In July 1983, the western part of Shimane prefecture was visited by the heaviest rainfall in this area in the history of observation. Maximum daily rainfall of 421 mm and maximum hourly rainfall of 97 mm was recorded. At that time, about 280ha of farmland there were no secondary disasters at all.

The reasons why the land could withstand such a record-breaking localized torrential downpour were mainly two preventive programs:

1. Measures to keep a bank from breaking:
   ① with a very gentle slope like 1:2.0, the bank can be set in dynamic steadiness and can be made compact.
   ② Pipe drain set in a bank every two steps can prevent high pore water pressure in a bank.
   ③ The slope end can be reinforced by concrete gravity walls or frameworks.
   ④ A catchment canal set across the upper slope can protect the surface of the slope from erosion.

2. Measures to remove rainwater and systems to prevent earth and sand from flowing out.

The fundamental structure of the drainage equipment for the prevention of disasters are as follows:

- Catchment canal in farm → Collecting canal → Inside settling basin → Main drainage canal → Chute → Outside settling basin → Terminal drainage canal → (River)
- Catchment canal in farm: A canal every 20 m to prevent erosion of the surface of the farm.
- Collecting canal: A canal has a cut-off wall every 5 to 10 m to prevent erosion between the catchment canal on the farm and the inside settling basin.
- Inside settling basin: A basin at the lowest place on every farm to accumulate earth and sand flowing out from the farm.
- Main drainage canal: A canal to supply a smooth flow to the chute.
- Chute: Equipment channeling the rainwater from the main drainage canal to the outside settling basin. It has many cut-off walls and the structure of a premoulded concrete channel connected by bolts; accordingly it offers a monolithic strong construction.
- Outside settling basin: A basin to prevent the outflow of earth and sand under construction. After completion, this basin functions as a support for the inside settling basin which prevents the outflow of earth and sand.
Terminal drainage canal: A canal between the outside settling basin and the river. Existing canals are utilized and rehabilitated when necessary.