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Study on the information to promote the adaptation action for the climate change

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1. Introduction

The climate change measures are classified into "mitigation" that is to reduce discharge of the greenhouse gas causing the global warming and prevent its progress, and "adaptation" that is to reduce influence by regulating a system of person, society and economy against a rise in temperature and sea level and a change of precipitation with the climate change. The enlightenment activity for mitigation is carried out actively as measures of climate change targeting citizens. Although the investigation of adaptation is made by predominantly government, the enlightenment activity for adaptation targeting citizens is not so enough. The probable reason is that they cannot imagine the influence of the climate change concretely in the area that themselves inhabit.

It is necessary to utilize the prediction of the change in the future with climate model and evaluate risk in order to understand the influence in the area by climate change concretely. Some institutes recalculate the result of global climate models (GCMs) including mainly CMIP3 into mesh data in Japan, then database is constructed and published (ex. http://hes.dpri.kyoto-u.ac.jp/database/), the usage of these data is promoted.

On the other hand, because the prediction result of climate change is not only one, the users have no idea how to utilize these data. It is important to show the climate change prediction data that is the result of research to the users intelligibly, so that local residents promote the adaptation for the risk of climate change.

The purpose of this study is to grasp the general user's image of the climate change and to investigate how the provision of prediction information changes the user's recognition and adaptation behavior.

2. Viewpoint of the general user for a climate change and the prediction

The problems about the use promotion of climate change prediction data for the general user are thought following points.

-They don't know which element and index of prediction data they should watch.

-It cannot be understood what kind of influence comes out only by having paid its attention to the meteorological data (temperature and precipitation) and index (precipitation of warm season).

-They don't know how reliable the prediction data is.

-They don't know how to interpret an uncertainty of prediction data.

In addition, it is thought that the adaptation of climate change for several decades is preferred to that for larger change 100 years later, which is pointed out by the recent research for the field of behavior economics. In that case, it is possible that an adaptation increasing a medium- and long-term risk is carried out as a result of regarding immediate actions as important. It is important to investigate the provision method of climate change prediction information to lead to an appreciate adaptation behavior from such a point of view.

3. Questionnaire survey

Based on these viewpoints, we carry out the questionnaire through the Internet investigation for citizens of Toyama where it is thought that the influence on farm products and tourist attractions by a rise in temperature with the climate change is large.

According to the recent meteorological observation data, snowfall between the winter seasons tends to decrease with a rise in temperature on the plains of Toyama. On the other hand, snowfall does not decrease even if temperature rises in the high altitude area. However, when a rise in temperature continues for the future, a decrease in snowfall in the high altitude area and a forward snow-melting are bought, and then various influences such as the review of the business period of the skiing area and the change of relation between water supply and demand in the rice-transplanting time could become apparent. It is vital to investigate the action of measures for the influence that is familiar to living environment not only an extreme phenomenon in order to promote the citizen's behavior.

Keywords: climate change, adaptation, prediction information, providing information, adaptive behavior