[EJ] Evening Poster | H (Human Geosciences) | H-CG Complex & General

[H-CG26]What scientists should do for reconstruction after Fukushima Daiichi Nuclear Power Plant Accident

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Seven years have passed since the Fukushima Dai-ichi Nuclear Power Plant accident on March 2011. Some local villagers have started returning their own home. Most of suspension on shipment of agricultural products from Fukushima has been released. Scientists temporarily concentrated on Fukushima-related issues are returning to their own research topics although we still need to solve various problems from application levels to pure scientific topics. For example, it is critical for farmers in Fukushima how to recover productivity of decontaminated agricultural lands. Radiocesium (Cs)-bearing microparticles having relatively high specific radioactivity (Bq/kg) had recently been discovered; however, the fate of the Cs-bearing microparticles, e.g., inert or not, is not well understood to date. It is about time for rural planning scientists to propose their own opinions rather than reporting case studies. We had preliminary discussion at ASA, CSSA and SSSA International Annual Meeting in Tampa, USA 2013 by driving a session of "Battles of Soil Scientists in Fukushima, Japan". In addition, we had "Battles of soil scientists for recapturing Fukushima land from Nuclear Power Plant accident. What can we do then?" last year. In this session, we are looking forward to presentations from soil and water sciences to social and agronomic sciences related to interaction of human and nature under the condition of post-nuclear power plant accident.

[HCG26-P07]Estimation of residence time for spring water and groundwater in coastal area of Fukushima Prefecture

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After the Great East Japan Earthquake occurred, the investigation near the coast area in northern part of Fukushima prefecture has been carried out to clarify the groundwater flow and residence time in this area. The measuring of EC, pH, water temperature, ORP and sampling of groundwater, spring water and river water have been carried out several times at Shinchi town, Soma city, Minamisoma city, Namie town, Okuma town, Iitate village and Date city since September in 2012. The water quality of shallow groundwater and spring water show mainly the Ca-HCO_3 type. On the other hand, the water quality of shallow spring water which was affected by the tsunami shows Na-(Cl+SO_4) type. However, the quantity of inorganic ions (as EC value) is decrease gradually, so the influence of the tsunami decreases gradually. The water quality of the deep groundwater and spring water which are located near the coastal area show the Na-HCO_3 type. It is estimated that the residence time of these deep groundwater and spring water relatively long. In some sites, the concentrations of iron and manganese in the water are high affected by the geology. As the result of CFCs and SF_6 analysis, it is estimated that the residence time of shallow groundwater (Ca-HCO_3 type) is about 10 years and that of deep groundwater and spring water (Na-HCO_3 type) is about 60 to 70 years. This result is consistent with the ^{3}H, δ^{18}O and δD analysis. As a result of altitude effect, it is anticipated that the recharge area of deep

groundwater which shows the Na-HCO_3 type is about 300 m higher than that of shallow groundwater which shows the Ca-HCO_3 type. These informations of groundwater flow are useful for considering the groundwater use with revival of the coastal area. We will continue the investigation of coastal area and make clear the groundwater flow system.