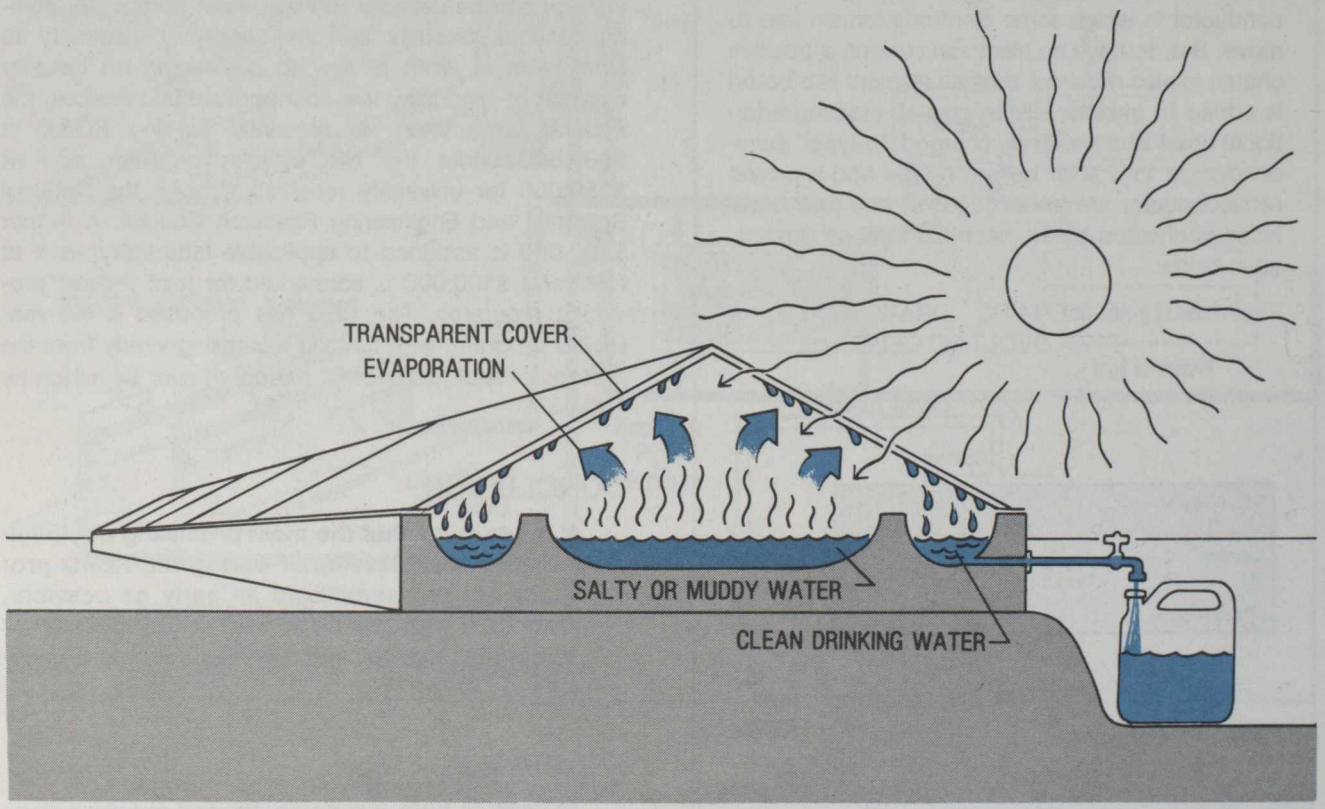
to Third World countries. Technical devices which are small-scale, comparatively simple to build and maintain, and which can be built and operated by local people using local materials are described as being "appropriate" for use in the Third World.

The Brace Research Institute, an affiliate of McGill University in Montreal, is a world leader in the development and introduction of a number of solar and other alternative energy devices which meet the above criteria. This Committee had the pleasure of visiting the Institute during its Canadian travel.

The Brace Institute has spent many years developing solar stills, solar domestic hot-water systems, solar dryers and solar cookers. Many of their designs are in use throughout the world. Designs are kept as simple as feasible and, to the greatest extent possible, the availability of local materials is taken into account when systems are developed. Solar stills provide a good example of such technology. A solar still (Figure 6-33) consists of a shallow flat-bottomed container with a curved, V-shaped or inclined transparent cover. The sunlight passes through the cover and heats the salt water in the container. The water evaporates, leaving the salt behind. When the water vapour hits the cover it condenses, runs down the inside of the transparent cover and is collected at the edges of the container. In many regions of the world such a system can be used to provide potable water where the local supply is contaminated by high salt concentrations, or by particulate matter. The unit is simple to construct and has no moving parts, so that there is a minimal requirement for maintenance.

Solar cookers and dryers are available which incorporate the same ideas of simplicity of design and construction with functional utility. In many Third World countries, these simple devices allow rural people to cook their food and dry their crops without purchasing any fuel. To these people this represents a significant saving. In many parts of Africa, for example, wood which is the traditional cooking fuel is becoming increasingly hard to come by. Deforestation is an extremely serious problem so any technology which can replace fuel wood can make a significant contribution to the well-being of people who now rely on this energy supply. Clearly solar energy has a major role to play in such situations and the Committee would like to see the work of the Brace Research Institute and other similar endeavours encouraged to the greatest possible extent.

Figure 6-33: A SIMPLE SOLAR STILL



Source: After Brace Research Institute, 1979.