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SMALL-SCALE WATER PURIFICATION SYSTEM FOR THE COUNTRYSIDE

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SMALL-SCALE WATER PURIFICATION SYSTEM for the COUNTRYSIDE

RATIONALE

Water used for people's needs i.e. drinking, preparing food, bathing, cleaning, etc. may not always be safe and at times, not readily accessible. In urban communities, drinking water usually comes from surface water (e.g. lakes, rivers, reservoirs, etc.). In rural areas, on the other hand, water is sourced from the ground, which is pumped from deep wells. These wells tap into aquifers, the natural reservoirs under the earth's surface.

If unchecked, there are potentially thousands of contaminants (pollutants, silts, disease-causing bacteria, viruses and protozoa) that could find their way into the drinking water systems that may be harmful to health. Incidence of waterborne diseases like diarrhea/dysentery, cholera, typhoid fever, infectious hepatitis, nausea, vomiting, cramps, etc. are usually the main problems in developing countries where most people are compelled to use contaminated water. The government provides measures such as public drinking water treatment system or facilities. In 2000, it has reported 770,000 cases of waterborne illnesses nationwide, making it one of the leading causes of morbidity and mortality in the country.

Calamities such as typhoons add on as aggravating factor. Recently, in Leyte and Bicol, for example, their water sources were gravely affected, leaving residents in a maze as to where to obtain their water supply particularly their drinking needs. This has prompted the ITDI-DOST to undertake and promote a technology that will address this concern by initiating a study on a simple water purification system applying completed researches like ceramic water filter and activated carbon.

APPLICATION

The simple technology for a small-scale **Water Purification System (WPS)** can be applied to the countryside. Its fabrication applies the typical treatment methods used in the public water system. It consists of pre-treatment tank, sand filter unit, chlorination tank and ceramic filter unit.

TECHNOLOGY DESCRIPTION

The technology applies the simple system of water purification.

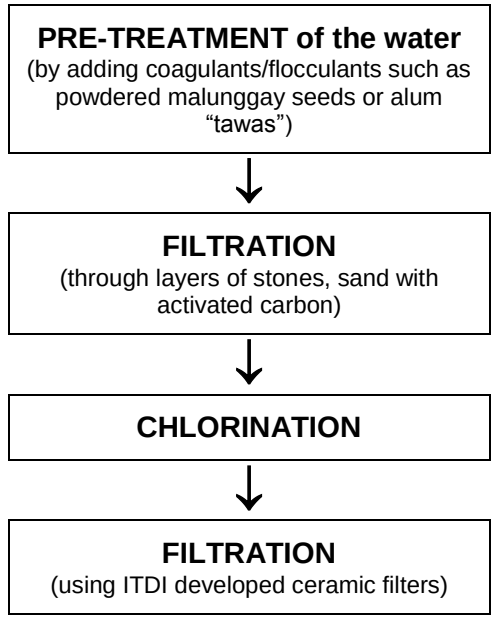

Fig. 1. The locally fabricated small-scale water purification system

KEY FEATURES

- Portable system
- Easy to fabricate and operate
- Low investment
- Use of locally produced high adsorbing activated carbon
- Use of indigenous materials for ceramics filters
- Can purify tap water, deep well water and raw water with up to 5% silts into potable water that is safe for drinking
- Can deliver 10L of potable water/hour per batch
- Pass the criteria set by the Philippine National Standards for drinking water in terms of microbiological and chemical analysis