

SAWEA Workshop

Holiday Inn, Al

Khobar, Saudi Arabia

22nd – 24th February 2010

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Fusion Welded Polyethylene PE100 Water Distribution Systems.

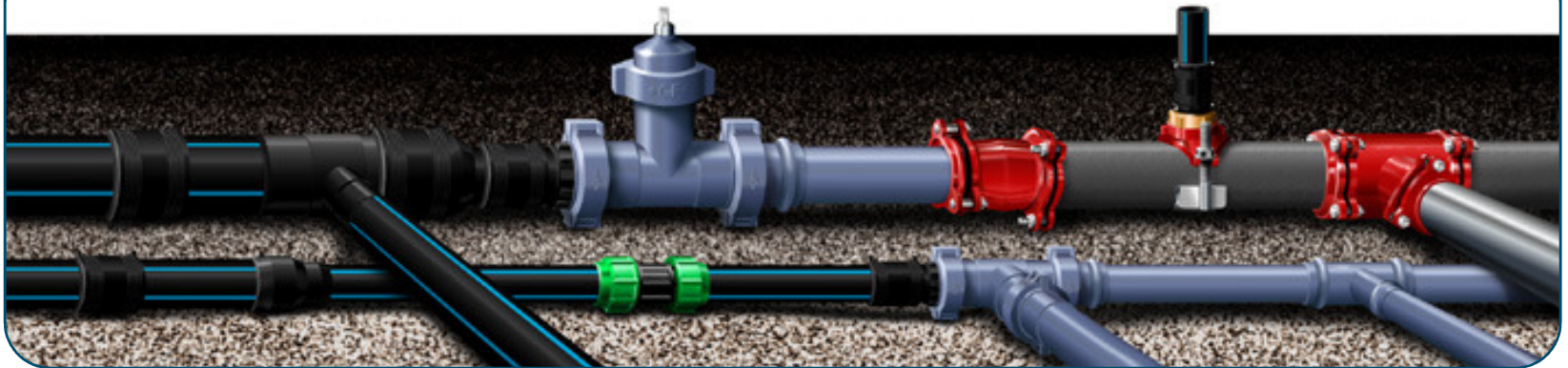
A cost effective solution to water loss.

GF Piping Systems

GEORG FISCHER Piping Systems

+GF+ Experience

- Manufacturers of Malleable Cast Iron Pipe Fittings since 1850
- Manufacturers of PVC Fittings since 1957
- Manufacturers of Ductile Iron Fittings since 1957
- Manufacturers of Polyethylene Fittings since 1972



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The World Largest Utilities Rely on Us



...and many more

Our distribution systems are used all over the world

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Water Crisis



Some facts about water



- **75% of earth surface is water**
- **60% of human body is water**
- **Survival without water 6 days**
- **World average rainfall is 860 mm/year**
- **A dripping tap wastes 54gal / 204L a month**



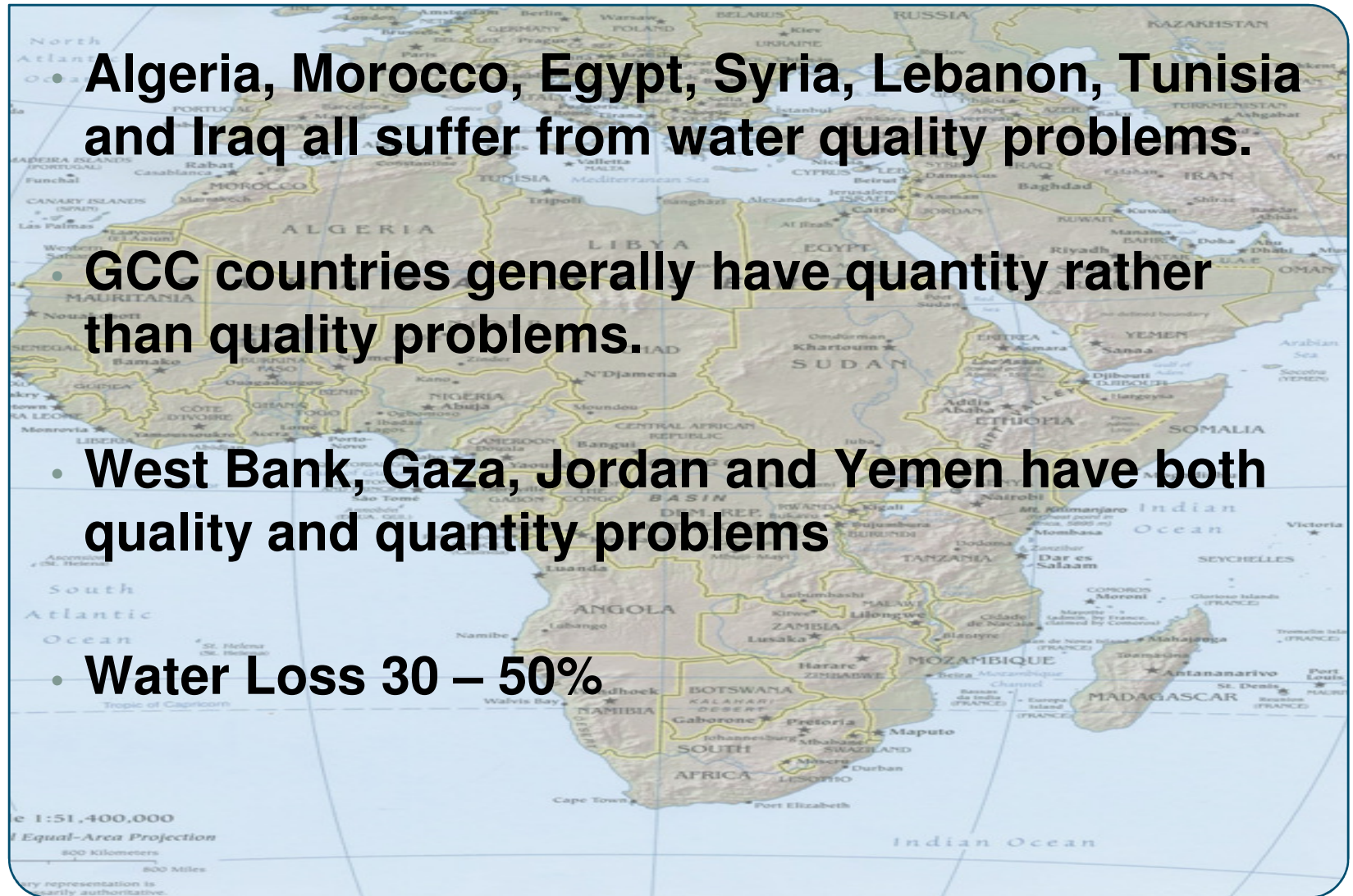
Some facts MENA

- 10% of worlds land surface
- 5% of worlds population
- 1% of accessible fresh water
- One of worlds driest and water stressed regions.



Some facts MENA

- **Algeria, Morocco, Egypt, Syria, Lebanon, Tunisia and Iraq all suffer from water quality problems.**
- **GCC countries generally have quantity rather than quality problems.**
- **West Bank, Gaza, Jordan and Yemen have both quality and quantity problems**
- **Water Loss 30 – 50%**



Saudi Arabia – Water Situation 2007

- Swiss Consultants (IPG) made studies in Jeddah and Riyadh
- IPG estimate water loss at 20%.
- Saudi Minister for Water stated it is higher (50%).
- In Riyadh 1 million m³ of water is lost per day
 - Riyadh has 5 million consumers
 - 1 cu. metre costs 5 Saudi Riyal (Production, transportation and distribution).
 - 5 million Saudi Riyals per day is lost
 - = 2 billion Saudi Riyal per year
- Saudi Arabia will invest 300 billion SR in next 10 years.
- 69% distribution pipes are PVC 31% are Ductile Iron
- Service lines are PE

Some facts MENA

■ **What is being done?**

■ **More investment (new pipelines)**

■ **Refurbishment (of existing pipelines)**

■ **More Desalination Plants**

■ **More people given access to water**

Water Loss Cycle continues.....

...More of the same attitude!



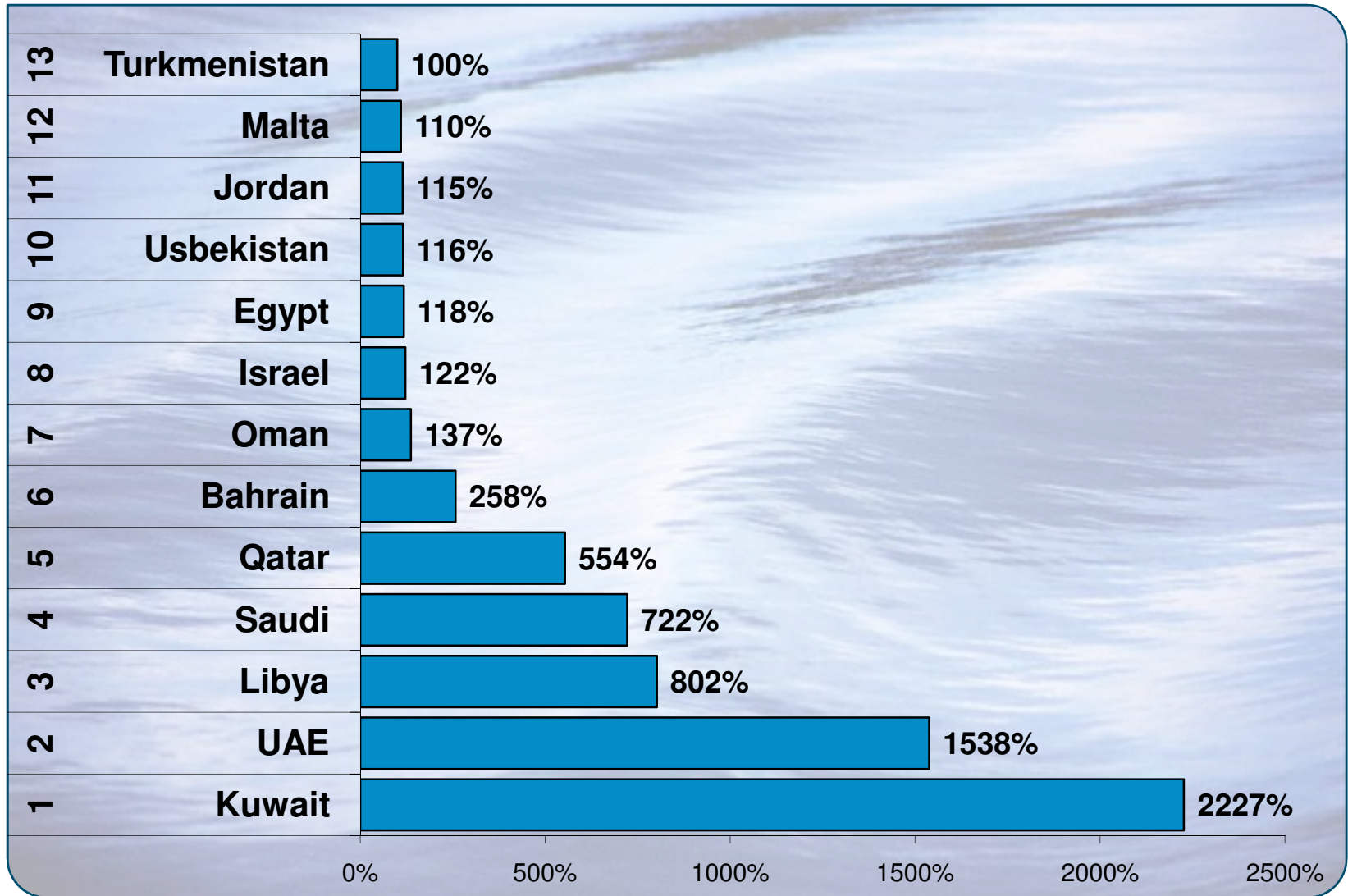
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WHY!



Pouring
money
down the drain

Countries, which use more Water than naturally available (in %)



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Water has to be manufactured in Desalination Plants



GF Piping Systems

Polyethylene.ppt 12

Desalinated Water

- Cost of desalinated Water
 $\approx 1.2 \$ / m^3$
- Average water consumption in
the Middle East
 $\approx 450 m^3 / \text{capita} / \text{year}$

What are the problems?



- Water of wrong quality
- Water of wrong quantity
- Wrong use of Water
- Pollution of Water
- Using water only once
- Loosing Water due to leaking piping systems

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Water of the wrong quantity



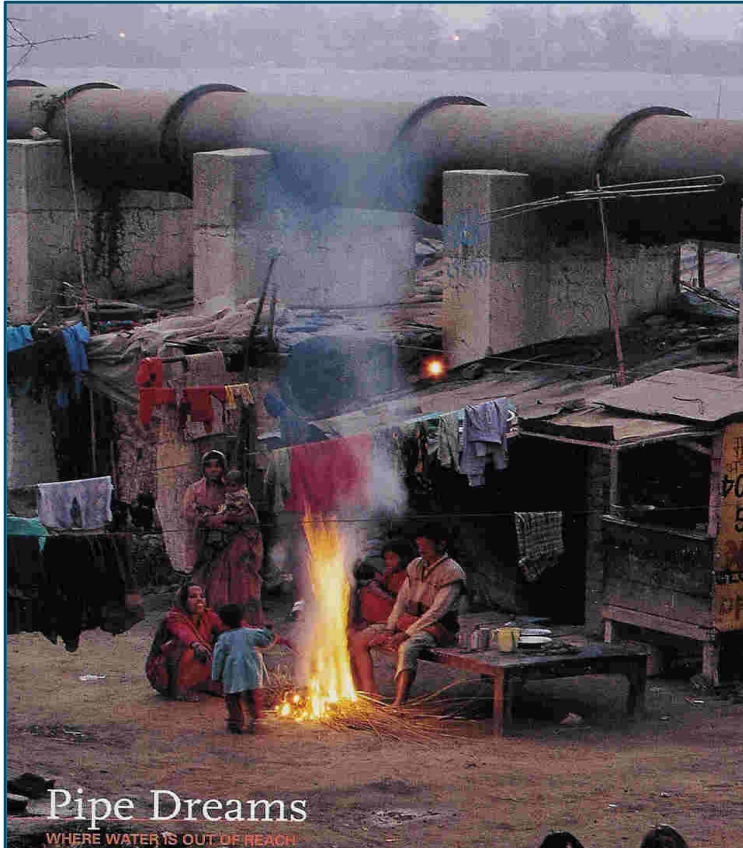
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Water of the wrong quantity



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Water of the wrong quantity



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Water of the wrong quantity

