Sanitary water is an important part of meeting basic health needs, says guest speaker to a recent science seminar audience.

Tom Zerkel, a perennial speaker at Science Seminar and civil engineer, spoke on the need around the world for more sanitary water.

Science Seminar is a weekly series of presentations in which staff and faculty members present on topics of interest and expertise to students and the public.

In the Pacific Northwest, most of the water comes from watershed sources.

“Watershed water is the run-off from the ridges near-by,” Zerkel said.

Water run-off works by collecting and cleaning the rainwater that collects in rivers and streams.

We also have particularly clean water in our area, he said.

Zerkel gave a brief history of sanitation to start.

Modern sanitation began in 1854 with Dr. Jon Snow and the cholera outbreaks in London.

Dr. Snow recognized that the disease was coming from a contaminated street pump, and developed the first method of tracing disease, Zerkel said.

In 1861, Louis Pasteur developed the method of pasteurization to produce safe drinking water.

Locally, 1889 was a landmark year in which the Seattle water system was commissioned.

Water started flowing into Seattle from the Cedar River Watershed in 1901 from which, 70 percent of our local water still comes from, but it wouldn’t be until 1972 until the Clean Water Act was passed, that a piece of national legislation that regulated pollution in water sources.

It was followed quickly by the Safe Drinking Water Act in 1974, which gave us the clean water standards in use today.

“The water we use is disinfected from lead, copper, organic chemicals, and radionuclides,” Zerkel said.

Today, Seattle filters water of the Cedar River watershed through various methods to make it clean.

The first method is sand filtration, which runs the water through a layer of clean sand which lets only water molecules through the sand.

“These sand pits are at least 36 inches deep,” Zerkel said.

The sand is made of diatomaceous earth.

“Diatomaceous earth is made of crushed and fossilized microbes that have made a powder,” Zerkel said.

In developing nations, there is very little history of water sanitation and no filters for water to run through.

“Over 1 billion people lack safe drinking water [in developing nations,]” Zerkel said. “And about 1 million people die each year because of it.”

Zerkel focused on one island in particular on Lake Victoria, between Kenya and Uganda.

Remba Island is 86 acres in area.

“Highline College is 82 acres, for comparison,” Zerkel said.

Remba island only has 20 bathrooms for its 2,400 residents, Zerkel said.

Eighty percent of the wastewater used winds up back in Lake Victoria where people bathe and get drinking water from.

With the help of the Thurston County Rotary Club, Remba residents recently installed several devices to purify water.

Sky Hydrants are a water purification product that uses pressure to filtrate contaminants out of potential drinking water, Zerkel said.

Under the management of the island’s , the Water, Sanitation and Hygiene committee of Remba Island now produces 11,000 liters of clean water for residents per day.

“What’s nice about this [solution] is that it takes a First World solution and puts it compactly in a Third World problem,” Zerkel said. “Most times, First World solutions don’t work in Third World countries.”

The clean water is sold by the WASH committee in cases of 20 liters at 5 cents each.

The residents were surveyed about the new water system, which they give their overwhelming approval.