

Foreword



Though the world celebrates this millennium as an era of technological advancement, one of our current and future challenges is the human-induced or natural processes leading to land degradation in general and desertification in particular. At present the world has not won the battle to address the twin challenges of nourishing an expanding population and conserving the natural resources.

Already eco-social spiral is being experienced by more than 1 billion people in the vulnerable parts of the world such as the arid, semi-arid and dry sub-humid areas. The complex nature of these challenges requires a global joint effort in tackling the causes of land degradation and the stresses occurring on the degraded soils.

The Arid Land Research Center (ALRC) of Tottori University is already collaborating in different ways with various institutions and scientists around the world in combating the factors leading to soil instability and permanent land damage. The ALRC has established academic exchange programs with the Agricultural Research Corporation of Sudan, The Institute of Soil and Water Conservation and Shijiazhuang Agricultural Mechanization Institute of the Chinese Academy of Sciences (CAS), the Hebrew University of Israel, etc. Last year the ALRC received a number of foreign visiting professors/researchers from Australia, Sudan, Turkey, and so on. Also a sizable number of foreign students are receiving their graduate training at the ALRC every year.

The ALRC signed a 5-year project with the Soil and Water Conservation Institute of the Chinese Academy of Sciences (CAS), which will be funded by Japan Society for the Promotion of Science (JSPS). This project to be carried out in the severely degraded Loess Plateau of western China, is expected to have a significant and positive impact on the reclamation of the already affected land. Similar projects in collaboration with Israeli and Sudanese scientists are underway. In the near future the ALRC is looking forward to expanding its current academic and research linkages to various parts of the world because a worldwide scientific collaboration is the only way to realize the necessary competence, vision, common sense and determination to alleviate the threat to the world's food security through sustainable agriculture in the dry areas.

With this prospective insight in contributing to ways of addressing issues related to arid land management, the ALRC has drawn the attention of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) which formally launched the 21st Century COE (Center of Excellence) Program in 2002 in order for the Japanese Universities to rank with the world's top universities. To achieve this, it is essential to foster the emphatic support for formation of a world-class base in areas of education and academic research by introducing 'the principle of competition' to be refereed by a third party. Therefore, for Japan that aims to build a nation based on the competitive creativity of science and technology, the role of universities and other institutions of higher learning in generating and conveying knowledge are of paramount importance. As such, ALRC was designated as a qualified candidate for the 21st Century COE Program (Program for Arid Land Science) award. The aim of this program is to develop a new Arid Land Science that is likely to be one of the unique approaches worldwide. The ALRC, including its predecessor, has accumulated

enormous knowledge and technology of plant production and vegetation recovery in sandy areas for over 80 years. We are updating this knowledge and technical know-how based on those already in use so that they are easily applicable to the arid lands in the world. To achieve this goal, we fuse the knowledge and technology of public health and energy engineering. The mission of this program is to contribute to environmental sustainability through development of a technical package that will be easily adopted by arid land inhabitants. Achievement of this objective forms the foundation of designing our National Arid Land Science as a worldwide top-level program in this field. Consequently, we are optimistic that this will bolster technological support of Japan as a UNCCD ratification country.

The ALRC is wide-open to researchers and scientists all over the world who are dedicated to the benefit of mankind. The friendly environment and the up-to-date facilities at the ALRC provide an excellent atmosphere for academics and research. For those who are interested in collaborating with scientists at the ALRC, please refer the 'Visiting Foreign Research Fellow Program' in this annual report, or visit our homepage at "<http://www.alrc.tottori-u.ac.jp/>", and make contacts directly with the concerned scientists at the ALRC. I would also take this opportunity to encourage foreign students to apply for postgraduate (MSc and PhD) scholarships at the ALRC through the Japanese diplomatic missions abroad.

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Director