



PLENARY REPORT

TOPIC 2: PROTECTION OF CHILDREN AND SELF-HELP BEHAVIOURAL APPROACHES



Chairs: Chris Clement, Jacques Lochard
ICRP

Rapporteur: Claire Mays, NEA

claire.mays@gmail.com

OECD NEA CRPPH 3rd Workshop on Science and Values in RP Decision Making – and -
6th Asian Regional Conference on the Evolution of the System of RP

Tokyo University, November 5-7, 2012



Self-Help Protective Actions

**A REMINDER OF
DEFINITIONS AND
UNDERSTANDING
FROM ICRP 111**

Protection Strategy

111

- Protective actions implemented centrally and locally by authorities, experts, and professionals
- **Self-help protective actions** directly implemented by the exposed individuals with the support of the authorities



Self-help Protective Actions

111

Informed actions taken by inhabitants of affected areas to reduce their exposure and the exposure of the people for whom they have responsibility (e.g. children, elderly)

Why?

- Exposure is largely driven by individual behaviour
- Individuals **regain control** of their own situation
- Inhabitants have local knowledge

Self-help protective actions **complement** and are **supported by** actions taken by authorities

Self-help

Elaboration by Chris Clement





The story of Tominari Elementary School in Date City

A DESIRE TO IMPROVE CONDITIONS

The narrative came from
Ms. **Satsuki Katsumi**, former Principal, Tominari Elementary
school,
and **Mayor Nishida**, Date City, Fukushima Prefecture

**Report of Decontamination
in Tominari Elementary School
富成小学校除染レポート**



The starting point in March 2011

- Members of the community started with different values
- Some felt like running away, some did not
- We received late, and false information at the start
- Meetings had to be held by municipality to provide facts and hear concerns
- Children experienced difficulties when they noticed contradiction between teacher's and mother's comments
- A high school teacher accidentally said « 3.0 » not 0.3, this worried the parents
- The situation was confusing
- People started to desire improvement

A small school surrounded by beauty

- Tominari school is 134 years old, only 60 children are enrolled
- We were shocked by the schoolyard dosimetry of 3.5 microSv per hour
- Children had to wear long sleeves and stay inside. When the warm spring arrived (April-May 2011) they wanted to play outside.
- We (community and professionals) decided to take action as a team. Specialist made detailed measurements and pointed to the hottest areas. The decontamination of the schoolyard became a pilot action for the region.
- **We removed topsoil from the yard in 3 waves; with the help of parents we went on to clean up our beautiful garden (altering it by removing plants) and our embankment (removing soil) and blasted the top layer of asphalt.**
- **Decontamination in the school environment has reduced levels from 3.8 micro Sv/hour to 1 microSv/hour, even as low as 0.8 and the pool from 6.5 to 1 micro Sv/hour**
- School became the safest place in our mountainous, wooded area; some parents wanted children to spend the night there

We tried to find something positive that would allow us to remain in our communities

- Katsumi: We tried to find something positive that would allow us to remain in our communities. We started our own research for this
- We learned about psychological stress linked to immediate evacuation.
- We couldn't assess the scientific evidence but we learned that in Brazil or China there are places with high levels and people go on living there
- Dr Tanaka also showed us scientific proof that we could safely use the decontaminated swimming pool
- IN 20 years or 30, what will become of children? Dr Tanaka indicated many positive factors on which we could depend in our decision to stay. We compared pros & cons and found the pros outweighed.
- *When you have decided that you want to stay, that you don't want to evacuate your homeplace: you will find reasons for staying. You will want to listen to experts who can provide reasonable reasons to stay.*¹⁰

Which 'scientific' factors were considered in Tominari when deciding to stay or leave?

1. Many people live in areas with high background radiation
2. Nuclear weapons were used and the level of radiation was high but we stayed healthy
3. Astronauts in outer space apparently were not affected by cosmic rays
4. Horrible stories appear in magazines but ordinary people apparently live a healthy life despite this

Why do people commit themselves?

- The beautiful setting of the school and its long heritage, the transmission across generations, the peacefulness of the place are the motivations and the background to the **team work**. Behind the decontamination work, there is the cultural heritage of the place. This existed before, and it is worth preserving and sustaining.
- People are not just fighting bequerels, but restoring the quality of their homeplace. This is why people commit themselves. It's not only to fight Bq but to maintain the heritage.



Tominari Community and Helpful Specialists on the scene

**SHARED
INFORMATION**

The children's pool

- Pool water was contaminated and the drainage was going to the rice paddies. We were worried about the discharge.
- We talked with the farmers and when they could see data confirming that the contamination level was low they accepted the discharge.
- We put clean water into the pool to let children swim but parents were very resistant. We had many meetings and the expert demonstration showing that it was actually safer in the pool finally convinced parents.

The parents decided to let the children swim

- Principal Katsumi: At Tominari Elementary School life was peaceful and uneventful. Then alarming calls came from worried people. Information was flooding me and I did my own research.
- I went on the web hundreds of times in order to verify their words and I decided that they were wrong.
- We worked with experts: through *concrete demonstrations* we could see that the scientific figures were reliable
- You learn probabilities in 5th grade; this is hard for the children but also for the parents to understand! But scientists explained using diagrams.
- **The detailed and interesting experiments by experts mobilized the children**
- This helped us decide to go ahead, trusting the specialists who worked with us.

What types of RP information are shared?

- We exchanged text messages on specific radiation readings in precise areas as part of our communication among community members.
- Handouts with detailed information on dose in play areas were given to parents so that they knew where their children were spending time
- Last year in August we started using integrated dosimeters for children.
- Sept-Nov 2011 results for various school districts are reported in the municipal bulletin.
- Individual dosimetry for children showed that most children received only a very low dose rate. The measures were sent directly to families, not through the school.
- In Nov. 2012 the adults too have obtained badges for this measurement.

Next steps: needed data

- Detailed individual measurements are really necessary for professionals to prioritize the next steps
- It is difficult for professionals to obtain these detailed data in order to help

Accurate early information is critical

- *You spoke of another community rather distrustful, what is the difference between the two contexts? Was it the tradition present, the respect paid to the local school?*
- *Ms. Katsumi: Traditional backgrounds in nearby communities were quite similar but the information received at very beginning was critical*
- *In another community teachers and parents received information full of horror stories and **misleading information never denied by authorities.***
- *TIMING is crucial in risk communication: scientists and authorities must be there on time to provide correct information. Even if better science is available later people return to the first impression*
- *Mass media: quick correct info to broad society is needed*
- *Contaminated rubble must be buried and readings after this storage in fact are lower, this is reassuring to people if they are shown this. The Media should broadcast this but they emphasize the bad news.*
- ***In fact, the time to communicate and build relationships is BEFORE an accident !!!***

Dose and risk information

- Dose and risk are important information which professionals are responsible for providing. Risk, which can be derived from dose information, is particularly interesting to the population
- Information about dose therefore should be as close as possible to a pertinent range of measured doses.
- Underestimation or overestimation can bring inappropriate neglect or unnecessary anxiety
- This is important to consider in regard to the upcoming [or May 2012?] WHO report which by using a very 'conservative' approach came up with dose estimations which are much higher than the actually measured doses.
- These figures can be misinterpreted by both public and authorities in years to come. Already today, they may destroy the credibility of the work done locally.
- It is the responsibility of scientists to consider the consequences of the information they provide.



The Municipality and the Specialists

EQUIPMENT AND TRAINING

Equipment has to support residents' experience and efficacy

- The mayor's challenge is to translate safety to residents: residents need to be able to make decisions themselves.
- We could do it because we took time and had info and knowledge. Residents need the same.
- We are passing out individual dosimeters to the population (both children and adults) beyond the 12,000 units provided by government
- For us it's obvious that all people need these badges, even the elderly. It may be a talisman, like wearing a mask. In this sense individuals need to see the data and experience their improving situation
- Dr Tanaka helped clean the pool, as did parents; this built trust
- It's about experience, not just logic
- **Teacher training** improved understanding of countermeasures



Input by the specialists

KNOWLEDGE OF HOW TO REDUCE EXPOSURE



Knowledge of reduction

- *Special consideration is needed for protection of children. What instructions were given to the mothers?*
- Ms Katsumi: Initially, ordinary warnings on TV instructed wearing of long sleeves, masks, sheltering, not touching soil
- Usually we encourage children to walk to school (up to 2 km) but we promoted rides for children to reduce exposure.
- Skirts were no longer required for girls.

Knowing, deciding, putting into action

- Knowing, deciding, putting into action: three separate steps. People need peer support to pass through these steps.
- Mayor Nishida: When we started to become aware of the situation some time had passed: 10 days or so. On 23 March SPEEDI was disclosed. We did not know about Bq, Geiger counters... We did not know what we needed to make measures. We had to grope around ourselves.
- If the community says they cannot understand or act it is normal.
- We were on the community side in this at the start. We studied the information available to us on internet.
- In the newspaper we saw Dr. Tanaka, the current chair of NRA who was born in FKS. The mayor asked him for help during a visit and he took the challenge.
- People called the principal, telling her to run. Principal Katsumi was not affected by that. A leader needs to make decisions and take responsibility for her decisions.



Decisions by the Mayor and
Community Solidarity

SUPPORT FOR IMPROVEMENT PROJECTS




Date City: From turmoil to partial trust

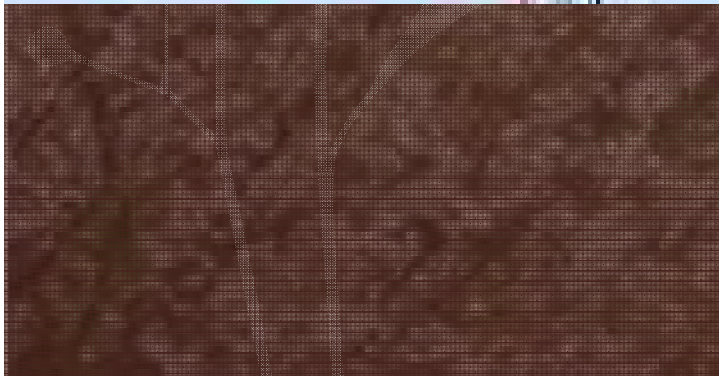
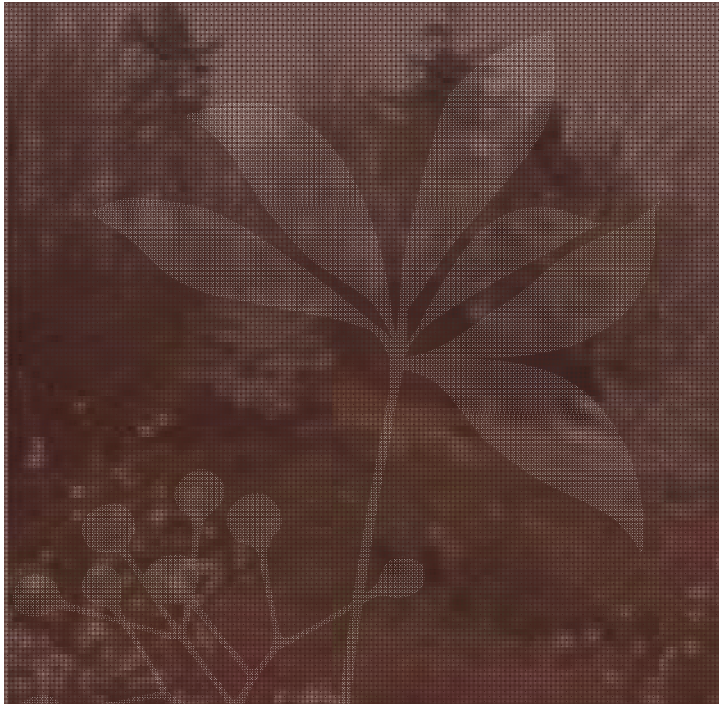
- Mayor Nishida: At the beginning we were really in the midst of uncertainty. We were hit by a strong sense of concern for children. Parents thought administrations were not quick enough to protect them, and this produced mistrust.
- Our lack of resources hindered us, and the tradition of waiting for resources and instructions from central government.
- We learned from Chernobyl and the reports we read about this, and the people who chose to stay in those contaminated territories.
- Our good luck: Dr Tanaka made himself available on a voluntary basis.
- In Early May 2011 we recognized that the playgrounds needed decon. We decided we needed to pay for this, for air conditioning in 28 schools, for integrated dosimeters for children. I decided this as Mayor and allocated 1 Bn yen from the municipal budget. This created trust. People aren't 100% trustful but we are still working for this.

Support by community members

- When there is no technical capability in the family or close community, help is needed from local farmers and business.
- Rubble was removed but was left in the schoolyard. In another city, the rubble was buried in surrounding farmlands.
- Finding land to hold rubble is a challenge. Recently we have overcome this problem in Date City and decon is accelerating in residential areas – 300-400 houses will be clean by this year



**WHAT WILL
IMPROVED LIVING
CONDITIONS MEAN
FOR THE CHILDREN?**



The children's awareness

- Fukushima became a different place
- We want to provide children with education and methodology to let them continue to live here
- The specialists have helped us here.
- We asked the children to write an essay about how they have been affected.
- Farmers' children perceive the suffering of their parents and grandparents whose mushroom and vegetable culture is stopped
- They have a high level of awareness of the adults' suffering, and this is a challenge for us to deal with.
- Children are adaptable and take today's reality as it is: this is their strength.
- They count on adults to take the right action
- They express determination for the future. Even little children make decisions and are determined.

Letting the children speak and remember

- What about the kids? It's good to see that they have already started to work and learn about these issues. Some may grow up to be RP professionals.
- It's important that they speak about their views, eg what they saw their parents go through
- Build the memory, don't try to forget, have a heritage to pass on: this is also important
- Maintain by all means the exchanges between these children and those from other cities and abroad.
- NIRS organises the education programs. HS students are invited to FKS to talk and learn with their peers, not only about radiation.
- In Belarus we organized exchanges with French penpals. The kids told amazing stories about how they lived through the event, how they feel and see the world. They say very deep things.
- Don't talk only about Bqs and micro Sv – that is not life, it's just to support life.
- The children are individuals, they are subjects, not objects, and they are treated this way when education is provided.

Elements for guidance? - 1



Tominari: Science, Values, Process

- The Tominari story shows everything: science, values, and process.
- Important to keep in mind the key players in this action:
 - **Determined local authorities**
 - **Committed specialists who made themselves available as volunteers**
 - **Officials of city government, staff administrators present each day**
 - **Local educators and health professionals**
 - **Experts coming to the scene, measuring and talking with residents**
 - **Parents, husbands, wives, neighbors coming to help**
 - **The children themselves**
- **The skill and effectiveness of this recovery are due to these people listening to each other and working together.**
- The role of experts is not only to do risk communication but primarily to help people to solve practical problems.

Achieving the shared goal: protection of children

- There is nothing special here that was needed exclusively to protect children. The process of decontamination was the same that would be undertaken in any case.
- The prerequisite was the desire to protect this sensitive population. All agreed on this. This consensus enabled:
 - Involving all types of responsible actors (professionals, authorities, families, the children themselves)
 - Collective decision to clean the school and to stay
- The technical process was fruitful: the school became the safest place, as a result of the involvement of all the people

Going into the field

- The traditional role of the scientists has been to stay in laboratories and offices.
- Roles and responsibilities have broadened today to include going into the field, learning day to day how to improve the situation with the community.
- Communication and collaboration must take place between the 2 sets of professionals.
- It is really important for the researchers to come to the actual scene. The experiences and achievements of the community should be shared more with the scientific community.
- This new context requires government to commit supplementary resources.

Elements for guidance? - 2

TRANSLATING SCIENCE INTO A SENSE OF SECURITY

Desire to
Improve
Conditions

Information

- Levels in Environment
- Levels in Foodstuffs

Support

- For Improvement projects

Improved
Living
Conditions

Equipment
& Training

- For locals to take their own measurements

Knowledge

- How to reduce exposures

Translating scientific knowledge into a sense of security for people

- The sense of security is gained when people
 - Engage themselves
 - Look at the facts (with some help)
 - Make up their minds about which way they want to go
- When people have decided what to do to improve the situation the sense of security comes. The Mayor and Principal have the situation in hand, they see where to go, and are reassured.
- Based on all the gathered information, find out what can be done, and work together to solve the situation. This is what reassures.

The transformation of numbers into tools

- Giving the best scientific evidence is not reassuring. It took the professionals a long time and lots of experience to learn RPa and the importance of mSv. For laypeople it may not mean a thing. Accurate information is not enough.
- **When people have a grip on the situation the figures no longer produce concern but become a source of assurance and support for action.**
- The meaning of figures needs explanation in order to be transformed into support.

Elements for guidance? - 3

HOW CAN THE TEAM SPIRIT BE TRANSFERRED TO HELP OTHER COMMUNITIES?

Desire to Improve Conditions

Information

- Levels in Environment
- Levels in Foodstuffs

Support

- For Improvement projects

Improved Living Conditions

Equipment & Training

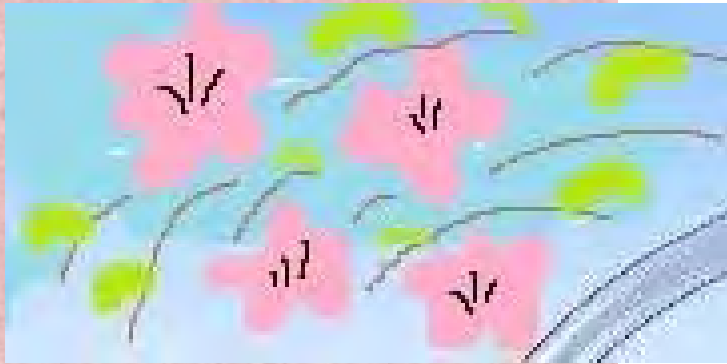
- For locals to take their own measurements

Knowledge

- How to reduce exposures

A small school surrounded by beauty; A big symbol of action and hope

- Will a positive or negative legacy result from these events?
- **Tominari School is a symbol that should be disseminated – locally, nationally, internationally**



**Report of Decontamination
in Tominari Elementary School
富成小学校除染レポート**



Singular situations

- Date City and Tominari were pioneers, performing pilot actions; the decontamination has by now been repeated in many schools. Good practice spread by example.
- What helped us to be successful? Community had strong trust toward the school and staff; people were amenable to outside support and experts including Dr Tanaka who were ready to provide apt answers to our questions. It was not fun or enjoyable but we had good **team spirit**. That and trustful relations were the keys.
- Leadership matters: when municipality leadership is strong the decon is well run. This varies across the prefecture.
- Each municipality is facing a singular situation; successful communication took place in Date between professionals and communities – but there are less happy stories.
- How to build the trust and understanding needed in those other contexts?
- **In some places more help is needed. Evacuated people are in a totally different situation – not touched on here.**

Issues remain unresolved, in Tominari and in other less trustful communities

- **Principal Katsumi** – My successor at the school is still struggling, even though the dose level has gone down, children are still more exposed than other children in Japan, we still need support from professionals. What kind of support can we expect in the future?
- In another hotspot community beyond the mountain range, people are defiant and emotional, mistrustful of professionals, particularly in one school district
- **20,000 children** are evacuated, living outside the prefecture, going to a new school, free from a high level of radiation but suffering from psychological problems, feeling that they are misfits. These aspects need attention.

Remaining questions



THE NOMINAL NUMBER?

How to embody the consensus into RP system?

- Perhaps the issue is not so much setting reference levels, but to recognize that in all our societies there is a duty to take particular care of children
- As ALARA is implemented : a special priority is placed on children, you place resources here first and go perhaps further than for other groups.
- Dose reference levels, statements which we have seen change over time and circumstances, express the priority given by society.
- *The ICRP nominal number perhaps needs to be reexpressed to embrace the focus on the sensitive population?*

