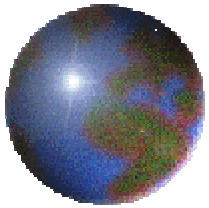

HACCP and ISO Development of a food safety

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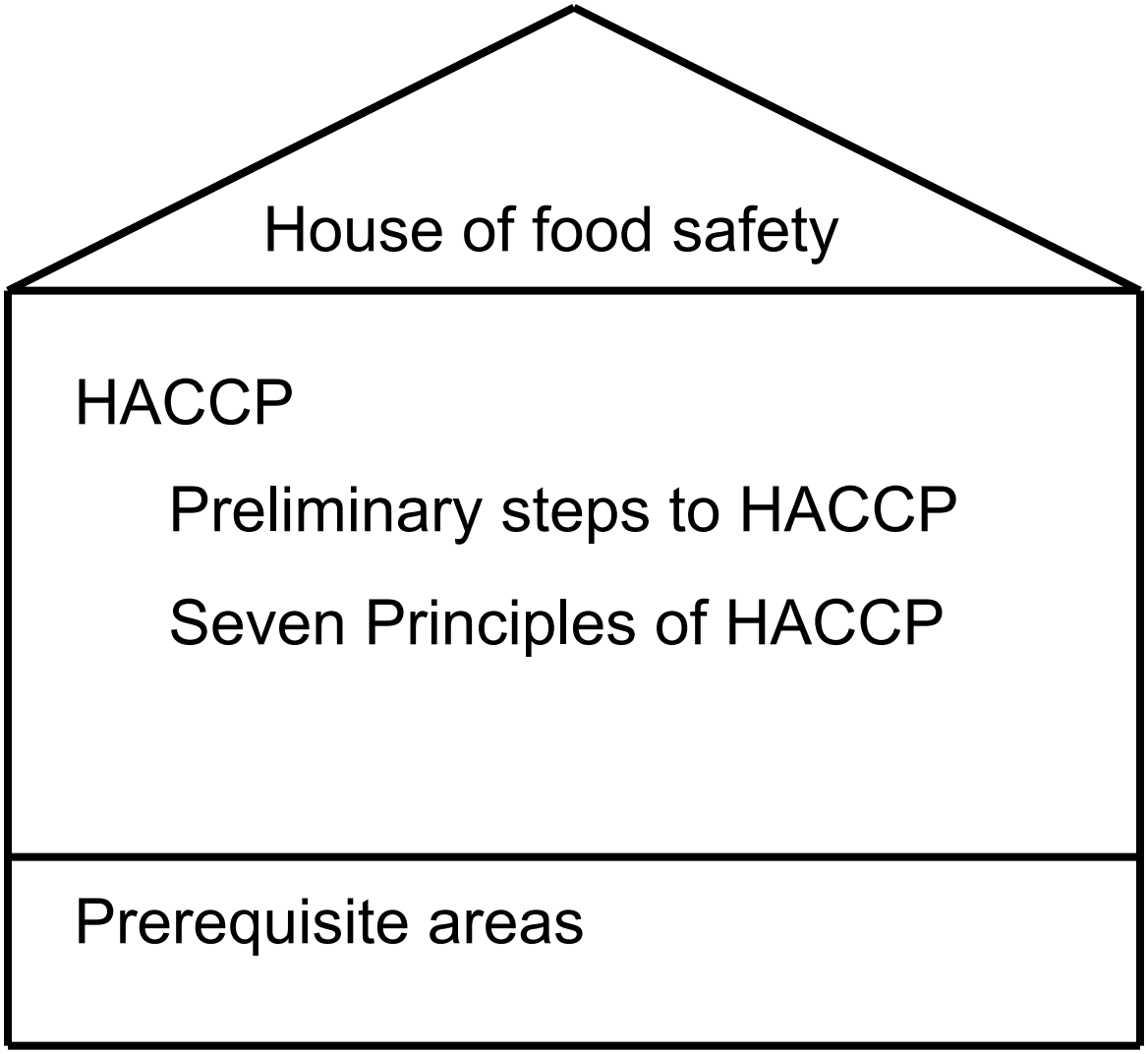
Original principles of HACCP

- Identification of hazards
- Determination of critical control points to control any hazard
- Establishment of monitoring systems



Adapted, Ciafrani et al. 2002

Preliminary steps to HACCP

- Assemble the HACCP team
- Describe the product and its distribution
- Describe the intended use and the users of the product
- Develop the process flow diagram
- Verify the process flow diagram

Seven principles of HACCP

- Conduct a hazard analysis
- Determine the Critical Control Points (CCPs)
- Establish Critical Limits (CLs)
- Establish monitoring procedures
- Establish corrective action
- Establish verification plan
- Establish recording keeping and documentation procedures

Prerequisite areas for HACCP

- Training
- Personnel practices
- Premises equipment and facilities
- Good Manufacturing Practices
- Cleaning, sanitation and pest control
- Receiving, transportation and storage
- Traceability and recall
- Suppler control
- Hazardous material handling

International expansion of HACCP

ISO WD 22000:200x

- Food safety management system - Requirements
- Scope
  - Defines food safety management system using Codex's seven principles of HACCP
  - Auditable
  - Can be used for certification

ISO WD 22000:200x

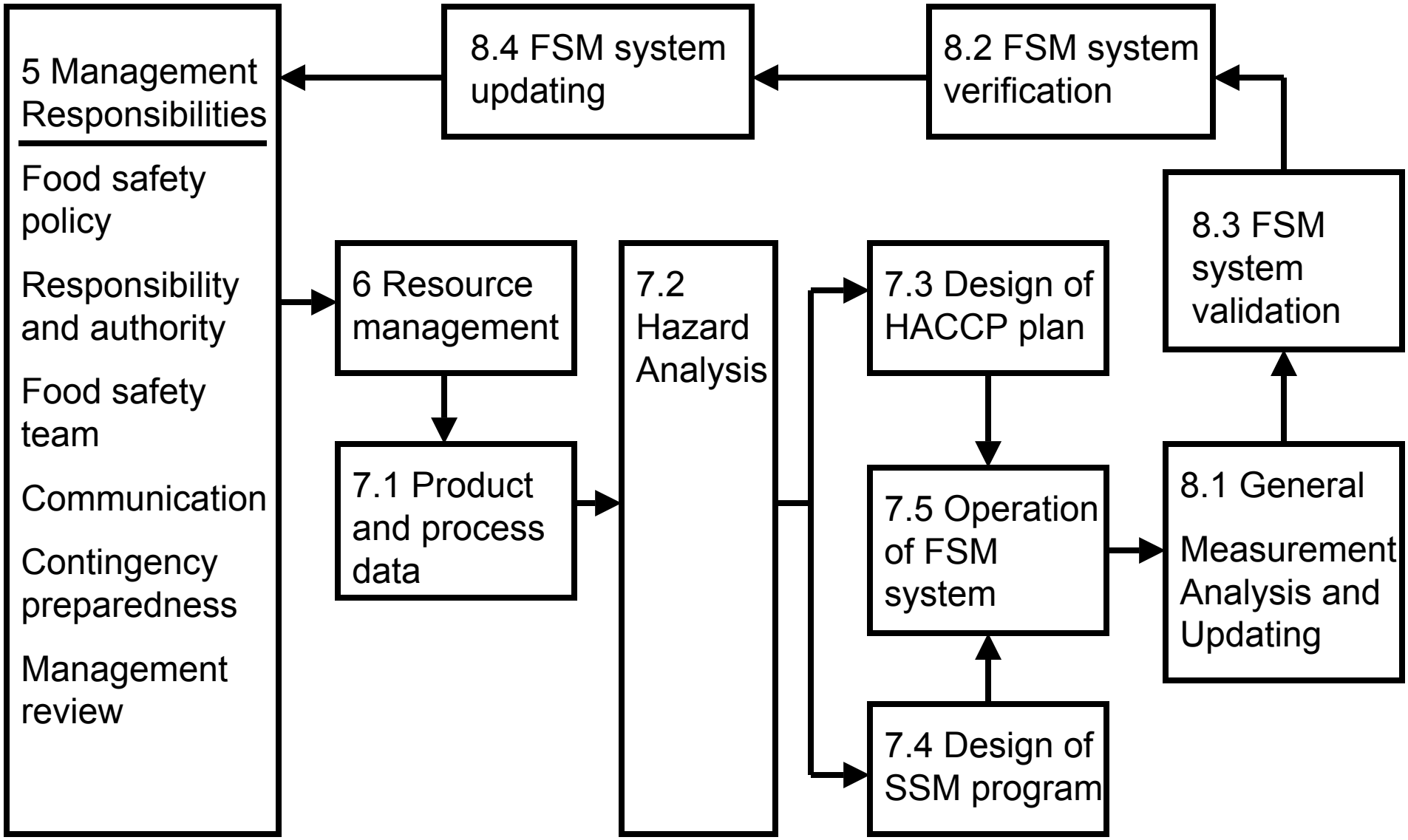
- Scope
  - Will link HACCP to prerequisite areas and SSOPs
  - Structure will be aligned with ISO 9001 and ISO 14001
  - Provides a mechanism for communication of HACCP concepts internationally

Tentative timetable for development of the standard

- March 2003 ISO CD 22000:200x
- Sept 2003 ISO DIS 22000:200x
- May 2003 ISO FDIS 22000:200x
- Sept 2004 ISO 22000:200x

ISO WD 22000:200x

- Structure will include
  - Policy
  - Planning
  - Implementation
  - Operations
  - Performance assessment
  - Improvement
  - Management review


5 Management Responsibilities
Food safety policy
Responsibility and authority
Food safety team
Communication
Contingency preparedness
Management review
8.4 FSM system updating
8.2 FSM system verification
8.3 FSM system validation
6 Resource management
7.1 Product and process data
7.2 Hazard Analysis
7.3 Design of HACCP plan
7.5 Operation of FSM system
7.4 Design of SSM program
8.1 General
Measurement Analysis and Updating

Relation of ISO 22000 to HACCP

- Assemble HACCP team
- Describe product
- Identify Intended use

- 5.3 Food safety team
- 7.1.3 Raw materials and food contact materials and 7.1.4 End product characteristics
- 7.1.5 Intended use

Relation of ISO 22000 to HACCP

- Construct flow diagram
- Existing control measures
- On-site verification of flow diagrams

- 7.1.2 Flow diagram
- 7.1.6 Description of process steps and other control measures in place
- 7.1.2 On-site confirmation of flow diagram

Relation of ISO 22000 to HACCP

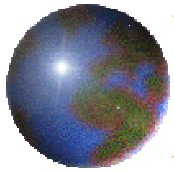
- Principle 1 Conduct hazard analysis
- Principle 2 Determine CCPs
- 7.2.2 Hazard identification and characterization
  7.2.3 Hazard assessment
- 7.2.4 Identification and assessment of control measures

Relation of ISO 22000 to HACCP

- Principle 3 Establish critical limits
- Principle 4 Establish a monitoring system
- Principle 5 Establish corrective actions
- 7.3.2 Determination of critical limits for CCPs
- 7.2.3 Design of the monitoring system
- 7.3.4 Actions when critical limits are exceeded

Relation of ISO 22000 to HACCP

- Principle 6 Establish verification procedures
- Principle 7 Establish documentation and record keeping
- Prerequisite areas (implied)
- 8.3 FSM system validation, 8.2 FSM system verification
- 4.2 Documentation requirements
- 7.4 Design SSM programs



Globalization and international trade

- There is increased food trade between WTO countries
- Customers around the world are demanding safe food
- Companies around the world are responding by implementing food safety management systems to ensure the production of safe food