International Workshop on Post-Accident Food Safety Science

Session 1:
The Food Management Situation in Japan after the Fukushima Daiichi NPP Accident
Status of contaminated areas

• Comprehensive monitoring plan: environmental survey by helicopter, drone, vehicle and walking
  – Dose rate and accumulative dose
  – Dust in air
  – Land sediment, index plants, cultivated soils, forest, pasture
  – Fallout and tap water, underground and well water, irrigation reservoirs, sea areas
  – Schools, ports, airports, parks and sewerage, natural parks
  – Foodstuffs
  – Wastes

• Different types of devices
• Maps and evolution with time
• Now dose rates ~ background levels; mainly due to radio decay
• Monitoring data available on the web (Japanese and other lang.)
  – Battle against false rumours
Situation in sea area

- Monitoring of seawater (close and far to NPP), sediments (radionuclides migration), biota (fisheries)
- H-3, Sr-90, Cs-134, Cs-137, Pu isotopes + I-131
- More or less easy to measure
- Areas: <2 km, 2-20 km, 20-100 km, >100 km
- Surface water, 1 m, 100 m, 200 m, 300 m, 500 m depth
- Difficulties at the beginning because of debris
- Levels are decreasing (quicker than radioactive decay)
- Back to background levels in water but not in sediments close to the coast,
- Inter-laboratory comparison (IAEA): Japanese labs are reliable
Situation in food

• Establishment of limits, by Nuclear Safety Commission
  – Provisional in March 2011; revised in March 2012
  – Based on 1 mSv/y; Cs as indicator
  – 10 Bq/kg (drinking water), 50 Bq/kg (milk, infant food), 100 Bq/kg (general food)

• Monitoring plan
  – Set in March 2011
  – Guidelines in April 2011 by Nuclear Emergency Response Headquarter
  – Inspection plan, revised regularly
  – Implemented by local governments or municipalities in 17 prefectures (Fuku. Agricultural Technology Center)
  – Frequency depending on products (systematic for rice)

• Food exceeding the limits
  – Recalled and disposed
Monitoring plan for food

• Concerned food
  – Items detected > limit: mushrooms, wild plants and animals
  – Items influenced by management of feeding: milk, beef
  – Fishery products
  – Items after lifting restrictions
  – Food distributed in the market

• Methodology
  – Shredding, weighting, measurement, analysis
  – Treatment of measuring equipment and samples to ensure reliability

• Restriction of distribution and/or consumption
  – Distribution: in areas where limits are exceeded
  – Consumption: when the limits are significantly exceeded
  – Criteria for lifting restrictions local dependant (no limit exceeded for a time)

• Results
  – From 0.88% (1st year) to 0.09% (5th year) above the limits
  – From 3.41% to 0.08% in Fukushima prefecture
  – 0.0006 ~ 0.0015 mSv/y (Cs)
Measures to reduce contamination

• Fruit trees
  – High pressure washing of trees, scraping of surface bark

• Tea trees
  – Further plucking and pruning of leaves and branches (original measure)

• Rice
  – Fertilization with potassium (with prudence)

• Mushrooms
  – Use of safe logs as mushrooms support, decontamination of logs
  – Greenhouses
  – Dissemination of information and guidance

• Farmlands
  – Removing of topsoil
  – Reversal tillage

• Feed management
  – Reference values for feed
  – Farmland management
Global impact on agriculture after 5 years

• Rice, beef: consumer has choice => activity in Fukushima decreasing more than in Japan
• Prices globally back to levels before earthquake but now less than the average in Japan
• Still discrimination of products from Fukushima
  – Contamination and inspections are focalised to Fukushima
  – Rumours despite huge efforts and good results (~ no sample > limits)
  – Problem with societal acceptance
• Problem with perception by consumers and distributors
• Efforts of producers not enough visible
• Information the most expected by public is related to survey
• High cost of damage (~ 14 trillion yen), partially paid by TEPCO
• Comics to explain situation

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Thank you for your attention