What are arid lands? What is desertification?

Arid lands vary in size, shape, and location. Some arid lands are found in the desert, while others are in semi-arid regions. Arid lands are characterized by low rainfall, high evaporation rates, and limited water availability.

Desertification is the process of land degradation in arid, semi-arid, and dry sub-humid lands primarily caused by climate variation and human activities. It results in a loss of productivity and environmental degradation, leading to the loss of soil fertility, vegetation cover, and water resources.

What research is in progress at ALRC?

Research at ALRC focuses on understanding and mitigating desertification through the development of drought-tolerant plants, soil conservation, and sustainable land use practices. The research includes:

1. Selection of drought-tolerant plants for food, forage, and oil crops.
2. Development of crop husbandry technology utilizing arid land plant species.
3. Carried out eastward countermeasures for Asian dust emission and assessment of its impact on humans and the environment.
5. A health survey on arid land plant species and their cultivation techniques in Mongolia.

Experimental Facilities and Equipment

The Experimental Facilities and Equipment section includes:

1. Desert Environment Room (Mini Desert Museum)
2. Desert Environment Simulation System / Monitoring System for Water Quality of Desert Environment
3. Desert Sensation
4. Desert Environment
5. Desert Acoustic Specimen Exhibition
6. Desert Environment
7. Desert Environment

Joint Usage Research with Japanese research institutes and universities

ALRC collaborates with Japanese research institutes and universities to conduct joint usage research on desertification control, desertification mechanism analysis, and joint usage research on desertification control in Mongolia.
What are arid lands? What is desertification?

Arid lands are defined as those areas where the amount of water lost due to evaporation or transpiration from plants is greater than the amount of the "rainfall". Arid lands are classified into the following four categories based on the degree of aridity: dry sub-humid regions, dry sub-humid regions, arid regions, and semi-arid regions.

Arid lands are characterized by low rainfall, high temperature, and low humidity, which lead to a limited water supply and a high rate of evaporation.

What research is in progress at ALRC?

Research is being conducted at the Arid Land Research Center (ALRC) focusing on the following areas:

- Detection of drought-tolerant crops using sand dune fields
- Development of crop husbandry technology utilizing arid land plant resources
- Advanced utilization of plant resources and its on-site demonstration
- Development of drought-tolerant plants (for food, forage and oil) and their cultivation techniques
- Selection of drought-tolerant soybeans utilizing sand dune fields
- Joint Usage Research with Japanese research institutes and universities
- Countermeasures for Asian dust emission and assessment of its impact on humans and the environment
- Conservation of desert flora

Experimental Facilities and Equipment

- Desert Simulator
- Desert Monitoring Station (Tsogt-Ovoo, Mongolia)
- Arid Land Academic Specimen Exhibition

Selected topics from the ALRC website:

- Development of crop husbandry technology utilizing arid land plant resources
- Advanced utilization of plant resources and its on-site demonstration
- Development of drought-tolerant plants (for food, forage and oil) and their cultivation techniques
- Selection of drought-tolerant soybeans utilizing sand dune fields
- Countermeasures for Asian dust emission and assessment of its impact on humans and the environment
- Conservation of desert flora

Additional information can be found on the ALRC website at http://www.alrc.tottori-u.ac.jp
What are arid lands? What is desertification?

Arid lands are lands that are characterized by a low amount of precipitation and high evaporation rates. They are divided into four main regions based on their degree of dryness:

1. Hyper Arid Regions
2. Desert Regions
3. Dry Sub-Humid Regions
4. Arid Regions

Desertification is the process by which fertile land becomes less productive or is destroyed. It can be caused by climate change, overgrazing, poor soil management, and other human activities. It affects millions of people and has significant environmental and economic consequences.

What research is in progress at ALRC?

Research Divisions

- Division of Desertification
- Division of Agriculture
- Division of Environmental Conservation
- Division of Desertification Control
- Division of Integrated Research

Joint Usage/Research with Japanese research institutes and universities

Research Divisions

- Desert Research Division
- Environmental Conservation Division
- Desertification Control Division
- Integrated Research Division

Joint Usage/Research with Japanese research institutes and universities

Experimental Facilities and Equipment

- Dust Monitoring Station
- Desert Monitoring Station
- Dust Monitoring Station
- Desert Monitoring Station
- Desert Monitoring Station

http://www.alrc.tottori-u.ac.jp
What are arid lands? What is desertification?

Arid lands are the lands where the amount of water lost due to evaporation or transpiration from plants is greater than the amount of water supplied by rainfall. In the arid lands, climates are classified into the following five types depending on the degree of dryness (aridity index):

1. Hyper-arid Regions: These are the lands where rainfall is less than 50 mm per year, and plants cannot grow. Most of the areas are covered by salt pans.
2. Arid Regions: These are the lands where rainfall is between 50 and 200 mm per year, and plants can grow, but only drought-resistant plants. Most of the areas are covered by salt pans.
3. Semi-arid Regions: These are the lands where rainfall is between 200 and 400 mm per year, and plants can grow, but only drought-resistant plants. Most of the areas are covered by grasslands.
4. Dry Sub-humid Regions: These are the lands where rainfall is between 400 and 600 mm per year, and plants can grow, but only drought-resistant plants. Most of the areas are covered by grasslands.
5. Humid Regions: These are the lands where rainfall is more than 600 mm per year, and plants can grow. Most of the areas are covered by forests.

Desertification is the process of land degradation in arid, semi-arid, and sub-humid lands primarily caused by human actions.

What research is in progress at ALRC?

Research Division

1. Desert Research Institute
2. Research on Arid Region Ecology
3. Research on Arid Region Resources
4. Research on Desertification

Experimental Facilities and Equipment

1. Desert Monitoring Station (Tsogt-Ovoo, Mongolia)
2. Joint Usage/Research with Japanese research institutes and universities

Experimental Facilities and Equipment

1. Sand Dock (Room (Mini Desert Museum))
2. Desert Environment Simulation Room (Mini Desert Museum)}