From Water Conflicts to Water Cooperation - 50 years of drinking water supply experiences in Skåne

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When do conflicts turn to cooperation

- **Internal** discussion and structures
- **External** discussion and structures
- Internal drinking water stakeholders: municipalities, political boards, municipal engineers, municipal health inspectors
- External drinking water stakeholders: landowners, political boards, neighbouring municipalities, authorities, courts
Sydvatten in numbers

- 15 municipalities
- 900,000 persons
- 250/1,600 MSEK
- Asset value 15 Mdr SEK
- 3 water sources
- 2 WTP
- 300 km pipes/tunnel
- 60 employees
- Water rights/ cap / prod
  8.7 / 3.9 / 2.2 m³/s
- 70 milj. m³/y
- Price: 3 SEK/m³

Viktiga årtal

- 1950
- 1966
- 1976
- 2004
Water service is a task for municipalities

- Bad outbreaks of cholera in Stockholm and Gothenburg killed a large number of inhabitants 1842, 1858
- Need for better water supply service
- This became a central task for municipalities, which since the early 20th century has been the outspoken manager of virtually all the urban water service systems (WSS) in Sweden.
Scania (Skåne) in the southern part of Sweden

33 municipalities
Until 1995 two counties (Malmöhus And Kristianstads län)
Thereafter one county (Skåne län)
Appr 1.1 M inhabitants
Lack of groundwater
Small lakes
Small rivers
Appr 10 000 km²
Most population along the Sound Öresund (75%)
South Swedish water supply prior 1950

• Strong urbanisation
• The water scarcity was visual every summer
• Some provisional water supply systems were used 1940-1950.
• Used raw water high in chloride and calcium, and in some cases also influenced by surface water giving an earthy, musty and mouldy odour to the drinking water.
• The complainings on the water quality of maybe lack of water quality were numerous.
• Vombverket taken into operation in 1949.
Where to find more water?

• New supply from lakes
• First study initiated in 1950 by the County Council and presided by the Governor Allan Voug in Malmöhus County.
• The study concluded that Ringsjön should be exploited for drinking purposes but that a long-term and large-scale solution, perhaps with water from Småland, was needed for Western Scania.
New and safer supply

• Gothenburg started investigating extended water supply in 1960
• The regional County Administrative Board of Halland County requested in a letter to the Swedish government in February 22, 1960 that a regional water supply study might be executed for Halland.
• A week later, the county administrative boards in the two Scanian counties (Kristianstad and Malmöhus län) sent a joint letter to the Swedish government with the corresponding request for the regional water supply of Scania.
Governmental investigation 1965

• Started May 26, 1961
• The study on water supply of south-west Sweden, presented as the inquiry under the name of Skåne and Halland water (SOU 1965:8).
Get the water in Småland!

Several alternative paths, but in principle water from Bolmen to Scania was suggested
Sydvatten formed

• In February 1965, the committee decided to form a limited liability company.
• The advantages of a corporation were considered to be more important than the disadvantages.
• Good experiences from joint electricity production (Sydkraft, since 1906)
1966

- Sydvatten AB formed 30 September 1966 in Malmö.
- Share capital SEK 1 million
- Shares were divided between the five cities in accordance with population.
- Sydvatten AB independent from its owner municipalities and managed all the projects related with the longdistance water transport in the tunnel, the construction of suitable waterworks for the Bolmen water and all legal aspects connected with large-scale water exploitation.
Scania wants water from The Little Land: 1972

• Why should Småland give off water to Skåne?
  ANSW: The government says so

• What does Småland get back from Skåne?
  ANSW: Nothing

• Why should Småland give off water for free to Skåne?
  ANSW: That is the rule
Who owns the water?

• The Swedish water is owned by all (or nobody)
• The water court (now land and environmental court) can grant abstraction rights to a water user for a good purpose
• Municipal water supply is a good purpose
Very high water consumption assumed

Prognosed water consumption up to 500 l/c/d in 2000
True consumption 280 l/c/d in 2000
Domestic consumption 160 l/c/d
Design flow 6000 l/s in the tunnel
Acutal flow 1800 l/s at present
Bolmentunneln

TUNNELSEKTION

3 x 3 m
Bolmentunneln
Beslutad besiktningsträck ca 42 km

Påslag | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | (21) Ybb Äkt

Nivå [m öh]

Markyta
Tunnelcentrum
Normal trycklinje
Påslag
Ras

Förstärkningsmetod: Geotex Sprutbetong
Bolmentunneln
Ett av 12 påslag
Materialet ska ut
Ringsjöverket
### Raw water protection work, 3 waters, 3 methods

| **BOLMEN** | - Lake area 184 km², discharge area 1640 km²  
| – National protection of the tunnel |
| **VOMBSJÖN** | - Lake area 12 km², discharge area 447 km²  
| - Eutrophic  
| – Small lake  
| – Project according to framework directive for water |
| **RINGSJÖN** | - Lake area 40 km², discharge area 347 km²  
| – Amended water rights for water abstraction |
1976 – not 33 but 12

• In 1976, seven new municipalities became members and owners of Sydvatten. It was Bara (Svedala), Burlöv, Höganäs, Kävlinge, Lomma, Staffanstorp and Svalöv.

• The founding municipalities decreased at the same time their shares - Malmö most from 60% to 39%.

• In 1978, the second agreement of cooperation (konsortialavtal in Swedish) between the shareholders was signed.
Consolidation 1978-2000

• Sydvatten took over ownership and operation of the waterworks Vombverket and Ringsjöverket 1983
• The waterworks were gradually modernised and developed. In 1993-1997, the capacity of Ringsjöverket waterworks was doubled from 1200 l/s to 2400 l/s.
• In 1996-1998, the waterworks Vombverket was supplemented by a softening plant through fluidized bed technology.
• Investments in tunnel, water mains, improved water safety
• Total gross assets in the company are about 2 000 Million SEK.
Political will to let the company grow

• Loans guaranteed from owners to Sydvatten
• What would the relevant capitalisation be?
• Should or could Sydvatten try to invite external customers or neighbouring municipalities to buy drinking water from the Sydvatten network?
• Could new municipalities be encouraged to join Sydvatten
New era

• Five / four new municipalities as members since 2004 (Vellinge, Skurup, Svedala, Ängelholm and Bjuv).

• Several other municipalities have expressed their interest in joining Sydvatten.

• The change in view on cooperation and municipal responsibilities for water production has been large compared with the responses in the 1970ies.
Drick kranvatten
www.drickkranvatten.se

TÄNK H₂O
• The value of water
• Water is truly transdisciplinary
• Increase awareness among pupils on the water sector (even as potential employee)
• Collaborate with municipalities around Lake Bolmen, Municipalities in Sydvatten, schools, universities, high-schools
• Transdisciplinary project work on water
• Water course at Lake Bolmen
• Classes, workshops, experience the nature
• Knowledge of water
• Increased awareness of the value of water
• Understanding a bit of what it means to work in the water sector
Place based learning

Understanding

- Theory Brain
- Practice Hand
- Experience Feeling
2015

• International School of Helsingborg
• Johannes Hedbergymnasiet, Helsingborg
• Cultura Gymnasium, Helsingborg
• Consensum Gymnasium, Lund
• Polhemskolan, Lund
• Sunnerbogymnasiet, Ljungby
• Einar Hansengymnasiet, Malmö
When do conflicts turn to cooperation

• Communication
• Transparency
• Sharing information and visions
• Honesty
• Strategic planning
• Inclusive work methods
• Generosity
What impact has the rise of NOM? How does it affect the waterworks? The management system, biofilm, chemical and microbial processes, corrosion? Taste and smell? Climate change and NOM? Methods for the reduction in wastewater treatment?

IWA 6th Specialist Conference on Natural Organic Matter in Drinking Water
Malmö 7–10 September 2015

Organic carbon in drinking water / NOM / brownification