterinary drug residues, maximum residue limits (MRLs) in target animal tissues, milk and eggs are developed taking into account Good Practice in the

use of Veterinary Drugs. The application of these MRLs provides assurance that when the drug has been used properly, the intake of residues from animal products is unlikely to exceed the ADI.

Information on the activities and output from JECFA meetings are available at the dedicated FAO and WHO web sites.

2.2. Joint FAO/WHO Meetings on Pesticide Residues (JMPR)

The Joint FAO/WHO Meeting on Pesticide Residues (JMPR) is an international expert scientific group that is administered jointly by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). JMPR, which consists of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group, has been meeting regularly since 1963. During the Meetings, the FAO Panel of Experts is responsible for reviewing residue and analytical aspects of the pesticides under consideration, including data on their metabolism, fate in the environment, and use patterns, and for estimating the maximum residue levels that might occur as a result of the use of the pesticides according to good agricultural practices. The WHO Core Assessment Group is responsible for reviewing toxicological and related data and for estimating, where possible, acceptable daily intakes (ADIs) for humans of the pesticides under consideration.

The first JMPR was convened in 1963. In 1966, JMPR considered both ADIs and maximum residue limits for the first time. Joint Meetings are held yearly, and since 1963 approximately 230 pesticides have been evaluated, many of them on several occasions.

JMPR serves as a scientific advisory body to FAO, WHO, to FAO and WHO member governments, and to the Codex Alimentarius Commission. Advice to the Codex Alimentarius Commission on pesticides is provided via the Codex Committee on Pesticide Residues (CCPR).

JMPR establishes ADIs and acute reference doses on the basis of the toxicological data and related information available on the substances that are being evaluated. In addition, JMPR reviews pesticide use patterns, data on the chemistry and composition of pesticides and methods of analysis of pesticide residues, and recommends maximum residue limits (MRLs) for pesticides that occur in food commodities following their use according to Good Agricultural Practice. The potential intake of pesticide residues is compared with the ADI and acute reference dose to estimate the potential dietary risks associated with the adoption of the MRLs.

In recent years, the scope of the toxicological evaluations has been expanded to include assessment of other routes of exposure that are relevant for public and occupational health. In addition, some environmental hazard assessments have been performed.

In addition to reviewing individual chemicals, JMPR develops general principles for assessing the safety of chemicals in food. The requirement to keep abreast of scientific

disciplines requires continuing review and updating of evaluation procedures.

Further information on JMPR is available at both the FAO and WHO web sites.

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WHO: International Food Safety Authorities Network

http://www.who.int/foodsafety/fs_management/infosan/en/index.html) [The official webpage of the International Food Safety Authorities Network hosted within WHO.]

WHO/ILO/UNEP: International Programme on Chemical Safety (http://www.who.int/ipcs/en/) [The official webpage of the International Programme on Chemical Safety hosted within WHO.]

WTO: Sanitary and Phytosanitary Measures (http://www.wto.org/english/tratop_e/sps_e/sps_e.htm) [The official WTO webspage on the sanitary and phytosanitary measures including the activity of the WTO SPS Committee.]

Biographical Sketches

Jørgen Schlundt studied veterinary medicine and received Doctor of Veterinary Medicine degree as well as Ph.D. degree (microbiology) from Royal Veterinary and Agricultural University, Copenhagen, Denmark. He has worked in this University as well as in Danish Agencies (Environmental and Food Safety), primarily responsible for microbiological food safety. He worked at the National Veterinary Laboratory in Zimbabwe in two periods and has since 1999 worked as Director in charge of food safety, zoonoses and foodborne diseases Department in the World Health Organization HQ in Geneva, Switzerland.

Kazuaki Miyagishima studied medicine and received his Doctor of Medicine degree at the University of Tokyo in 1985. He received an international diploma of public administration from the Ecole nationale d'administration (Paris, France) and a Ph.D degree (medical sciences) from Showa University (Tokyo). After a postgraduate study in physiology, he joined the Japanese Ministry of Health and Welfare (Tokyo) as a medical officer. He was responsible for health policy and planning, maternal and child health, and mental health, among others.

From 1994 to 1998, he worked in the Food Safety Programme of WHO (Geneva) and was appointed, in 1998, Associate Professor in public health and health policy at Kyoto University (Japan). In 2003, he was appointed Secretary, Codex Alimentarius Commission by the Directors-General of FAO and WHO.