

## Appendix: Prioritized research topics of the Arid Land Research Center

<p>(1) Integrated Desertification Control</p> <p>Research related to comprehensive technologies and/or efforts to tackle issues in drylands:</p> <ol style="list-style-type: none"><li>Development of next-generation sustainable land management (SLM)</li><li>Comprehensive research on the “Land Degradation Neutral World (LDNW)”</li><li>Elucidation of dust (Asian dust) emission</li><li>Development of early warning system of dust storms</li><li>Research on development of livestock production system for the better livelihood of drylands</li><li>f. f. Development of effective measures to improve the livelihood of the locals living in drylands through development projects in drylands</li></ol>
<p>(2) Environmental Conservation</p> <p>Research related to elucidation of unique characteristics of dryland’s natural environment and development of conservation and restoration technologies</p> <ol style="list-style-type: none"><li>Establishment of monitoring methods of desertified area and evaluation/diagnosis methods of dryland natural disasters</li><li>Elucidation of interaction among precipitation, river, lake water and underground water in drylands</li><li>Elucidation of drought and heat tolerance mechanisms of trees and their application to afforestation</li><li>Elucidation of ecology and functions of plant symbiotic microorganisms and their application to environmental conservation</li><li>Elucidation of drought adaptation strategies of wild animal/plants and development of ecosystem conservation methods</li></ol>
<p>(3) Agricultural Production</p> <p>Research related to development of sustainable agricultural production technologies and biological resources for drylands</p> <ol style="list-style-type: none"><li>Elucidation of plant stress response mechanisms to drought-related stresses by physiological and molecular biological methods and their application to vegetation recovery</li><li>Elucidation of metabolism and regulation mechanisms of drought-stress related plant hormones and development of drought tolerance induced compounds</li><li>Exploration and function analysis of drought-stress responsive genes and development of drought tolerant crops by gene recombination</li><li>Breeding of drought tolerant crop lines by introduction of genes and chromosomes of wild relatives</li><li>Development of numeric projection of land degradation of agricultural lands and preventive and restoration technologies</li><li>Development of water harvesting and water efficient irrigation technologies</li></ol>
<p>(4) Plant Resources</p> <p>Research related to elucidation of unique characteristics of food crops and resource plants of drylands origin; research supports through collection, preservation and condition maintenance</p> <ol style="list-style-type: none"><li>Research related to elucidation of unique characteristics of resource plants of drylands origin as well as collection, multiplication and sharing</li><li>Collection of data on dryland plants and development of its database</li><li>Correspondence to treaties and laws relevant to plant usage</li></ol>

List of research divisions, research fields, field of specialization, name of host faculties and their contact information.

Division	Name	Research Field	Field of Specialization	Direct Line	Email address ...@tottori-u.ac.jp
Division of Integrated Desertification Control	Professor Atsushi TSUNEKAWA	Conservation Informatics	Monitoring and modeling of plant production and ecosystem change in drylands	0857(21)7036	tsunekawa
	Professor Mitsuru TSUBO	Climate Risk Management	Dryland agrometeorology and climate-smart agriculture	0857(30)6327	tsubo
	Associate Professor Yasunori KUROSAKI	Dust Climatology	Spatiotemporal distribution of aeolian dust. Relation among wind, soil-land surface conditions, and dust generation (i.e., wind erosion)	0857(21)7032	kuro
	Associate Professor Nobuyuki KOBAYASHI	International Development Cooperation	Planning and evaluation of agricultural and rural development projects in arid lands of developing countries, and international development cooperation	0857(21)7235	kobayashi.nobuyuki
Division of Environmental Conservation	Professor Norikazu YAMANAKA	Revegetation Science	Plant ecology and ecosystem restoration in arid lands	0857(21)7039	yamanaka
	Associate Professor Reiji KIMURA	Meteorology	Observation and physical understanding on the meteorological phenomena in the atmospheric boundary layer	0857(21)7031	rkimura
	Associate Professor Takeshi TANIGUCHI	Microbial Ecology	Ecology and use of plant symbiotic microorganisms in drylands	0857(21)7038	takeshi
Division of Agricultural Production	Professor Hisashi TSUJIMOTO	Molecular Breeding	Development of drought and heat-stress tolerant crops by use of genetic variation of the wild species	0857(21)7213	tsujim
	Professor Haruyuki FUJIMAKI	Irrigation and Drainage in Drylands	Water-saving irrigation, water harvesting and salinity management	0857(21)7040	fujimaki
	Associate Professor Ping AN	Plant Eco-Physiology	Improvement of agricultural production and vegetation restoration in drylands	0857(21)7035	an.ping
	Lecturer Takayoshi ISHII	Plant Cytogenetics	Creating new breeding methodology by chromosome engineering	0857(21)7283	Ishii.T