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# Before COVID-19

#### We focused on the resilience of infrastructure to climate and weather-related risks

- (i) Smart water technologies:
  - forecast and provide early warning for urban flooding
  - improve water supply and wastewater treatment operations, overall efficiency, and planning for network extension
  - detect network anomalies and quickly react to incidents and leakages
  - monitor water quantity, quality, timing for re-chlorination and automatic flushing, and wastewater epidemiology
- (iii) Climate- and disaster-resilient techniques to mitigate urban flooding caused by excessive rainfall
- (iv) Wastewater reuse as a cost-effective solution to water scarcity
- (v) Improving energy efficiency



## Following COVID-19





#### We witnessed

- (i) Water and wastewater projects continued essential services with some adjustments such as
  - additional support to vulnerable people with free water
  - water kiosks
  - enhanced staff safety
  - increased quality testing frequency and locations
- (ii) Digital solutions played a crucial role during lockdown
- (iii) New investment opportunities to upgrade the existing water plants to meet higher quality standard and test new solutions to prepare for next wave of pandemic.



### Lessons Learned

### Resilience plans have to be upgraded to cope with uncertainty:



Supply chain disruption. Delays in construction and maintenance



Unexpected demand fluctuations (industrial/commercial users)



Longer lead times to obtain the governments' approvals/licenses



End-user payment moratorium/deferring water and sanitation bills



Significant delays in commercial bank approval processes