

# Societal dimensions in post-accident recovery – return of experience from Fukushima and Chernobyl

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Statens strålevern  
Norwegian Radiation Protection Authority

[www.nrpa.no](http://www.nrpa.no)

# Chernobyl information

- First period:
  - Denial and confusion
  - Contradicting messages from different authorities
  - Downplayed consequences

→ Information crisis

NYTT FRA HELSESEKTOREN:



# Countermeasures still necessary in Norway due to Chernobyl

- Elevated permissible levels for reindeer, game and freshwater fish ('minor foodstuffs')
- Monitoring of radiocaesium in animals before slaughter ('live monitoring');
- Clean feeding of animals before slaughter;
- Caesium binder (Prussian blue) in concentrates ,salt licks and rumen boli to prevent absorption of ingested radiocaesium in the animals;
- Change of slaughter time (in reindeer husbandry); and
- Dietary advices and monitoring of internal contamination.

**Developed in cooperation between authorities, agricultural experts, farmers and local administration during 1986-1988.**



# Contamination and evacuation in Fukushima

- Large areas contaminated
- More than 150 000 people evacuated – most of these are STILL evacuated
- Industrial and agricultural production stopped in evacuated zones
- Bans and restrictions on fisheries and hunting
- Agricultural produce and seafood contaminated in large areas





NRPA supporting the Norwegian  
embassy in Tokyo (4 days after)



# Support team

MFA, Health directorate, police, NRPA





# NRPA tasks in Tokyo

- Assisted the embassy with information on radiation protection, emergency preparedness and reactor competence
- Established system for dose monitoring and protective actions for the personnel at the embassy
- Established system for distributing iodine tablets, including information material
- Answered questions from the public and others on issues concerning radiation protection



# Information and data collection

- Monitoring weather forecasts
- Most of the week, the predominant wind direction was fortunate for us, and most of the release went into the sea or northwards
- Measurement data came from several sources, but for us the amount of information was too large, and we were completely dependent of situational understanding at our home office (NRPA)



# Countermeasures at the embassy

- Establishing measurements at the embassy with dose rate measurements twice a day
- Distribution of iodine tablets
- Offering homeward travel to Norwegian citizens
- Temporarily relocating the Norwegian embassy





# Public information meetings



- Information meetings open for the general public
- Information meetings for all personnel at the embassy
- Meetings with representatives from the other Nordic embassies



# Lessons learned

- Not an easy task – the uncertainty of the situation gave many challenges, both scientifically and socially
- Ethical questions concerning protective measures and advices for Norwegian vs. Japanese citizens
- The importance of Nordic harmonisation



# ICRP Dialogue seminars

In the fall of 2011 the ICRP took together with a Japanese NGO an initiative to organize a forum for dialogue with all concerned parties in the Fukushima Prefecture to identify the problems and the challenges of the rehabilitation of living conditions in the long-term contaminated territories.

## **NRPA's support to the dialogue:**

- Economical support to the seminars
- Experts from Norway that have taken part in the Dialog
- Local experts, farmers, that have been affected of the Chernobyl accident with experiencences



# “People to people” cooperation

- A Norwegian project initiating from the Ministry of
- Fukushima famers have visit Norway and farmers with Chernobyl experiences have visit Fukushima









# Co-expertise with the affected people

- The inhabitants are the owners of the situation in the affected areas.
- To better address their expectations experts should
  - be at their service
  - listen to their concerns
  - respond in an understandable way.
- The development of common evaluation of the situation by evacuees, residents, experts and authorities in the various communities (co-expertise) should be supported.



# Local meeting in Date

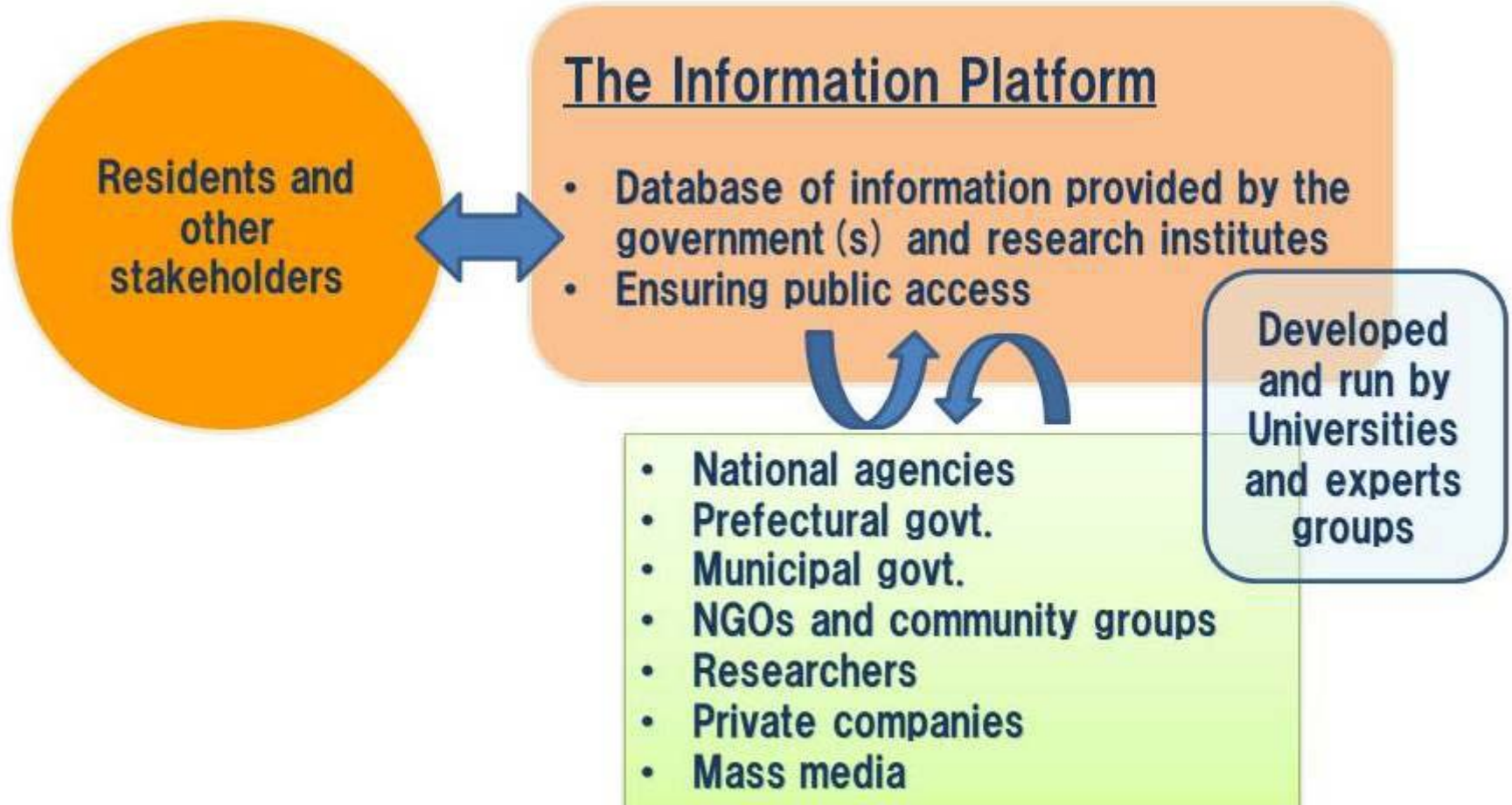


# Fukushima Action Research on Effective Decontamination Operation (FAIRDO)

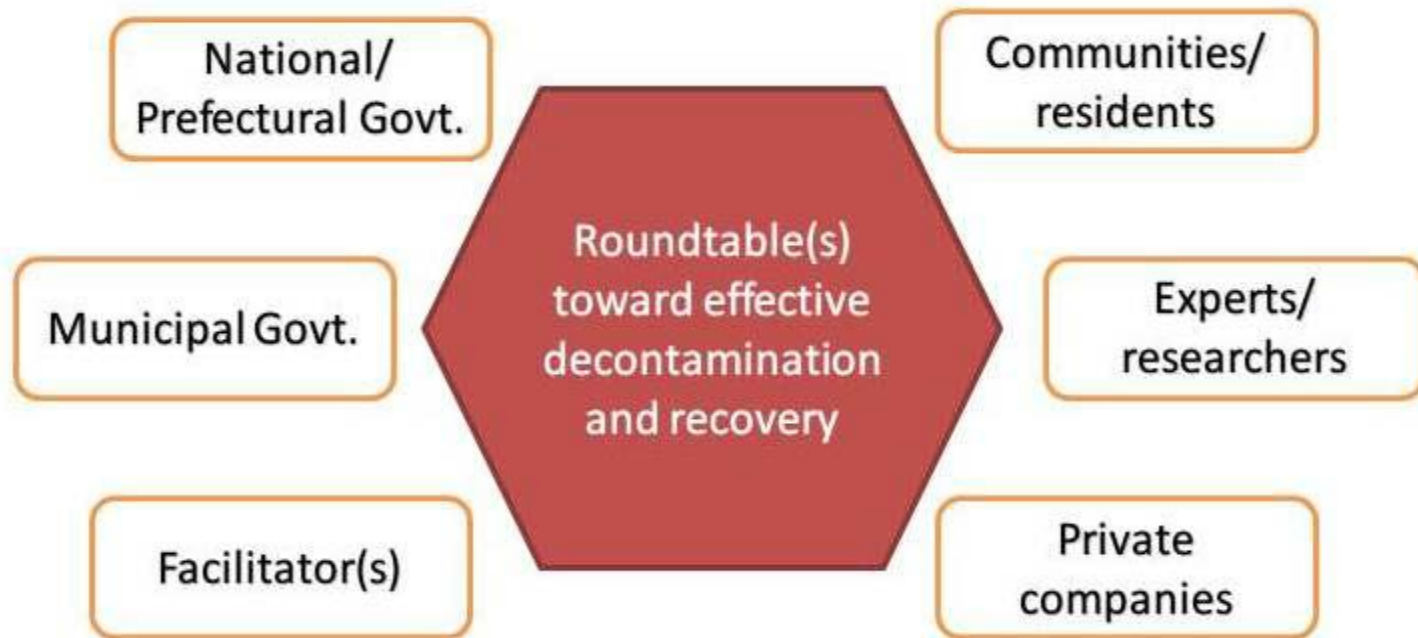
- FAIRDO mainly conducts survey and analysis of initiatives taken by country and municipalities concerning decontamination activities and communication with residents in the “priority survey areas for contamination status”
- After one year of research activities, they recognize that it is insufficient to look at the mechanisms and effectiveness of the decontamination activities. They started to review decontamination among the overall policies concerning reconstruction and regeneration of the hometowns as well as the rehabilitation and rebuilding of the lives of afflicted people.



# The Information platform



# Image of the roundtable



- At least one roundtable per municipality
- To be facilitated by University researchers/NGO officers
- To be proceeded with clearly set guideline on discussions
- To closely communicate with the information platform





難波 謙二

半澤 隆宏

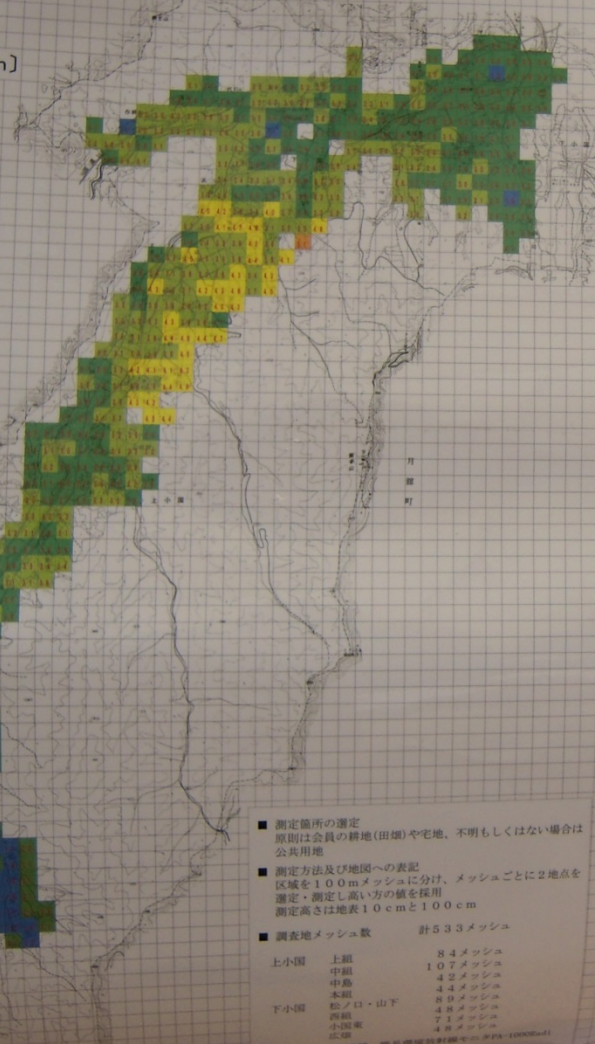


# 伊達市小国地区放射線量測定マップ

(平成23年10月17日~23日実施 地上100cm)

[凡例 測定高さ 100cm]

- 0以上1.0  $\mu$ Sv/h未満
- 1.0以上2.0  $\mu$ Sv/h未満
- 2.0以上3.0  $\mu$ Sv/h未満
- 3.0以上4.0  $\mu$ Sv/h未満
- 4.0以上5.0  $\mu$ Sv/h未満
- 5.0以上6.0  $\mu$ Sv/h未満
- 6.0以上7.0  $\mu$ Sv/h未満
- 7.0  $\mu$ Sv/h以上



- 測定箇所の選定  
原則は会員の耕地(田畑)や宅地、不明もしくはない場合は公共用地
- 測定方法及び地図への表記  
区域を100mメッシュに分け、メッシュごとに2地点を測定・測定し高い方の値を採用  
測定高さは地表10cmと100cm
- 調査地メッシュ数 計533メッシュ

上小国	上組	84メッシュ
	中組	107メッシュ
	中島	42メッシュ
	本組	44メッシュ
下小国	松ノ口・山下	89メッシュ
	西組	48メッシュ
	小国東	71メッシュ
	広瀬	48メッシュ

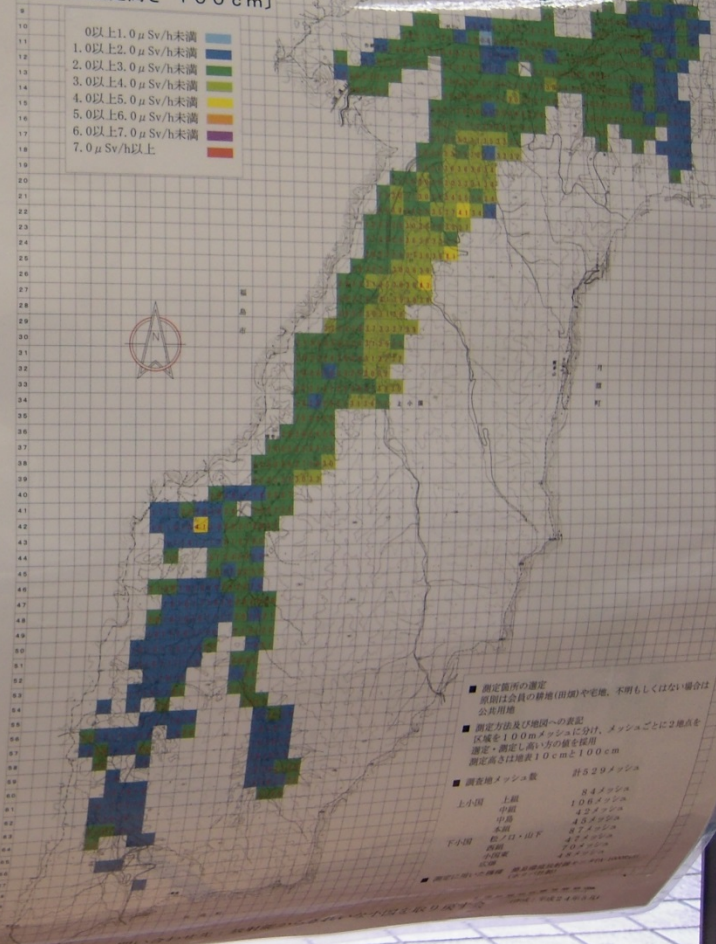
■ 測定に用いた機器 株式会社放射線測定機 型名: R-10000A-01 (0.01~10.00)

# 伊達市小国地区放射線量測定マップ

(平成24年4月21日~30日実施 地上100cm)

[凡例 測定高さ 100cm]

- 0以上1.0  $\mu$ Sv/h未満
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問い合わせ先: 放射能からきれいな小国を取り戻す会





# PREPARE

- PREPARE: Innovative integrated tools and platforms for radiological emergency preparedness and post-accident response in Europe
- Research project under the European Commission's 7th Framework Programme, EURATOM for Nuclear Research and Training Activities (work programme 2012)
- Started February 1, 2013 and will last 3 years
- 45 partners
- 6 research work packages
- 1 work package on training and dissemination
- 1 work package on management



# Local actors confronted to complexity in a post-accident situation (1/2)

- Post-accident situations produce complex challenges regarding nuclear safety, radiological protection, radioactive waste management, but also for almost all activities of society and lifestyles.
  - local populations face the maximum level of complexity as their day-to-day life is disrupted
  - upper levels of decisions are expected to bring support, information, expertise and means, but many decisions and actions stay in the hands of local actors
- Political and social mechanisms of coordination and trust, as resources for managing complexity, are disrupted by the spreading of distrust and controversies; expertise is put into question



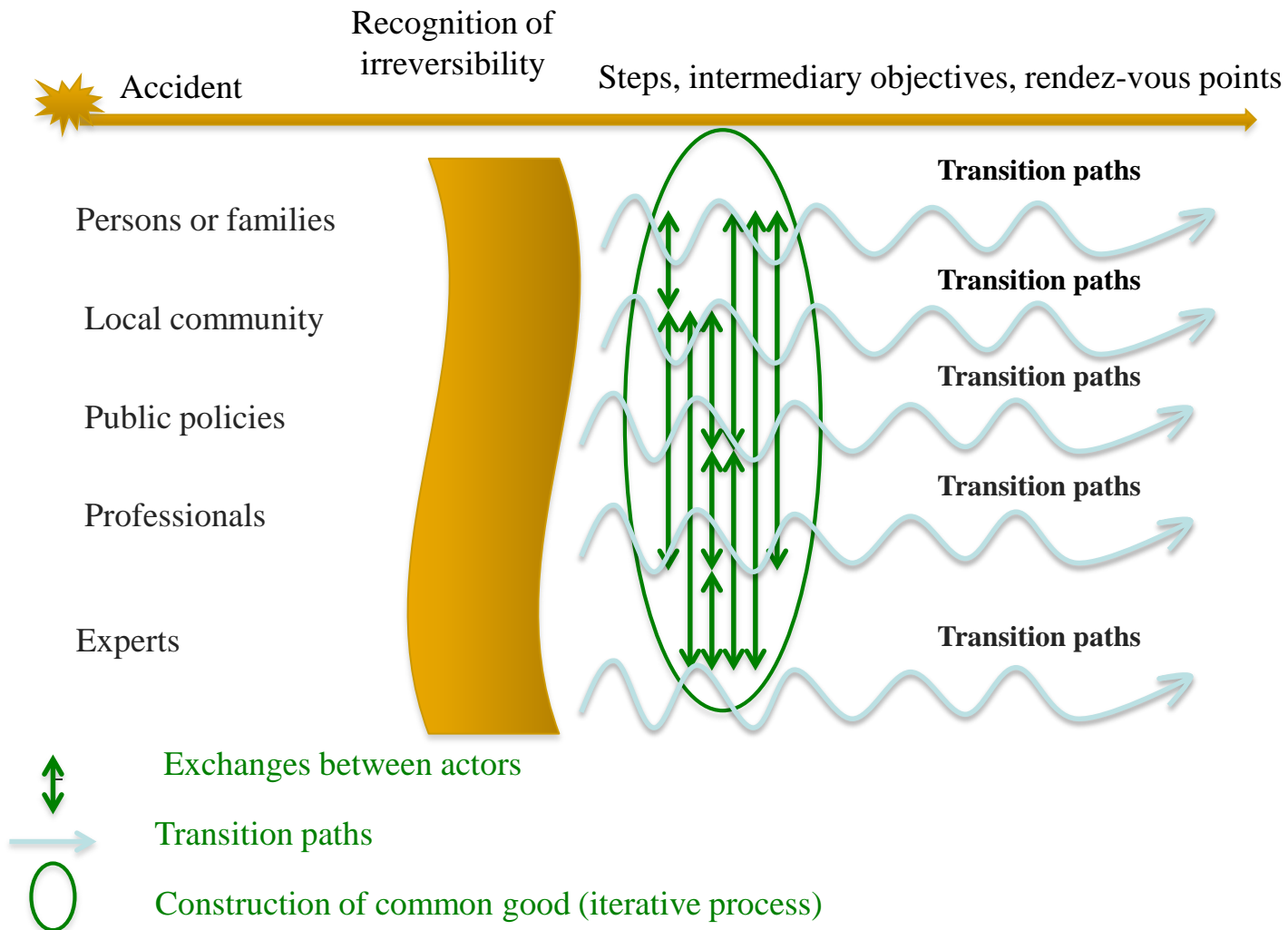


## Local actors confronted to complexity in a post-accident situation (2/2)

- In a context in which the spreading of distrust is impeding the emergence of a consistent societal response, local population thus have to recreate the conditions to
  - access (and sometimes build by themselves) trustworthy and reliable information;
  - understand the situation at the individual & community level;
  - build relevant action.
- The societal dimension of the local response to a post-accident situation is of key importance,
  - at a personal and community level, notably
  - depends on their capacity to build new forms of cooperation among themselves and with other actors



# Recovery: a transition process resulting from the interaction of different transition paths (2/3)



# What are the information processes for local actors?

- How do local actors assess their information needs?
- What information resources do they use?
- What is the role of the different types of experts (including civil society experts)?
- How is solved the issue of
  - Trustworthiness of information for local actors?
  - Usefulness of information for local actors?



# How do local actors build common goals and projects for recovery?

- How do local actors set together common objectives for action and a common project for the future?
- What resources do they mobilize to build common action?
- What are the mechanisms of trust mobilised in common actions? On what ground is founded this trust?



# Your success in emergency management....

- Will only go down in history as a success if this view is shared by your citizens
- The reality for people is what goes on in their hometown – not in the crisis management centre
- Make plans ***with*** the people, not for the people

