SOIL SEALING GUIDELINES – supporting better land management in the EU

Sino-EU seminar on land resource allocation
- Brussels, 15 April 2013

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EU 27:
- 4.3 mill km²
- 0.5 bill people
- 75% urbanization rate (16 cities above 1 mill inhabitants)
- 116 people km² – but: NL 400 - BE 340 (as in eastern China) - SE 20
- Land use: 13% grassland and 24% arable land [9/30], 30% forests, 5% artificial surfaces
- Productivity loss of 700,000 tons of wheat annually (2000-2006 period) due to land take

China:
- 9.6 mill km²
- 1.4 bill people
- 52% urbanization rate (44 cities above 2 mill inhabitants)
- 140 people km² – but: 50% on 10% of the land, and 90% on one third of the territory (Heihe-Tengchong line)
- Land use: 24% grassland and 36% arable land [20/7] and 21% deserts, 9% Forests, 1.5% cities
- Land losses of 60,000 ha annually, 10% of arable land contaminated etc.
Red line showing 380 mm precipitation
Setting the context

• Soil is a **non-renewable** natural resource
• It performs **crucial** ecological, social and economic functions
• Soils are being **increasingly degraded** or **irreversibly lost** across the EU
• Estimated costs of soil degradation reach up to **€38 billions per year**
• There is a need for a **comprehensive** approach
Land take and sealing

- Soil sealing occurs when agricultural or other rural land is built on - and soil functions are stopped.
- Annual land-take of some **1,000 km²** in the EU – the size of Berlin (= 270 ha/day) taken over by urban and infrastructure expansion
- In the decade 1990–2000, the sealed area in the EU-15 increased by 6%, and the demand for new construction sites for urban sprawl and for transport infrastructures is continuing to rise.
The magnitude of soil sealing in the EU

Land take per administrative unit in the period 2000-2006

Soil sealed surface in 2006
Impacts of soil sealing

- Soil can store as much as **3 750 m³/ha of water** or almost 400 mm of precipitation. Sealing reduces rainfall absorption, thus increasing flooding risks and exacerbating drought, and requires bigger sewers.

- Annual water retention losses are roughly equivalent to the holding capacity of Germany's largest water reservoir – **215 million m³ of water**
Impacts of soil sealing (cont’d)

• At least a quarter of global biodiversity is in soil. Soil sealing affects both above and below-ground biodiversity. Linear soil sealing (e.g. roads and motorways) can be a barrier for some wildlife, interrupting migration paths and affecting their habitats.
Impacts of soil sealing (cont’d)

• European soils store some 70-75 billion tonnes of organic carbon. Because of soil stripping, sealing causes the loss of soil carbon.

• The reduction in evapo-transpiration causes the ‘urban heat island’ effect.

• An overly intensive degree of soil sealing, without open spaces of sufficient quality, can reduce the quality of living in urban areas.
Potential wheat yield losses due to agricultural land take (1990-2010)
Important threat to food security

From 1990-2006, a potential agricultural production capability equivalent to a total of **6.1 million tonnes** of wheat has been lost in 19 MSs, with large regional variations.

*Production loss of 1% within a short time-span.*
Global food security - value of land

Source: FAO (2010b)
• **Resource Efficiency Roadmap**, COM(2011) 571:
  - Milestone: By 2020, EU policies take into account their direct and indirect impact on land use in the EU and globally, and the rate of land take is on track with an aim to achieve **no net land take by 2050**
  - The Commission will (...) publish **guidelines** on best practice to limit, mitigate or compensate soil sealing (in 2012)
  - **Communication** on land use (2014)

• **Soil Thematic Strategy Report**, COM(2012) 46:
  
  Soil sealing (the permanent covering of soil with an impermeable material) and associated land take lead to the loss of important soil functions (such as water filtration and storage, and food production).
The loss of soil resources through urbanisation and the conversion of our landscape is one of the major environmental challenges Europe is facing. There is an urgent need to use this valuable resource more wisely, in order to secure its many vital services for future generations. We simply cannot pave over our chances for a sustainable future.

Janez Potočnik
Environment Commissioner
Regional Policy proposals

European Regional Development Fund, COM(2011) 614, 6.10.2011

Investment priority: Protecting the environment and promoting resource efficiency

... improving the urban environment, including regeneration of brownfield sites and ...

Objective: Limiting land take on Greenfields and recycling of land, including remediation of contaminated sites
Special ERDF objective: Sustainable urban development
Guidelines on best practice to limit, mitigate or compensate soil sealing


http://ec.europa.eu/environment/soil/sealing_guidelines.htm

Available in all EU official languages

Available in selected EU official languages
Objective of the document

- Provide information on:
  - The magnitude of soil sealing in the EU;
  - Impacts;
  - Examples of best practice.

- Best practice examples may be of interest to:
  - National, regional and local authorities in Member States;
  - Professionals dealing with land planning and soil management;
  - Stakeholders in general and citizens.
A three-pronged approach

• Limiting
  o Reducing / stopping land take
  o Reusing already sealed land (e.g. brownfields)

• Mitigating
  o Permeable materials and surfaces
  o Green Infrastructure
  o Natural water harvesting systems

• Compensating
  o Re-using topsoil
  o De-sealing
  o Eco-accounts
  o Sealing fees
Examples of best practice

- Land take targets
- Planning restrictions & greenbelts
- Planning guidance towards less valuable soils
- Protection of agricultural soils & valuable landscapes
- Brownfield regeneration
- Improving city centres quality of life
- Eco accounts and compensation systems
- Soil quality in city planning
- …
Conference
‘Soil remediation and soil sealing’
Brussels, 10-11 May 2012
http://ec.europa.eu/environment/soil/conference_may2012.htm
Latest & Upcoming

• 7th Environment Action Programme 2012-2020
  The new EAP is to be adopted by the European Parliament and Member States, to gain more legal weight than a policy paper, called ‘communication’, or a roadmap. The plan also reaffirms the need for a soil directive.

• EC Communication on land as a resource (2014)
Thank you for your attention!

http://ec.europa.eu/environment/soil/index.htm