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Present Situation of Reconstruction and/or Revitalization of Fukushima and Promotion for Research, Technology Development and Industrial Creation by Innovation after 2011.03.11

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2. Regional Characteristics and Historical Issues in Fukushima

- 1) The disaster hit local regions where an **aging population** combined with **the diminishing number of children** had been proceeding.
- The disaster destroyed agricultural industry as a local key industry. The community and occupation must be reproduced.
- **3) Declining the activity** in small cities and districts are observed due to the globalization and shift to finance economy.
- Even though the man power shortage of the local government is pointed out, the governments should still play a major important role in the formation of regional policy and consensus building.
- 5) Wide-area and long-term refuge might be expected due to the Fukushima Daiichi NPS accidents and radioactive contamination, and the combined effects are observed.
- 6) Fragmented developments should be improved in the procedures of decontamination, compensation, refuge, health and welfare care, life support, reconstruction and revitalization and so on. 8

Research works in Fukushima Universty



RADIATION MONITORING TEAM



FUKUSHIMA 'S PRESENT ISSUES COMPLEX MEDICAL AND SOCIOLOGICAL ISSUES





The Institute of Environmental Radioactivity (IER) Fukushima University



Agriculture and Foods system



3. Problem to the society for the return





Current numbers of Evacuee

Inside the Prefecture	Outside the Prefecture
Temporary housing or Apartments paid by government	Public housing or Apartments paid by government

15,384





The Community In Community

Using existing connections from the evacuees' former communities as a basis, **new communities have been created within the host communities**.

However this state of situations and extension of the period of evacuation has led some new problems coming to light.

Whilst **caring for these disaster victims**, it is necessary to acknowledge to their feelings, and support them to stand on their own two feet as an individual, as well as integrate into their new regions.

Conditions of returning by gender and age 性別と年齢による復帰への条件



- soon すぐに
- after infrastructure repairs
 - インフラ修理後
- after decontamination
 除染終了後
- after other town residents return 他の住民が戻ったら
 no plans to return 戻る計画はない
- others その他

Radioactive pollution and evacuation zoning, July 2012 放射性物質による汚染と避難区域





the Innovation Coast scheme

Decommissioning of F1 NPS with TEPCO

- constructing cooperative partnership with institutions such as JAEA, IRID and NDF
- collaboratively conducting developmental research into the decommissioning methods

As the promotion of industry of the Heisei period !



Deterioration Monitoring Technology for Aged Materials by using Magnetism Properties

The reliability for deterioration monitoring technology is confirmed for material specimen cut from the aged steel pipes used in nuclear reactors, by using macroscopic electromagnetic evaluation with electromagnetic acoustic transducers and an microscopic observation of with SEM.



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Deterioration Monitoring Technology for Aged Materials by using Magnetism Properties

The difference between microscopical magnetic property for sample 1 and sample 2 was found, and crystal grain boundaries pattern was also different by using STEM observations. It means that the method is valid for aged materials.





Fig. 3 Magnetic property for sample 1 specimen and STEM observation





Fig. 4 Magnetic property for sample 2 specimen and STEM observation

Development of an atomic interior surveying robot Proposal of a joint lock mechanism using low melting point alloy for windable sampling arm

In order to pick-up fuel debris

- evaluation of a method to pick-up fuel debris
- sampling of fuel debris in Reactor containment vessel



Development of an atomic interior surveying robot Proposal of a joint lock mechanism using low melting point alloy for windable sampling arm



Government-led initiative;

- -Development of foundational nuclear power plant decommissioning techniques
- -Creation of an indispensable international industrial-academic relations hub
- -Corroborative experimental robotics research
- -Creation of an archiving facility
- -Smart Eco Park

Initiatives led by Fukushima Prefecture;

- -Development of renewable energy,
- -Research to advance the reinvigoration of farming
- -Nurturing of critical industries within the prefecture such as the production of **medical equipment**

Great opportunity for innovation

Implemented support activities by JST, AIST and NEDO;

- the coming-together of regional industry is lacking
- Successful Matching Planner business project;
 - linking business operations and research to create a cooperative operation is required
- Advancement of industry in the affected areas;
 - the change from order-based production business models to innovative companies is indispensable.

Human resource development and establishment is also required, and "Needs Oriented Collaboration" must be essential.

Construction of New Regional Industry and Innovation



Human Resource Development for Supporting and Leading Revitalization "Matching Planner" and/or "Producer" Industrial Characteristics of Hama-dori Area in Fukushima and Promotion for Research, Technology Development and Industrial Creation by Innovation



Utilizing the characteristics of each place, identifying demand for nextgeneration industries arising from changes in market needs or society, and making action to promote it, these active efforts to change and the reformation that constitute business innovation were required.

Important Five Points for Promotion

- Making necessary efforts to establish their own business to catch up market needs by following Needs-Oriented Operation
- Adding new high value of products developed
- Developing human resource with view of business and technology
- Creating Collaborative Works (Venture company Businesses in different fields, Government office, Financial organs, News media, etc.)
- Creating Open Environment for Project Information to develop an appropriate business environment where companies can undergo self-reformation

Educational Experiences Only Fukushima University Can Offer