

Current Issue on Remediation in Fukushima and Creation of Newborn Fukushima

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Prefecture on Remediation

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The contents of presentation are
supplied by Fukushima Prefecture



11.03.2011

Attacked by Tsunami in Yotsukura-Bay
(Yotsukura, Iwaki-city)



22.03.2011

Police officials under searching by heavy machines
(Soma-city)



14.04.2011

Searching by police officials with protective clothing



13.03.2011

Gymnasium in school for evacuation
(Minami-Soma city)



Location of Fukushima



Fukushima Prefecture

Region	Tohoku
Island	Honshu
Capital	Fukushima(City)
Governor	Yuhei Sato
Area	Total 13,782.54km
Population	Total 1,962,333
Density	154km2

Fukushima



Profile of Fukushima Prefecture



Peaks of
Azume/Peach



Hama-Dori



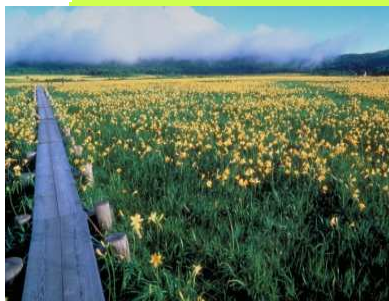
Significant, intangible
folk cultural asset of
Japan

Soma-Nomaoi



Tsuruga-jo Castle

Aizu



**Oze/National
Nature Park**

Naka-Dori



Cherry tree, named

Takizakura



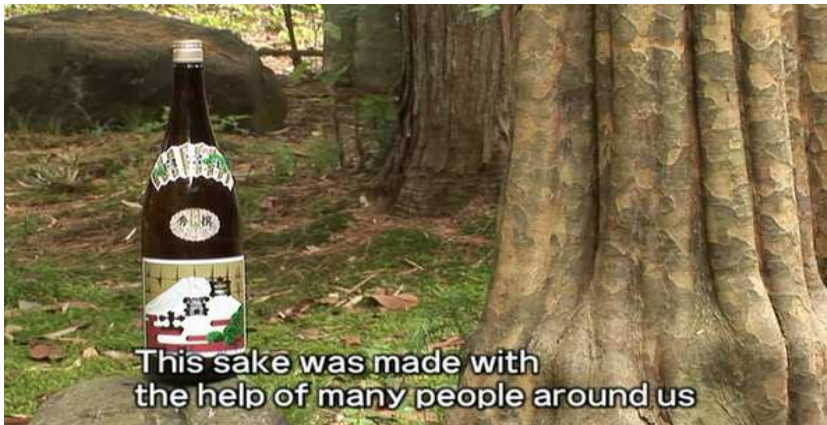
Fukushima
Airport



Lake Park, named
Nanko Park



Onahama Industrial
District



This sake was made with
the help of many people around us



Damage Caused by Earthquake and Tsunami in Fukushima

人的被害 Human Damage

- ◆ Death ; 3,058人
- ◆ Disappearance ; 5人 (As of December 29, 2012)

住家被害 Damage of Habitations

- ◆ Total collapse; 21,069
- ◆ Half Collapse; 72,345 (As of December. 29, 2012)

地震・津波による被害額

Total Financial Damage Caused by Earthquake and Tsunami

- ◆ Public civil facilities ; ca.\$ 3700M (3,162億円)
- ◆ Agriculture, Forestry and Fishery facilities;
ca.\$2900M (2,453億円)
- ◆ Educational facilities; ca. \$550M (470億円)

Total ; ca. \$7160M (6,085億円)

(As total cost of prefectural and local governmental repair construction, estimated as on Dece. 27, 2011)

* 市町村所管分：南相馬市の一部及び双葉8町村の概算被害額は含まれていない。

津波に襲われる四倉湾

Small bay named Yotsukura -wan, Iwaki, attacked by Tsunami



防護服を着て捜索活動を行う警察職員

Searching activity for disappeared human by policemen with protective suit



Damage caused by Nuclear Accident



- ◆ Nuclear accident affected on all of domains, such as industry, agriculture, fishery, over the prefecture Diffuculity to seize all figure of the damage
- ◆ Heavy psychological burden received such as by human-rights abuse

Enormous
Damage

●農林水産業

- ・出荷自粛・制限
- ・作付け自粛・制限
- ・漁自粛
- ・入荷拒否・価格下落 等

Primary sector

Voluntary suspension and control of the deliveries
Voluntary suspension and control of the cropping
Voluntary suspension voluntary of the fishing
Receipt of products refused, and downfall of the prices, etc.

●製造業

- ・納入拒否
- ・放射線測定の要求
- ・工場の県外移転 等

Manufactures

Receipt of products refused
Request of radiation monitors
Transfer of the factories outside the prefecture, etc.

●建設業

- ・建設資材の放射性物質汚染
(discovered about 10 months after the nuclear accident)
- ・放射線測定の要求 等

Construction

Radioactive contamination of the construction materials
Request of radiation monitors, etc.

●観光業

- ・予約のキャンセル
- ・観光客の激減 等

Tourism

Cancellations of reservations
Sharply decreasing the number of tourists, etc.

Damage caused by Nuclear Accident

● Others

- Significant reduction of population in the prefecture, Families divided by evacuation
- Anxiety against invisible radiation
- Hazing to children sheltered from Fukushima (Rumor as «radioactivity infection»)
- Rejection of acceptance on evacuee from Fukushima
- Large hardle on the treatment of contaminated soil, sewer dirt and other wastes, etc.

Issues to be solved

- **Avancement of remediation**, and positioning of intermediate storage and final disposal site
- Clarification of safety standard, and overcoming against rumor by transmitting the correct information
- Long-term health care & monitoring
- Speedy indemnification on all of damage over Fukushima prefecture and for all residents, etc.

Fukushima Restoration Program (December, 2012)

Guiding Principles

- Building a safe, secure and sustainable society free from nuclear power
- Revitalization that brings together everyone who loves and cares about Fukushima
- A homeland we can all be proud of once again

PRIORITY PROJECTS FOR REVITALIZATION

Living in peace of mind

- 1. Environmental restoration**
2. Assistance for rebuilding livelihoods
3. Protecting the physical and mental health of citizens
4. Raising and supporting our children and young people, who should be a driver of our future

Work in own hometown

5. Revitalization of primary industries
6. Revitalization of small and medium-sized enterprise
7. Promotion of renewable energy
8. Medical-related industry cluster

Rebuild towns, Re-connected people

9. Building Fukushima connections
10. Fukushima tourism exchange
11. Town development for the revitalization of tsunami-hit area
12. Strengthening the cooperation and communication infrastructure that links Fukushima

Environmental Remediation Project

Goal

- To secure a livable environment for returnees as early as possible, by thoroughly decontaminating living areas, farmland, forest as well as facilitating contaminated waste disposal – homing our prefectural lands to a fertile and beautiful state.
- To assure the safety of food produced in Fukushima for distribution and consumption by enhancing the food testing measures.

Subject

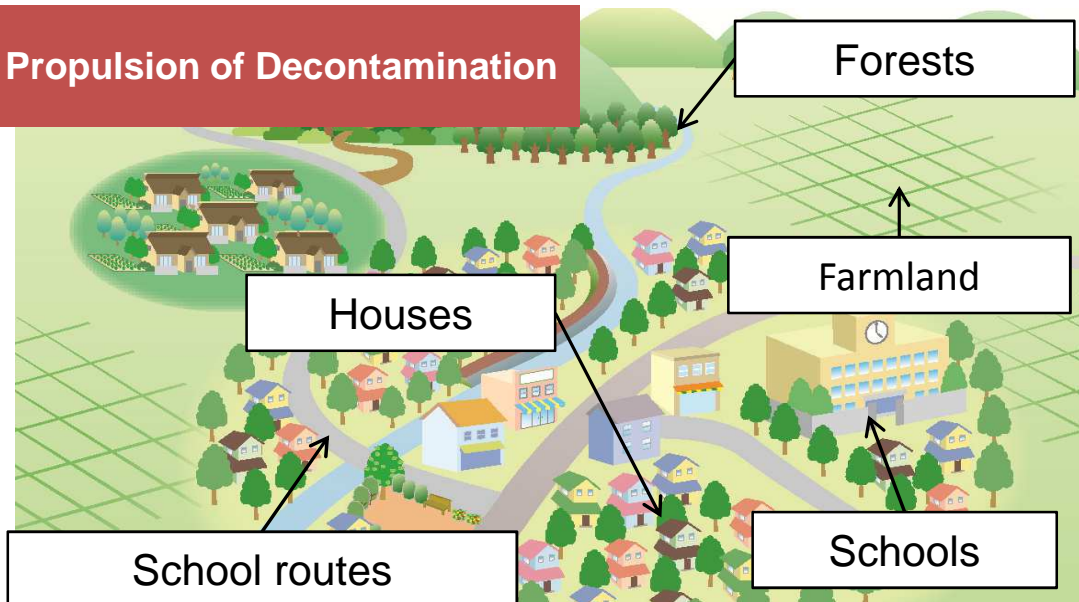
○Acceleration of Decontamination

○Contaminated waste disposal

○Ensuring food safety

○Establishment of hubs

Propulsion of Decontamination



Ensuring food safety

Creation of consumer-friendly food testing system

Contaminated waste disposal

Environmental creative strategy hubs

Remediation Measures

家 屋 Houses

庭 Garden



庭木の剪定
Pruning of garden
trees



表土除去
Removal of topsoil

外壁 Outside Wall



拭き取り
Wiping down

耕作地 Arable Land

草地 Grassland



除草
Weeding

屋根 Roof



ブラッシング
Brushing

雨どい Drainpipe



堆積物の除去
Removal of sediment

道路 Road



高圧水洗浄
Washing with high
pressure water

土壌 Soil



深耕
Deep plowing

Remediation of House with Forest behind and Waste Packages generated



Remediation of Fruit Farm

Reduction of Radioactivity on Tree Bark by High Pressure Water Cleaning

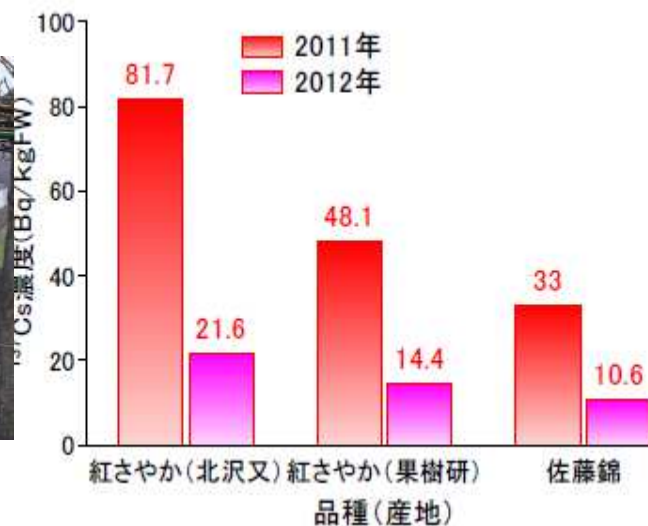


High pressure washing of peach tree bark

Fruit	Counting (kcpm)		Reduction (%)	備考
	Before Cleaning (a)	After cleaning(b)	$100-(b/a*100)$	
Peach	1.81	0.96	47.0	所内ほ場
Pear	4.20	0.60	85.7	〃
Apple	1.81	0.14	92.3	〃
Persimmon	2.63	0.31	88.2	現地ほ場
Grape	3.40	0.50	85.3	所内ほ場
Cherry fruit	1.88	0.92	51.1	〃
Plum	3.21	1.66	48.3	現地ほ場



High pressure washing of pear tree bark



Cs-137 concentration in Cherry fruit
2011 and 2012

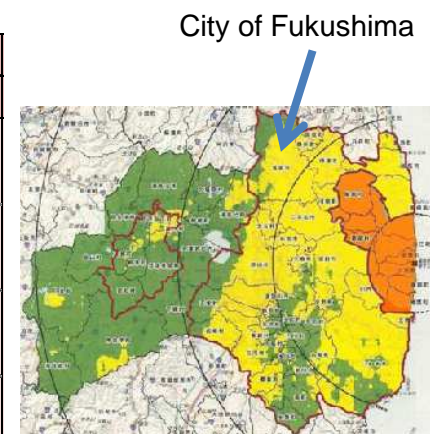


Cs-137 conc. In Peach
(2011,2012)

Progress of Remediation in Each Municipality

Fukushima-city

	Plan (A)	Ordered		(C)	Result	
		(B)	発注率(B/A)		実績率(C/A)	
Houses	20,806	18,913	90.9%	3,015	14.5%	
Public Facilities etc	625	621	99.4%	458	73.3%	
Roads (Km)	656	77	11.7%	25	3.8%	
Farmland (ha)	6,115	5,679	92.9%	4,720	77.2%	



The areas planned for remediation are indicated with Red and yellow-color.

various villages, towns and cities

	Plan (A)	(B)	Order		(C)	Result	
			発注率(B/A)			実績率(C/A)	
Houses	65,873	51,111	77.6%		8,908	13.5%	
Public Facilities etc	3,057	3,112	101.8%		2,424	79.3%	
Roads(km)	3,457	1,994	57.7%		426	12.3%	
Farmland(ha)	25,726	20,095	78.1%		12,943	50.3%	

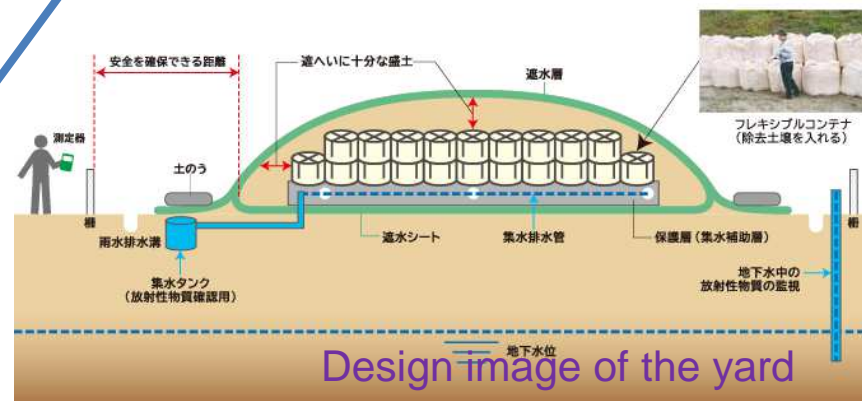
※調査対象は汚染状況重点調査地域の指定を受けた40市町村です。

※計画数量は今年度までの累計であり、未公表の市町村分は含んでいません。

※平成24年度以前の除染実施計画施行以前の事業も発、実績には含まれているため、計画数を上回っています。

Temporary storage site and keeping on the spot

Temporary storage sites



Keeping safely on the spot



※Number of temporary storage site; 452
(Number of Planned Storage Site; 102)

※Number of keeping at spots; 14784

Risk Communication

Regional Dialogue Forums

Dialogue with residents in order to promote the understanding of decontamination by participating specialists and government officials, who answer to resident's questions and concerns face to face.



Temporary Storage Sites Observation Visits

The observation visits to the temporary storage facility sites for leaders of community associations and the like from various autonomous organizations are progressed to promote understanding the installation of these facilities within various regions.



Voice from residents and Future issues

Anxiety for remediation

- Anxiety against invisible radiation
- Anxiety against prolongation of evacuation due to the delay of remediation
- Anxiety against re-contamination on a remediated area

Challenge for Future

- Developing potential remediation measures
- Comprehending environmental dynamics for applying remediation
- Effective risk-communication with residents

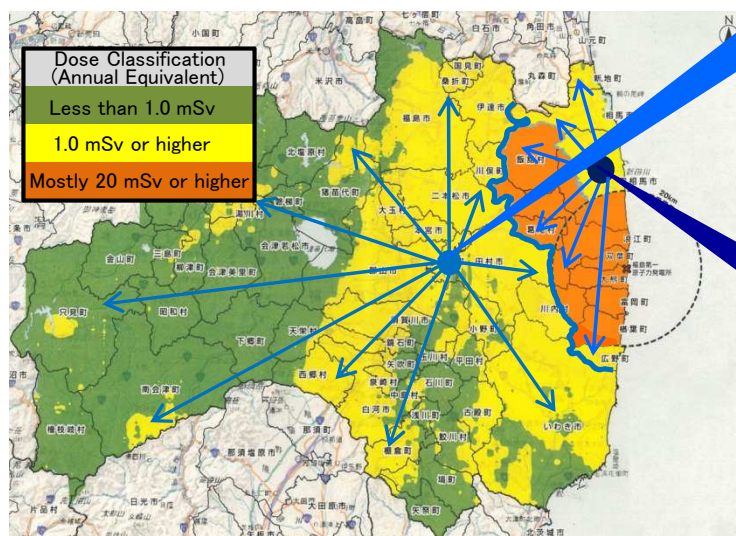
Fukushima Prefectural Center for Environment Creation (As tentative)

Overview of Plan

1 Basic concept

- Quickly restore environments contaminated by radioactivity, and create environments in which residents of the prefecture can live with peace of mind now and in the future.
- Strive to become a preeminent international research base through close cooperation with research institutes in Japan and other countries.

2 Facility overview



Facility A

- ① Monitoring
- ② Surveys and research
- ③ Collecting and transmission of information
- ④ Education, training and networking

Facility B

- ① Monitoring of the area around nuclear facilities
- ② Monitoring of safety at nuclear facilities

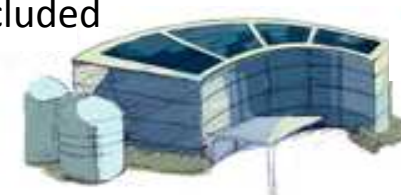
3 Construction/research schedule

Maintenance Process	FY2012	FY2013	FY2014	FY2015	FY2016
Basic design					
Execution design					
Construction			Facility A Facility B	Partial opening of Facility A Opening of Facility B	Complete opening of facilities
Investigative research		IAEA cooperative project, etc.		Investigative research using facilities of center	

4 Maintenance and operating costs

JPY19.4 billion (Estimated)

(JPY10 billion for Designing and construction + JPY9.4 billion for 10 years of operations), land acquisition cost not included



Ensuring Food Safety

- Agricultural products for marketing are monitored by the prefecture as well as being inspected by individuals, and are shipped after the safety confirmation
- All the municipalities throughout the prefecture have equipped with 520 examination units that were placed in the public facilities to ensure a simple inspection of food consumed at home

Number of examinations 147,717(April- Oct. 2012)

Kind of Food	Before March, 2012		After April, 2012 (As of Sept. 2012)	
	No. over criterion / No. of inspection		No. over criterion / No. of inspection	
Brown rice	0 / 1,724	(0%) (※1)	71 / 10,034,208	(0.00%) (※2)
Vegetable, fruit	145 / 6,121	(7.4%)	6 / 6,987	(0.09%)
Animal product (Milk, meat, etc.)	15 / 5,888	(0.25%)	0 / 5,253	(0%)
Mushroom, Mountain vegetable	127 / 1,083	(11.7%)	90 / 1,097	(8.2%)
Marine product	227 / 3,557	(6.4%)	738 / 5,054	(14.6%)

Criterion value	Interim criterion in food, for Cesium		New criterion in food, for Cesium	
	Rice, Vegetable, Meat, Fish, Others	500Bq/kg	General food	100Bq/kg
			Infant food	50Bq/kg
	Milk, Milk products	200Bq/kg	Milk	50Bq/kg

※1 モニタリング調査終了後、暫定規制値を超える放射性セシウムが検出されたことから、緊急調査を実施し、新基準値(100Bq/kg)を超える米が流通しないよう特別隔離対策を実施した。

＜調査結果＞ 調査戸数23,247戸 うち100Bq/kg以下 22,664戸 (97.5%)

※2 モニタリング以外に全量全袋検査を実施中。



Food brought in for examination of radioactivity

Health Care and Enhancement

➤ Fukushima Health Management Survey

-Basic Survey

Response rate 23.1% (As of 5/12/2012) Number of people who response 475,028/
Objective 2,056,994 people.

-Examination of the Thyroid Gland

Number of people tested 130,368/ Objective 360,000 people (As of 30/11/2012) *

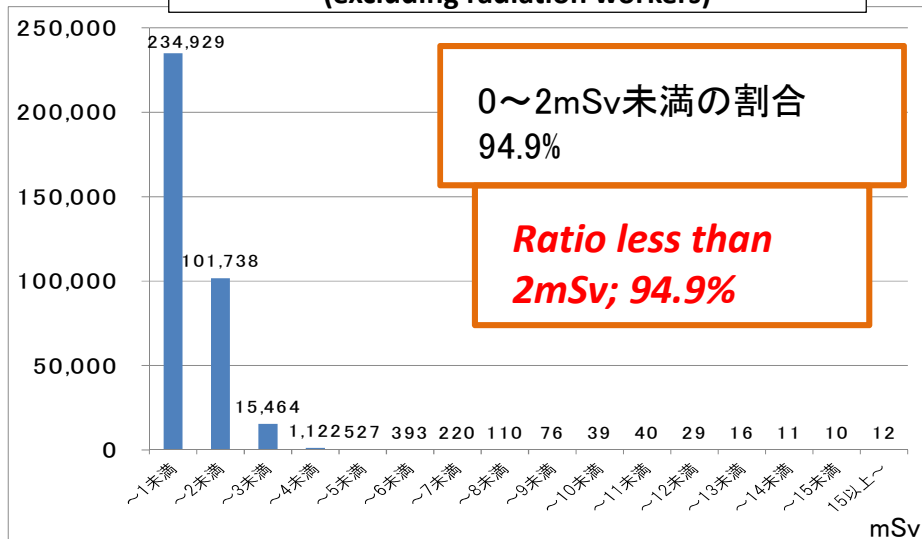
Lifelong examination of all residents who were between the ages of 0-18 at the time of the Earthquake.

➤ Implementation of Internal Radiation Exposure Examinations

Number of people tested 81,119 (June 2011 – Sept 2012 H23.6~H24.9)

Will implement examinations of children under the age of 18 and pregnant women by NY2014.

Distribution by estimated radiation dose
(excluding radiation workers)



0~2mSv未満の割合
94.9%

**Ratio less than
2mSv; 94.9%**

福島県「県民健康管理調査」 「基本調査」の実施状況について (速報値)
(平成24年12月5日) より作成

Thyroid Screening Results

Total Number of Participants			95,954 人		
Results		Status	Number	%	
A	(A 1)	No nodules/cysts	57,627 人	60.1%	99.5%
	(A 2)	Nodules ≤5.0 mm or cysts ≤20.0 mm	37,826 人	39.4%	
B		Nodules ≥5.1 mm or cysts ≥20.1 mm	500 人	0.5%	
C		Immediate need for secondary examination	1 人	0.0%	

〈参考〉H24.9.28検査分まで
第9回福島県「県民健康管理調査」検討委員会資料より作成

Summary

「Newborn Fukushima with Full of Dream, Hope and Smile」

from the Basic Objective on Newborn Fukushima Plan, December 2012

Wishes of full of life on all of residents, safe-society of giving birth to and rearing babies for young generation, and society being proud of Fukushima toward future

For Realization

- Securement of safety and security of residents by remediation and health monitoring
- Regeneration of primary industry and enterprises
- Creating a hub of leading industries
- Revitalization of tourism, transmission of information, etc.