

Preface

The most critical challenge that Japan is facing, is how quickly recover from the Great East Japan Earthquake¹ (GEJE) and reconstruct the disaster-stricken regions.

The 2011 off the Pacific coast of Tohoku Earthquake was a massive earthquake with its hypocenter on Sanrikuoki. It caused huge tsunamis along with extreme seismic motions, which resulted not only in critical damages for people and properties in a broad area, including most of the Tohoku area and some parts of the Kanto area, but also accidents at Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station (NPS) and Daini NPS. Due to these accidents, many people were forced to evacuate and radioactive substances were scattered across a wide area, which was one of the most serious disasters Japan had ever experienced.

Recently, the Japanese public is very skeptical about S&T (science and technology; the same shall apply hereafter) with questions: was it impossible to reduce the effects of the earthquake and tsunami which caused almost twenty thousand dead and missing people, was it impossible to prevent the nuclear energy power plant accident, as well as questions about the effects on people's health. There is a major question arising about the role and responsibility of S&T.

People now recognize the limitations of S&T and that the earthquake could not have been predicted, and the fact that the negative aspects of S&T, such as the nuclear energy power plant accident, can cause serious casualties. Meanwhile, it grows important to reexamine expectations of the future of S&T, such as how to handle the risks of S&T, the responsibilities of scientists and engineers to society, and the contribution of S&T to society from various viewpoints of the Japanese public, politicians, government administrators, scientists, engineers, and so forth. The re-examination is important for S&T to be able to realize innovations and continuously play a role of the driving force of economic development in society.

The problems that the GEJE taught us were overwhelming and difficult to solve. Therefore, in this White Paper, we tried to summarize the problems revealed by the earthquake in detail, and analyze them for the future, from the view of the roles of S&T as Japan is establishing the best possible preparation against crises, including natural disasters while building a robust and resilient society, although the discussion has just only began.

We have to make continuous efforts that will be evaluated as the foundation for tremendous progress toward establishment of a new and robust social system in the future. With this White Paper, we wish to honor our historical role, as we record the process of this investigation, so that Japan might better protected and serve the following generations.

¹ The disasters caused by the 2011 off the Pacific coast of Tohoku Earthquake and disasters by following nuclear power plant accident shall be called the "Great East Japan Earthquake." (Cabinet agreement on April 1, 2011)