

# 2013 IChemE Award winner



Nick Hwer (MC) John Bewsey (Inventor), Nabil K Aldabal (Saudi Aramco)

**Water Management and Supply category, sponsored by Saudi Aramco**

# An Environment under stress



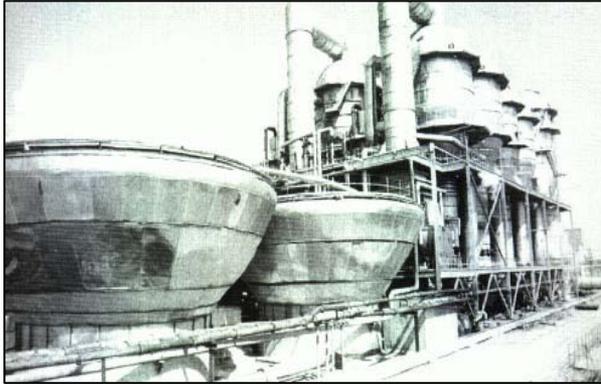
OR



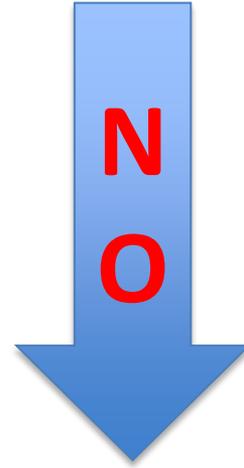
We all need water



# Is water shortage the real pain?



Desalination 1914



Desalination 2013

## Financial and environmental pain



# THE PAIN

## Concentrated brine

15000 Desalination plants  
world wide



All are creating brine



# The KNew process



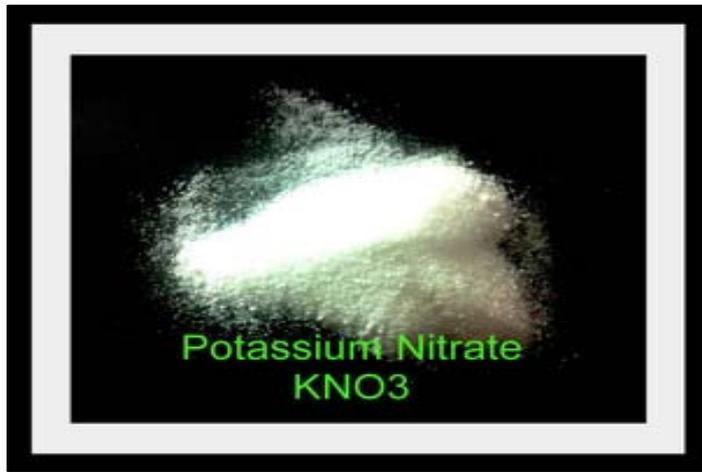
Potassium Nitrate – $\text{KNO}_3$  EX waste

# The KNew process

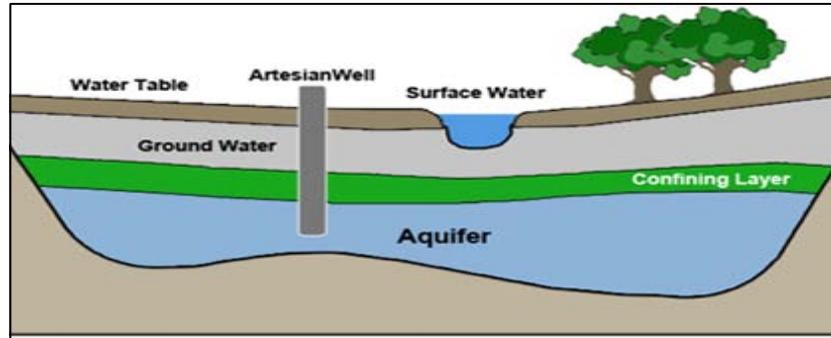
Concentrated brines



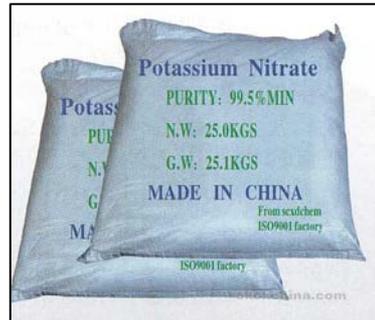
Converted into fertilizers



# Business model

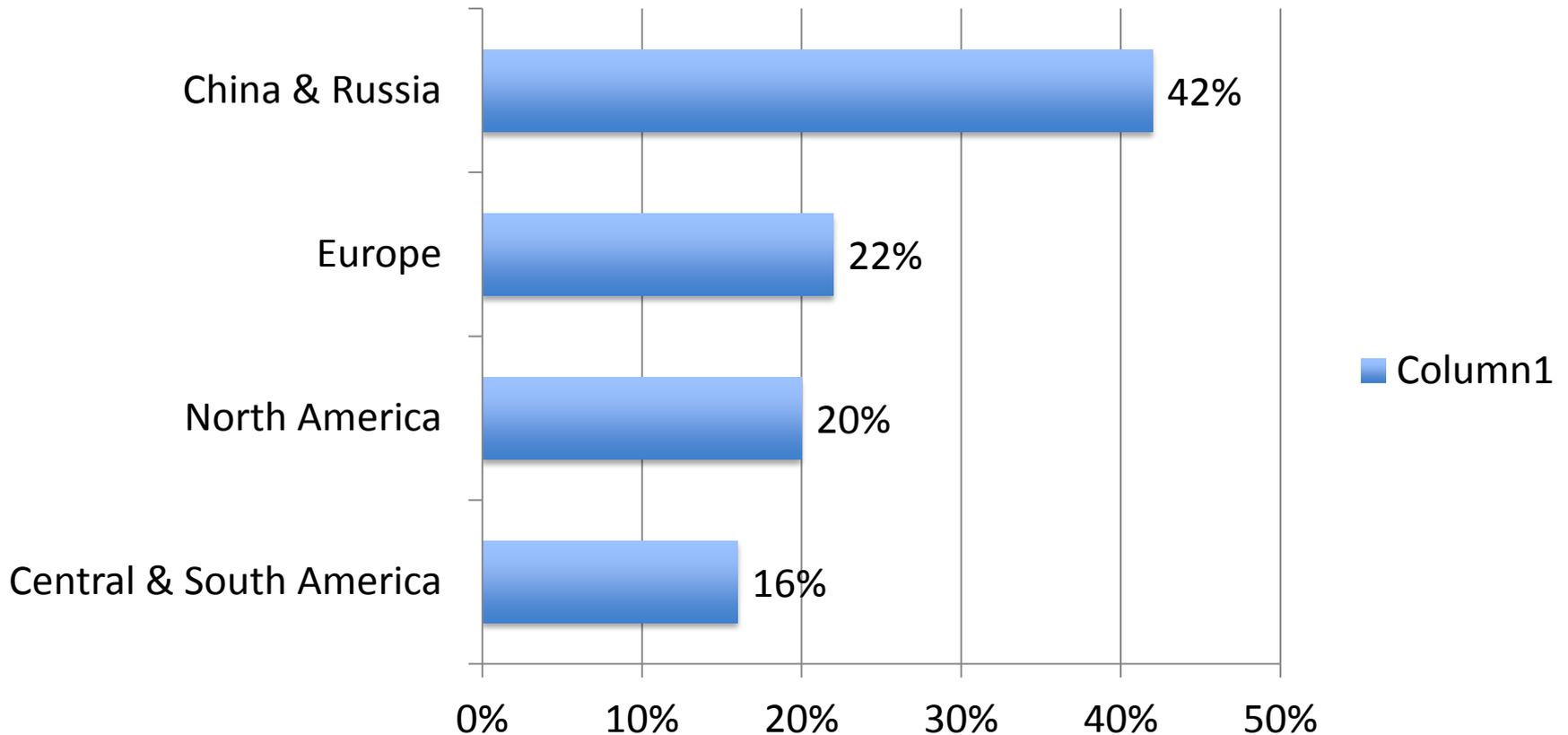


Convert brackish aquifers into:



# Fertilizer market

**Global potassium nitrate sales 1.5 million tons**

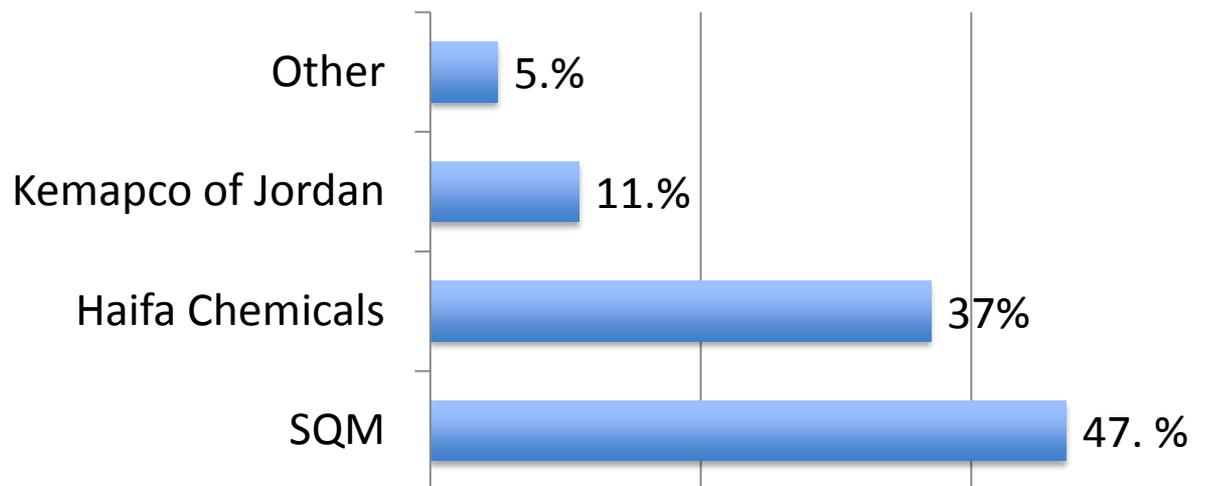


**Potassium Nitrate market growing at 10% per year**

# Competition



## Potassium nitrate dealers



# Competitive advantage

Environmentally friendly



No toxic brine



Potable water  
Fertilizer products  
No storage of toxic  
waste



# Go to Market strategy

Prove the KNew process in the U.S.A



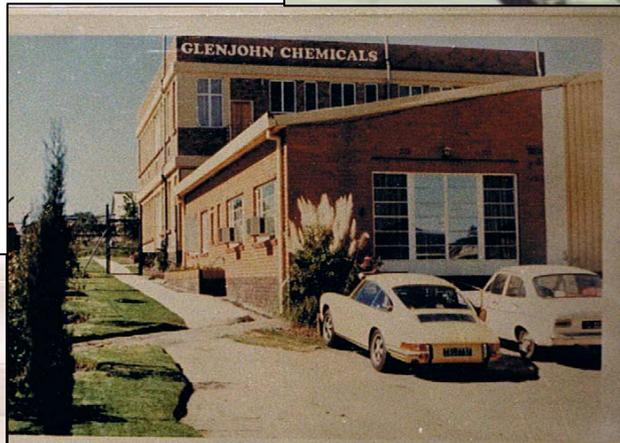
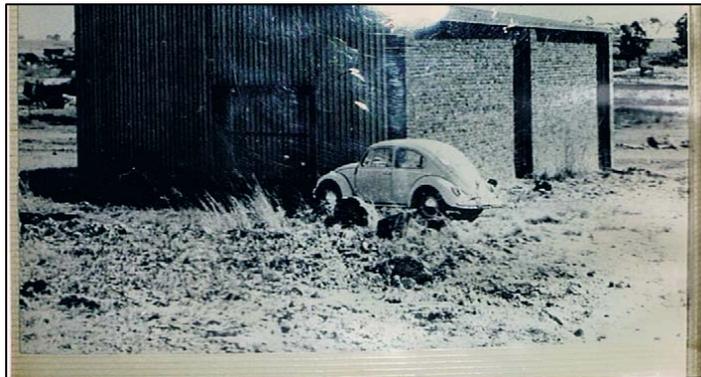
Build a 20 million gallon/day treatment plant



# GlenJohn Capital

1968 - 1975

A team with a history

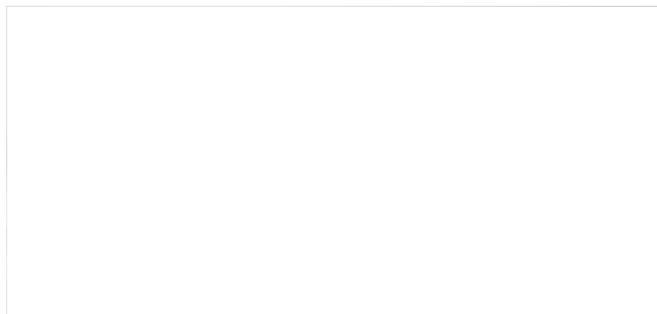


- 1973 -

# GlenJohn Capital



“ I HAVE FOUND A WAY”



**The KNeW Process Patent PT/IB2011/054264**

# Financials for a 19M/day plant

## CAPEX \$104M

P & L acct \$'mill pa

**INCOME from fertilizer**      \$319

**Income from water**      \$ 12

**TOTAL INCOME**      \$331

**Raw materials**      \$212

**Overheads**      \$ 23

**TOTAL EXPENSES**      \$235

**EBIDTA**      **\$ 96**

# First plant

20 million gallon/day plant



**\$104 Million**

# Summary

- The Knew process produces designed quality water
- Solves Sodium, sulphate and chloride problems
- Removes radio-activity usefully
- Produces valuable and commercially pure potassium nitrate, ammonium sulfate and electrolytic sodium chloride

# New markets created



Horticulture



Sugar beets



Ethanol



Replacing corn