


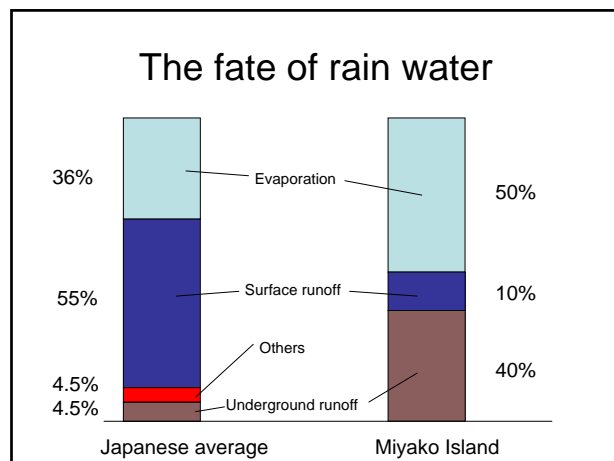
Public works like construction of bridges and roads are the main industry in the case of most of the rural areas in Japan.



GNIP (GN Island P)  
 45% GNIP --- Public works  
 35% GNIP --- Tourism  
 20% GNIP --- Agriculture Fishery

The cost of this bridge 10,000,000,000 Yen

Low Island and High Island		
	High Island	Low Island
Mountains	Yes	No
Main Soil composition	古期岩類変成岩	琉球石灰岩
土壌	国頭マージ	島尻マージ
Water System	Rivers	Ground Water



In Miyako island, Okinawa prefecture, Japan, there are no rivers in this island. So ground water is the only source of drinking water supply.



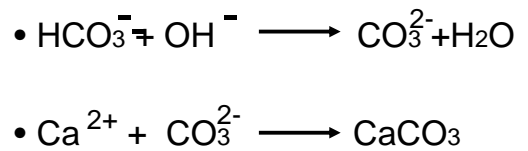
To make good use of limited water resource, there are two big reservoirs of 80,000 m<sup>3</sup>.



To remove hardness (Ca<sup>2+</sup>), water softening facility was constructed in this island.



### The removal of hardness



For softening water, crystallization process is used.



The crystal of CaCO<sub>3</sub>



The slow sand filtration process is used after the crystallization process



Underground reservoirs were constructed for agricultural use of water

Without underground reservoirs



With underground reservoirs



There constructed a underground reservoir under the red colored road in the central.



The land of Miyako Island is extremely water permeable. That is why no rivers can be found in this island. Underground reservoir is considered to be one of the solutions to obtain stable water resource.



There is a window to display the underground reservoir to visitors.



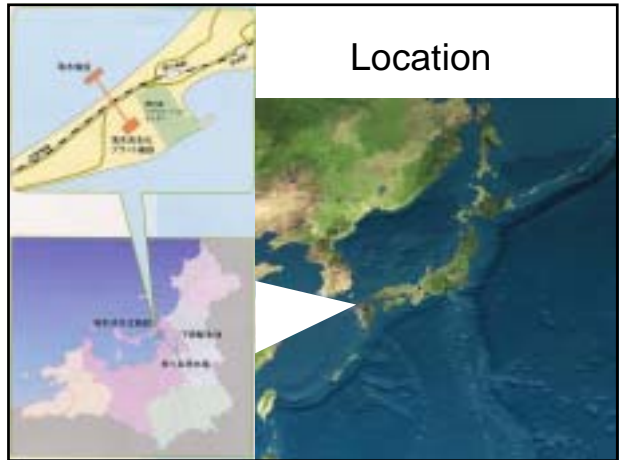
## Public works related to rural agricultural area development.



Wind Power Generation

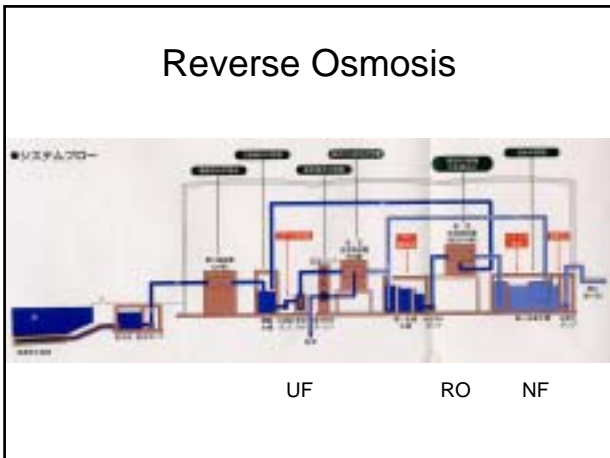


Seawater Desalination  
Fukuoka full scale 50,000m<sup>3</sup>/day



Location

## Reverse Osmosis

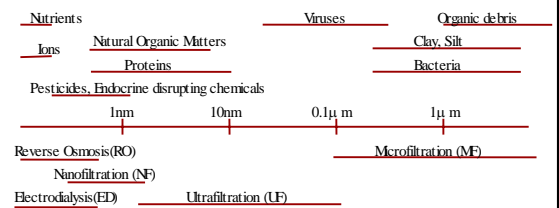


UF

RO

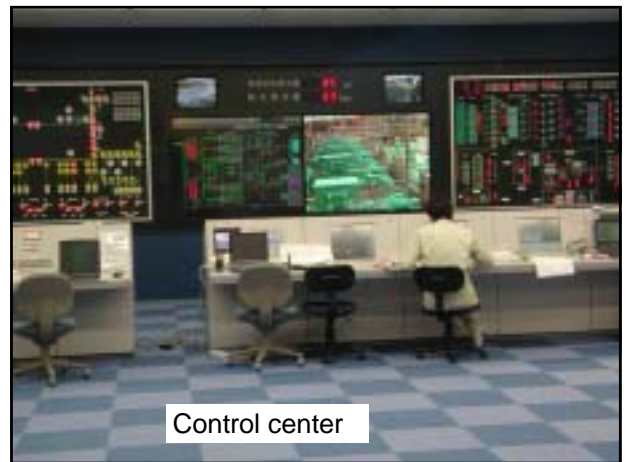
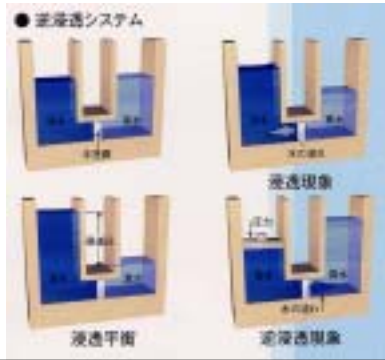
NF

## Solute size and Separation size





## Principle of reverse osmosis



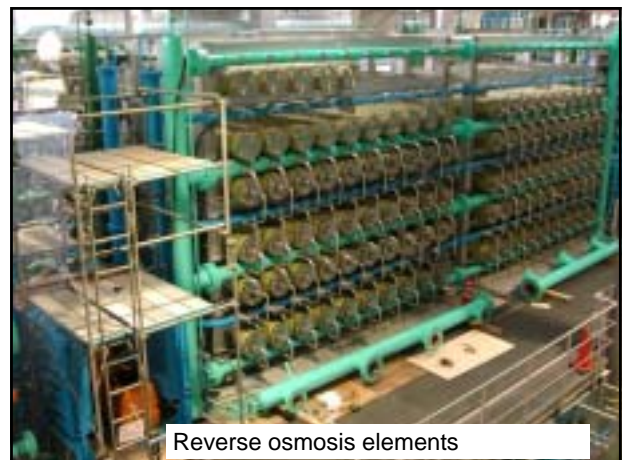
Control center



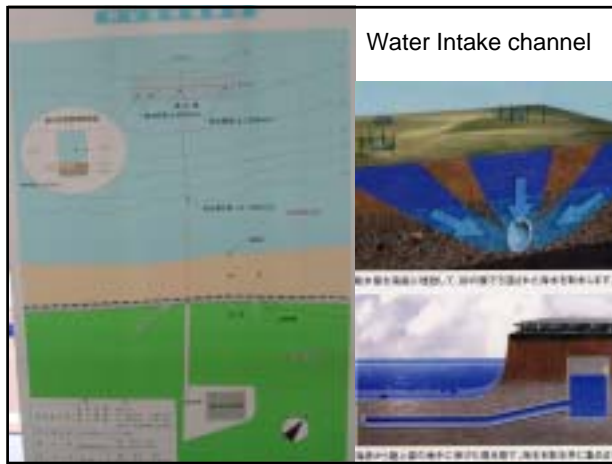
Pretreatment by Ultrafiltration



High Pressure Pumps



Reverse osmosis elements





## Construction of the pipeline.



Their water is obtained by a war. The route of pipeline is selected based on security reasons.

## South Africa, 2001



## Wastewater treatment plant in South Africa



A schematic diagram of the modification of the wastewater treatment plants

## Water treatment in a aquarium



## Wastewater reuse in Olympic Park in Australia



Wastewater and surface runoff treatment in a zoo



UV (Ultraviolet light) disinfection



