

## Evaluation of water erosion of Andisol under climate change

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Radioactive materials have been distributed after the accident of Fukushima dai-ichi Nuclear Power Plant at March 2011. Decontamination works have been conducted and thus most of arable lands and residential areas have been decontaminated. However, forest was not the target of decontamination plan, and pasture lands are still under planning. Still a possibility of redistribution of radioactive materials from those contaminated area to decontaminated area is discussing.

Water erosion is an important agent of the redistribution. Universal Soil Loss Equation which is a de facto standard soil erosion model in Japan may predict annual soil loss from agricultural lands. It has been extended to describe soil loss from pasture lands and forests. However, it still can predict only annual soil loss even though rainfall characteristics such as rainfall intensity and frequency of a rainfall event alters under effects of the climate change. Soil loss prediction and evaluation for each rainfall event would be important however USLE does not have a performance to do it. So, we tried to use Water Erosion Prediction Project (WEPP) and Cligen combined with Marksim to simulate future rainfall events and soil loss under those rainfall events.

Simulated rainfall by Cligen with Marksim cannot wholly represent a trend of shorter but heavier recent rainfall events. However, results of soil simulations suggested extent of surface runoff during a rainfall event is an important factor to consider soil loss and thus redistribution of radioactive materials. This would suggest soil treatment to avoid reduction of infiltration and management of surface runoff will be effective to reduce redistribution of radioactive materials.

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