Export of Danish water knowledge - Possibilities and challenges!

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EnviDan Water A/S
Water - A huge challenge world wide!!

- Now more than 7 billion people on earth
- 50 % of all people on earth now live in mega cities
- Climate change squeeze water resources

- Around 1,2 billion has no access to safe water
Water - A huge challenge world wide!!!

• 2,7 billion has no sanitary solutions

2.2 million people die annually of insufficient water and sanitation facilities 🙏🏻🙏🏻🙏🏻
The blue planet seen from space, blue because...

- 70% of the surface is covered by water!

BUT !!!!!!
The blue planet!

- 97% of the water is salt in the seas
- 2% is captured in ice and glaciers
- 1% of all water on earth is fresh water, groundwater, lakes or rivers

80% of fresh water is used for irrigation or industries!!!

We must manage the remaining 0.2% with great care!!! Or we end up with more NEWater! The “reclaimed” water from Singapore! RO treated waste water!
But.......do we take care?

NRW = loss of water from distribution system - in many cities NRW above 50 %!

NRW - an embarrassing example on waste of good water due to bad installation and miserable operation!

In DK NRW is 6 %, we can learn them a lot!
Why should we go international?

- The global water business is estimated to 2.500 bill. DKK per year. We have 0,5 % of the world market
- We are strong in innovative development and creates unique solutions (both knowledge, hardware and software)
- The world needs holistic and integrated concepts to create efficient solutions. Danes are very strong in working with holistic and integrated solutions!
- We have implemented systems that are highly efficient and we are famous for quality and “work smart” solutions.

BUT: The competition is so tough, we need to be World Champions, or it is waste of time and money!
We have to focus on global challenges, not just our Danish solutions!

- Most of the world use surface water!
  - Many will always need bottled water for drinking purpose, even they convert to groundwater
- Water is extremely scarce and/or polluted many places
  - Advanced treatment and recycling necessary
  - Singapore plan water supply to be 50% NEWater!
- Our solutions are sustainable in DK with a very high price for water, but water is very cheap in most of the world!
- We have a big challenge, to go from Danish scale to mega cities
  - In Bangkok they have 25,000 km distribution pipes!
  - In Kuala Lumpur the loss/NRW equals the total Danish water consumption
NRW project for MWA Bangkok - Thailand
Reduction of physical loss and NRW

MWA, Bangkok - Thailand

- Consumers: 11 mill.
- Daily production: 5 mill m³
- Distribution system: 25,000 km
- NRW (officiel): 36 %

- Daily Loss from distribution system = 1,8 mill m³, same same as annual consumption in Silkeborg
NRW project for MWA Bangkok - Thailand
Reduction of physical loss and NRW

Our contribution:
• Upgrade GIS system
• Set up hydraulic model for 25,000 km of pipes
• Separate distribution system in 700 DMA’s
• Design pressure management for the whole distribution system
EnviDan Water, SkyTEM and GEUS:
Groundwater mapping in Thailand

Client: Ministry of Environment of Thailand

- 5000 km SkyTEM survey
- Interpretation of geophysical data to hydrogeological model
- Implement GERDA, the national database for geophysical data from GEUS
- Implement Danish groundwater relevant software (Ex. GeoScene3D)
- Training of Thai staff in DK and Thailand
- Next: Full blown Danish groundwater mapping concept?
Conclusion:

• Danish "water industry" has a huge international business potential, both advanced technology, concepts for mapping, software, QA systems and training!

• Danish water utilities and authorities has knowledge and experience about management, organisation and operation of high international potential and value

• We have to continue developing and be World Champion, or we will lose the competition!
Recommendations:

• We can use more utilities staff trained in international work

• Prioritize Danish technology development projects that has international perspective and potential

• Financial support (seed money) to “first reference” or demonstration projects or to F.S. - to support project development on selected markets.

• We have to organize the Danish water sector much stronger, and cooperate when we go international!
We are World Champions and we are ready!

Thank you for your attention!