

**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, Peri-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.



## The ISO 30500 & 31800 Certifications – What, Why, How

The ISO 30500 & 31800 standards were developed with experts from 48 countries, representing industry, government, academia, and NGOs. Major contributions came from TÜV SÜD, the African Water Association (AfWA), and the Toilet Board Coalition (TBC). ISO 30500 was published in October 2018, 31800 in August 2020. The Bill & Melinda Gates Foundation has supported uptake activities.

ISO 30500 (Non-Sewered Sanitation Systems) – Prefabricated integrated treatment units

- Non-sewered Sanitation Systems (NSSS)
- User interface and treatment unit
- Household scale
- No connection to sewer or electrical grid
- Output is safely disposed or reused

ISO 31800 (Fecal Sludge Treatment Units) – Energy independent, prefabricated, community scale resource recovery units

- Fecal sludge treatment unit (FSTU)
- Treatment unit
- Community scale
- No connection to sewer or electrical grid
- Output is safely disposed or reused

Standards have traditionally been established to regulate products that are already in the market. The development of the standards for decentralized sanitation published in 2018 and 2020 was a “paradigm shift” within ISO, as no mature technologies existed at the time. This illustrates the infancy of the NSSS and FSTU markets.

The 30500 and 31800 standards are used as

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performance standards for manufacturers to ensure that their systems are safe for human health and the environment. As nations continue to adopt the standard, manufacturers will find increased value in certifying their products to the ISO 30500 & 31800 standards to gain market penetration.

From [ISO.org](https://www.iso.org), on 1st January 2016, the 17 UN Sustainable Development Goals (SDG) were launched, including SDG 6: *ensuring access to water and sanitation for all*. The SDGs are a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of the new UN sustainable development agenda. The 30500 and 31800 standards support the development of stand-alone sanitation systems designed to address basic sanitation needs and promote economic, social, and environmental sustainability through strategies that include minimizing resource consumption (e.g. water, energy) and converting human excreta to safe output.

TÜV SÜD provides technical consulting, supported by a Gates Foundation grant, to manufacturers who seek certification.



## 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.

## NATIONAL CONFERENCE ON CLIMATE RESILIENT WATER SUPPLY AND WATER RESOURCES MANAGEMENT IN ERITREA



**In the January Water Life issue, we discussed a United Nations SDG Help Desk pathogen monitoring policy brief authored by WLS President Thomas Murphy.**

UNICEF, also known as the United Nations International Children's Emergency Fund, functions as the United Nations agency responsible for providing humanitarian and developmental aid to children worldwide. WLS President Thomas Murphy was invited to present a paper on Water, Energy, and Food distributed life systems at a 2020 UNICEF sponsored water supply and management themed conference in the African nation of Eritrea, which has recently been published.

The paper answers the question: How can humanity effectively plan for the civil infrastructure required to adapt to climate change and population growth realities? Previous work fails to consider 'water, energy and food distributed life systems' integration with centralized civil infrastructure, or as stand-alone systems. Considering civil infrastructure only from the centralized standpoint misses the opportunity to add significant resilience to water-wise population centers. The value of integrating centralized with distributed water systems has become evident in Cape Town, South Africa, the site of the 2017 Day Zero fresh water shortfall scare. In November 2018, South Africa became one of the first countries to formally adopt the ISO 30500 national standard.

Distributed life systems integration into centralized infrastructure has the potential to alleviate centralized infrastructure weaknesses and provide resiliency benefits that centralized systems are unable to provide.

The key impact of this paper is to explain the importance not only of decentralized water treatment and distribution systems integration, but of moving to the next phase of incorporating a closed-loop plumbing system to conserve water in a cost-effective manner. The information in the paper provides utility services and city planners with the justification to proactively integrate distributed water, energy and food services into their centralized systems for greater sustainability and resilience of core human living systems.



**Figure: Water Life Systems reconfigured sanitation service delivery chain that incorporates NSSS/FSTU and container aeroponic farm systems. Shorter chain, resource recovery, reduced carbon footprint.**

**Contact WLS to receive a copy of the full conference paper for your viewing pleasure.**

# 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 9

### Industry, Innovation and Infrastructure

#### 9.2 Target

Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

#### 9.2.1 Indicators

Manufacturing value added as a proportion of GDP and per capita

#### 9.2.2 Indicators

Manufacturing employment as a proportion of total employment

#### 9.3 Target

Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

#### 9.3.1 Indicators

Proportion of small-scale industries in total industry value added

#### 9.3.2 Indicators

Proportion of small-scale industries with a loan or line of credit

#### 9.4 Target

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

#### 9.4.1 Indicators

CO2 emission per unit of value added

#### 9.5 Target

Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

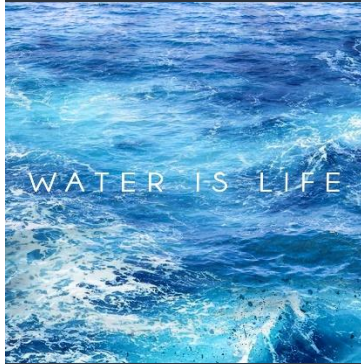
#### 9.5.1 Indicators

Research and development expenditure as a proportion of GDP

#### 9.5.2 Indicators

Researchers (in full-time equivalent) per million inhabitants





## 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](#)

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.

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**For More Information**  
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