



Using International Plumbing Standards as Tools to Promote Local Industry & Economic Growth

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Agenda

- Brief introduction to IAPMO
- Setting the state – achieving water efficiency & public health goals
- Our theory of change
- International examples

United States



Jordan

Indonesia



India

IAPMO Group – About Us

Complete International Service Organization

- Code Development
- Standards Development
- Industry-Leading Training and Education
 - From Market Access to Capacity Building
- Accredited Industry-Leading Compliance Programs
 - Test Labs, 3rd Party Certification Program, Continuous Compliance Inspection Program
- We Focus On Where People Come in Contact with Water



IAPMO Baseline Codes



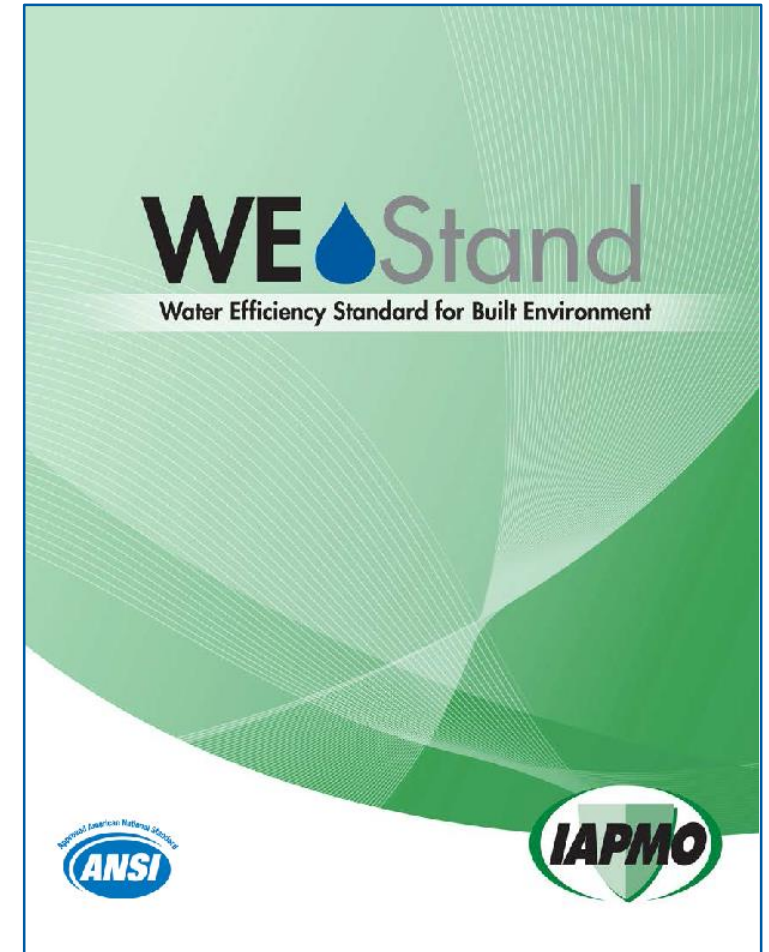
- Installation code of practices
- References hundreds of product standards
- ANSI accredited consensus process – fair, balanced, transparent, all stakeholders have a vote throughout the entire development process
- Addresses both energy and water efficiency
- 2012 UPC – 1st model code in the USA with provisions for rainwater catchment, gray water and reclaimed water in the body of the code

WE[💧]Stand

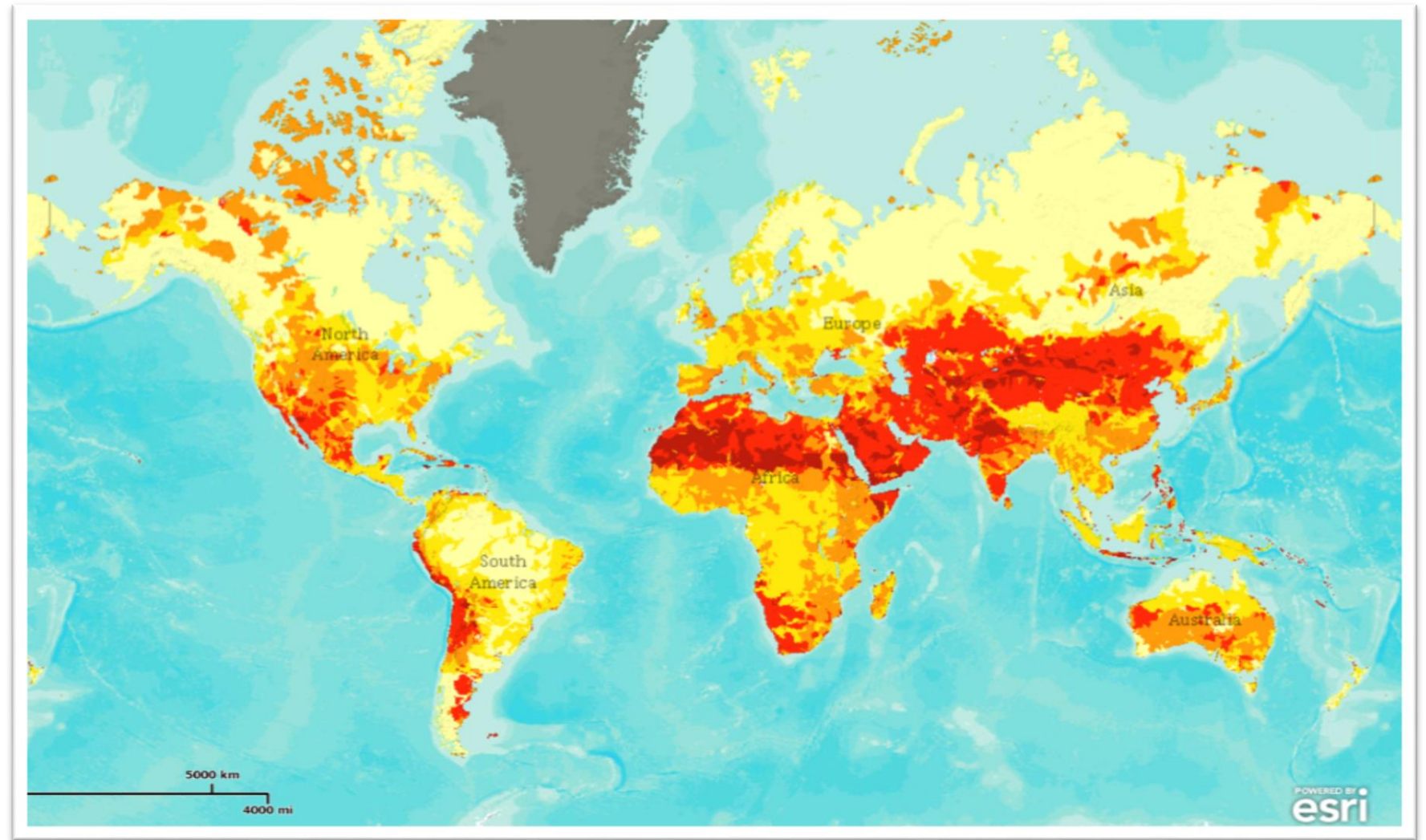
Water Efficiency for Built Environment



- Fills a need for an American National Standard that focuses solely on water efficiency
- Publication as a standard allows for multiple means of adoption by states and municipalities
- Allows for bringing together the best minds in the water efficiency industries to develop a robust and comprehensive standard



Confluence of Public Health and Safety





EVERY **15 SECONDS** A CHILD DIES
FROM A PREVENTABLE **WATER**
BORNE DISEASE



200 MILLION HOURS = THE TIME
WOMEN & GIRLS SPEND FETCHING
WATER EVERY DAY



MORE THAN **1 IN 3** PEOPLE HAVE NO ACCESS
TO IMPROVED **SANITATION**. **1 IN 7**
STILL PRACTICE **OPEN DEFECATION**

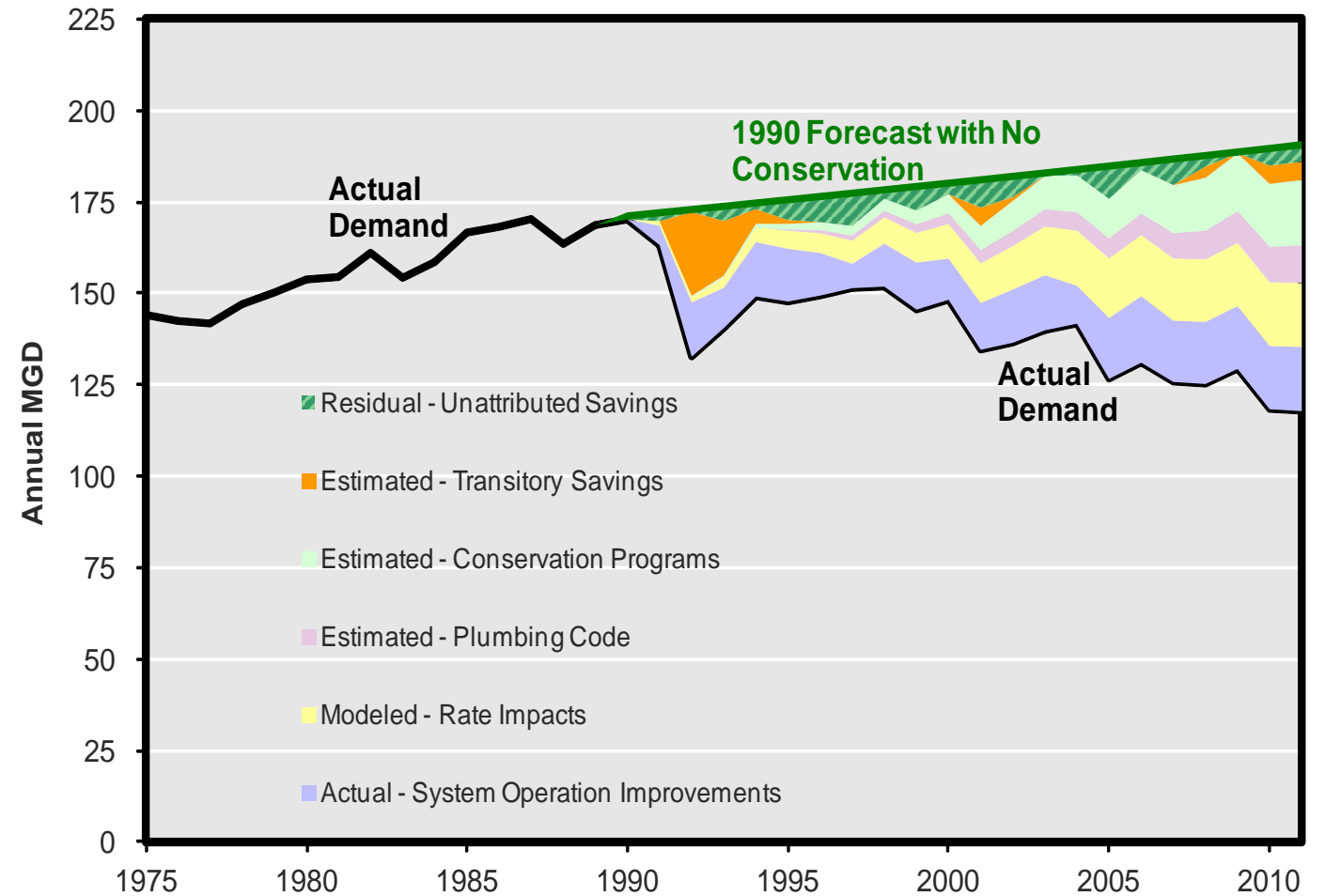


SOME COUNTRIES **LOSE AS MUCH AS 7%**
OF GDP BECAUSE OF INADEQUATE SANITATION



Good Policies
Can Make a
Big Difference
in Water
Efficiency

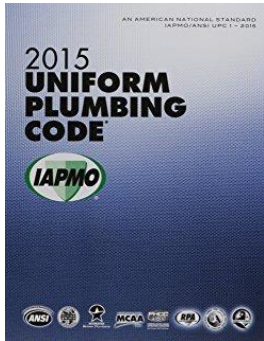
Impact of Conservation on Historical Water Demand
Components of Conservation Savings Since 1990



Where is IAPMO Actively Engaged?



Big Question: How to grow local industry?



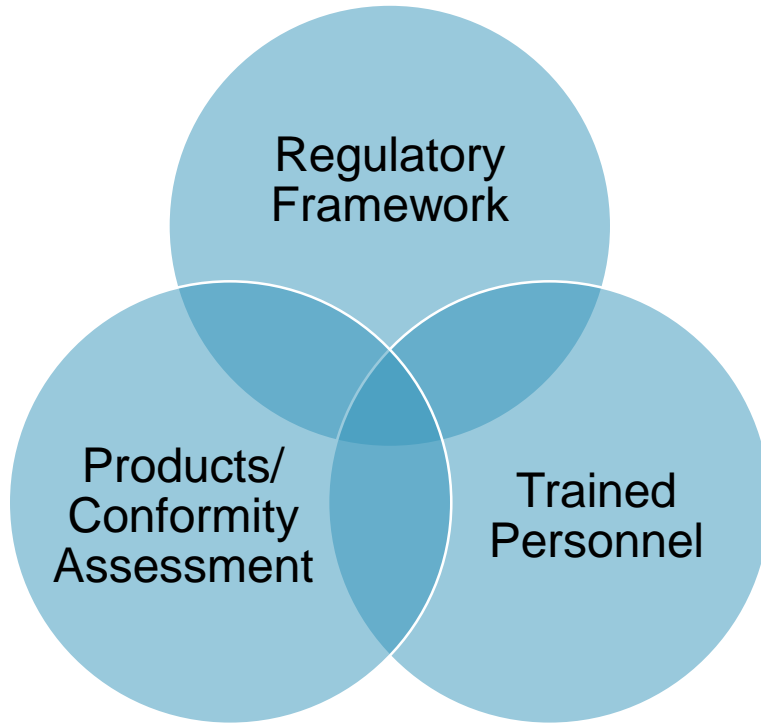
Adoption of
Plumbing
Code &
Product
Standards



Buildings
Built to
standard

- Lessons learned from Vietnam, Jordan and other countries
- Adoption of voluntary standards into technical regulations is not enough
- Need help with implementation

Big Question: How to grow local industry?



- Each plays a vital role
- Effective framework
- Level playing field
- Substantial government and industry involvement

Regulatory Framework is intended to protect health and safety, national plan
Trained Personnel needed to fulfill plan, create demand for products
Conformity Assessment ensures the free flow of quality products into the market

Standards Are the Foundation



How is the system organized?

Gov't/Industry decides on best practices for installation

Standards become technical framework or blueprint

Often adopted into technical regulations or law

Dept. of Construction/Housing, national standards body

Who performs the work?

Gov't/Industry decides the technical knowledge required

Becomes basis for personnel certification criteria

Foundation for curriculum used by universities, schools

Ministry of manpower/labor, academic & vocational institutions

What products or materials are used?

Gov't/Industry agree on product standards

Protect market from unsafe/inferior goods.

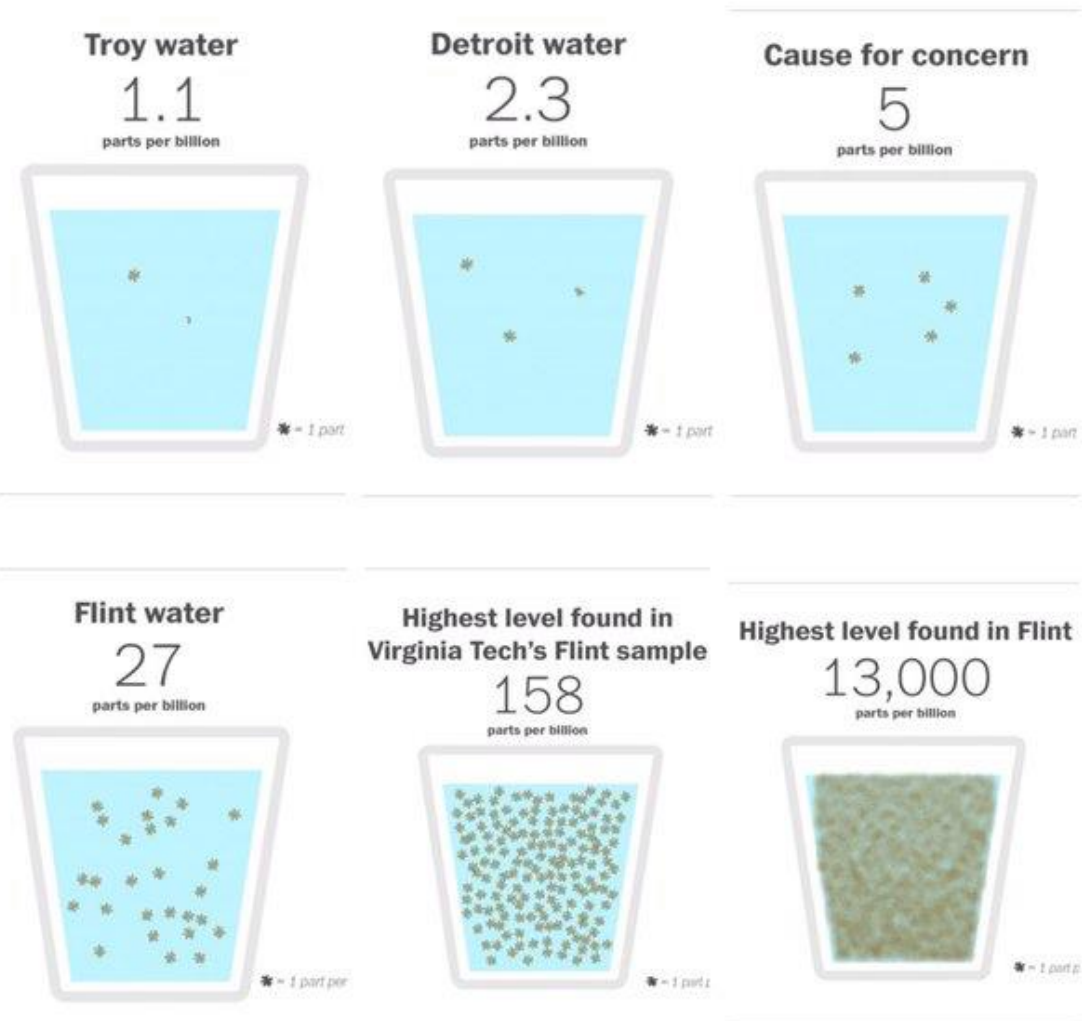
Trade implications – TBT, market can respond to national plan

Dept. of Commerce/Trade, customs, national standards body

Example: United States



Components must work together to protect water quality

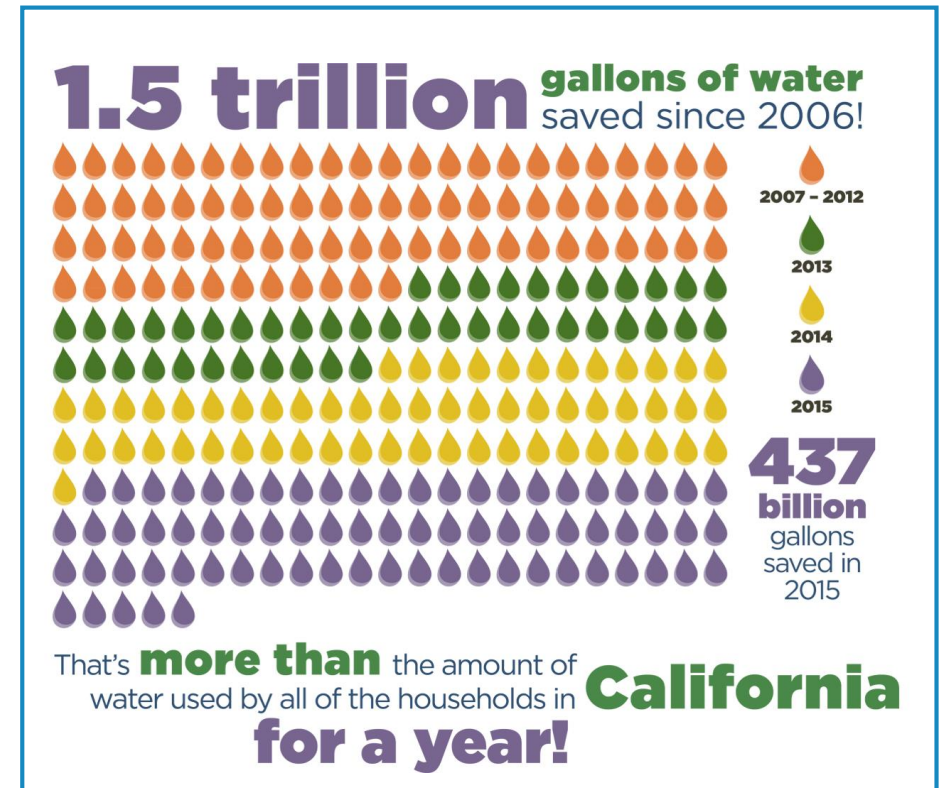


Products impact public health

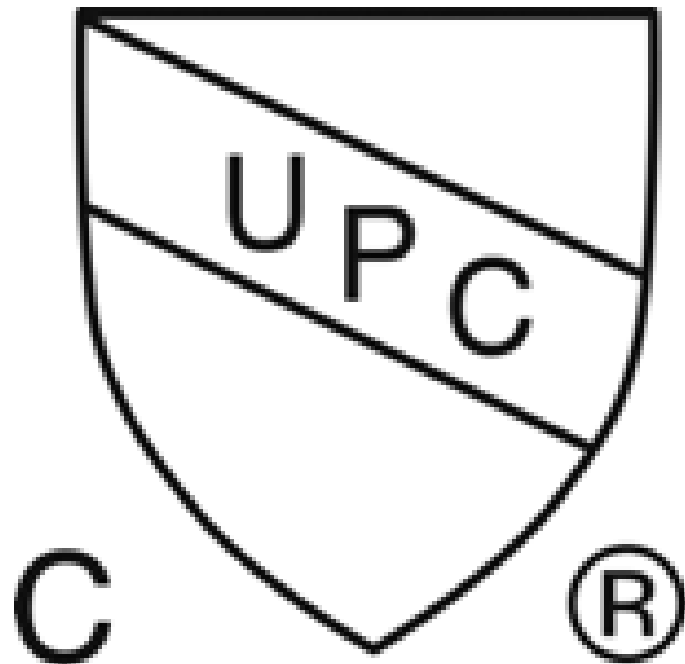


U.S. – Products Impact Efficiency

- Voluntary partnership and labeling program launched by U.S. EPA in 2006 designed to reduce municipal water use across the country
- Simple way for consumers to identify products that use 20% less water and perform well
- A label with integrity – third-party certified
 - Saves water, reduces energy consumption, saves consumers money
- Adoption of efficient products take time to saturate market
 - 5.5% of California's 33.5 million installed residential and commercial toilets meet the WaterSense standard (1.28 gallons per flush/4.28 liters)
 - 21.1% of bathroom faucets (1.5 gmp/5.68 lpm)
 - 23.9% of showerheads (2.0 gpm/7.57 lpm)



U.S. – Importance of 3rd Party Testing and Certification



USA Facility



New Facility in Indonesia



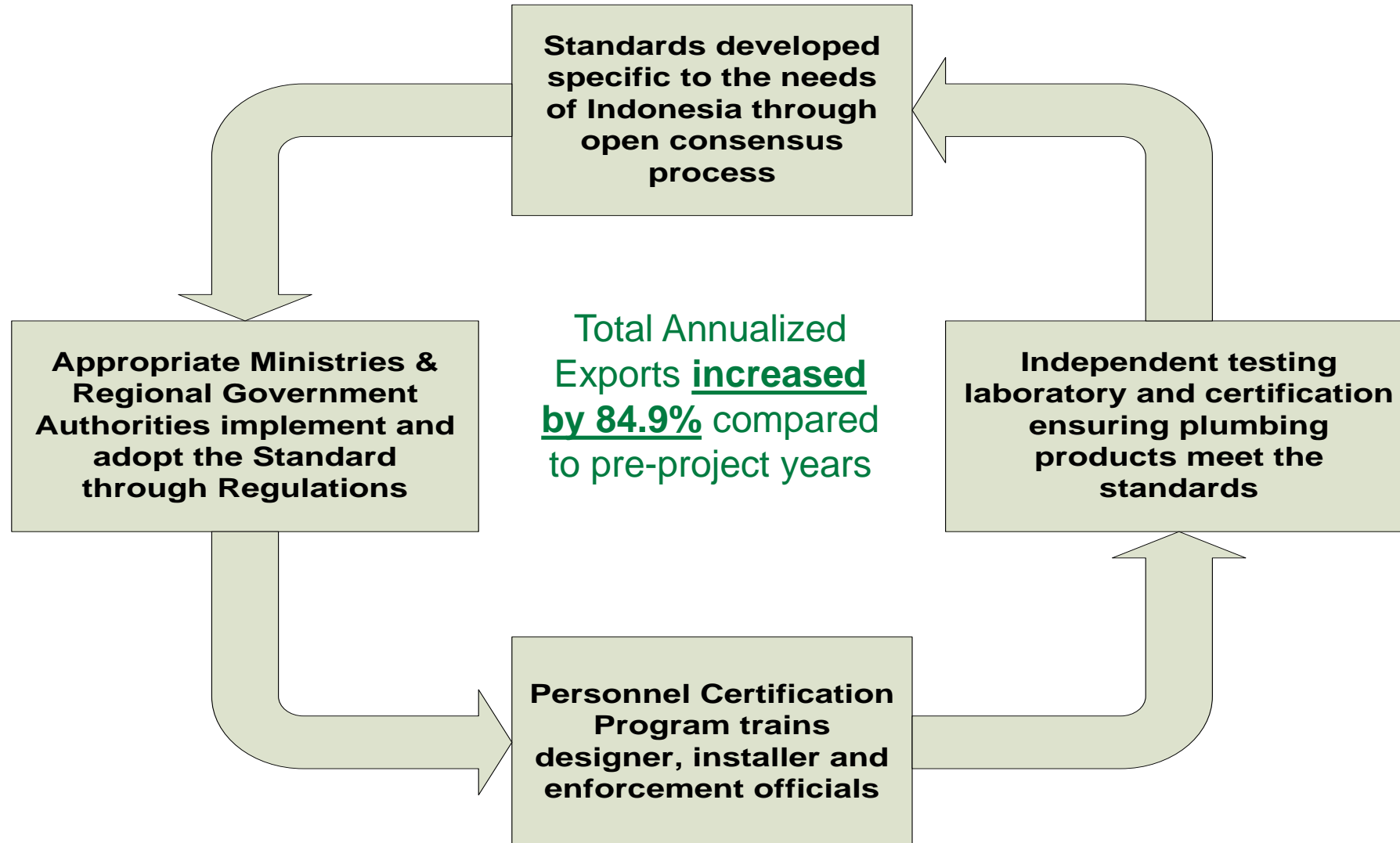
China Facility



Example: Indonesia



Indonesia: Circle of Standardization



Example: Jordan



- **Water Scarcity**

- Considered one of the most water-scarce countries in the world.
- Population depends on groundwater for 80 percent of their freshwater, levels are dropping 3 feet each year and will likely be depleted by 30 to 40 percent within the next 15 years.



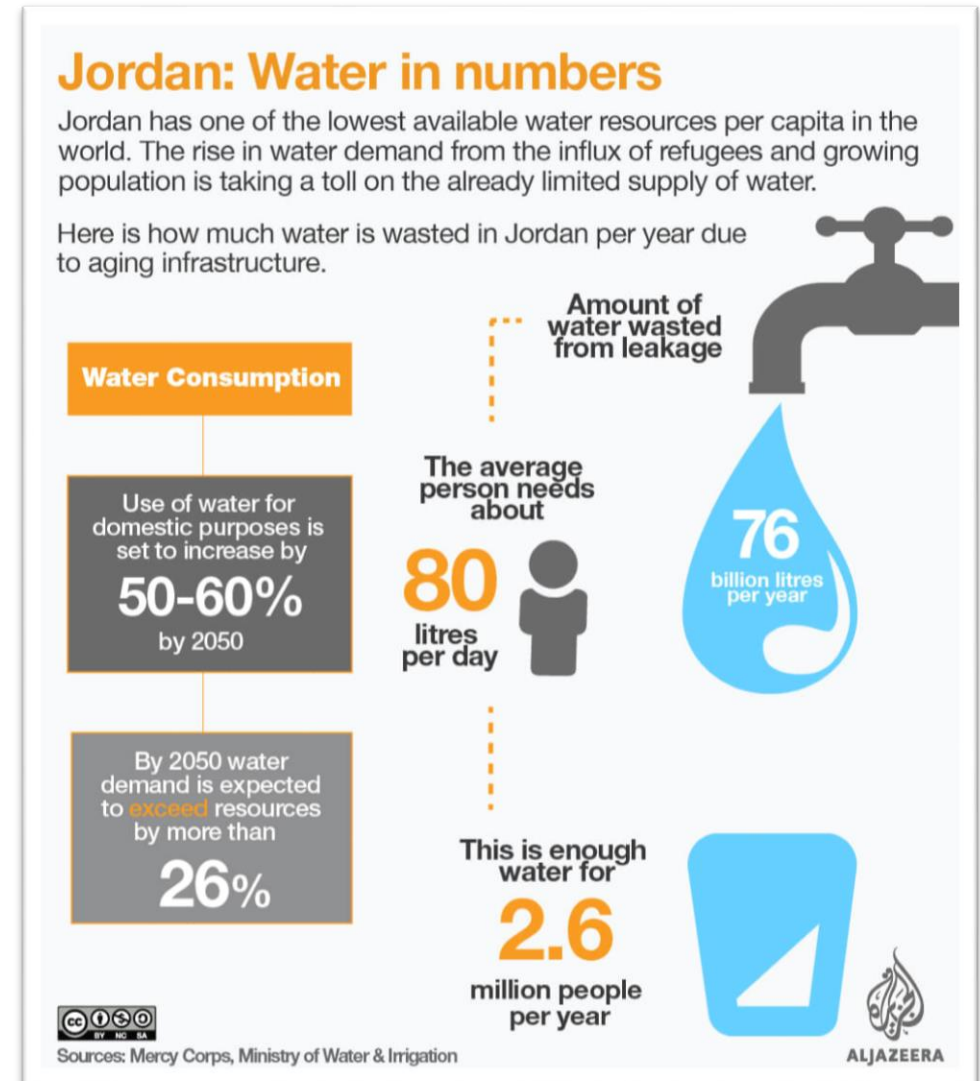
- **Effective Implementation is Key**

- Jordanian plumbing code, incomplete references product standards
- Personnel certification criteria and training programs
- Challenges with enforcement during construction phases
- Current Market = Plumbing product market is saturated with unsafe and unreliable products

Jordan – Moving Forward



- **Growing the Industry in Jordan**
 - Partnership between JSMO, MPWH, RSS, WAJ, and IAPMO
- **Moving Forward – Fixing Processes**
 - Adoption of plumbing product technical regulations and their enforcement
 - Local enforcement: process for approving the occupancy of buildings
 - Update to the Unified Code to Provide Buildings with Water and Sanitation (UCBWS)
 - Potentially developing and updating personnel certification requirements



Example: India



Water Scarcity: NITI Aayog June 2018 Report

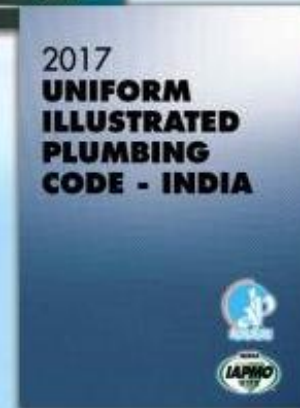
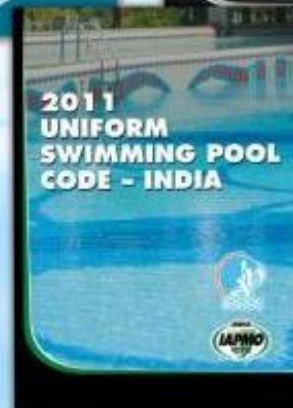
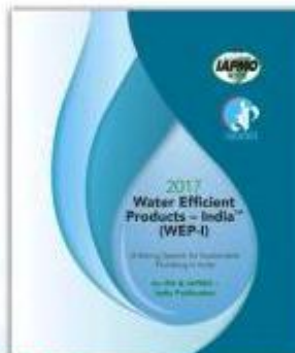
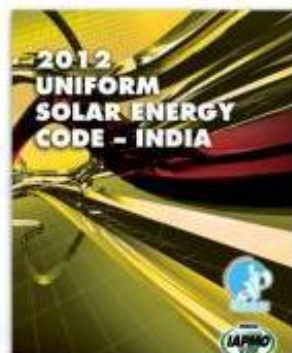
- 40% of the population will have no access to clean drinking water by 2030.
- Pressure on urban water systems is expected to increase. More than 20 cities, including New Delhi, Bengaluru and Chennai, will run out of groundwater by 2020, affecting 100 million people.

Partnership to Bring Change

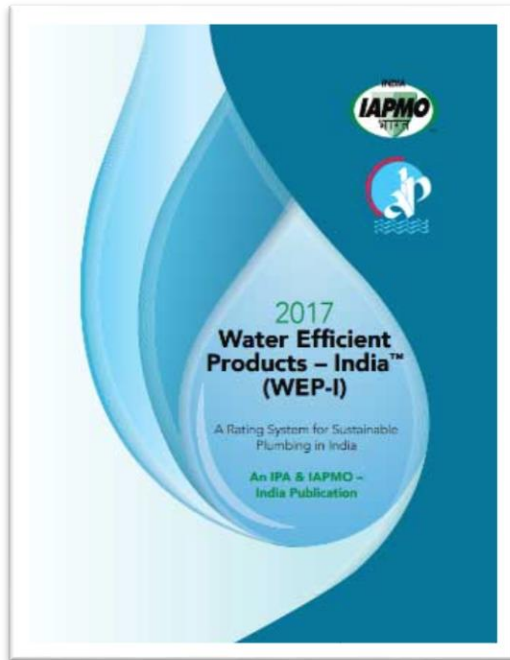
- Since 2009, BIS, CII and ANSI have worked together on many critical sectors within India and the US, including water/sanitation.
- The US-India SCCP (and SCCP II) have provide an important foundation and portal for US and Indian organizations to meet, identify, discuss and collaborate on the challenges facing both of our nations.
- Successful collaboration that IAPMO has had for over a decade with the Indian Plumbing Association, the Indian Green Building Council and the Indian Plumbing Skills Council.



IAPMO INDIA PUBLICATIONS



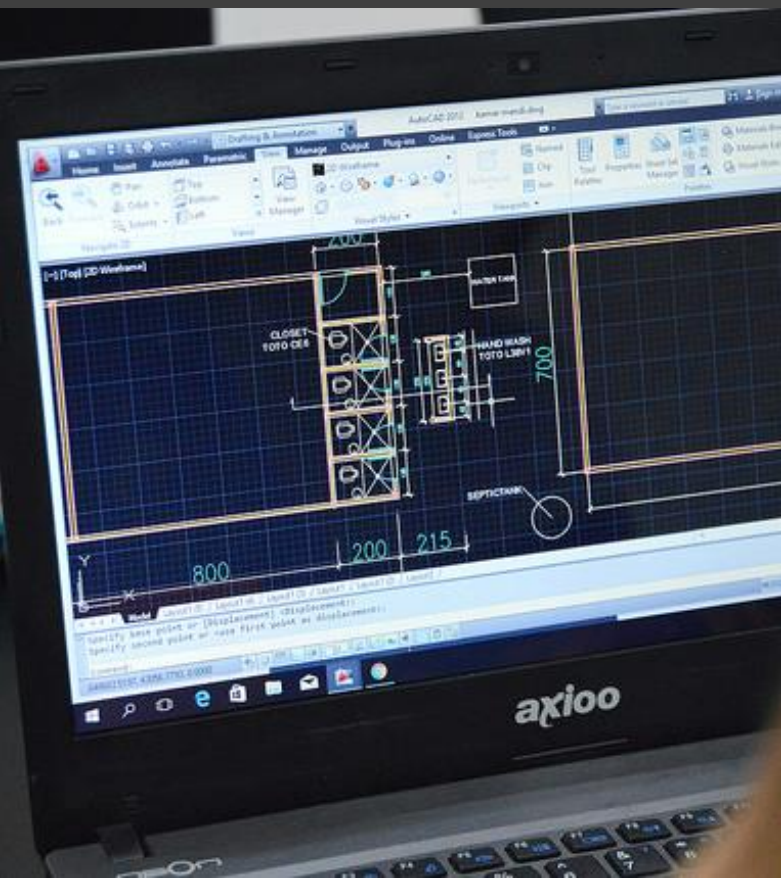
India: WEP-I 2017



Water Efficient Product Certification

- WEP-I is a rating system for sustainable plumbing in India
- Set of recommendations to all those who are involved in the design, engineering, manufacturing, selection, installation and maintenance of water efficient plumbing products in India.
- Intended to encourage use of water efficient products, to incorporate and implement the latest technologies and systems and provide uniformity in the performance of products.
- Prior to 2011 (WEP-I first published), no rating system for water efficient products existed.
- WEP-I prepared jointly by IAPMO-India and IPA.
- Others involved in process Confederation of Indian Industry- Indian Green Building Council (IGBC), ADaRSH (Association for Development and Research of Sustainable Habitats).





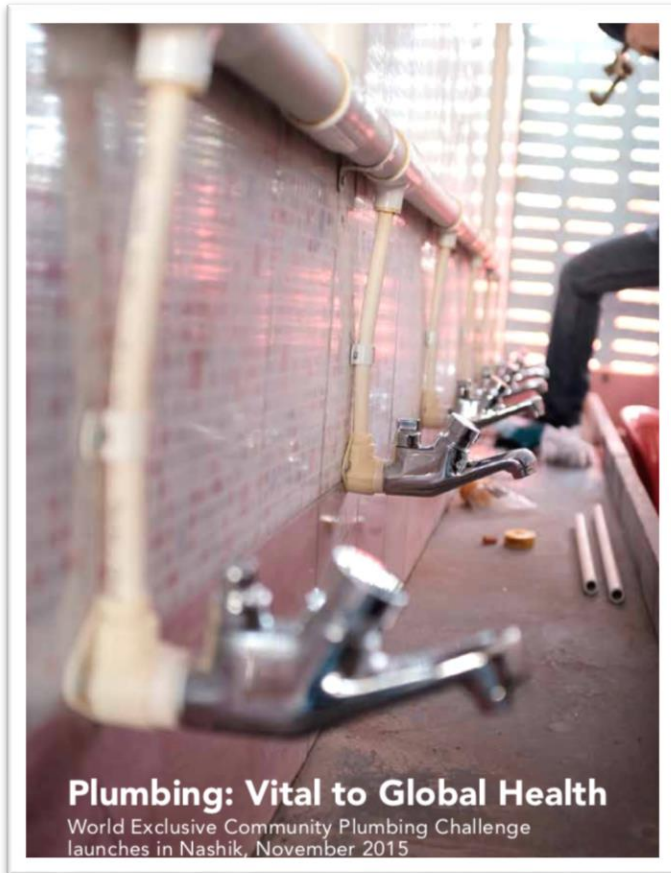
India...

Building
a Skilled
Workforce

IWSH – Community Plumbing Challenge Nashik

International Team

Teams from India, United States, Australia, and Spain two parts of program to focus on the design and construction of the project.



Before

- The school is home to 400 students, between 7–15 years old, and 12 staff
- Only 4 water taps available with limited water supply, poor pressure
- Urinals that did not flush
- Toilet stalls with doors that did not allow light or airflow

After

- New water tank added to the roof, in order to improve water supply & pressure
- New hand washing troughs and 25 hand washing taps added (push taps used in order to reduce water wastage)
- Urinals flushed by re-used hand wash water drained into the urinal trough
- Toilet stall doors replaced with permanently fixed louvres giving light and constant air flow through the areas
- Water meters were installed on the various branch lines of piping to assess water use, tap performance, design performance and maintenance needs

Thank You!

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