



# ***Globalisation and its impact on emerging risks***

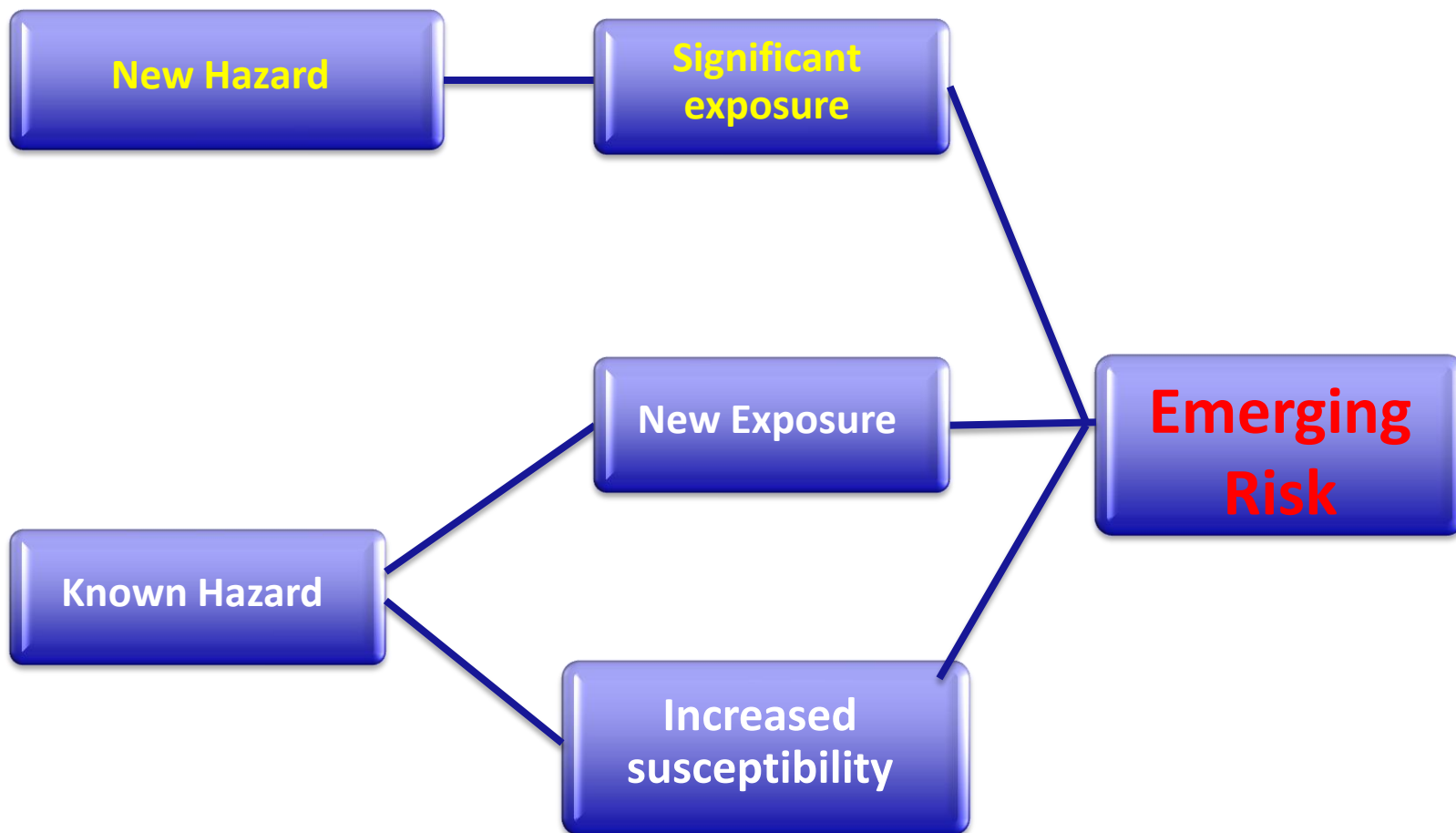
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Scientific Committee and Emerging  
Risks

# OVERVIEW

- Definition of emerging risks
- Why are we interested ?
- Examples of what to expect




# DEFINITION



ESFA, 2007. Definition and description of « emerging risks » within the EFSA's mandate. Statement of the Scientific Committee, 10 July 2007.

# WHY ARE WE INTERESTED IN EMERGING RISKS ?

- 
- Anticipation of future risk assessment needs
    - Data / Knowledge
    - Risk assessment methods  
(via data gathering/surveillance/research etc)
  - Help risk manager anticipate (or even prevent) future food/feed etc safety challenges

# GLOBALISATION CONTEXTS

- 
- **Trade**
    - New products
    - New contaminants
    - New fraudulent behaviours
  - **Travel**
    - Vectors
    - Diseases
    - Invasive species
  - **Natural processes !**
    - Vectors
    - Diseases
    - Invasive species
    - Contaminants


## EXAMPLES

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# THE TOMATO LEAFMINER *TUTA ABSOLUTA*



## THE TOMATO LEAFMINER *TUTA ABSOLUTA*

- 
- Until early 90's tomatoes in Northern Europe were sold as single fruits rather than as vines.
  - Increased demand for vine tomatoes led to importation from 3rd countries.
  - The green stems and leaves can carry pests and diseases not occurring on the fruits.
  - Repacking of imported fruits required specialist equipment present at facilities often in tomato production areas in the EU.
  - This combination of circumstances led to the introduction of *T. absoluta* and its rapid spread across Europe.




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## TYPES OF FOOD FRAUD (SPINK 2007, 2009)

- 
- **Adulteration** e.g. melamine in milk
  - **Tampering** e.g. changed expiry date
  - **Over-run** e.g. under-reporting of production
  - **Theft** e.g. product distributed outside of regulated supply chain
  - **Diversion** e.g. relief food redirected
  - **Simulation** e.g. inexact copies of foods produced without the same food safety assurance
  - **Counterfeit** e.g. product fully replicated but without the same food safety assurance

## EXAMPLES OF FRAUD

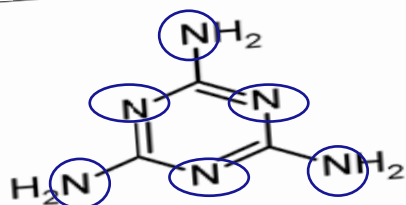
Globalisation = big money for legitimate business ..... and for others too:

- **Adulteration**
  - Milk with melamine
  - Milk with leather proteins
  - Milk with clouding agents
- **Counterfeiting**
  - Pesticides (organised crime)



# MELAMINE

- approved as food contact material  
(Directive 2002/72/EC)



- legally used in plastics, fabrics, glues, colorant for inks etc

- illegally used in feed & food



analytical tests measure higher protein content



£ € \$





- 2007: pet feed contaminated with melamine imported from China  
    ➡ kidney failure, deaths in **dogs, cats**
- 2008: contaminated infant milk, milk products produced and consumed in China  
    ➡ kidney failure, deaths in **children**
- EU: no imports of milk & milk products from China, but products containing milk (biscuits, chocolate) imported



## EXAMPLES

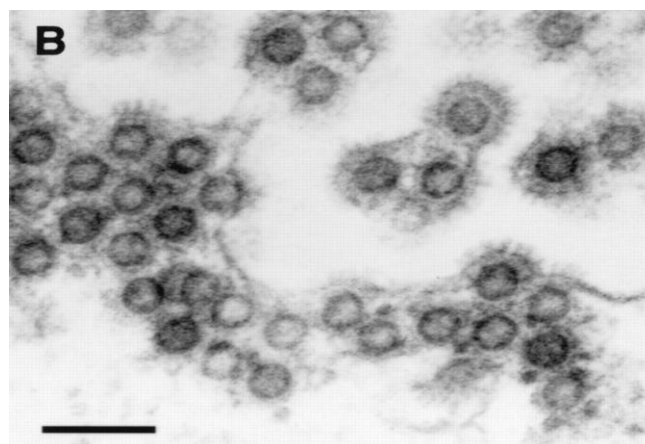
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## BUSH MEAT (CHAUBER ET AL., 2010)

- 
- Passengers on Air France flights from Central/West Africa into CdG airport were checked over a 18 day period.
  - Passengers carrying iceboxes were targeted
  - 134 passengers inspected from 29 flights
  - Estimated that for this airport and the Air France routes inspected, 3287 tonnes of fish and meat and 273 tonnes of bushmeat imported per year
  - Bushmeat in EU is sold for around 20x price in country of origin
  - No sanitary controls, exotic species .....  
Diseases ?

## BUSH MEAT (SMITH ET AL., 2012)

- Study from bush meat confiscated at 5 US airports
- From 44 animals (apes, monkeys, rodents)
  - Simian foamy virus (zoonotic)
  - Herpesviruses (cytomegalovirus, lymphocryptovirus) (status unclear)





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## MARINE BIOTOXINS

- Introduction of ciguatera toxin producing algae into EU waters (ballast water ?)
  - Canary islands
  - Eastern Mediterranean
  - New cold tolerant species ?
- Introduction of okadaic acid producing microalgae into northern Mediterranean through the establishment of exotic macroalgae.



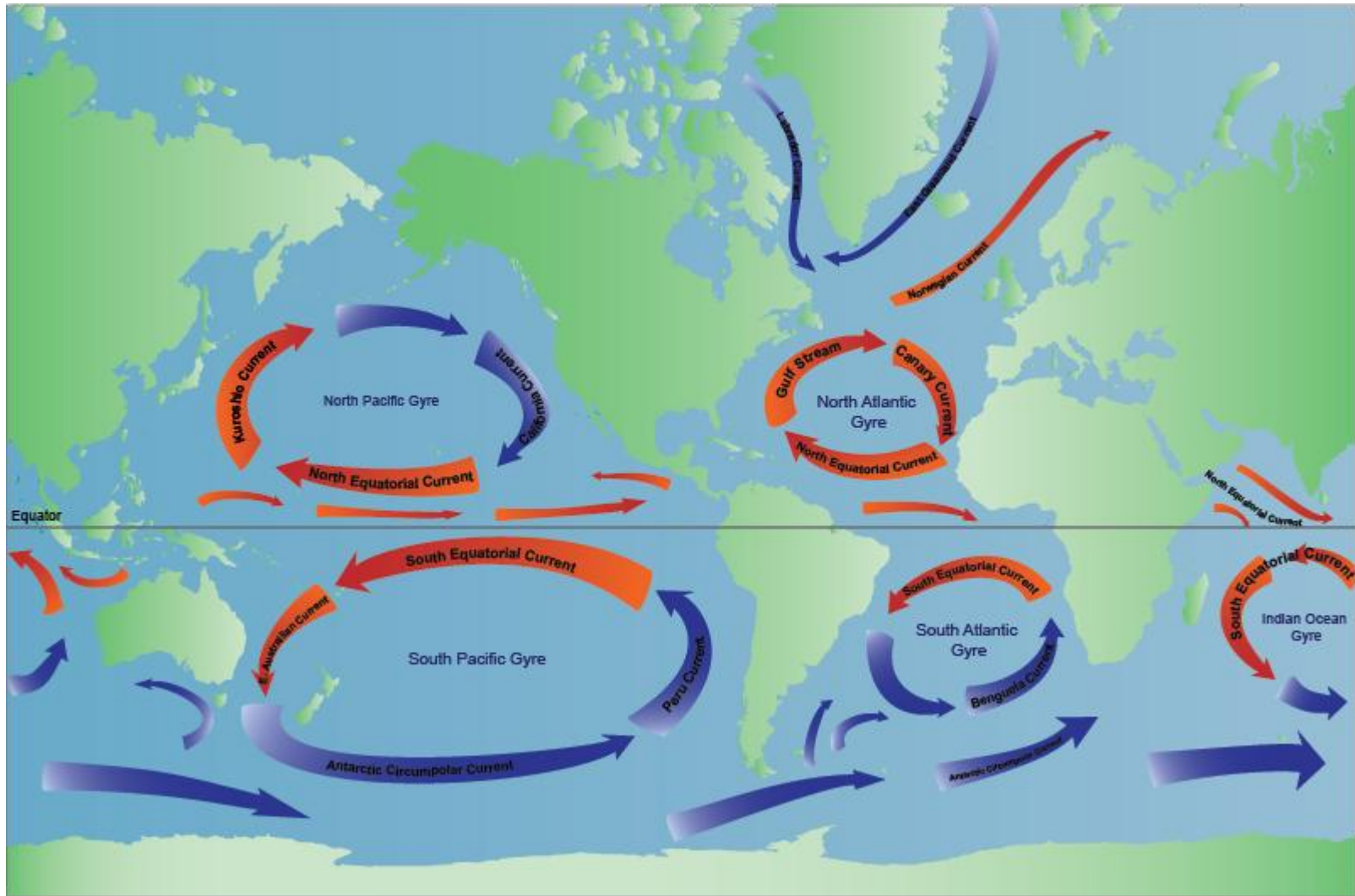
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# MICROPLASTICS IN MARINE ENVIRONMENTS




# A GLOBAL VILLAGE

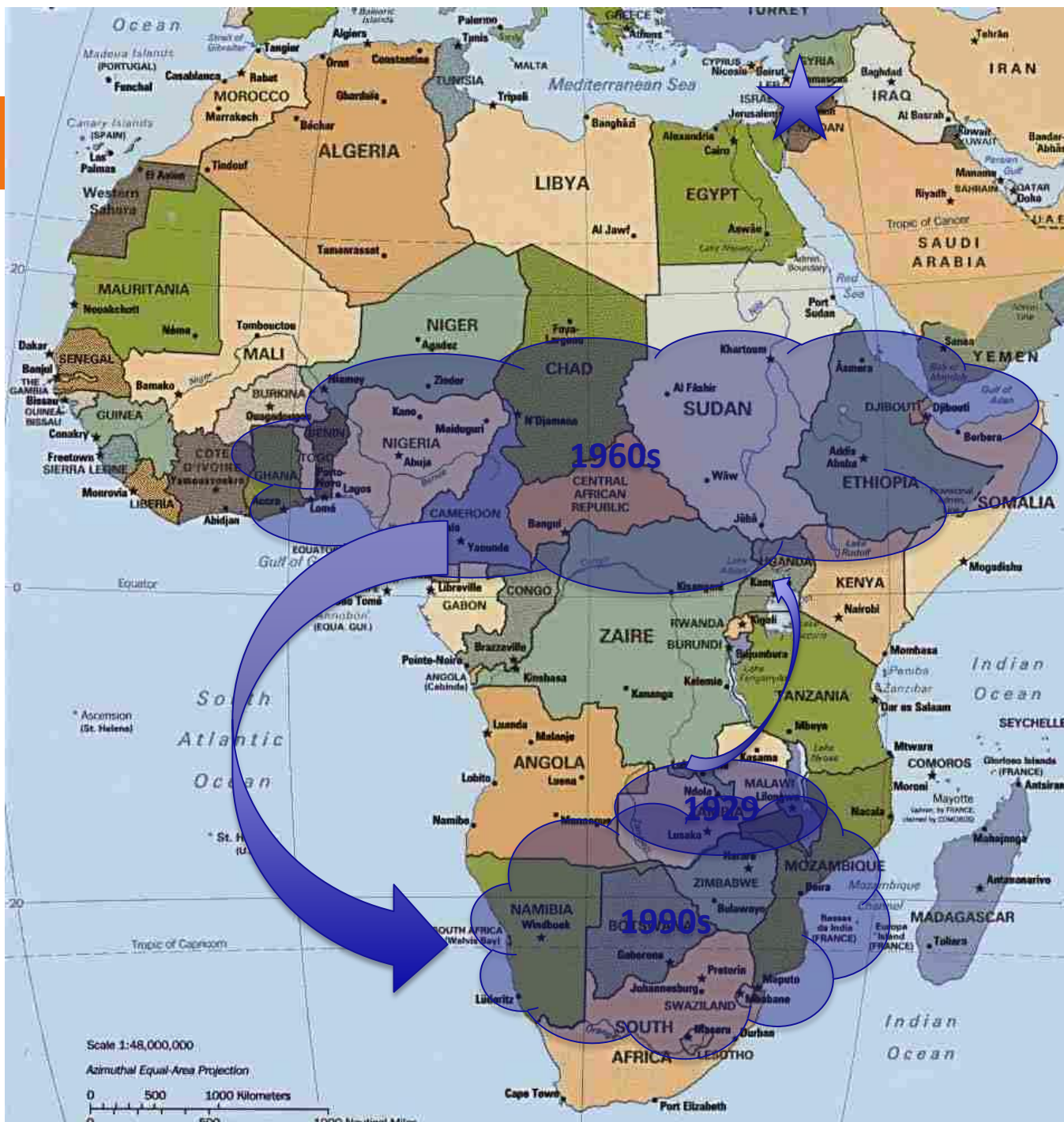


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## A GLOBAL VILLAGE

- 
- Lumpy Skin Disease
  - Infectious, eruptive, occasionally fatal disease of cattle characterized by nodules on the skin and other parts of the body.
  - The disease is of economic importance, because it causes reduced production, particularly in dairy herds, and causes damages to the future leather.
  - Despite being vaccinated, susceptible animals can still show clinical symptoms





## A GLOBAL VILLAGE - LUMPY SKIN DISEASE

- Outbreaks confirmed in Israel in 2007 and 2012, in Lebanon and Palestinian Territories in 2013.
- .... and now in Turkey




## A GLOBAL VILLAGE

- Situation exacerbated by political instability in the region reducing veterinary capacity, surveillance, control options .....

..... so food production in the EU is (potentially) susceptible to politico-social events in other countries



## FINAL THOUGHTS .....

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- Very complicated ! (food production, fraud, consumer preference, travel, waste disposal .....
  - Never underestimate human inventiveness ..... for good or evil !
  - How does climate change play into this ? (think: invasive species, “new” diseases) – does it make us more vulnerable ?
  - We cannot isolate ourselves - new food safety problems will come and find us, often through very unexpected routes
  - But ..... there’s much we could do to prepare ourselves, starting with networking with key international partners – the answers may already be out there !



■ **Thank you for your attention !**

