

Implementation of EU Landfill Directive in Estonia

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Basic information

ESTONIA

- Population 1.36 million
- Area 45,2 th km²

ESTONIA'n Economy

- Growth rate 2006 ca **11 %**
- GDP *Per capita* **\$17,802**
- Average monthly salary 2006 ca **640 €**
- but there are remarkable differencies between regions
- Thus, on 1991-92 average salary was about 50 €
- This all still affects as well on WASTE MANAGENT!

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General Remarks – waste management

Estonia, as most of the Central- and Eastern European Country's heritaged the under developed and **landfilling based waste management system**.

There was ca 350 landfills (actually dumpingsites without any environmental measures taken) often in abandoned sand- and gravel pits. **For long time there was in fact no proper control about waste types or amounts taken to landfills.**

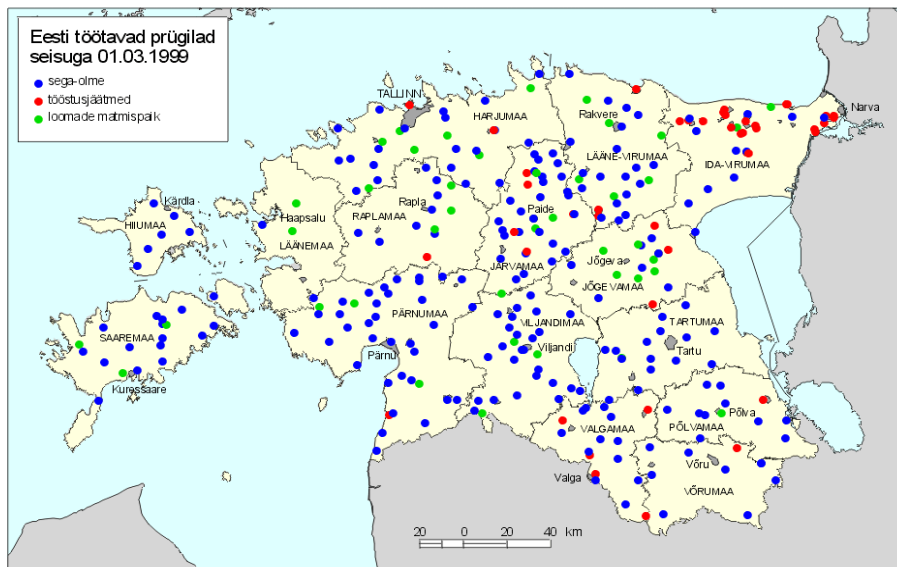
After **bio-degradable**, containing in household and similar non-hazardous waste, there was landfilled as well big quantities wooden waste (saw dust, wood park etc.), sewage sludge, even major part of 'green park waste'

There was landfilled as well **waste tyres, different liquid waste, untreated medical waste etc.**

- **AND littering (illegal dumping of waste) was problem all the time too!**

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Landfills on 1999- 'just behind the corner' and often 'free of charge'





Main considerations with the Landfill Directive transposition

- **Landfill Directive is not at all 'just about landfills' – AS REQUIRES principal changes in whole waste management system !!! Several waste types are banned to landfill, for bio-degradable waste there is serious task to reduce landfilling etc.**
- **'ownership' (responsibility) on landfills – closure of old landfills and developing new landfills**
- **site selection for new landfills**
- **'polluter pays' principle and landfill 'gate fees'**



Landfill Directive – High Costs Burden ahead

The whole waste management issue requires huge financial effort. But on the 'helicopter view' there is on 'a situation, where *all the cost of the past (old landfills to be covered) and investments to the Future (infrastructure for ca 20-30 years), should be covered by approx. 10-15 years.*

This is more than difficult. In addition there is on-going dispute on which level and in which form should the new waste management projects be developed? Should it be 'Government Authorities' (Ministry) level or perhaps thus the regional and local level – different co-operations structures of the local municipalities together with different private firms, who could be interested about waste management?

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Landfill Directive transposition on 2001

As the EU Landfill Directive was implemented on **2001**, then majority of the small countryside landfills was closed after.

As a result there is a nearest landfill in distance of tens of km-s. **Replacing waste management infrastructure as local waste stations** (Public amenity sites, recycling centres etc.) have not been developed as fast as was expected



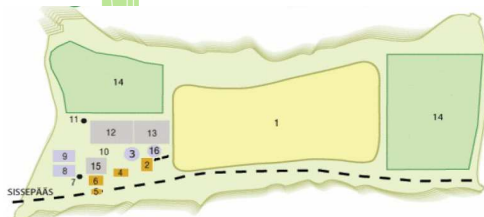
Tallinn new landfill – opened 2003



Site selection since 1980-s to 2001

- landfill site on the area of former mining area ca 20 km W from the Tallinn, ca 67 ha
- Tallinn city formed Company (35 % Tallinn City, 65 % Cleanaway)
- financing on two different projects 1)inside 'landfill fence'- landfill company **ca 8 M€**
- 2) 'out-side' (access road + leachate pipeline ca 8 km) Tallinn city ISPA project **ca 6 M€**

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**New Landfill near Pärnu (S-W of Estonia), opened
2006, financed 67 % by ISPA**



Financial issues of closure of old landfills

- There was counted up to 350 small landfills on 1990-s*
- majority from those are closed and covered by now*
- as majority was < 1-2 ha, then simplified closer procedures was applied, based on local conditions and EIA (if needed)*
- closure layers on average up to 1 m different soils + topsoil or compost for greening*
- as most of the alndfills was in the sites with relatively good filtration, then leachate collection have been establishen only on few places*

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Financial issues of closure of old landfills - II

- cover with plastic liner etc. only exceptional, if clear danger to groundwater - then cost level ca 100 th.€/ha
- closer cost for bigger landfills > 5 ha up to 300 th.€/ha
- average cost of closure of small landfills ca 20 th.€/ha

Financing scheme typically :

- 10 % local municipality(s),
- 90 % Environmental Investments Centre
- since 2004 as well ERDF, now Cohesion Fund

Total costs of closure of landfills until 2007 – ca 32 M€
(ca 22,8 €/person)

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Main problems related to closure of old landfills

Ownership disputes – about land as property, but also about responsibility

On most cases had'nt the local municipalities collected any closure fund – so the state aid was 'unavoidable'

Even if closed, then problems with landfill aftercare – there are examples, where there is still waste dumped, on some cases have run-off waters damaged the covering layers, etc.

Landfill-gas collection still only on Tallinn Pääsküla landfill as all other municipal waste landfills have been estimated as 'low level gas generating'

On future planning restrictions purposes, are still not all landfills marked on digital maps

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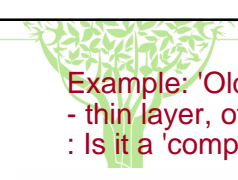


Main problems related to closure of old landfills

=> To Do:

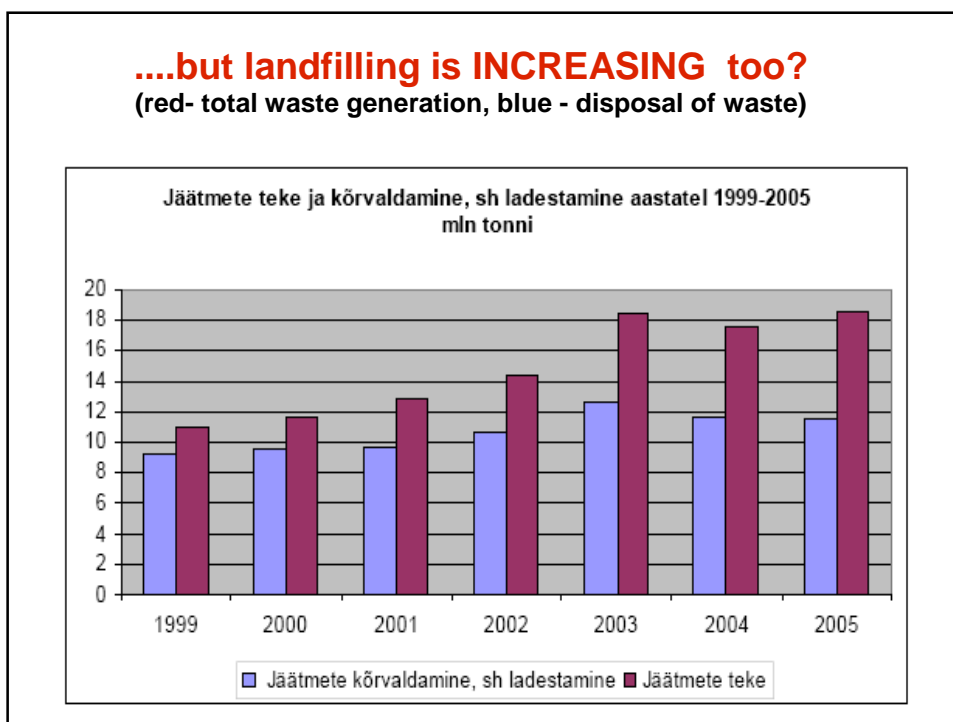
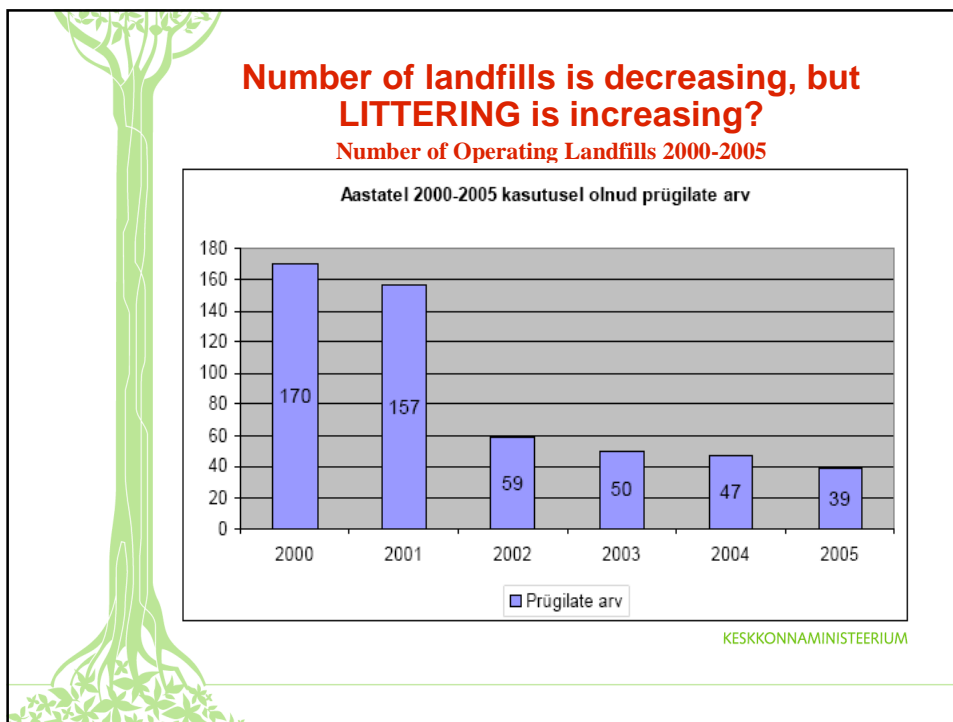
- 1) to mark all old landfill to digital maps and to secure housing restrictions**
- 2) to continue supervision about situation and aftercare requirements**
- 3) To solve problems with Financing of aftercare**

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Example: 'Old dumping site' – 2004, Saaremaa island
- thin layer, often 1-2 m, aerobic conditions
: Is it a 'composting-landfill or 'waste field' ?





Landfills 2007

	Non-Haz W.	Hazardous-W.	Inert Waste
Number of Landfills in operation - 2007	17	10	3
In compliance with landfill Dir. 99/31	5	2	1
Number of landfill in operation on 2001	76	26	3
Number of landfills to be closed or brought to compience	12	8	2
Closed for landfilling, but yet to be covered - 2007	24	3	1

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Ditch at the Tallinn landfill, 2004





Alternative solution after closure of local landfills and to the littering issue is...

.... mandatory joining to the municipal waste collection scheme

+

sufficient network of waste stations (public amenity sites)



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**The EU Membership Treaty : Estonia shall stop landfilling
of the oil-shale ash as a liquid waste by 16.07.2009 . . .
cost estimate 65 M€**



***Oil-shale oil production waste (oil-shale semi-coke)
landfills : cost estimate for closure ca 90 M€***





Separate collection – when and how and why?

There is wider experience, that for diverting waste away from landfilling towards recovery there must be as economic incentives as well as regulatory support.

In Estonia nowadays landfilling of waste costs ca 40 €/t (thus less on some 'old landfills', still in operation).

The landfill tax (ca 8 €/t on sanitary new landfill and ca 16 €/t on 'old-ones') is included in the 'gate fees of the landfills'.

For the households is the average waste management service fee ca 65 €/t, but on the average household basis ca 4-8 € in month, what is ca 3-5 % from living rooms related costs in central heated dwelling houses.

There are opinions raised on the same time, that waste management is already to expensive for the average household – but also, that this all is too cheap to motivate source separation.

As well waste management companies was mainly on the opinion, that low landfilling price didn't motivate to deal with alternatives to landfilling – the situation is changing, as on 2006 the landfill tax raised considerably.



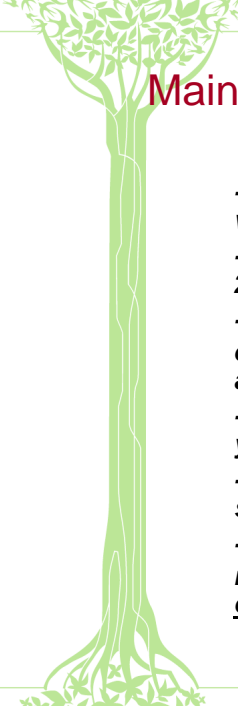
Diverting Bio-waste away from landfills

Looking forward the full attention to the separate collection solution should be given, main hurdle- the weakness on the Local Authorities to set the system up, as it is 'unpopular'

- On the same time methodology should be developed FOR 'household waste' sampling and analyzing. This should be made mandatory for landfills, incl. to set on each landfill 'bio-waste bilanss'

- The current financial model for support of municipalities (75 % from landfill tax for municipal waste i.e. 5,8 EUR/t from each t household waste landfilled) is not sufficient and not promoting recovery. The 'local waste tax' should be a option. Regardless that this Option is still politically not supported (as 'New tax!')

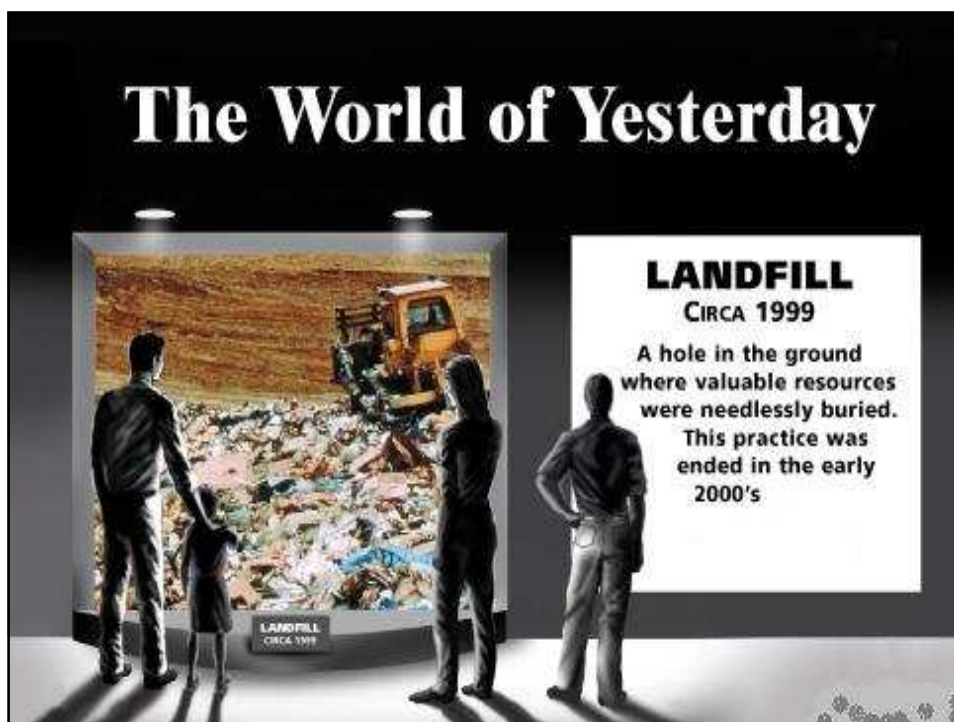
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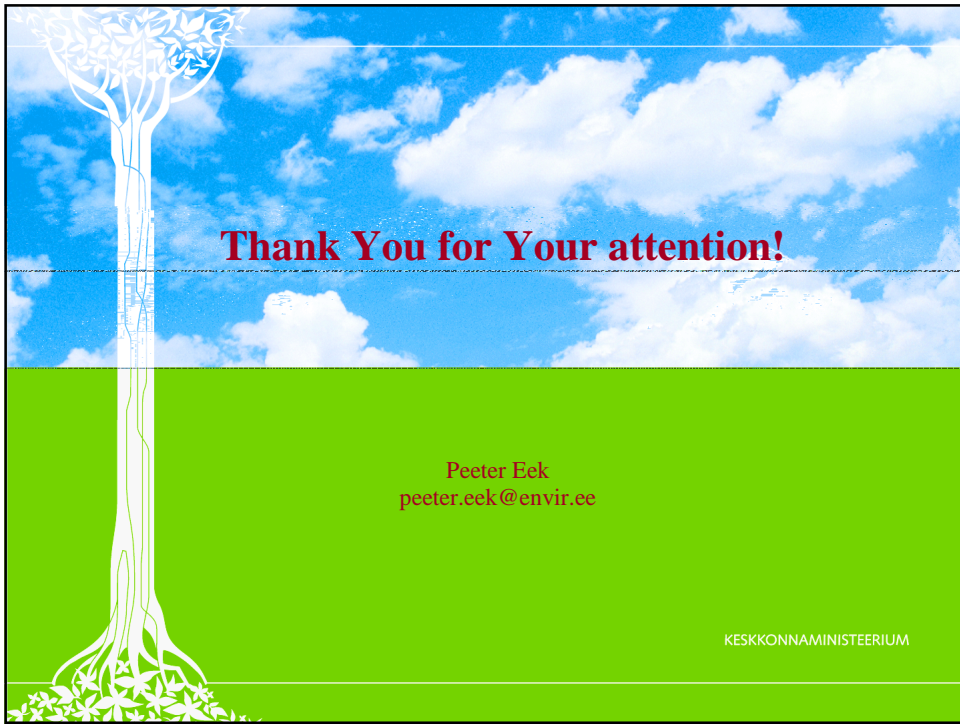


Main problem to deal with

- *promotion of recovery and reduction of landfilling with 'all means'*
- *landfil tax is very powerful tool, shall be raised on 2009 (?) or 2010 significantly*
- *joining household to the collection cheme is most essential to support separate collection schemes and avoid littering*
- *bio-waste is the the main challenge for coming years*
- *inter-municipal co-operations is crucial factor for success*
- *state support for landfill investmenst should be remarkably reduced and instead recovery operations should be encouraged*

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Thank You for Your attention!

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