

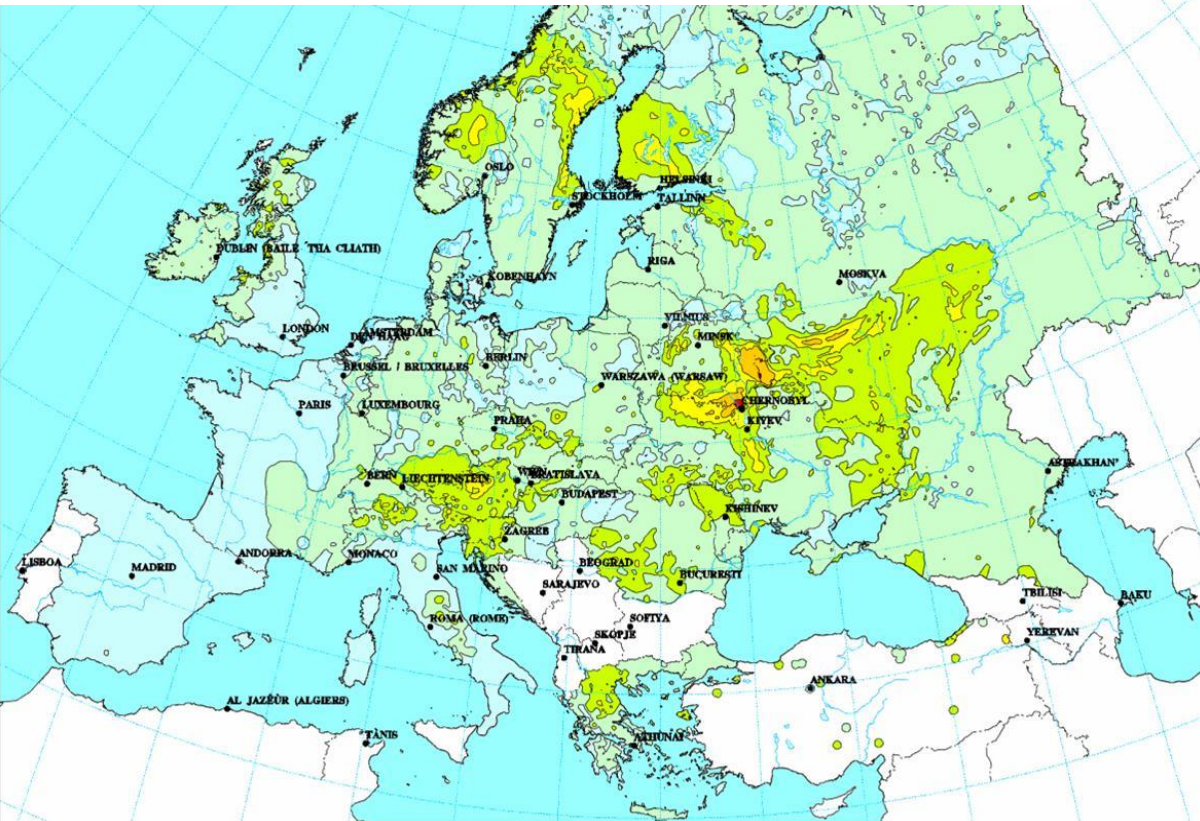
# EP&R national priorities, national action plans and possibilities of trans-boundary/regional activities

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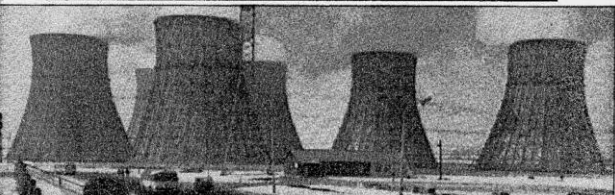
NTW WG on Nuclear Emergency  
Respons, Inception Seminar 6-7  
February 2014



# The Chernobyl accident in Norway



**2100 DØDE**  
**15 000 stråleskadd**  
**i Kiev-katastrofen**



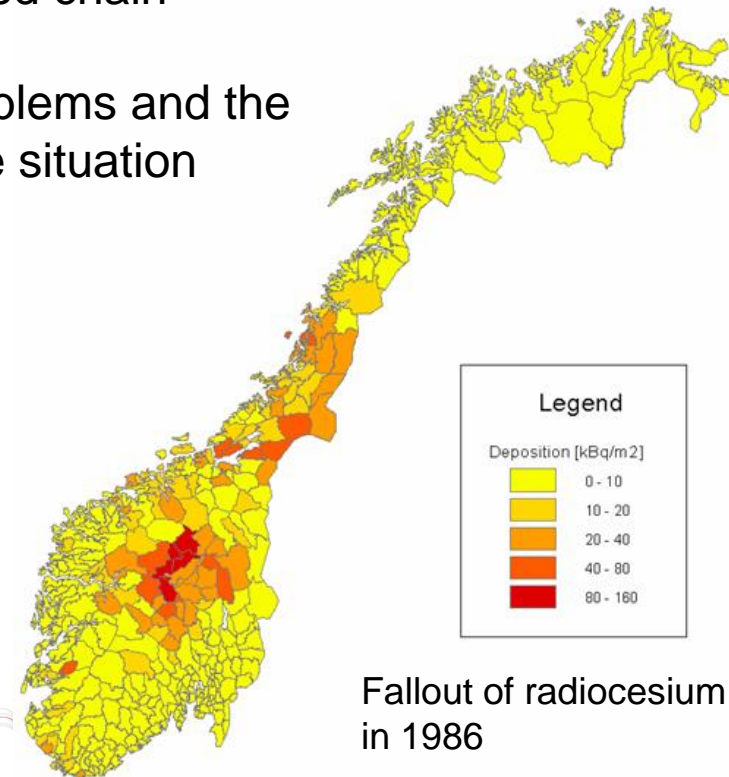


# The Chernobyl accident in Norway

- Norway was the country outside the Soviet Union that was most affected by the fallout from the Chernobyl accident in April 1986
- Large areas of mountain pastures were heavily contaminated and caused lots of problems for grassing sheep, reindeer and cattle because radiocesium went in to the food chain
- Norway was not prepared to handle the problems and the authority was not coordinated in handling the situation



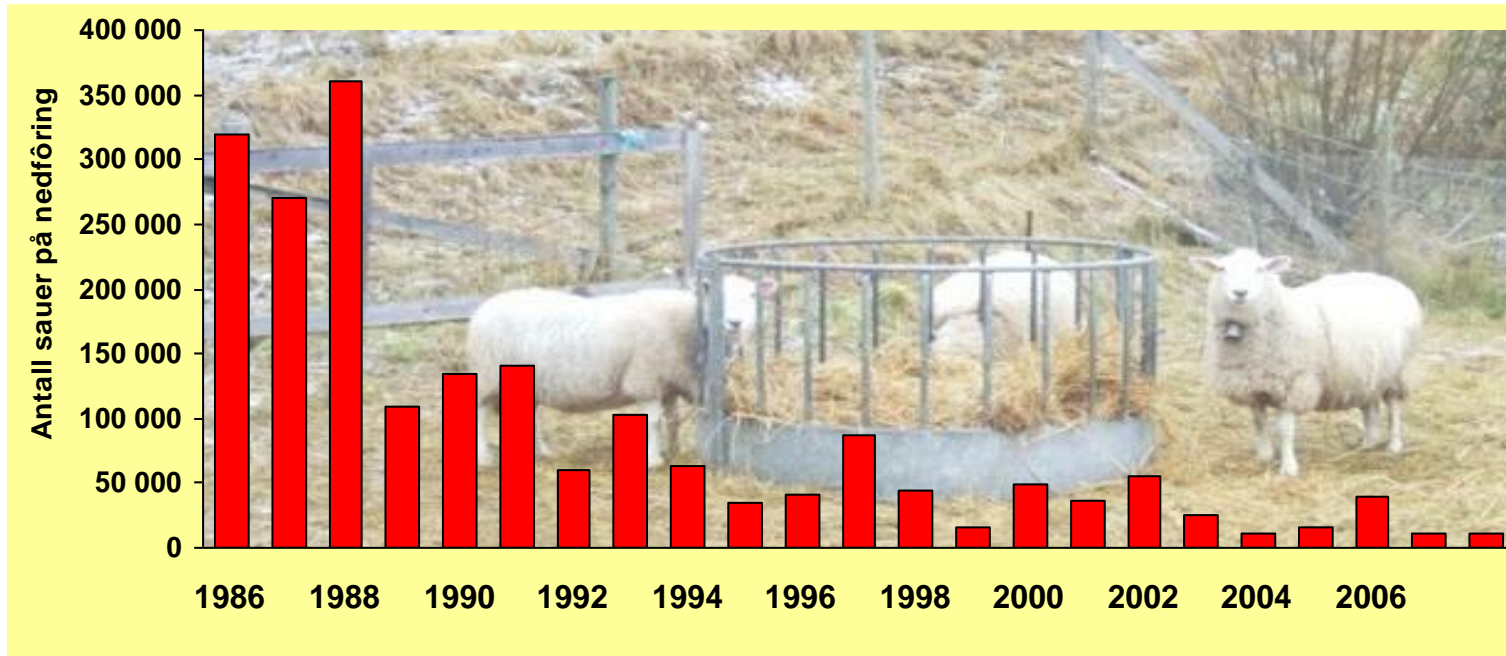
80% of the Norwegian sheep stock use mountain pasture



Fallout of radiocesium in 1986

# Countermeasures in sheep production

Number of sheep fed uncontaminated feed before slaughter 1986-2008



We expect to have to perform countermeasures for at least another decade

# Consequensces for reindeer production and the sami culture

**Reindeer production is on a national basis reserved for sami people, because it is a key factor in the sami culture**

- Reindeer are extremely vulnerable to Cs-fallout
  - Outdoor through out the year
  - The reindeer demands large areas
  - Lichen is the key source for food
  - Reindeer are not domesticated



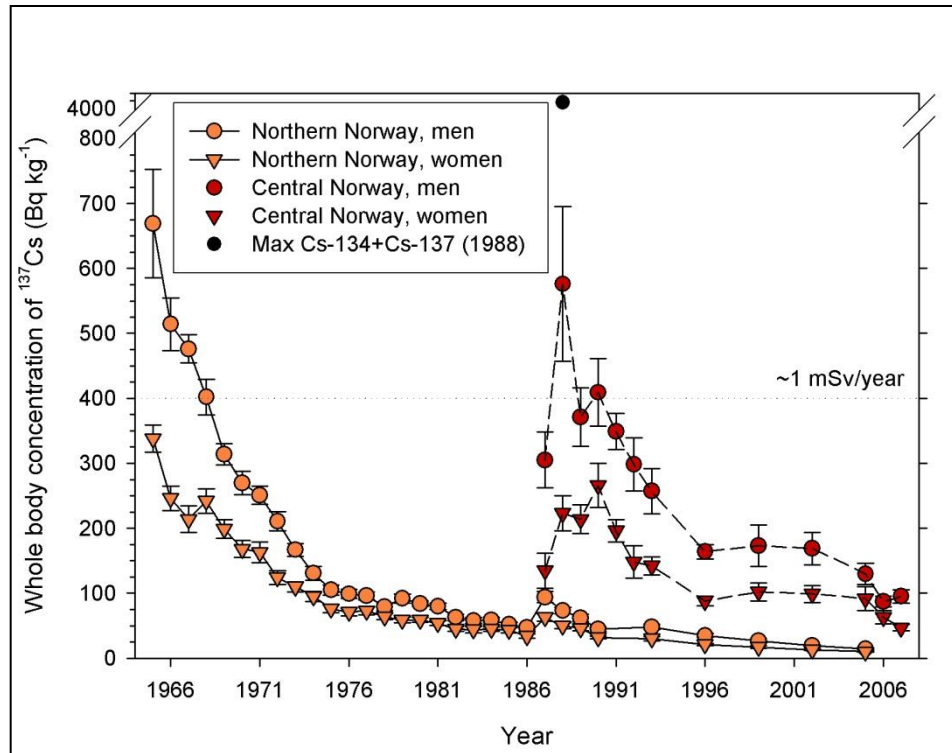
- Aspects concerning the sami culture

Countermeasures often conflicted with the cultural traditions

- Earlier slaughter
- Feeding clean feed
- Caesium binders
- Select low contaminated animals for slaughter



# Wholebody counting of the effected sami population in Norway





# New countermeasures were developed



Rhumen tablettis with cesiumbinders



Feding reindeer with concentrate

Live measurement of cows



# Important experience from the first years of the management of the Chernobyl accident

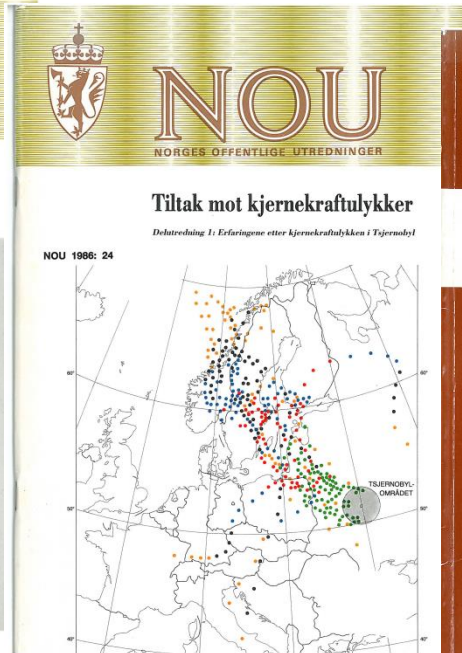
- Norway gained experiences from long term effects of the Chernobyl fallout for agriculture, environment and health
- Development of countermeasures to prevent uptake of the contamination in animals and dietary advises to reduce intake of radioactive contaminated food in effected population groups
- People are concerned about conditions and reality in their local environment and good management from engaged individuals in communes together with or in spite of national authorities was successful
- Locale laboratories able to measured radioactivity in food products are important for risk perception.



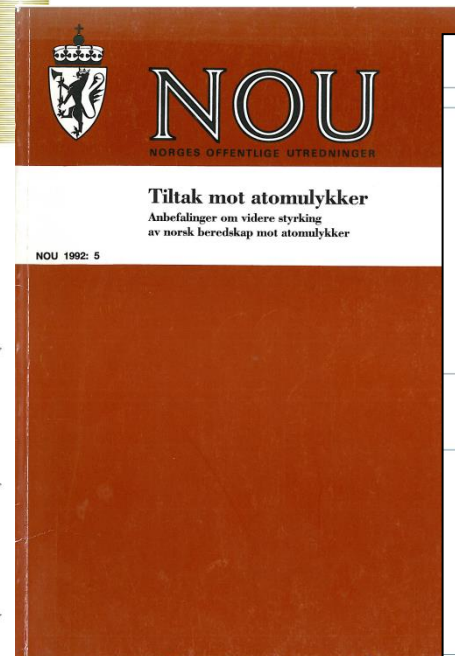
# Public reports on nuclear emergency preparedness after Chernobyl



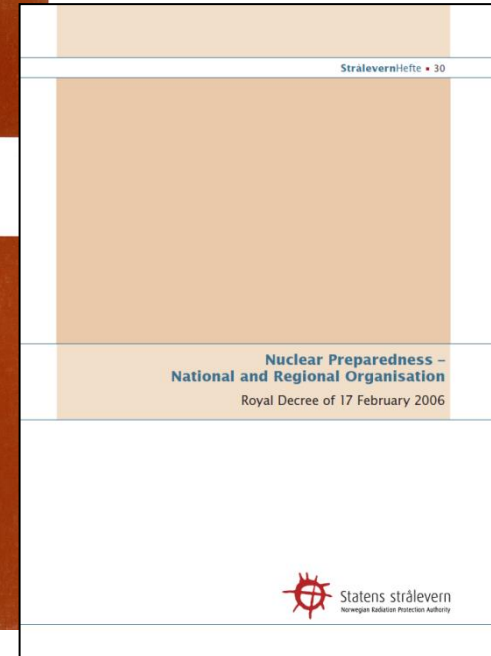
August 1986:  
«Information crisis»



November 1986:  
«Countermeasures in nuclear power accidents – Part I: experiences after the nuclear accident in Chernobyl»



February 1992:  
«Countermeasures in nuclear accidents – Recommendations on further strengthening of Norwegian emergency preparedness towards nuclear accidents»



June 1998, updated February 2006: «Nuclear Preparedness – National and Regional Organisation» (royal decree)

# Norwegian organisation of nuclear and radiological emergency preparedness

- Norwegian preparedness for nuclear and radiological emergencies differs from most other national emergency preparedness systems, both in Norway and in other countries. In order to ensure an efficient, rapid and competent crisis management of the early phase of a nuclear event, a national Crisis Committee for Nuclear Preparedness has been appointed.
- The Committee is authorised to make decisions and order implementation of specific countermeasures in the early phase and ensures good coordination on a sub-strategic level (directorate level).
- The Crisis Committee may on its own initiative implement countermeasures in the early phase and acts as advisor for the government and ministries in later phases
- The Crisis Committee has advisors from several national authorities and organisations. These advisors can also be viewed as stakeholders.

# Norwegian Nuclear and Radiological Emergency Organisation





# Challenges for strategies and plans for long-term recovery 25 years after Chernobyl

- Still need for countermeasures in reindeer husbandry and agriculture in some but few municipalities
- No real need for comprehensive countermeasure plan regarding the Chernobyl fallout and thereby no plans for future accidents
- Lack of experience – vulnerable for loss of competence in several fields, such as radioecology, measurement strategies and planning, countermeasure effectiveness etc.
- As a result: There is still need for nuclear and radiological emergency planning, but the need is not very visible in day-to-day life

# Nuclear and radiological emergency preparedness seminars for regional authorities

- A series of seminars in nuclear and radiological emergency preparedness for all the 19 county governors in Norway
- One day-seminar arranged by the NRPA for the county emergency board and the administration
- Content of the seminars
  - Threat/hazard assessment and the nuclear and radiological emergency preparedness organisation
  - Methods and tools for decision making
  - Information strategies
  - Countermeasure strategies
- Table top exercise

# The EURANOS project – Involvement of people affected by the contamination of an area

- How do we best prepare for the long-term effects of nuclear accidents?
- Who may help to develop the best management practices and which methods should be used?
- How do we get appropriate information so that the concerns of the affected people will be included in the management plans?





# The process - who and how

- Participants from the local communities, local- regional- and national authorities responsible for health, agriculture and environment, and NGO's
- Participants with and without Chernobyl experience
- Two workshops of 2 days each in January and March 2008
- Two facilitators organized the workshops
- IDPA-method was used



# NERIS-TP Local-national forum for emergency and recovery strategies in Østfold in Norway

- Establish local-national forum for improvement of both local and national capabilities
- Build strongly on already existing national and local initiatives. The forum will address the challenges met by municipalities/local communities when planning for nuclear and radiological emergency and recovery preparedness and response
- The initiative and planning of the first forum seminar was done by the County Governor of Østfold, The Farmers Association, Norwegian Food Safety Authority and the Norwegian Radiation Protection Authority
- The aim was to bring together all involved parties to strengthen the late phase emergencies after a nuclear accident/incident in the county and the municipalities
- The seminar had introductory sessions in radioecology, relevant countermeasures and discussions on a radioactivity fallout scenario



# Conclusions from the seminar

- Through the discussions, the participants realised their roles and responsibilities and the need to be better prepared for this kind of emergencies
- There are many practical challenges which need to be solved locally, and there need to be prepared emergency plans. It is important that these plans are made with stakeholders on all levels.
- There are need for different kinds of decision support tools and educational tools for the local and regional authorities. These tools need to be well-known in advance of an emergency
- Procedures and systems for communication between local, regional and national levels in the emergency response organisation need to be developed in order to have a successful implementation of countermeasures during an emergency and late phase recovery





# Nordic cooperation

- NEP- group:
  - cooperation on emergency preparedness
  - meets 3 times pr year
  - works with harmonisation, information exchange
- NKS Nordic Nuclear Safety Research
  - reactor safety
  - emergency preparedness
- Exercises



# Cooperation in the North

- Arctic cooperation
  - Arctic council
  - AMAP and EPPR
- Lofoten against Sellafield – NGO working against radioactive contamination of our common sea
- Bilateral cooperation with Russia in the high North
  - clean up after the “cold war”
  - cooperation between NGO's, Bellona, Nature and Youth
  - regional cooperation in emergency preparedness in the North
  - exercises
  - environmental monitoring in the marine and terrestrial environment





We still have ways to go to improve emergency preparedness

Thank you for your attention