

## Message from the President



*Dr. Kiyotaka Miyashita*

The National Institute for Agro-Environmental Sciences (NIAES) conducts research aimed at solving the many challenges facing agro-environments, in accordance with the basic philosophy of helping overcome the world's food and environmental problems by means of high-standard research activities that are meant to harmonize nature, society, and humanity.

Under our phase III medium-term target, which started in 2011, NIAES is carrying out research and development both by taking full advantage of the knowledge accumulated and the domestic and international networks built to date, and by marshaling our research potential across multiple fields. These endeavors cover the following four priority areas:

1. Investigating interactions between global environmental change and agriculture
2. Illuminating the mechanisms of change and the ecological functions of biodiversity in agro-environments
3. Studying the dynamics and risk mitigation of chemical substances in agro-environments
4. Advancing agro-environment inventory

The following are some NIAES research achievements and initiatives from 2013.

With the increasing concern of consumers about food safety, we expect that NIAES-developed rice plants, which absorb hardly any cadmium, will be quickly and widely adopted as a means to control exposure to the toxic heavy metal cadmium as rice is a large source of cadmium intake. In addition to applying for registration of this low-cadmium rice cultivar, we conducted joint research with agricultural experimental stations in six

prefectures to introduce the low-cadmium-absorption gene into other rice cultivars.

As a means of coping with contamination from Tokyo Electric's Fukushima Daiichi nuclear accident, we continued our efforts to develop techniques to predict and mitigate the risk of radioactive cesium contamination of agricultural crops, and techniques to predict environmental dynamics of radiocesium. Additionally, in response to requests from government agencies including the Ministry of Agriculture, Forestry and Fisheries, we measured the concentrations of radioactive substances in many samples of soil and agricultural produce, and cooperated in determining the reasons why radioactive cesium was detected in agricultural produce in excess of standards.

There is a need for agriculture that is heedful of biodiversity. Joint research conducted with Shizuoka Prefecture found that the semi-natural grassland maintained around tea fields for the purpose of producing good-quality tea are hot spots of rare plants. Based on this discovery, the district of Shizuoka Prefecture where this method is employed was registered as a Globally Important Agricultural Heritage System.

The history of NIAES goes back to 1893, when the National Agricultural Experimental Station was established as Japan's first agricultural research organization. In 1950, with the National Agricultural Experimental Station as the nucleus, the National Institute of Agricultural Sciences was created as the nation's central agricultural research institution. Subsequently, after the institution's relocation to Tsukuba, NIAES was founded with the National Institute of Agricultural Sciences as its nucleus. Behind the creation of NIAES were the discovery of limits to the conventional economic system, which assumes that the Earth has no limits, and the rapid rise around the world of concern for the environment.

The year 2013 marked 30 years since the founding of NIAES and was also the year for commemorating the creation, 120 years earlier, of the National Agricultural Experimental Station, the original forerunner of NIAES. For that reason, in 2013 we hosted many symposiums to communicate our research achievements widely; we also held discussions with interested parties and citizens about the challenges facing agro-environmental research. Additionally, we conducted vigorous public relations activities such as opening our facility anew to elementary and junior high school students during summer vacation and receiving visitors from many high schools.

This Annual Report describes NIAES research achievements and activities from 2013. We very much hope that you will read it and offer your frank opinions and requests.

Kiyotaka Miyashita, President