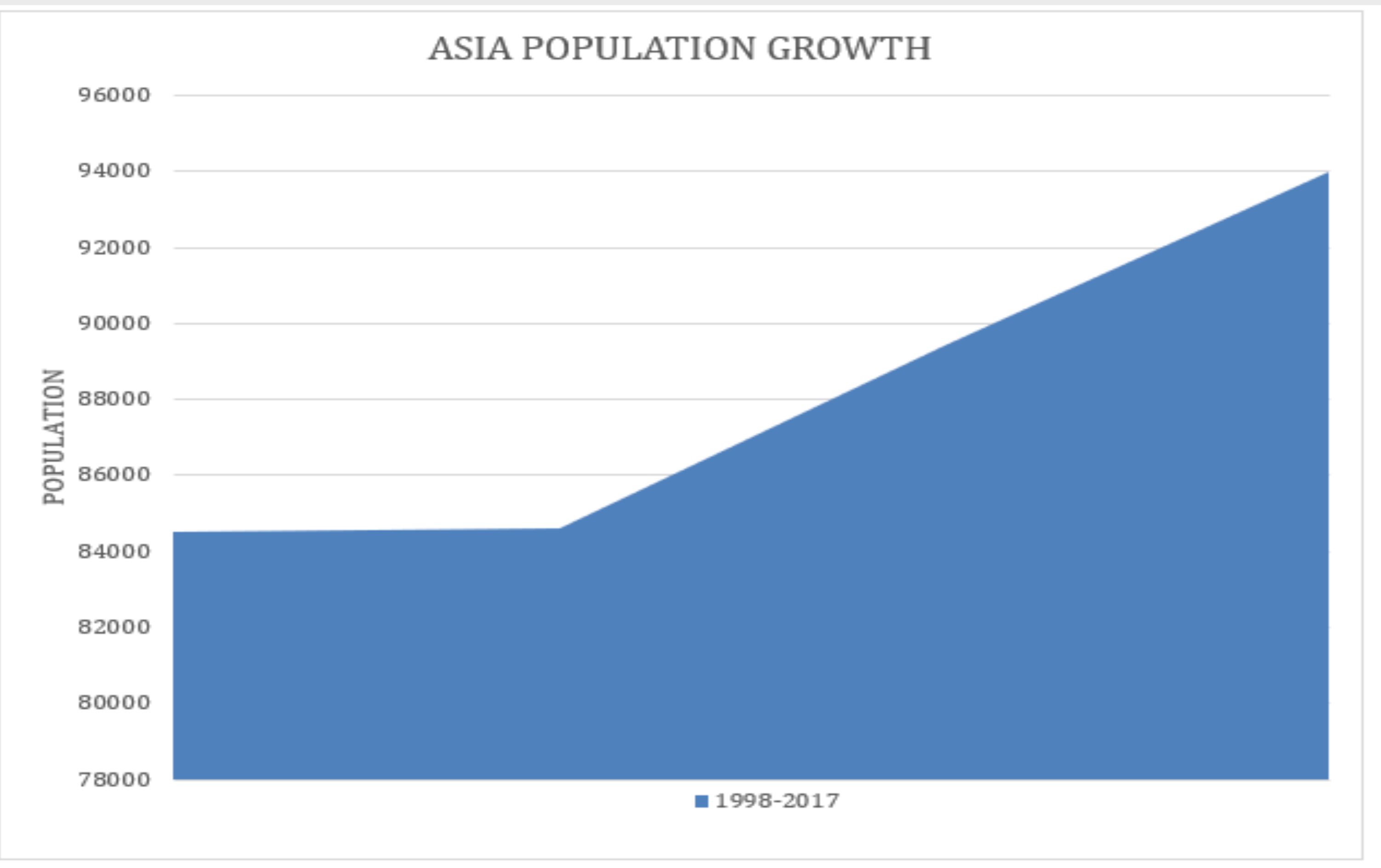
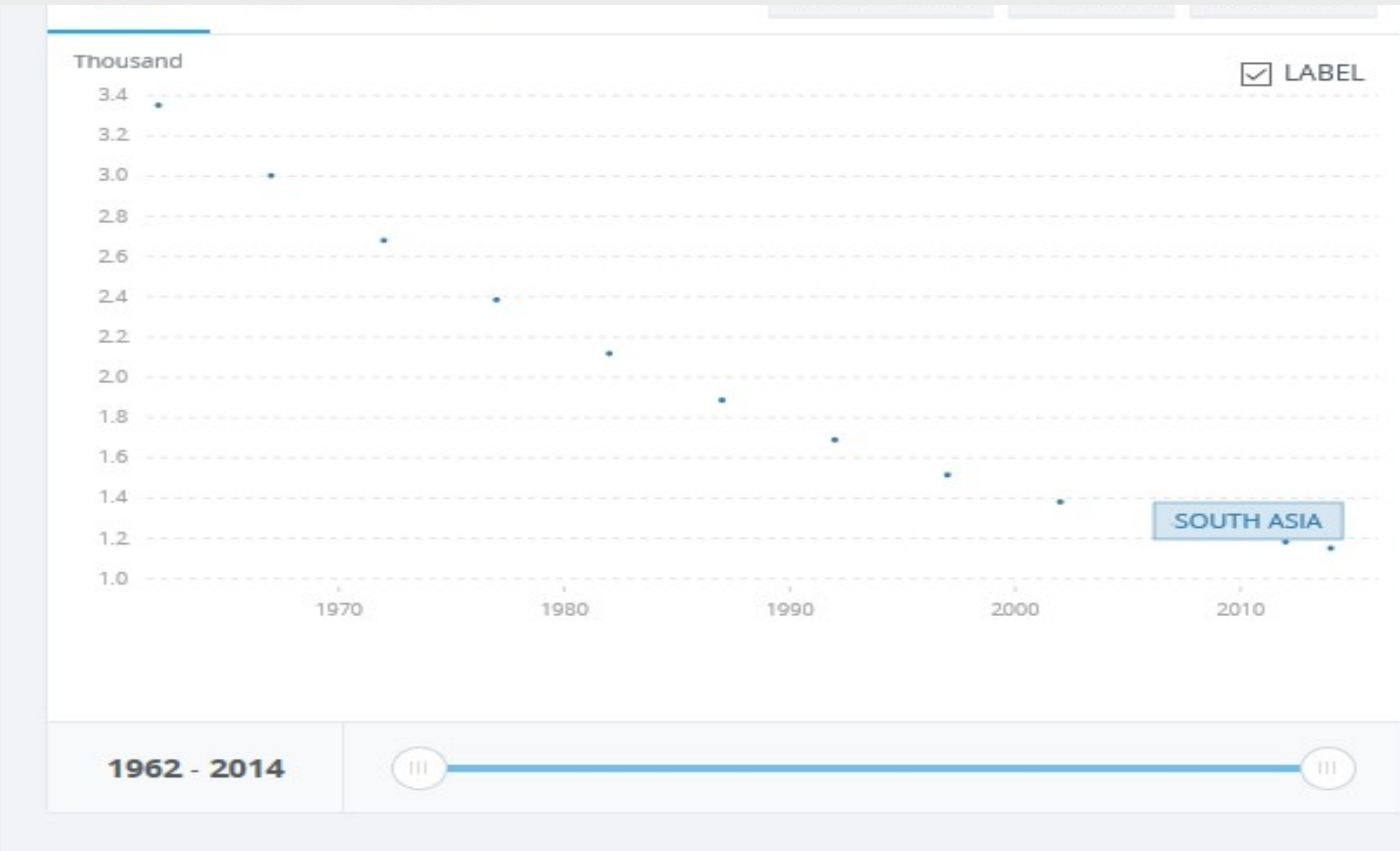


# WATER INSECURITY IN ASIA

What it means to have water insecurity, defining what water is and the effects of water in Asia.



## DEFINING WATER SECURITY

Water security means that there is enough available freshwater resources to meet the needs of the present while preserving enough for future generations.

There are three types of freshwater that we consider available freshwater. Blue water, Green water and Virtual water. Because freshwater has a finite supply, it is broken down into sections to help allocate it to different areas of use.

Blue water- This is freshwater that flows through or below the lands surface.

Green water- This is the portion of precipitation that becomes soil moisture and returns to the atmosphere. This water is used for agriculture lands.

Virtual water- this is the freshwater that is used indirectly, like bringing it in from another source.

There are five dimensions of freshwater use that Francois Molle and Peter Mollinga have provided.

- Drinking water- recommended 1 to 5 liters of water per day for life.
- Domestic- what is used for home i.e., cooking, bathing etc.
- Food Security- what is used for agriculture lands
- Economic Product- production of goods
- Environmental- all life requires water to survive.

## POPULATION GROWTH

- Population growth in Asia has steadily risen Over the last few decades. With this growth comes increased stress on freshwater resources in the region.
- The figures above show the freshwater resources and the population growth in all of Asia.
- Figure One shows from 1962-2014 the available freshwater resources in Asia and Figure Two shows the population from 1998-2017 in all of Asia. These figures demonstrate the inverse relationship between freshwater security and population growth.

## POLICY PRESCRIPTIONS

Recourse for water insecurity/scarcity would be to improve freshwater governance by placing caps on freshwater withdrawals, and integrating recycling or reuse of water from different sources like



## CLIMATE IMPACTS

Climate change plays a vital role in the management of freshwater resources. There are many impacts that climate change will have on our freshwater resources.

Population growth and migration will lead people to ill migrate toward urban areas with greater freshwater resources and infrastructure.

Soil degradation, when the soil does not capture the moisture and it returns to the atmosphere, leaving the soil dry and unusable. This causes major issues with agriculture lands, leading to lower agricultural yields and poor soil quality.

Climate change can lead to droughts (e.g., aridity, intermittent droughts, landscape desiccation, and water stress).With droughts, the soil will degrade and the streams, lakes and rivers will lower or even dry out. It can impact livestock and the availability of freshwater to use.



## CONCLUSION

- Freshwater is a vital part of Asia and the globe. With impending climate change and population growth there is a need to preserve freshwater resources and to make effective policies that are designed to mitigate freshwater insecurity.
- Other options would be to improve virtual water governance and trade.
- Continued stress on our freshwater resources will continue to grow, policies designed to combat climate change can take the stresses off of our environment and help keep our crops from depleting.
- It is recommended that we have a 50 gallons per capita, so that our water resources can survive.