Clustered cities to promote collaboration in joint infrastructure projects

Innovative solid waste management

Inter-communal cooperation (institutional structures)

In the framework of circular economy

DON'T WASTE THE WASTE
“Counties” as institutionalised structure for municipal cooperation

- The county as a cooperative administrative entity as it exists today was a result of major administrative reforms in Germany, in the early 19th century.

- A county is a functional association of neighbouring municipalities and simultaneously a territorial entity, having its own administration and professional staff.
Key rationale for county administrations is the cost-effective provision of public services, which smaller municipalities on their own could neither deliver in sufficient quality nor quantities - county administrations realize economies of scale.

County administrations manage sectoral areas of environmental protection encompassed by the WEF Urban NEXUS such as:

- Fresh water supply
- Waste water management
- Solid waste management
- Landscape preservation / preservation of open space
- Management and maintenance of nature reserves (maintenance of biodiversity)
- Management of public transportation, in particular networks of bus routes
- Construction and maintenance of secondary roads within the county
- Construction control authority – approval (or disapproval) of construction applications
Due to rapid urbanization, effective handling of solid waste management, fresh water supply/waste water treatment, and public transportation, the ‘catchment’ areas of counties frequently were too small/narrow.

To tackle this problem, the organisational tool of the “Special Purpose Association” was developed.

The existence of county administrations is a solid basis for the development of SPAs in the area of environmental services, but not a prerequisite.

All SPA’s are legal entities under public law.

The German states all have a ‘Law on Municipal Cooperation’, which provides the legal framework governing SPAs.
An SPA is a combination of independent cities and counties to execute certain tasks, which are assigned to them by state law or national law or which they can execute on their own on a voluntary basis.

Each SPA has to have a ‘Charter of Association’, which defines tasks, duties of members, organizational structures, budgets and fees.

Many modern environmental facilities such as solid waste processing plants or waste water treatment plants require large up-front investments.

Due to territorial extent SPAs can mobilize the cash flows (amount of user fees) required for decades to re-finance initial plant investment.

Key areas of engagement are public transportation, solid waste treatment, water supply.
Best practice examples
Special Purpose Associations (SPAs)

The SPA for the Area of Greater Berlin of 1912

*Its task:*

- Elaboration of spatial development in an urban/suburban/rural region for:
  - Consolidation of a fragmented electric tram network into one public sector-owned corporation
  - Wholesale purchases of forests, lakes and agricultural areas from the Prussian state and private land owners to preserve large green belts and parks (‘Forests-Forever’ Contract of 1915)

*Results of these efforts are still visible:*

- Berlin is one of greenest cities in Germany
- In the Eastern part of the city, citizens still enjoys a tight network of electric trams
46 towns and municipalities are subordinate to the legal supervision of the district office Ortenau county.

The administrative district own “Special Purpose Association Waste Industry Ortenau county” perceives the duties of the waste disposal according to the land waste act.

The organs of the SPA are the district assembly, the committee on environment and technology, the head of the district authority and the manager of the of the SPA “Waste industry Ortenau county”.
Best practice examples

History of solid waste management in the state of Baden-Württemberg, Germany

Company: ZAK Ringsheim
Location: Kahlenberg, Germany
Operational: since 2006
Input: 120,000 tons/year
municipal solid waste from ≈ 575,000 residents
Best practice examples
History of solid waste management in the state of Baden-Württemberg, Germany
Waste disposal sites in Baden-Württemberg 2013

- Waste disposal site category II
- Disposal site (for mineral substances)
- Thermal waste treatment
- Mechanical-biological waste treatment plant
- Fermentation plant
- Composting plant
- Mechanical waste treatment plant (cycle of material flow)

Development of recycling industry as “new” industrial Sub-sector

- Thermal waste treatment (electrical energy and heat generation)
- Mechanical-biological waste treatment plant (electrical energy and RDF generation, reuse of water)
- Fermentation plant (electrical energy generation)
- Composting plant (Humus and fertilizer generation)
- Mechanical waste treatment plant (cycle of material flow)

Germany considered as champion of recycling industry

*Since the “Waste Disposal Ordinance” from 2009 landfill sites are categorized. Important for the definition of category for each landfill site is there basement insulation and installed leachate treatment system. Landfill sited category I and II need a combination of mineral sealing and plastic sealing membrane additionally to the leachate treatment facility.
Supra-regional Special Purpose Associations (SPAs) for solid waste management as county, state and national borders have become too narrow.
Reduction of green house gases (COP 21)

Methane gas emission of the waste management industry in Baden-Württemberg since 1990

Household waste disposal site
Composting plants
Mechanical-biological plants
**Metabolon/North Rhine Westphalia -**
Successful transformation of landfill site to internationally recognized knowledge center for metabolic material conversion between society and nature.

The Leppe Waste Disposal Centre, in Lindlar, Oberberg District, has been the central landfill for the Oberberg and Rhine-Berg Districts since the early eighties.

Roughly 45 ha area has been steadily backfilled giving the location a completely new face: **Regional 2010 project: „metabolon“** (material conversion of the existing material on the site to be given new value and a new appearance).

**Organizers/implementers:**

Special Purpose Solid Waste Association “Bergisches Land” together with the two districts, the local authorities and University of Colon.

**The approach/The objective**
Providing a place of learning and experience for school students,
Demonstrate the transformation of a landfill into a sustainable industrial area and a location for recreation and recuperation activities
Development of an efficient material flow management with state-of-the-art pilot plants
World Cup Park Seoul, Korea
Successful transformation of landfill site to beautiful park scenery today
Reduced environmental pollution and greenhouse gas emissions

The World Cup Park was built to commemorate the 17th FIFA World Cup, held in Korea in 2002.

The World Cup Park is a transformed 15-year-old landfill that held over 92 million tons of garbage.

The park is located near Seoul World Cup Stadium made up of five smaller parks with in-line skaters, holding a pond, garden, children’s playground, and forest. It is often used as a picnic area and place for nature studies. The Nanji Stream was once overflowing with sewage runoff from the nearby landfill, but it has since been beautifully restored into a park with clear water. It contains an outdoor stage and various sports facilities.
World Cup Park Seoul, Korea
Successful transformation of landfill site to beautiful park scenery today
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29/06/2016
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As a federal enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Registered Offices, Bonn and Eschborn, Germany
“Integrated Resource Management in Asian Cities: the Urban Nexus”
United Nations Building
Rajadammern Nok Avenue
Bangkok 10200, Thailand
T + 66 2 288 2142
E ruth.erlbeck@giz.de
I www.giz.de

Responsible
Ruth Erlbeck / Ralph Trosse

Author(s)
Ruth Erlbeck / Ralph Trosse

Photo credits
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Layout
Ralph Trosse

In cooperation with

UNESCAP
Economic and Social Commission for Asia and the Pacific