

Management of radiation accident on the late phase using Decision Support System RODOS and GIS technology.

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In the event of a radiological accident, the construction of a strategy for managing the contaminated systems is an important component into the emergency response process. A wide collection of possible management options exists, but for each specific accident scenario only a subset of options appropriate for management strategy will be applied. The selection of these options depends on a range of assorted criteria (time and space, effectiveness, economic cost, radiological and environmental impact, waste disposal, legislative issues and societal and ethical aspects, for example) which, nowadays, are implemented into tools and systems to guide to the decision-makers.

This work aims to analyze the usefulness and applicability of the Decision Support System (DSS) RODOS for representative Spanish situations where food production systems become contaminated after a radiological emergency. This aspect is demonstrated for developing a management strategy for one scenario involving contamination of the foodchain after a hypothetical accidental release of ^{137}Cs and ^{90}Sr from a Spanish NPP.

For this scenario, the NWP (Numerical Weather Prediction) data of INM (National Meteorological Institute) have been considered. The deposited contamination, the activity concentration in significant agricultural products for this region, human doses and countermeasures proposed by the RODOS system have been considered and analyzed.

The customization of the management process is revealed as an essential part of planning for the recovery phase after a radiological emergency. The ArcGIS technology has been complementary used together with DSS RODOS to collate, analyze and scatter information about the land use, agricultural practice, levels of contaminations of the agricultural components, being its usefulness analyzed for the customization process. This enables a more realistic and reliable exploration, analysis and query of the existing situation and allows to define the applicability and extension of some management actions and finally assists in construction of management strategy. The RODOS results of this scenario have been analyzed for accessing of the applicability of proposed management options and construction of management strategy. E.g. such management options like disposal, land amelioration, change of crop, change in land use, agricultural decontamination, removing from contaminated feed etc. have been considered and analyzed. Finally, implications and further improvements to construct efficient management strategies for Spanish situations are discussed.