

Post-accident situations and social innovation: lessons from Chernobyl and Fukushima

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Objective of the presentation

- To present an **innovative collaborating process** to address effectively the **protection of affected people** and the **rehabilitation of their living conditions** after a nuclear accident
- Based on:
 - **Past experience** in Chernobyl: the **Ethos project*** (1996-2001) and the **CORE Programme** (2004-2004) in the affected areas of Belarus
 - **On-going experiences** in Fukushima communities: Iitate, Kawauchi, Suetsugi, Yamikiya,...
- * *LOCHARD J. - Stakeholder Engagement in Regaining Decent Living Conditions after Chernobyl. In: Social and Ethical Aspects of Radiation Risk Management, Oughton D., Hansson S.O. (Eds.), Radioactivity in the Environment, Vol. 9, Elsevier, 2013, pp. 311-331.*



The human dimension of nuclear accidents

- The irruption of radioactivity into people's everyday lives creates an unprecedented **complex situation** which profoundly upsets daily life, raises many questions and concerns, generates numerous **views**, and exacerbates **conflicts** among the affected population
- The Fukushima accident confirmed what had already been observed in the affected areas by the **Chernobyl** accident 20 years ago:
 - A strong **concern** for health, especially that of children
 - The apprehension about the **future**
 - The **disintegration** of family life, and the social and economic fabric
 - The **loss of control** on everyday life
 - The threat to the **autonomy** and **dignity** of people
 - The fear to be **abandoned**

What is at stake for the affected people as far as radiation is concerned? (1)

- An **invisible**, **disquieting** and **unspeakable** presence of radiation which tends to **paralyze** individual initiative
- **All dimensions of daily life are affected**: health, environment, social life, production and distribution of foodstuffs and commodities... but also psychological, aesthetic and moral dimensions: the **well being** of individuals and the quality of the '**living together**' are severely degraded
- To **protect** themselves and to **regain control** on the radiological situation it is essential that affected people know individually **where**, **when and how** they are exposed to radiation
- To restore a **descent quality of life** they must put this protection and control at the service of **actions and projects** aimed at the **rehabilitation of their living conditions**



What is at stake for the affected people as far as radiation is concerned? (2)

- Measurements of:
 - **ambient dose rates** in the living and recreation places of people
 - the **contamination of foodstuffs** they eat daily
 - and the **external and internal doses** they receive day after dayis the only way to access to this knowledge in order for them to make **informed decisions** and **behave wisely** to protect themselves i.e. to acquire a **practical radiological protection culture**
- However, measurements results in figures which are difficult to interpret for people without radiological protection background and the access to practical radiological protection culture therefore requires the indispensable **mediation of professionals and experts** of the domain

The co-expertise process to develop the practical radiological protection culture

- The so called “**co-expertise process**” emerged in the late 1990s in Belarus in the context of the rehabilitation of living conditions in the territories affected by the Chernobyl accident. It has been enriched and refined in recent years through the experience gained in communities of Japan following the Fukushima accident
- This process is based on the recognition that to make sense for people confronted with radiation, knowledge about radiological protection must be **anchored to their daily reality to allow them to act to improve their future living conditions**. This is only possible if they are directly involved in the process



The main steps of the co-expertise process (1)

- The first step is to organize **community meetings** with the objective to share information. The idea is to allow local people to **express their concerns, challenges and expectations, and also ask questions**. For experts it is to **listen** carefully, share free from euphemisms the information they have on the current situation, and provide responses when they can
- If local people respond favourably to the experts' invitation to continue the **dialogue** then both parties can progressively share their respective **knowledge** and **experiences** during the following meetings
 - Affected people bring their knowledge about their **living conditions** and that of their communities
 - Experts bring their knowledge about the science and practical implementation of **radiological protection**





The co-expertise process
ETHOS Project, Olmany village, Belarus, 1996-2001



The co-expertise process
Suetsugi village, Fukushima Prefecture, 2013



The main steps of the co-expertise process (2)

- The next step is to **characterize the radiological situation of the community** in order to:
 - Identify individual **behaviours** and **habits**, local **uses** and **customs**
 - Perform relevant **measurements** going step by step **from causes to effects** to characterize the exposure situation of individuals and the community
 - Use the **collective results** to discuss individual situations and identify **margins of manoeuver** and implement **protective actions at the individual and collective levels** taking into account the prevailing circumstances in the community
- In this approach the access of individuals to adapted devices of measurement (e.g Environmental and food monitors, D-Shuttle, Baby-scan, WBC,...) is obviously paramount



Practical radiological protection culture and self help protection

- As far as radiation is concerned the co-expertise process allows to develop the **practical radiological protection culture among the involved people:**
 - To **interpret** the results of their measurements
 - To **build** their own benchmarks in relation to the radioactivity present in their daily life
 - To **make their own decisions** to protect themselves and their loved ones
 - To **assess the effectiveness** of the protective actions implemented by themselves or by authorities and organisations
- In other words, the co-expertise process allows to **empower** those involved, favour their **autonomy** and the implementation of **self-help protection actions** adapted to the prevailing circumstances

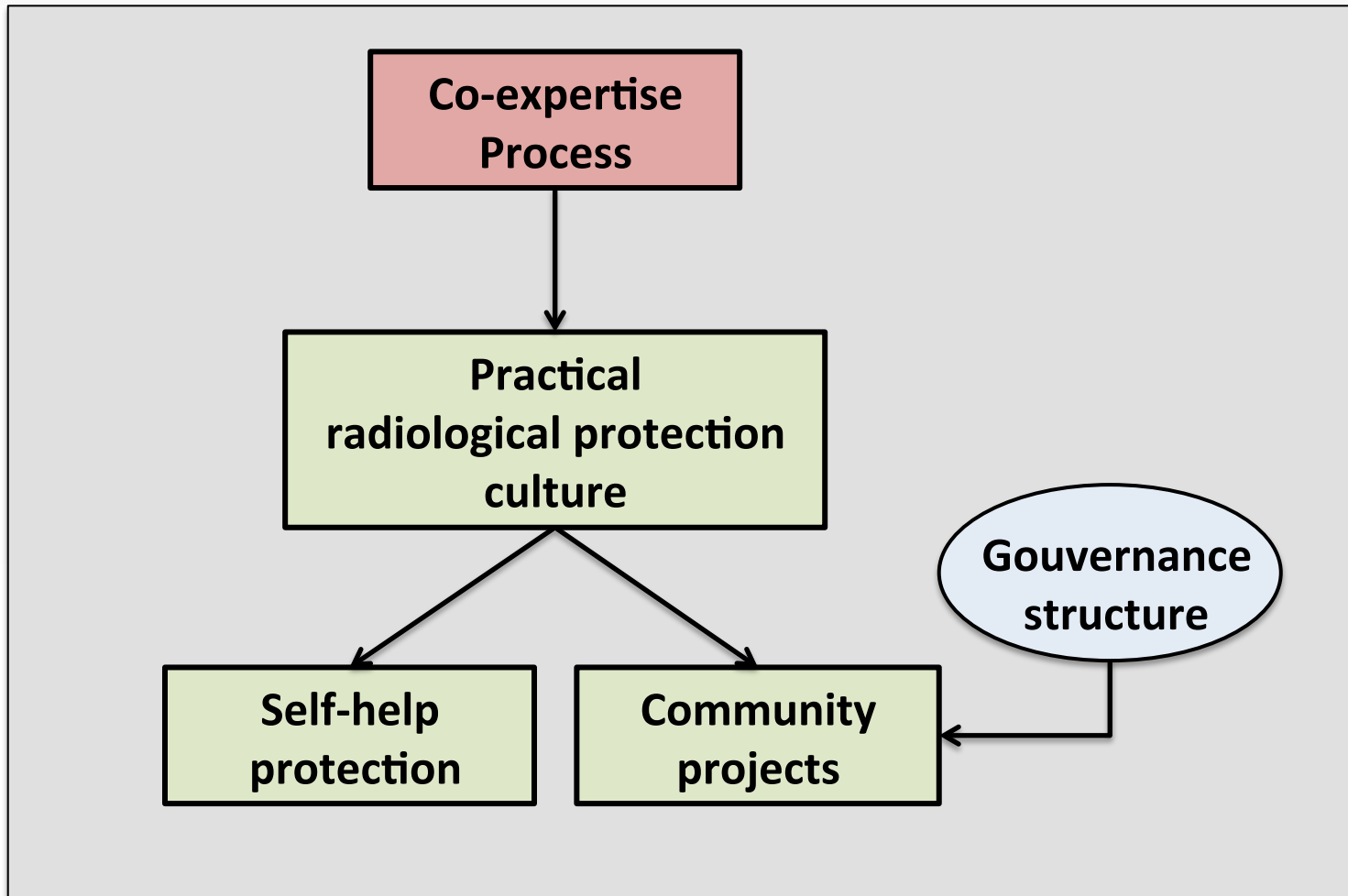


Practical radiological protection culture and local projects

- The co-expertise process has also proven to be an effective approach to identify and implement **local projects** aiming at the **rehabilitation of living conditions** in affected communities, for which the radiological protection dimension is important
- This was the case in Belarus for numerous collaborative projects developed in a few villages in the framework of the **CORE programme***
- For these projects, it is also necessary to involve authorities, public and private organizations, experts and professionals in the disciplines or fields that concern domains other than radiological protection
- Experience has shown that when these projects mobilized external resources to the community, it was necessary to put in place appropriate **governance structures** to ensure legitimacy, transparency and fairness of the **decision-making process**
- *Zoya Trafimchik. The CORE Programme in Belarus: A new approach of the rehabilitation of living conditions in contaminated territories. <http://slideplayer.com/slide/2514537/>*



In summary



Concluding remarks (1)

- Confronted with the complexity and the stakes of the situation resulting from a nuclear accident it is crucial that all public and private actors and all stakeholders engage in **cooperating** to address the problems and challenges in the affected areas
- The **co-expertise process** that emerged in the contexts of Chernobyl and Fukushima, although still perfectible, is a **social innovation*** that demonstrated its effectiveness to help restore the **well-being** of individuals and the quality of '**living together**' in affected communities

* *'Social innovations are new ideas that meet social needs, create social relationships and form new collaborations'*

http://ec.europa.eu/growth/industry/innovation/policy/social_en



Concluding remarks (2)

- Reflection on the role of collaborative approaches is now on the agenda to search for sustainable solutions in many complex environmental problems*
- Given its **trans-disciplinary** and **inter-sectorial** positioning i.e. mobilizing several disciplines and involving actors and organisations from different areas of public and private action involved in the reconstruction after radiation disasters, the **Phoenix Leader Education Program** is undoubtedly in a privileged position to contribute to this reflection

**Örjan Bodin. Collaborative environmental governance: Achieving collective action in social-ecological systems. Science 357, 659 (2017) 18 August 2017*



Thank you for your attention



***Inspection visit by villagers of the Suetsugi
decontamination waste storage site***

