ISSUE
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YOUR SOURCE FOR
WATER, SANITATION,
& FOOD SECURITY
INNOVATION INFO

Water Life

this issue

water life systems

What We Do

WATER TREATMENT & SUPPLY

Water is life... for both people and business. Our scalable prefabricated systems treat ground, surface, and wastewater sources to supply:

- Drinking / Domestic Water
- Industrial / Process Water
- Agricultural / Irrigation Water

SANITATION & HYGIENE

The COVID-19 pandemic has raised the awareness of global water challenges and the lack of proper sanitation. Public health conditions related to clean drinking water, and adequate treatment and disposal of human excreta and sewage, are our top priority. Our systems are designed to provide Urban, Per-Urban, and Rural populations with proper sanitation and hygiene services.

FOOD SECURITY

We recover water and nutrients, among other resources, from wastewater for reuse and closed-loop plumbing infrastructure in agriculture and aquaculture-controlled environment operations.

IoT CONNECTED

Our Wi-Fi, Lo-Ra, and Satellite IoT Connected arsenal of digital pathogen, heavy metals and nutrient sensors make our solutions revolutionary.

China's Growth: The Good, The Bad, and The Ugly Water Problem

From an October 16, 2020 Harvard Political Review article, *"Water is China's Greatest Weapon and its Achilles Heel"* authored by Jack Silvers, "...China's rapid industrial-ization and urbanization have eased the problem of water scarcity while exacerbating water pollution."

The good and the bad of China's growth can be summed up in that one quotation. As China continues its rapid rise as a global power, the number of its 1.6 billion inhabitants that lived on untreated water sources dropped by 150 million between the years 2000 to 2019. That's good effort on the part of Chinese government to eradicate poverty, but it was done at the expense of the natural environment.

In 2013 water pollution was so bad that over 70% of lakes in the world's 3rd largest country by area were polluted, and over an entire 1/4th of China's surface water was not suitable for human consumption.

While government aggressively addressed the water pollution problems starting in 2013 and many of the pollutants have peaked, some pollutants persist, and the problems go unsolved. **Add on top of that rapid population growth and nation-wide systemic water scarcity that sees climate change further decreasing available water supply, and we get to the ugly of China's growth.**

Even though China is the source of 10 major rivers that flow through 11 Asian countries and supply over 1.6 billion people with water, **the nation has not yet joined the UN Watercourses Convention** that establishes principles for equitable water utilization, transboundary cooperation, and pollution prevention.

China is diverting entire major river flows to hydropower dams and dryer regions of the nation, as 50% of the country's population lives in an area that contain only 20% of the country's freshwater resources. This leaves populations downstream – entire nations and billions of people – without the source of life that has allowed them to survive and thrive for millennia.

This is how water wars begin. This is the ugly water problem created through China's growth. More assistance is needed, and more is available through Water Life Systems.

water life systems
Water, Sanitation & Food Security

OUR MARKETS

INDUSTRIAL

Agriculture | Aquaculture | Automotive | Commercial Livestock | Disaster Management | Environmental Rehab | Food & Beverage | Military | Mining | Oil & Gas | Paper & Pulp | Petrochemical | Pharma | Power | Specialized Industry | Steel | Tourism

MUNICIPAL

Urban, Peri-Urban & Rural Utilities | Commercial Buildings | Public Facilities | Mixed-Use Buildings | Developments | Multi-Tenant Residences | Single Homes

OUR GUARANTEE

Water Life Systems guarantees that you will receive enhanced security and higher quality with Water Life Systems' products and services. The service starts with customizing our solutions to your specific needs and continues through equipment delivery and life cycle maintenance. We back up what we design and manufacture to ensure that you receive complete technical and process support on-demand.

CASE STUDY

A Policy Initiative: Distributed Pathogen Sensor Integration in the Built and Natural Environments

In the December Water Life issue, we discussed the accumulation of evidence that shows SARS-CoVs (COVID-19) presence in wastewater, and the importance of implementing smart monitoring and disinfection solutions provided by Water Life Systems.

The United Nations SDG Help Desk recently published a policy brief authored by WLS President, Thomas Murphy, that provides a starting point for pathogen monitoring initiatives in the built and natural environments.

The goal of this paper is to provide policy makers, urban planners, and other pandemic-related prevention and response interests with the justification to proactively integrate distributed microchip bioelectrical sensors into the Fourth Industrial Revolution (4IR)-supported built and natural environments. Sensors are outfitted with Internet of Things (IoT) networking via mobile Wi-Fi, Lo-Ra, or satellite communications for air and liquid pathogen detection in centralized and decentralized water supplies, wastewater treatment systems, and other distributed applications.

Urban populations are the most susceptible to pathogen spread in part due to interconnected infrastructure and population density. From a wastewater treatment standpoint, fecal transmission pathways via the aerosolization of liquid waste is now known to transmit COVID-19, with a virus survival timeline in water and sewage between numerous days and weeks. Aerosolization of human excrement can take place at any point of the wastewater service chain, such as during the flush of a toilet, in pipeline leaks, and wastewater treatment plant effluent discharge.

The global systemic risks associated with the COVID-19 pandemic and rapid global urbanization can have debilitating effects on life and activities within human populations. COVID-19, caused by a new strain of the coronavirus family, SARS-CoV-2, starting at the onset of 2020, became the latest infectious disease to rapidly evolve into a global pandemic. As of the week of Dec 15, 2020, there were over 70 million cumulative COVID-19 cases and 1.6 million deaths reported globally since the start of the pandemic. Of the 195 countries recognized by the United Nations (2020), only 11 have reported no COVID-19 cases.

The full policy brief can be viewed and downloaded at http://sdghelpdesk.unescap.org/technical-assistance/best-practices/policy-initiative-distributed-pathogen-sensor-integration-built

SUSTAINABLE DEVELOPMENT GOALS

#WeCanSaveTheWorld

The core mission of WLS is to increase global resiliency and sustainability in water, sanitation, and food security systems.

The world's rapid population growth, coupled with rapid climate change, is increasing the competition for resources. At WLS, we're committed to doing our part to operate sustainably. Our innovative solutions provide resource conservation, energy savings, the reuse of water, food security, and better population well-being and health outcomes.

Advanced **O3In-Gen™** technology is one example of WLS' focus on cost savings and increased treatment effectiveness. **O3In-Gen™** is used in WLS' **PureBOX™** distributed / decentralized package plants and controlled environment food production systems. The systems are ideally suited for a scalable solution to provide clean water, wastewater treatment, and food security for all by 2030 in a world where billions of people do not have access to sufficient water supply and sanitation services. We envision a world without waterborne pollution and the abundance of freshwater for all using our water treatment and monitoring systems, which correspond most directly to the United Nations Sustainable Development Goals SDG 6 - Clean Water and Sanitation.

At WLS, we're committed achieving the United Nations Sustainable Development Goals (SDGs) by the 2030 goal date. This collection of 17 global goals is designed to be a "blueprint to achieve a better and more sustainable future for all." Our operations and solutions contribute to all the UN's SDGs.

This Issue's SDG Provided by Water Life Systems

World Economic Forum 2020: "The global water crisis is one of the greatest threats to humanity."

The "traditional" way of living is not sustainable for life on Earth. Water Life Systems leadership, in living through their own climate-caused near disasters, being Vancouver 100-year drought in 2015 and the 2017-18 Day Zero scare in Cape Town, South Africa, have developed water supply, sanitation, and food security Micro-Utility solutions that can be deployed into the built environment on a global scale. Tech components can be integrated into centralized systems.

WLS systems are at the core of providing water stressed populations with clean water and sanitation services. Currently some 2.2 billion people worldwide do not have sufficient drinking water services, 4.2 billion people do not have safely managed sanitation services, and 3 billion lack basic handwashing facilities.

Much of the world is not set to meet United Nations Sustainable Development Goals with current systems thinking. No single solution will result in universal access by 2030. A range of adaptable and scalable solutions are needed to overcome geography, gender, and socioeconomic barriers.

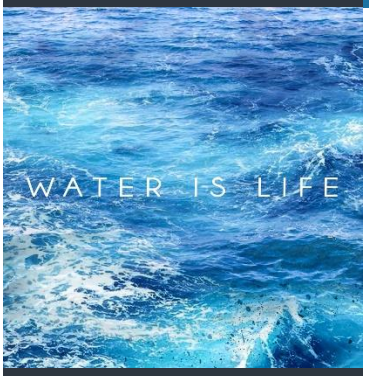
SDG 3
Good Health and Well-Being

3.2 Target
By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
13.2.1 Indicators
Under-five mortality rate
13.2.2 Indicators
Neonatal mortality rate

3.3 Target
By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
3.3.1 Indicators
Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations
3.3.2 Indicators
Tuberculosis incidence per 1,000 population
3.3.3 Indicators
Malaria incidence per 1,000 population
3.3.4 Indicators
Hepatitis B incidence per 100,000 population
3.3.4 Indicators
Number of people requiring interventions against neglected tropical diseases

3.9 Target
By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
3.9.1 Indicators
Mortality rate attributed to household and ambient air pollution
3.9.2 Indicators
Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)
3.9.3 Indicators
Mortality rate attributed to unintentional poisoning

3.d Target
Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks



Would you like to participate in the WLS prime partnership program? Please fill out the application to help us determine how to best approach the partnership to ensure mutual success.

Partnership Tracks

WLS offers various partnership solutions including:

- **Integrated product distribution**
- **Individual tech component licensing**
- **Complete tech transfer programs for national solution integration**

Technical expertise, geography and solution area of your business will determine which track best fits your business model. Partners can participate in one or more tracks, based on expertise and available production facilities.

[Click here for more information and to complete the application]

For More Information

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