

3. Water Resources Crisis

1. The Earth's Water Resources

- Virtually all the water on Earth is salt water. (97.4% of all water is salt water.) In addition, 99% of the fresh water exists as ice and snow in remote areas.
- Consequently, only 0.01% of all water on earth is usable fresh water. This amounts to approximately 9,000 square kilometers of fresh water.
- If each person used 1 ton of water per day, there would be enough water to support 250 billion people.
- In reality, however, the usage of water (including industrial use) is 3 tons per person in Japan. Americans use 6 tons of water per person.
- If each person uses 3 tons of water per day, there is enough water to support a world population of 8 billion people. At the rate of 6 tons per person per day, there is only enough water for 4 billion people.
- At the present time, the actual world population is 6 billion. The developed world is using more than their share of water.
- ※ Africans use between 10 and 100 liters of water per day, 1/100 of the amount consumed in developed countries.
- ※ Furthermore, this water is not only for people, but also for all living things.

2. A Water Shortage Currently Exists

- Since 1900, the world population has tripled. Water consumption, however, has increased 6 times.
- During the past 20 years, the population has increased by 1.8 billion, while available water has decreased by 1/3. Because of the lack of rain in the Sahara area, especially since 1980, 1,000,000 people have starved to death.
- Currently, 10% of the world's population (500 million people) are suffering from a severe shortage of water and 1/4 of the population has some degree of water shortage at all times.
- Droughts have occurred, underground water levels have decreased, the level of water in lakes and ponds have decreased, and wet lands have disappeared.
- Available water has diminished due to the contamination of domestic and industrial drainage.

3. Outlook for the Future

- The increase in population will necessitate greater food production. Industrialized and developed economics have caused a demand for more water at a faster rate.
- The population of the Middle East, China, Central Asia, and Africa will double in the next 25 years. The water supply is totally inadequate to meet this need and collapse is inevitable.

【Global issues】

- Egypt and other African countries as well as other countries depend on the same water supply and will go to war over water.
- Because of global warming, water shortages will increase. Areas with less rainfall will have water shortage. However, in areas with greater rainfall, floods will occur, and floods also lead to water shortages due to contamination.
- By the year 2025, 2/3 of the world's population will be experiencing a water shortage. (1997 United Nation SD committee report)

4. The Reasons for the Water Shortage

- A rapid increases in industrial water use due to industrialization.
 - A rapid increases in domestic use of water due to higher living standards.
 - The destruction of water resources such as forests, lakes and rivers due to land development.
 - The destruction of water resources due to urbanization (loss of rice fields, increase in asphalt pavement and construction of breakwater.)
 - The destruction of water resources due to dam construction. (Because dams seriously damage water resources, they are a negative factor in the long run. Advanced countries such as the United State forbid or strictly limit the construction of dams.)
- ※ In India in the last 40 years, 16,000,000 people have lost their homes due to dam construction. In China dam construction has taken the homes of 3,000,000 people. 300,000 people were forced to move because of the construction of the Suan Men Xi (Three Gate Canyon) Dam, but the dam was buried in sand after two years.

5. Polluted Water

In addition to actual water shortage, another serious problem is pollution of existing water resources.

- Rivers, lakes and underground water have become polluted, as have the oceans.
- There are several major sources of direct water pollution: Industrial water drainage, sewage, agricultural chemicals, leakage of petroleum products, and organic fertilizer runoff.
- Another source of water pollution is air pollution such as emissions from factories and auto emissions. These emissions create acid rain, which pollutes water resources.
- Nuclear waste is also becoming a serious problem. This includes nuclear waste from power plants, as well as waste from nuclear weapons.

6. What we can do?

- Realize that the water supply problem is critical and that you yourself are still wasting and polluting water.
- Resolve to save water in every area of your daily life. (Apply the 4R principle:

Refuse, Reduce, Reuse, and Recycle)

- Think again about daily activities such as bathing, doing laundry, flushing the toilet, washing your face and brushing your teeth, cooking, washing the dishes, washing your car, and watering your yard.