Implementation of the EC Landfill Directive in Croatia
(with Emphasis on Municipal Solid Waste)
Progress, Problems and Achievements

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Strategic Waste Management Planning in South Eastern Europe, Middle East and Mediterranean Region
• Background
• Key Data
• Research Aims and Questions
• Methodology
• Legislative Framework
• Waste Management in Croatia
  – Past and Present
  – Future
• Conclusions
Waste management is the **single biggest problem** in the environmental sector in Croatia.

Not only does the legislative framework need to be aligned with EU requirements and standards, but existing Croatian regulations are not yet being implemented.

This sector poses a **major challenge** for Croatia and will require major efforts to align with the *acquis*.

*2004 Opinion (“avis”) of the EU on Croatia’s application for membership*
• Population: 4.5 million
• MSW: 1,450,000 t/a
• 0.9kg/person/day or 327kg/a
• Tourism – 100,000 t/a or 1kg/tourist/night
• Waste is predominantly landfilled
Research Aims and Questions

• Analyse transposition of the EC Landfill Directive and implementation of laws
• Illustrate
  – the past and present
  – the future
  state of MSW management in Croatia
• Explore weak areas and illustrate successes and failures
• Questions:
  – How well has the Landfill Directive been transposed?
  – Have the provisions implemented on paper been carried out in practice? If not, why?
  – What are the problem areas?
  – Are deadlines being observed?
  – How good is Croatia doing? Is it a model pupil?
Methodology

- **Legislation Side**
  - Comparison of the EC Landfill Directive with Croatian laws
  - Transposition of the Landfill Directive
  - Provisions regarding the future system of WM

- **Practical Side**
  - Past and present waste management practices
  - Illustration of the future system (using a case study)

- **Material:**
  - studies (incl. waste types, quantities, costs)
  - waste management strategy, programs and plans
  - specialized articles
  - web pages of competent authorities and landfill operators
  - NGO reports
  - studies of the implementation of the Landfill Directive in EU member states

- **Objective:** prevent or reduce negative effects on the environment from the landfilling of waste, by introducing stringent technical requirements for waste and landfills

- **Defined:**
  - categories of waste
  - classes of landfills
  - waste acceptance procedure (e.g. pre-treatment of waste)
  - wastes that may not be accepted in a landfill

- **Hierarchy:** prevention → recycling/reuse → disposal
Croatia’s obligation: to apply the environmental *acquis*
- comprises 200 major legal acts → Chapter 27: Environment

The Landfill Directive has been transposed into the:
- Ordinance on Waste Management (2007)
- *Ordinance on the Methods and Conditions for the Landfill of Waste, Categories and Operational Requirements for Waste Landfills (2007)*

Followed by: Strategies, Programs and Plans

Croatia requested a transitional period for the full implementation regarding two articles:
- compliance of existing landfills with provisions of the landfill directive (2015 instead of 2009)
- reduction of biodegradable municipal waste to 35% of the total amount of biodegradable municipal waste produced in 1997 (2020 instead of 2016)
- prolongations should become obsolete however, as new WM system should be set up in the next 2-3 years
Past and Present Waste Management in Croatia

- Large number of landfills
  - almost every municipality has own landfill and company
  - 187 active landfills

- No sanitary landfills
  - no pre-sorting
  - no weighing of waste
  - quantities only estimated acc. to volume and nr. of vehicles

- Too little organized recycling

- Wide-spread open dumping

- Existing legislation is not implemented properly

- Public awareness and acceptance is low

- Costs of disposal ~ 20-60 EUR/t
Future Waste Management in Croatia

- **To do until 2025 (WM Strategy):**
  - establish max. **21 regional** WM **centres** with sanitary landfills until 2011
  - close all **island landfills**
  - restore all illegal, **open dump sites**
  - close or rehabilitate **old landfills** and turn some of them into recycling or transfer stations
  - introduce **mechanical and biological treatment** and reduce waste volume
  - establish a comprehensive **information** system

- **Total cost: 3.25 billion EUR**, of which
  - **2.26 bill. EUR** for facilities handling MSW
Primorje - Gorski kotar County / Rijeka

- Population: 306,000 inh.
- Biggest town: Rijeka with 150,000 inh.
- Karstic terrain (!)
- Estimated waste: 250t/day
  - only 10% sorted
- Planning and construction of the new WM system well under way
• Population covered by collection: 95%

• Nr. of landfills: 10
  – 9 are at the end of their capacity

• Biggest one:
  – Viševac (for Rijeka)

• In operation since 1964

• Landfilling still going on although 14m above envisaged level

• Problem: new sanitary WM center will not be in operation before 2011
Case Study (3)

Existing system

Planned system (2015)

The Marišćina Central Waste Management Zone

- 1st fully developed disposal site in Croatia
- total investment for the new system: EUR 50 million
- disposal costs: ~100 EUR/t
- disposal & collection: ~150 EUR/t
- operational time: ~50 years

Source: www.ekoplus.hr
• All new waste laws comply with EU standards

• Exemplary transposition of the Landfill Directive, but

• disparity between what is on paper and what is in practice
  – problems resulting in **substantial delays** in construction of WM centers and remediation of old landfills
Reasons for delays:

- **high investment** costs (EU funds necessary)
- insufficient **administrative capabilities** incl. inspectors
- **politics** and political bickering
- physical planning and **bureaucratic problems** regarding landfill locations
- “**not-in-my-backyard**” attitude and skepticism of the population
Final remarks

• Croatia is on a good path
• the legal framework is very good
• progress can be compared to new EU members
• but an acceleration of action is needed in the next 2 years
THANK YOU FOR YOUR ATTENTION

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