

2011 World Materials Summit: Student Congress

Water Panel Report

Water is an essential resource for life and is present in every aspects of our life. The awareness and efficient governing is critical.

One can now set the conditions when adapting its use in every situation. Whether it is through regulating, controlling, and managing, there is a need to define and create strategies to recycle or find new materials solutions in addressing the challenges that relates to water today.

- Challenges and Issues
 - Information regarding the water “crisis” is limited. (even with the group)
 - Developed countries (e.g. USA) seem to think that they do not have problems regarding water however developing/under developed nations (e.g. nations in Africa) have strong opinion with regards to the problem of water sanitation and availability.
 - Water access in other countries is a problem.
 - Transport of water from South China (large water reservoir) to North China (insufficient water reservoir)
 - Distribution of fresh water is not efficient enough in many parts of the world.
 - Water energy nexus problem: challenge in balancing the use of consumable water and the use of water as energy sources, as well as the use of energy in bringing water to an expanding global population. With expanding global population, there is an increased pressure on communities to provide water to their people.
 - Increase incidence of drought due to climate change (expansion of deserts around the world): Challenges of water transport which require energy cost.
 - Water management is done inefficiently. People have been misusing water as a vital resource.
 - Water purification is a problem.
 - Current purification systems such as the use of chlorine are not sustainable due to the accompanying health concerns.
- Possible solutions
 - Foster a culture of efficient water consumption (through further education at the local and national level)
 - Water and water-related issues should be part in all related discussion (new government projects).
 - Expand awareness on the importance of the availability of potable water.
 - The world’s available water supplies are decreasing and being polluted in various parts of the world.
 - Suggest proper environmental policies with regards to water such as ways of
 - Reducing contamination due to pollution.

- Implementing efficient and appropriate waste management (improper waste management has been one of the key sources that cause flooding).
- Guarantee the implementation of the aforementioned policies.
- Research in advanced materials for better filtration and purification systems
 - For the reduction of pharmaceutical contamination in water systems in US.
- Access toward new technological innovation around the world to mitigate the problems related to water (includes recycling of materials, management and use of water, environmental impact, and etc.).
- Create sustainable systems in the use of water resources: water management at homes, small infrastructures, industrial facilities.
 - Rain water can be used as a resource of water at home.
 - Water resources require intelligent management in populated establishments. (usage of water during a football game)
 - Accountability must be commensurate with resources consumed. (check and balance in big factories with regards to water in-take and water wastes)
- Make good use of the energy and by-products regarding the process of water purification (e.g. usage of thermal energy and salt from desalination process as resource assets for other applications).

Actions at a small scale (student roles):

- Promote awareness at a personal level (through the help of experts and existing literatures in coming up with concrete data)
- Disseminate information through existing social networks with regards to the problem of water (creating You-tube videos, Facebook fanpage, Twitter trends, etc.)

Recommendation: To develop appropriate technologies, educational awareness, and policies to encourage efficient water purification, management and access for a growing world population.

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