



Expanding Global Capacity Building in Risk Analysis and it's use in Regulatory Analyses

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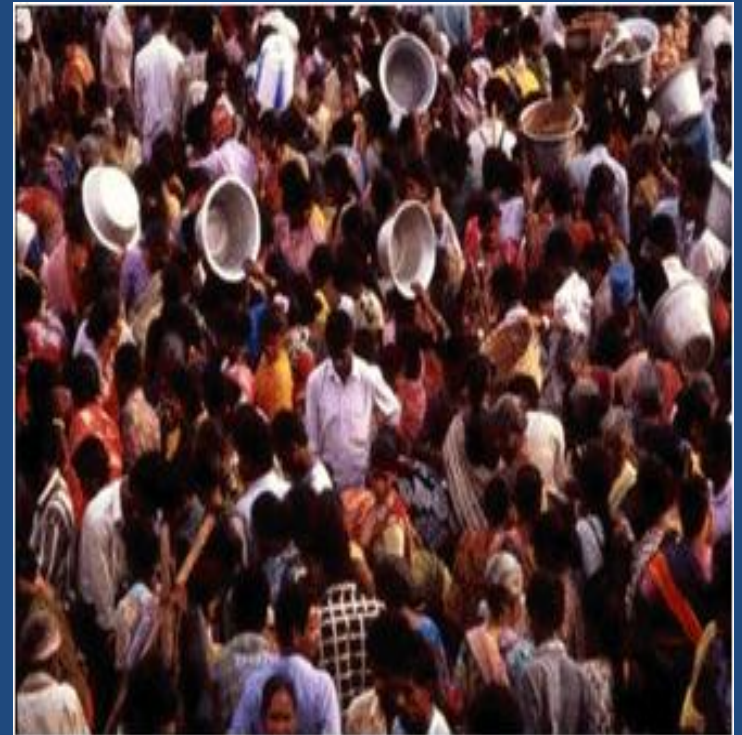
Background

Consumption of unsafe food and water continue to be one of the major causes of preventable malnutrition, disease, and death.

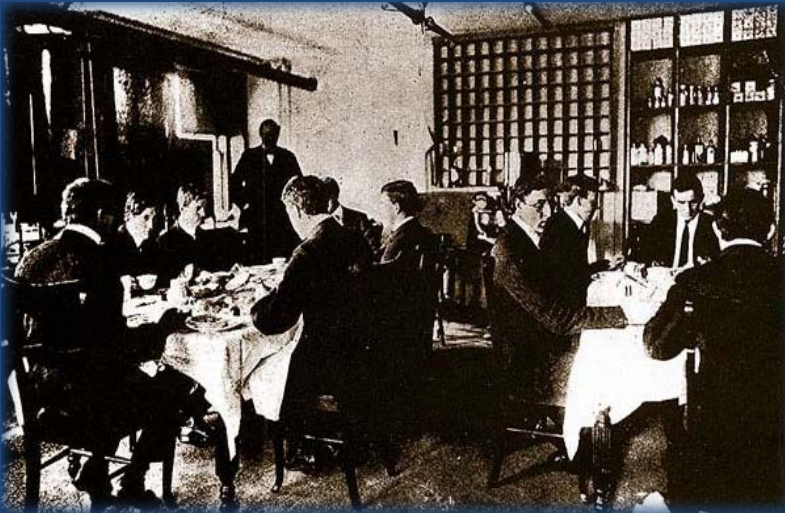
- 1.7 million deaths and 54.2 million Disability Adjusted Life Years lost annually due to unsafe water, lack of hygiene and insufficient sanitation (WHO)
- 3 to 3.5 million ha. of agricultural land in developing countries are being irrigated with raw or diluted wastewater (IWMI)
- Over 4.5 billion people are chronically exposed to toxic fungi in staple crops which may cause cancers, liver diseases and stunted growth in children (CDC)

Factors driving demand for food safety

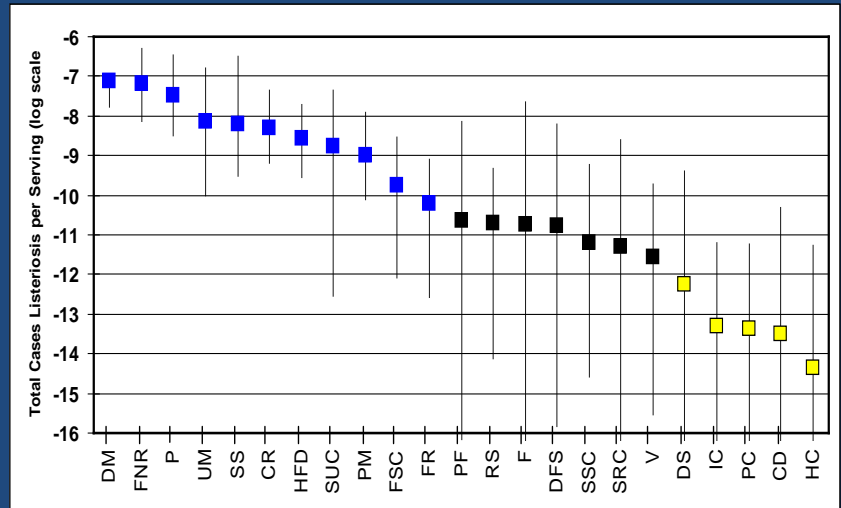
1. Increasing income and urbanization
2. Technological advancement in detecting and tackling food safety risks
3. Institutional changes which require use science based risk analysis in rule making, adoption of stricter food safety standards and modern marketing channels – SPS and TBTs (and private standards– e.g. GlobalGAP)



Risk Assessment: Then and Now



1906 – Dining room of “poison squad”:
A direct approach to assessing risk



Risk Assessment modeling techniques

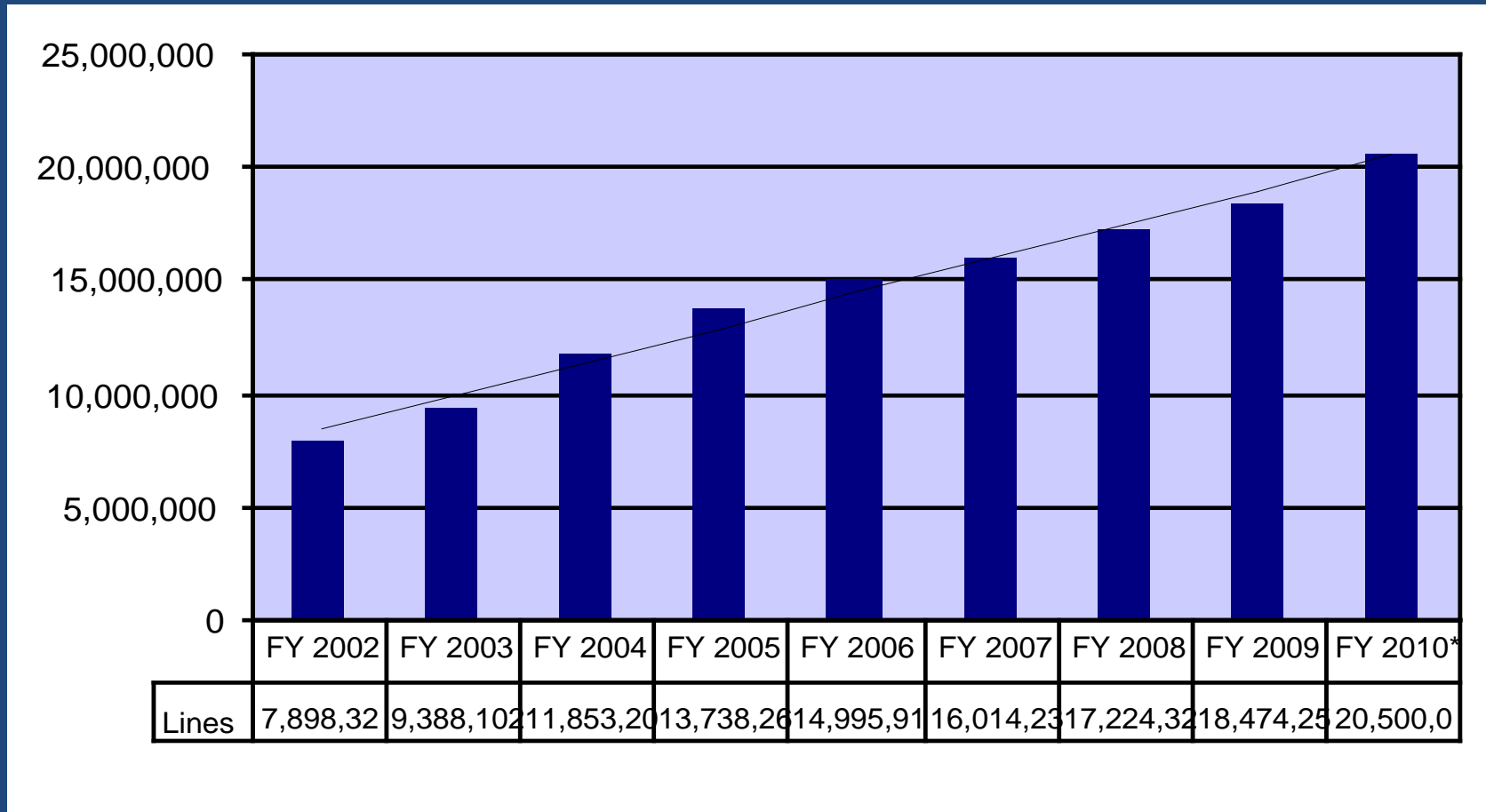
Food Modernization Act

- Charged FDA to develop a comprehensive plan to expand the technical, scientific and regulatory capacity of foreign governments, and their respective food industries, from which the foods are exported to the US

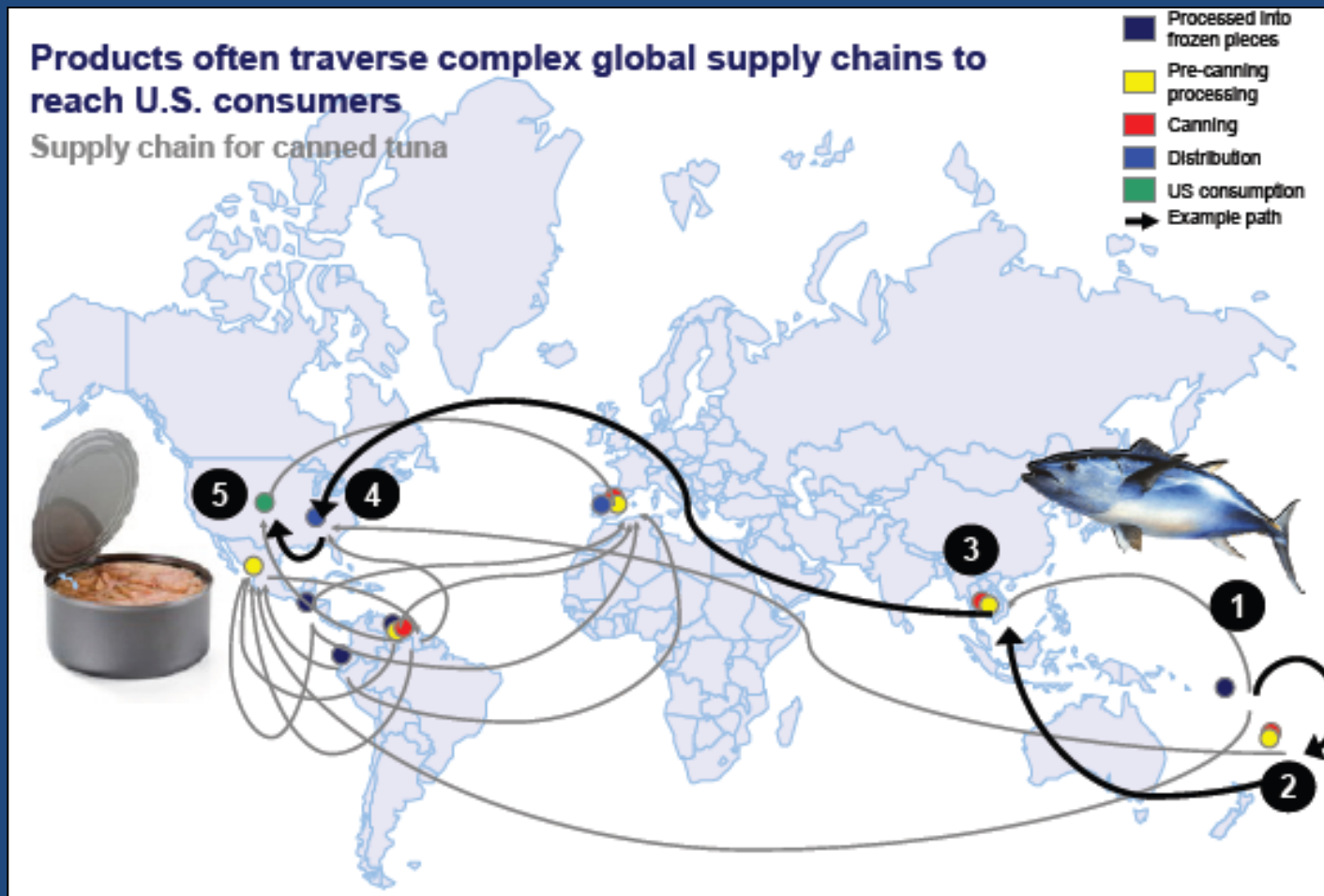


Signed into law January 4, 2011

Imports of regulated products increased nearly threefold between 2002 and 2010



Canned tuna travels the global supply chain before reaching American tables.



Source: FDA, 2010

How can Risk Analysis Program respond to increased need?

- Expand capacity of people in developing countries to conduct risk analysis
 - Rethink the Risk Analysis program?
- Develop hands on “real world” activities for both the qualitative and quantitative risk analysis programs
 - Have people come to class prepared to conduct a RA based on a product of interest (present before leave)
 - Research projects with partners in developing countries
- Develop mentoring programs with countries establishing risk analysis programs (China National Centre for Food Safety Risk Assessment)
- Establish closer links with WTO Standards and Trade Facility and CODEX

Dr. Zhu discussed his project: Cross-Contamination in Food Preparation in China A Mechanistic Model Applied to *Salmonella*-Broiler Chicken Combination



Comprehensive course on use of Risk Analysis in Regulatory Science

- Currently all training programs teach snapshots of the process

Core Elements of Regulatory Systems

- Responsive
- Outcome-Oriented
- Predictable
- Proportional or Risk-Based
- Independent

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES
Advising the nation / Improving health

Ensuring Safe Foods and Medical Products through
Stronger Regulatory Systems Abroad

Expand Course on Risk Communication

- Current and widely accepted food-safety training models are designed with the assumption that we are able to devise comprehensive and prescriptive rules for all food-safety practices that will be followed at all times, regardless of the situation
- Behavioral change does not always occur
- Develop concept note with Center for Risk and Communication, UMD



Expected outcomes

- Intermediate outcomes
 - Increased number of people to conduct risk analyses in developing countries with those people training people in country
 - Increased use of risk analysis to support regulatory science in developing countries
 - Increased use of risk communication tools to get people to alter behavior to ensure provision of safe food
 - Increased traffic and use of the data bases found exclusively on foodrisk.org
 - Improved understanding of how risk analysis is used to support rule making
- Outcome impacts (long term)
 - Increased exports from developing countries to US (revenue from developing countries)
 - Decreased rejections by FDA/USDA of imported products
 - Reduced food related recalls (domestically)
 - Reduced food borne illness (particularly associated with imports)
 - Behavioral change in consumers and people along the supply to ensure the provision of safe food

Past Risk Analysis Activities

- Core Courses
 - Overview of risk analysis
 - Risk management
 - Risk communication
 - Risk assessment
- Intermediate Courses
 - Quantitative risk assessment methods: probabilistic methods
 - Quantitative risk assessment methods: model building
- In country courses
 - Thailand (2006), Croatia (2006), Mexico (2006), Nicaragua (2007), Norway (2009), Alabama (2009), India (2011), **Taiwan (2012)**

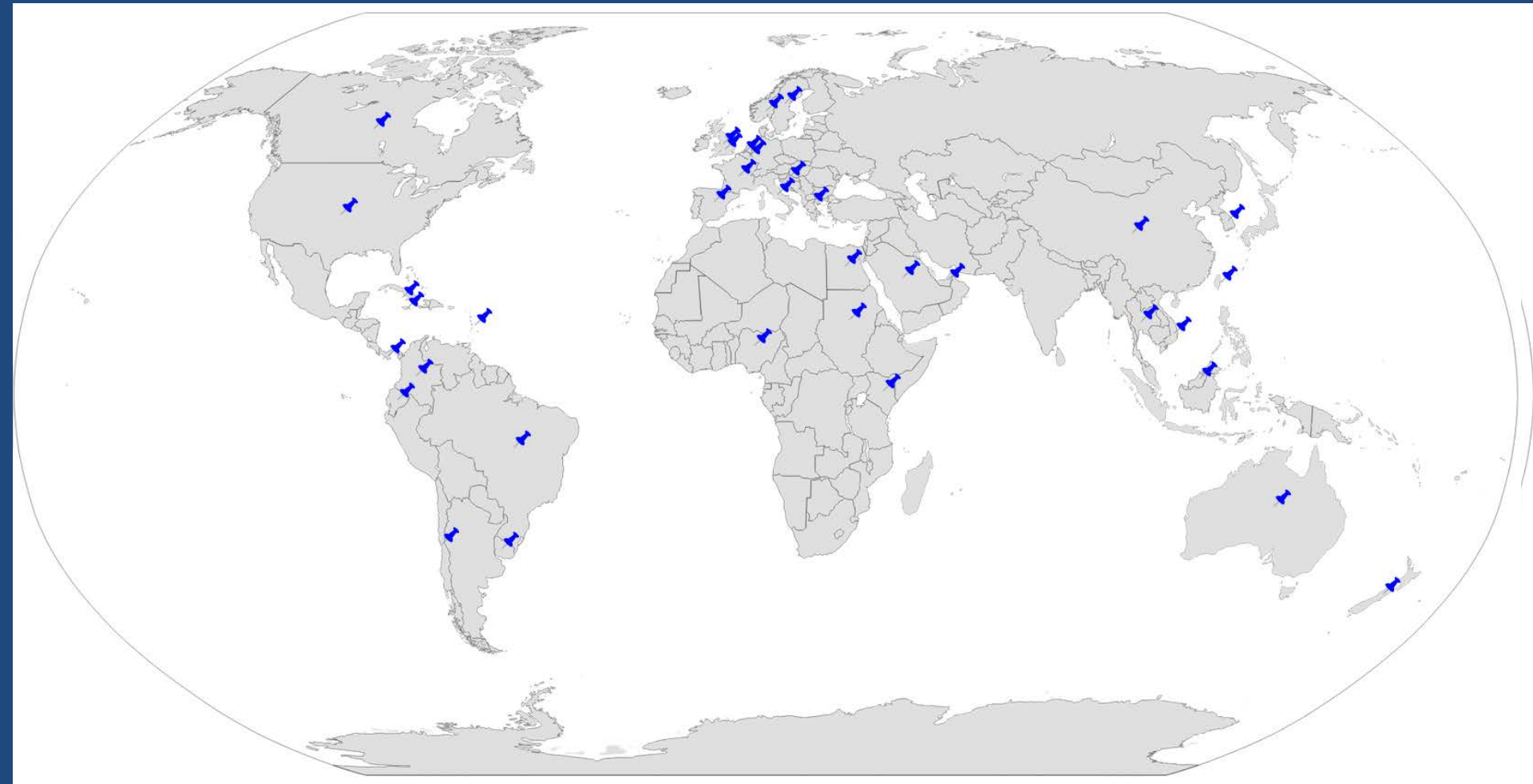


Have trained 1260 individuals from over 30 different countries who took over 2000 course

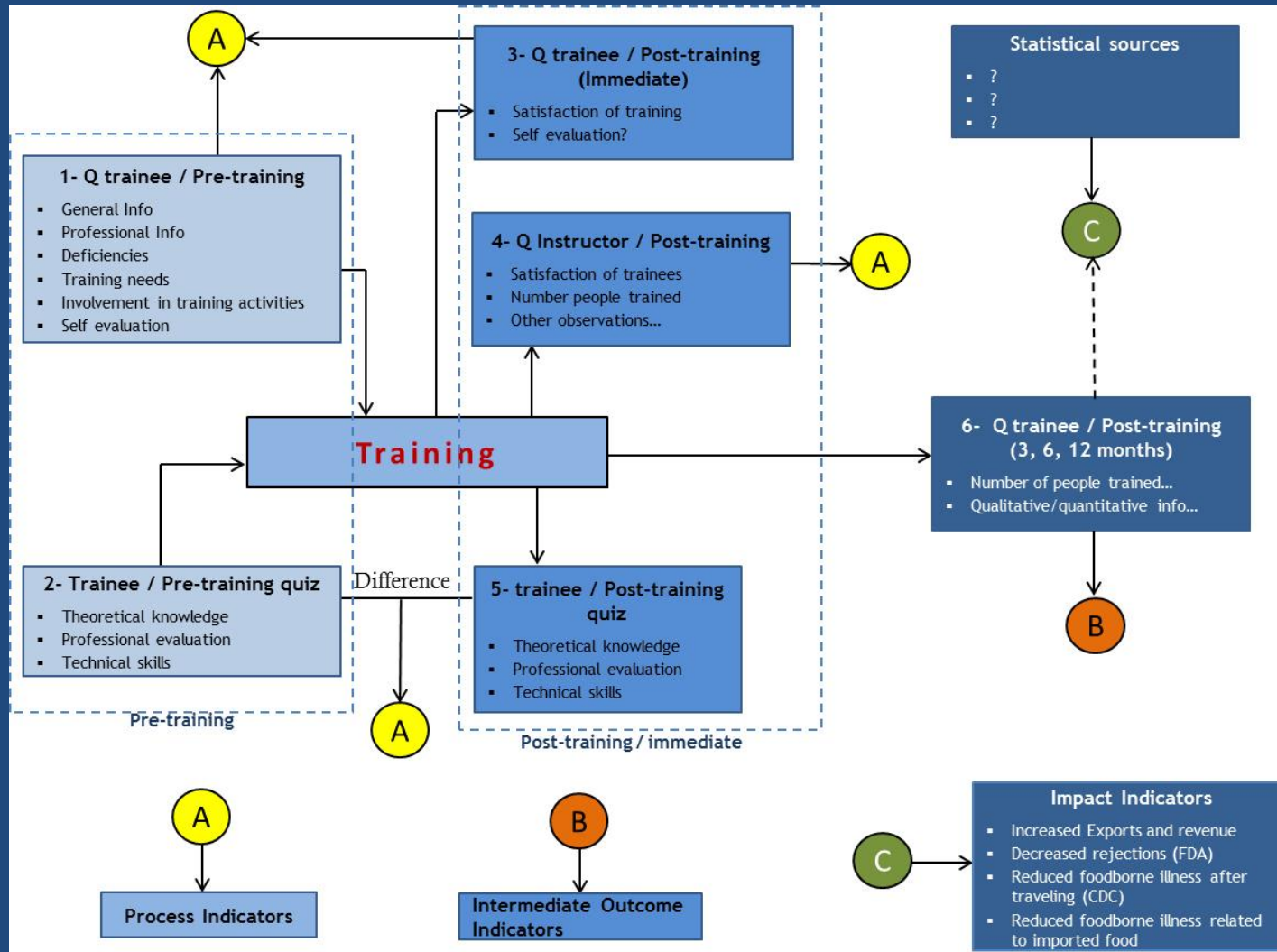
Risk Analysis Fellowship Program

- JIFSAN offers one tuition fellowship to developing countries
 - 2010: Brazil
 - 2011: Uruguay
 - 2012: Malawi (11 applicants this year)
- ILSI (International Life Science Institute) fellowship to China National Centre for Food Safety Risk Assessment
 - Provides travel and tuition support for participating in SIP Courses and working with JIFSAN on a research project (3 months)
 - 2011: Dr. Jianghui Zhu
 - 2012: Dr. Xiaoyu Song

Risk Analysis Training



Develop Tools to Evaluate Impact of Training Programs



Metrics Project

- Piloting aspects of survey instrument this year
 - Risk based inspection (China)
 - GAPs training (Honduras)
 - Risk Analysis- SIP (US)
 - Several IFSTL – (US)
- Full pilot planned for Mexico Gaps program

FoodRisk.org database

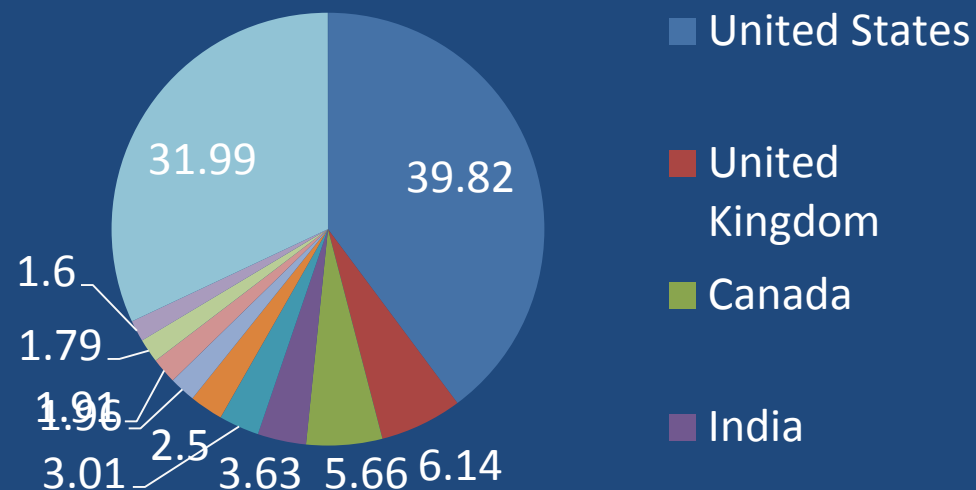
- The only comprehensive on-line resource for food safety risk analysis
- The aim of FoodRisk.org is to assist professionals involved with the many aspects of risk analysis as it pertains to the safety of our food.
- Includes unique datasets, tutorials, tools, and links to numerous sources of information.
- Host to the US Interagency Risk Assessment Consortium

The screenshot shows the FoodRisk.org website homepage. At the top, it says "Maintained by JIFSAN". The main header features the "FoodRisk.org" logo in a green banner with mathematical formulas in the background. Below the logo is a navigation menu with links: HOME, ABOUT US, EXCLUSIVES, EVENTS, IRAC, COMMUNITY, CONSUMER RESOURCES, and CONTACT. A search bar is located below the menu, with the text "Search FoodRisk Database" and a "SEARCH" button. The main content area is divided into three columns. The left column is titled "TOOLS & RESOURCES" and lists categories like Tools, Risk Assessment Models, Risk Assessment Repository Databases, Datasets, Learning Resources, and Software. The middle column is titled "EXCLUSIVES" and lists recent updates such as "A Swift Quantitative Microbiological Risk Assessment (SQMRA) Tool", "Center for Food Safety and Security Systems (CFSS) Microbial Food Safety Literature Databases", "FDA's Fresh Produce Risk Ranking Tool", "Food Handling Practices Model v1.5", "Australian Risk Assessment Model for Listeria Monocytogenes in Ready-to-Eat Meats", "EcoSure 2007 Cold Temperature Database", "SRA Workshop 19", "Consumer Storage Practices for Refrigerated Ready to Eat Foods", "Tomato Safety Research Needs Workshop 2007", and "Society For Risk Analysis Annual Meeting 2006". The right column is titled "HOT TOPICS" and lists "Risk Assessment Repository Tool Launched!", "Ranking the Risks: The 10 Pathogen-Food Combinations with the Greatest Burden on Public Health", and "International Center of Excellence in Food Risk Communication". Below the hot topics is a "CALLS FOR DATA" section with a call for data and experts for future meetings and review of JEMRA. The footer contains links for "About", "Exclusives", "Events", "IRAC", "Consumer", and "Tools", along with logos for JIFSAN and the University of Maryland. Copyright information at the bottom reads "© 2011 University of Maryland. All Rights Reserved."

Since March 6, 2010 (Past 2 years)

- Data from Google Analytics
- 109,863 visits
- 84,518 unique visitors
- 295,150 page views (2.69 pages/visit)
- 2.43 minutes average time on site
- Visitors from 197 countries
- 76% new visitors

Top 10 Countries



Highlight uniqueness of site








- Repository of risk assessments and regulatory analysis used to support food safety rule making for FDA and FSIS (USDA)
- iRisk – interactive tool for running risk analysis models (public and private versions)
- Interactive online Catalogue on (Quantitative Microbial) Risk assessment (coming)
 - Netherlands, Denmark, JIFSAN
- Food Commodity Intake Database, 2003-2006 (coming)
 - developed by U.S. EPA's Office of Pesticide Programs
- Developing with FDA a streamline search interface linking USDA's international transport data to, region, time period, shelf life data, and outbreak data (conceptual phase)

Risk Assessor Models

Model Tree

 Collapse All |  Expand All |
Toggle All

My Models

	Name	Pathogen	Food Matrix	Region
	BfR/DNV QMRA	Campylobacter (spp.)	Chicken	Germany
	CARMA	Campylobacter (spp.)	Chicken	Netherlands
	DVFA QMRA	Campylobacter (spp.)	Chicken	Denmark
	EFSA SiP	Salmonella (spp.)	Pork	Europe
	FDA QRA on Public Health Impact	Vibrio (parahaemolyticus)	Seafood	United States
	VLA QMRA	Campylobacter (spp.)	Chicken	United Kingdom
				

New Model Details

Name *

Pathogen *

Food Matrix *

Region *

Year

Developed

Software

Food Commodity Intake Database

What We Eat in America

Welcome



Welcome to the U.S. EPA's What We Eat in America - Food Commodity Intake Database, 2003-2006 (WWEIA-FCID 2003-06). WWEIA-FCID 2003-06 was developed by U.S. EPA's Office of Pesticide Programs to improve the utility of the WWEIA food consumption survey for dietary exposure assessment. WWEIA-FCID 2003-06 can be used to translate food consumption as reported eaten in WWEIA (1999-06 survey cycles) and CSFII (1994-96, 1998) into consumption of U.S. EPA-defined food commodities.

WWEIA-FCID 2003-06 contains almost 6,000 recipes based on more than 500 U.S. EPA-defined commodities. The database also includes WWEIA 2003-06 food consumption and demographic data that is available through CDC's National Center for Health Statistics at [this page](#).

In addition to its applications in dietary exposure assessment, WWEIA-FCID 2003-06 also offers the following capabilities.

- The ability to link foods that are commonly consumed in the U.S. to EPA-defined food commodities
- A point-and-click user interface that makes the underlying data more accessible

Getting Started

Click the buttons below to get started.

- The **FCID Recipe** button provides a search interface used to search FCID recipes and generate a user-friendly report.
- The **Database Contents** button provides a searchable and navigatable list of tables and fields.

FCID Recipe

Database Contents
Information

Next Steps

- Explore funding mechanisms for supporting students from developing countries
- Develop MOA's with various regional and international groups supporting capacity building in risk analysis
- Develop concept notes on developing intermediate courses in risk communication and risk analysis
- Develop concept notes for research projects in developing countries that included training components in risk analysis and lab testing methods
- Start expanding mentoring programs with countries having newly established regulatory programs in risk analysis
- Remodel foodrisk.org website
- Develop a data base of the survey information for all JIFSAN training programs and develop a database

Possible Increase Involvement of Advisory Board with JIFSAN

- Leveraging International Food Safety Conferences and Trade Shows to build stakeholder interest in the need for expanding risk analysis training to developing country nationals
- Offer fellowships to students from developing countries where you have factories in risk analysis training
- Facilitate implementation of risk analysis projects involving developing country nationals along supply chains you are involved in

Questions?

