A major global concern is that the world will soon run out of water to meet the needs of its burgeoning population. It is estimated that the world population will reach 9.3 billion by 2050. Since water is at the foundation of nearly every aspect of life, the fear is that there will not be enough water to meet our population's needs. Already, we are seeing droughts and panic in various areas across the globe

The most pressing global water problem of the future will be water quality and quantity. The quantity of water is deteriorating in nearly all the countries of the world and in many lesser developed countries currently, and more countries in the future, the quality of water is not up to living standards

Producing fresh drinking water from Ocean/seawater - a process we will more simply refer to as desalination - has always seemed to be the most obvious answer to water shortages. Our oceans cover more than 70% of the Earth's surface and contain 97% of its water.

But up till now, the energy needed to achieve this seemingly simple process has been costly. However, thanks to new technologies, costs have been halved and huge desalination plants are opening around the world.

One key issue with desalination is what to do with the leftover salt. For example, water in the Persian Gulf historically was 35,000 parts per million (ppm) salt. But according to the United Arab Emirates' Ministry of Environment and Water, some of the nearest desalination plants now measure 50,000ppm or more. Only now are countries starting to see this downside to desalination. Even salt levels in the Persian Gulf are eight times higher in some places than they should be as power-hungry water plants return salt to an already saline sea. The higher salinity of seawater intake reduces the plant's efficiency and, in some areas, damages marine ecosystems; negatively affecting coral and fishing catches and thus contributing further to global environmental issues.

Desalination may be getting cheaper but it is still prohibitively expensive for poorer countries, many of whom are the primary victims of water scarcity and poor water quality.

More than two-fifths of Africa's 800 million people live in "water-stressed" areas. The United Nations predicts that in 10 years, 1.9 billion people will live in water-scarce areas.

What water-stressed regions most need is a desalination device than can supply 100 to 500 people - the size of a village. While desalination has 'gone big' in wealthier countries, it also needs to 'go small' in order to benefit those unlucky enough to be poor in regards to both money and water. A key way to achieve sustainability and water security in these regions would be to fully embrace solar desalination. This would allow small cities and villages to leverage solar energy, the region’s most abundant renewable energy source in order to access a vital source for life.

The situation is challenging, but these regions cities are not necessarily doomed to an unsustainable future. To meet growing demand, they’ll have to work on securing sustainable water supplies. Even more challenging, they will need to do this in the context of population growth, socio-political conflicts and climate change.

The fact that the APP Technology systems are containerized, solar powered and require minimal site construction makes them an ideal answer to drinking water problems throughout underdeveloped countries. The equipment produces minimum amounts of salt in rejected water, does not require any external power source beyond the renewable sun and does not have a long installation period. Involving local partners, engineers, workers, servicemen etc. for manufacturing and servicing units are keys to success for APP and fall under our greater goal of benefiting communities at the local level.