

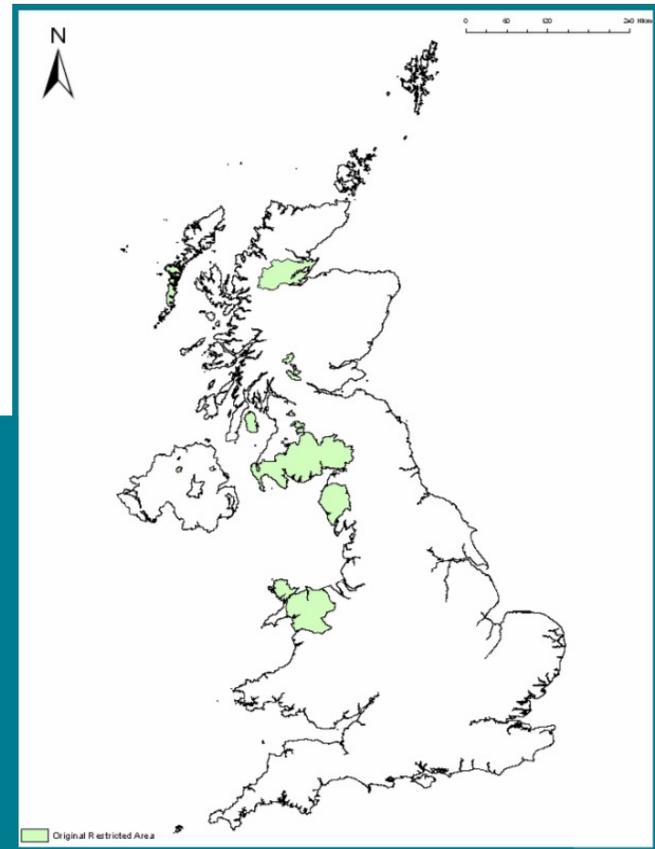


UK Health  
Security  
Agency

# Experience of upland sheep farmers in the UK following the Chernobyl accident

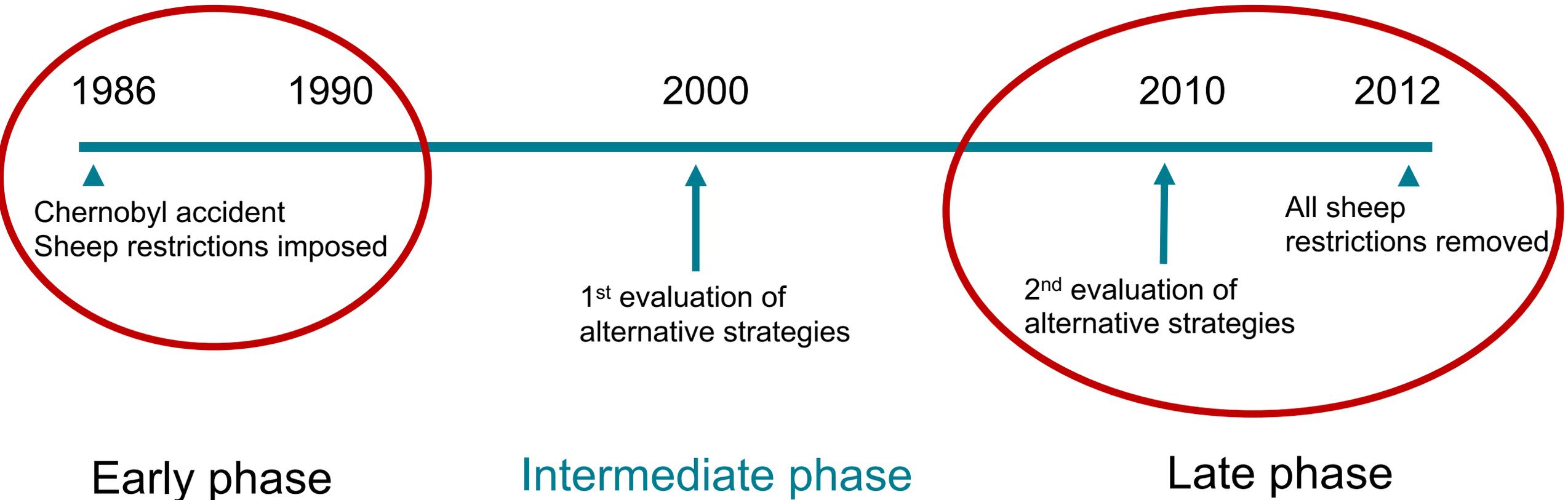
Anne Nisbet

NPO 25<sup>th</sup> Fukushima Dialogue



15 October 2023

# Overview of Chernobyl timeline in UK



# Content

- Upland sheep farming
- Impact of Chernobyl contamination
- Response of authorities ('early phase')
- Response of the farmers ('early phase')
- Building a co-expertise
- Evolution (output) of the co-expertise
- Lessons learned
- Conclusions
- Further reading/viewing



# Upland sheep farming

- The community has a distinctive traditional cultural identity.
- Economically fragile as the land is marginal for cultivation due to poor soils and difficult terrain
- Farmers have few alternatives to make a living
- Lambs are brought off the uplands to improved lowland pasture for 3-week fattening period
- Sale of spring lambs provides hill farmers with their only significant yearly income.
- Financial success depends on identifying the optimum time for marketing lambs (complex, requiring expert judgement)



# Impact of Chernobyl contamination

**1986**

**26 April**

Accident at Chernobyl

**2-4 May**

Plume passes over UK

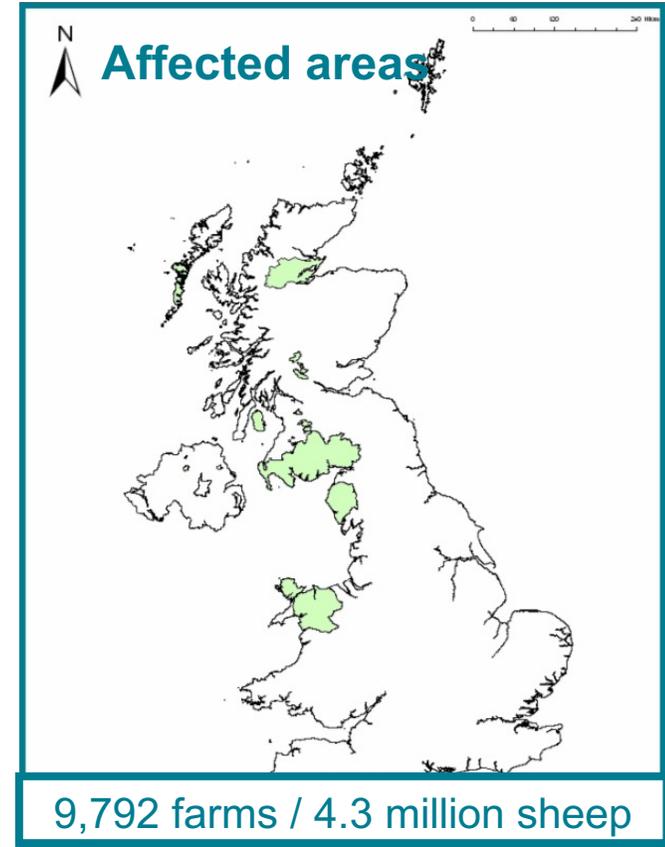
Coincides with heavy rainfall in upland areas

Peat soils – low mineral content

- Radiocaesium readily available for plant uptake

Sheep farming predominant activity

High levels of radiocaesium in 20% UK sheep



# Response of the authorities (1): Early phase

- June**            **Restrictions on sheep movements for 3 week period**
- Legal powers under 'Food & Environment Protection Act 1985'
- Defines geographic area of the restrictions
  - Prohibits the slaughter of sheep within the area
  - Prohibits movement of sheep out of the area, unless issued with a consent
- July**            **Indefinite restrictions on sheep movements**
- August**        **Introduction of 'Mark and Release' monitoring controls**

# Response of the authorities (2): Early phase

## ‘Mark and Release’ Controls

- Sheep had to be live monitored before they could move out of the area
- If assessed to be below 1000 Bq/kg, sheep were free to move and there were no restrictions on entering foodchain
- If assessed to be above 1000 Bq/kg, sheep were prohibited from going to slaughter for a minimum of 3 months, and were identified by a colour paint mark

**Every animal in a restricted area had to be monitored!**



# Response of the farmers (1): Early phase

- “We were told we could not sell our lamb. This caused problems of cash flow” *Glyn Roberts*
- “We were told, and presumed, that the whole issue would be over and done with in a matter of weeks or months” *Aeron Prysor Jones*
- “It was a huge battle to get the government to realise the severity of the problem” *Elfred Williams (NFU)*
- “We couldn’t believe it at first. The radiation had come from 3,000 miles away and you couldn't see it. It brought back memories of the Windscale nuclear accident in 1957”.
- “It has been a real struggle. Our daily lives are much harder; I can’t just take my sheep to auction, instead I have to phone the FSA 3 days in advance for them to come to take readings” *David Ellwood*



# Response of the farmers (2): Early phase

- Farmers felt betrayed by bureaucrats and scientists because their own specialist local knowledge and expertise were ignored
- Farmers' autonomy and sense of identity was undermined by how the restrictions were implemented
- Farmers felt that distinct traditions, skills and social interactions were under threat
- Farmers lost trust in government scientists who expressed certainty, unqualified reassurance and failed to admit mistakes
- Farmers perceived communication as an 'add-on' to the decisions that were made



Will Rowling farmer in Cumbria  
Photo of Will Rowling (Photo by Rob Fraser of somewhere-nowhe)

# Building co-expertise (1):

## 1. Initial engagement (1986-1996)

- Farmers progressively engaged with experts
  - Local government: monitoring of sheep, discussion of results, research projects ...
  - Independent scientists: plain speaking, trustworthy, acknowledged uncertainties ...
  - Farming unions, auctioneers ...

## 2. Dialogue on alternatives to restrictions (1997-2000)

- Independent scientists, farmers and a wide range of other stakeholders
  - Jointly evaluate alternative options: clean feeding, administration of Prussian Blue boli, land improvement, market place monitoring ...
  - Considering environment and economic impact, consumer confidence...

# Building co-expertise (2)

## 3. Revisiting risks to consumers (2010)

- Authorities, independent consultants, farming community
  - Move to risk based approach (estimate dose to consumers of lamb)
  - Extensive monitoring, probabilistic modelling, and information on consumer habits
  - Report with results of dose assessment
- Stakeholder workshop (wide participation ~ 10 different groups)
  - Presentations, plenary discussions, breakout groups

## 4. Public consultation (2011)

- Launched by the Food Standards Agency for a period of 12 weeks
  - 15 responses from government and non government organisations, farmers ....
  - Key message: “removal of restrictions should be risk based, proportionate, and must not compromise consumer safety”

# Evolution (outputs) of the co-expertise process

- **Initial engagement (1986-1996)**
  - Much improved relationships with almost all stakeholders
  - A deep mistrust of central government remained (centralised, hierarchical, remote)
- **Dialogue on alternatives to restrictions (1997-2000)**
  - Wide range of stakeholders were engaged
  - Consensus to retain restrictions
- **Revisiting risks to consumers (2010)**
  - A more holistic approach to risk was welcomed
  - Risk was shown to be very low, if all restrictions were removed
  - Recommendation to remove restrictions – careful and consistent communication
- **Public consultation (2011)**
  - All UK sheep restrictions were successfully removed on 1 June 2012

# Lessons learned for developing co-expertise

1. Authorities needed to recognise that farming community had something to contribute, and worthy of acting as co-experts
2. Authorities needed to engage sooner with the farming community and more widely with other stakeholders
3. Authorities needed to be empathetic to the suffering of farmers
4. Authorities needed to engage frequently. Too many years elapsed between initiatives.
5. Authorities and scientists needed to admit uncertainty and be humble/open to other sources of local information and knowledge
6. Authorities and scientists believed that lay people could not understand and manage the situation, leading to them being given false reassurances

# Conclusions

1. Monitoring sheep immediately off the hills was too conservative
2. A fixed limit of 1000 Bq/kg in sheep meat does not consider dose to consumers
  - a. Consumers do not eat from a single sheep.
  - b. For more than 20 years, majority of sheep had  $< 1000$  Bq/kg
  - c. Dose to consumers were estimated in range  $0.05 - 0.21$  mSv/y
  - d. Therefore, restrictions did not provide a meaningful approach to reduction in doses
3. Farmers, meat industry and consumers were apprehensive about removing controls
4. Communication plan was established jointly between stakeholders
5. All restrictions were removed on 1 June 2012, after 26 years!
6. No adverse consequences, due to the **co-expertise** that had been established

# Further reading/viewing

## Reading

- Food Standards Agency (2012) The removal of post-Chernobyl sheep controls. <https://www.food.gov.uk/sites/default/files/media/document/fsa120306.pdf>
- Nisbet AF and Woodman RFM (2000) Options for the Management of Chernobyl-restricted Areas in England and Wales. *Journal of Environmental Radioactivity* 51: 239-254
- Wynne B (1989) Sheep farming after Chernobyl: A case study in communicating scientific information. *Environment*, 31, 2: 11-38
- Wynne B (1992) Misunderstood misunderstanding: social identities and public uptake of science. *Public Understanding of Science*, 1, 281-304

## Viewing

- Farmers Weekly video: Interview with Welsh farmers <https://www.fwi.co.uk/farm-life/video-still-facing-the-fallout>
- Landlines project: Interview with Cumbrian farmer <https://landlinesproject.wordpress.com/nuclear-legacies-nuclear-energy-and-farming-landscapes-in-cumbria/>

# Media reports

## Sheep farmers still stuck under a Chernobyl cloud

Ever since radiation from Chernobyl rained down on the UK 23 years ago, sales of sheep in affected areas have been restricted. But frustrated farmers now claim the meat is safe - and that testing should stop



📷 RSPCA inspector Steve Pottinger (with Geiger counter) and farmer David Ellwood testing sheep for radiation. Photo: Christopher Thomond

