



USEtox[®]

A thick, dark blue curved line arches across the top of the slide, framing the logo.

USEtox[®] 2.0

Scientific Consensus Model

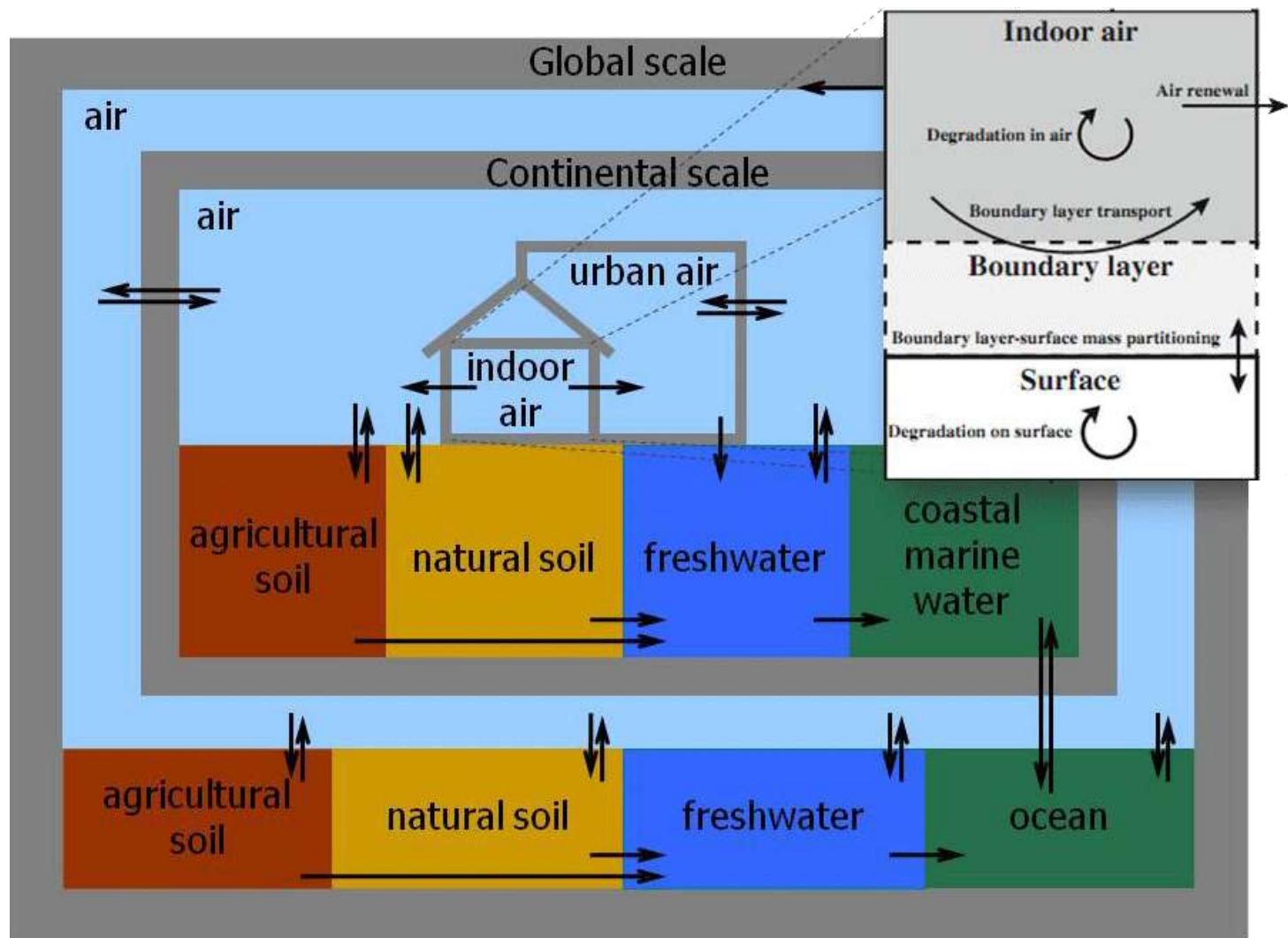
**Characterizing Human Toxicity and Ecotoxicity
for Life Cycle Assessment**

USEtox

A large, light blue, semi-transparent watermark of the word "USEtox" is positioned at the bottom of the slide.

New: Indoor Air Environment

- Household and industrial **indoor air** compartments



New: Exposure to Pesticide Residues

- Human exposure to **pesticide residues** in crops from direct application

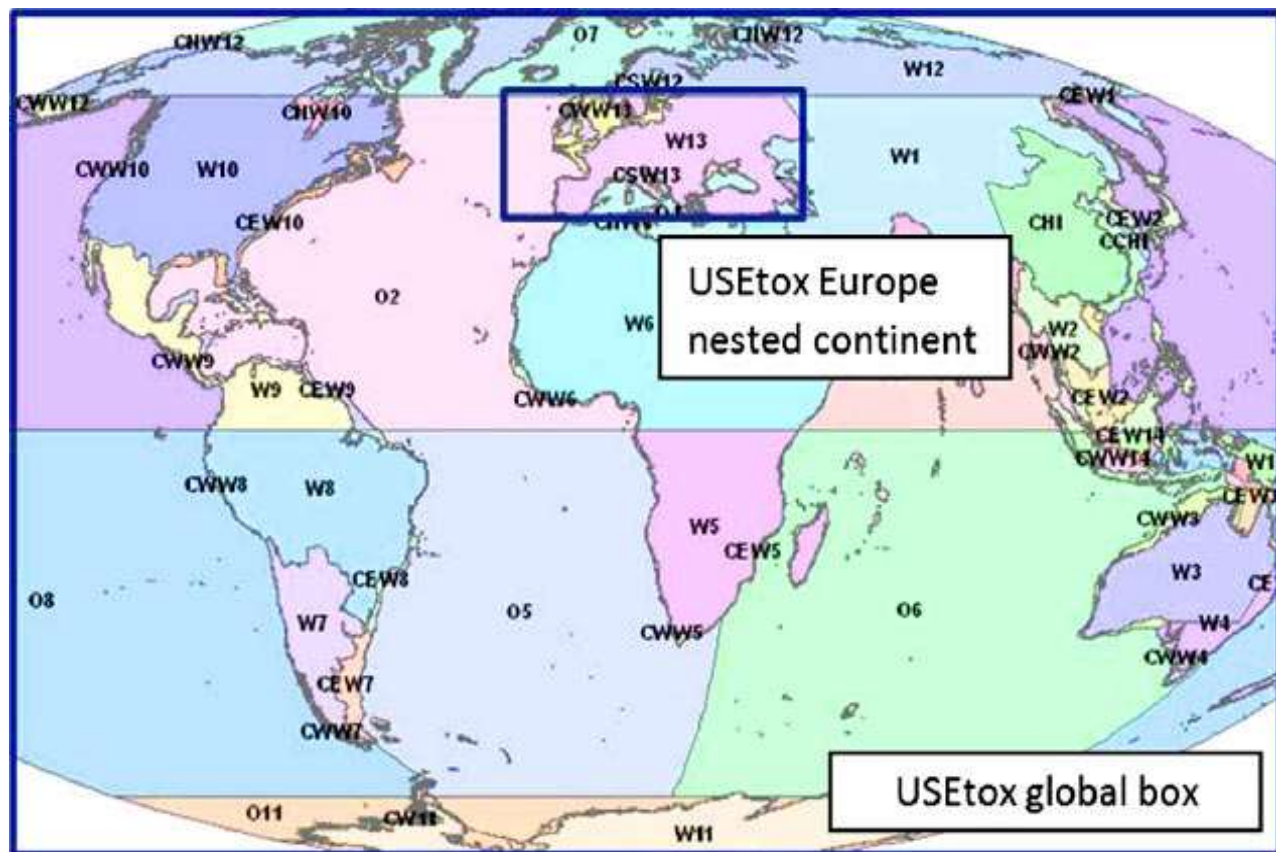


- **Wheat** (68% of cereals)
- **Paddy rice** (97% of paddy cereals)
- **Tomato** (15% of herbaceous vegetables)
- **Apple** (13% of fruit trees)
- **Lettuce** (14% of leafy vegetables)
- **Potato** (51% of roots and tubers)

45% of global vegetal consumption

New: Regionalized Landscape Data for Sensitivity

- Landscape datasets for 8 continental and 17 sub-continental regions
- Wind speed, rain, human population, intake
- **Sensitivity study** for «default» dataset



New: User Interface and Documentation

New interactive user input interface

USEtox® 2.0 [built 11-Mar-2015]: organic substance customization wizard

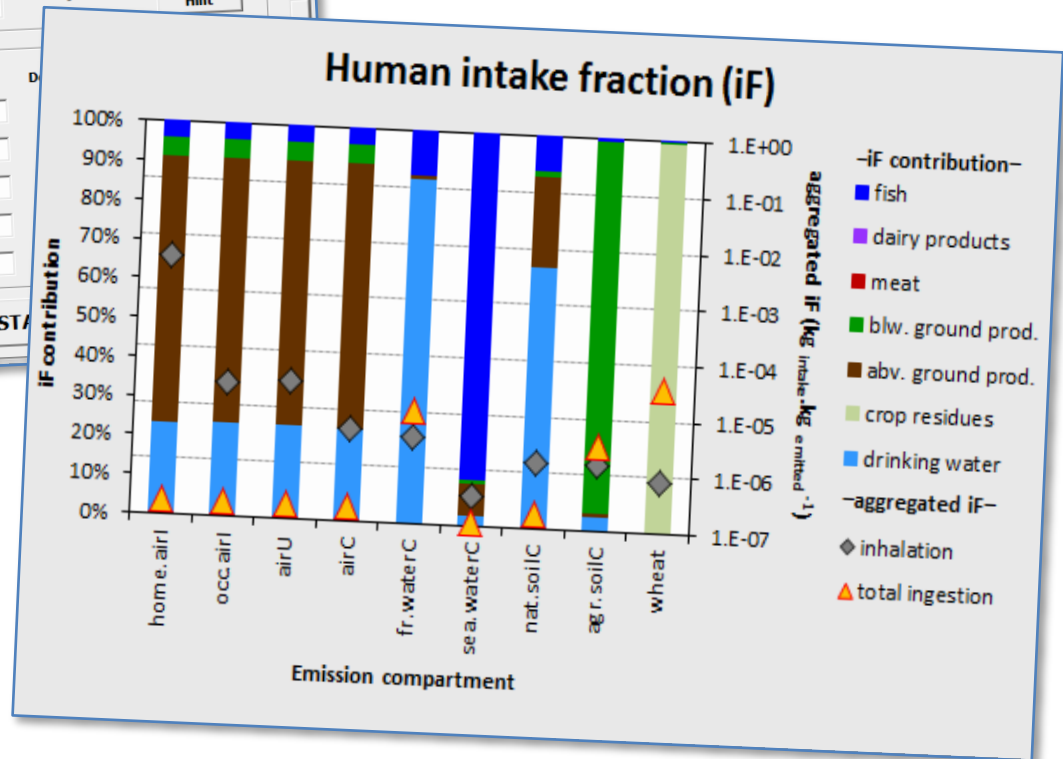
Environmental degradation

Data name	Unit	Value	Default value
kdegA - Degradation rate in air	s-1	8,00E-06	-
kdegW - Degradation rate in water	s-1		-
kdegSd - Degradation rate in sediment	s-1		-
kdegSl - Degradation rate in soil	s-1		-
kdissP - Dissipation rates in above-ground plant tissues	s-1		-
kdissWheat - Dissipation rates in wheat	s-1		-
kdissRice - Dissipation rates in rice	s-1		-
kdissTomato - Dissipation rates in tomato	s-1		-
kdissApple - Dissipation rates in apple	s-1		-
kdissLettuce - Dissipation rates in lettuce	s-1		-
kdissPotato - Dissipation rates in potato	s-1		-

Human and Ecosystem Toxicity

Data name	Unit	Value
avlogEC50 - Average of the log-values of the species-specific ecotoxicity data	mg.L-1	
ED50inh,noncanc - Human-equivalent lifetime dose per person that causes a non-cancer disease probability of 50% after inhalation	kg.lifetime-1	
ED50ing,noncanc - Human-equivalent lifetime dose per person that causes a non-cancer disease probability of 50% after ingestion	kg.lifetime-1	
ED50inh,canc - Human-equivalent lifetime dose per person that causes a cancer probability of 50% after inhalation	kg.lifetime-1	
ED50ing,canc - Human-equivalent lifetime dose per person that causes a cancer probability of 50% after ingestion	kg.lifetime-1	

CANCEL SAVE NEW SUBST



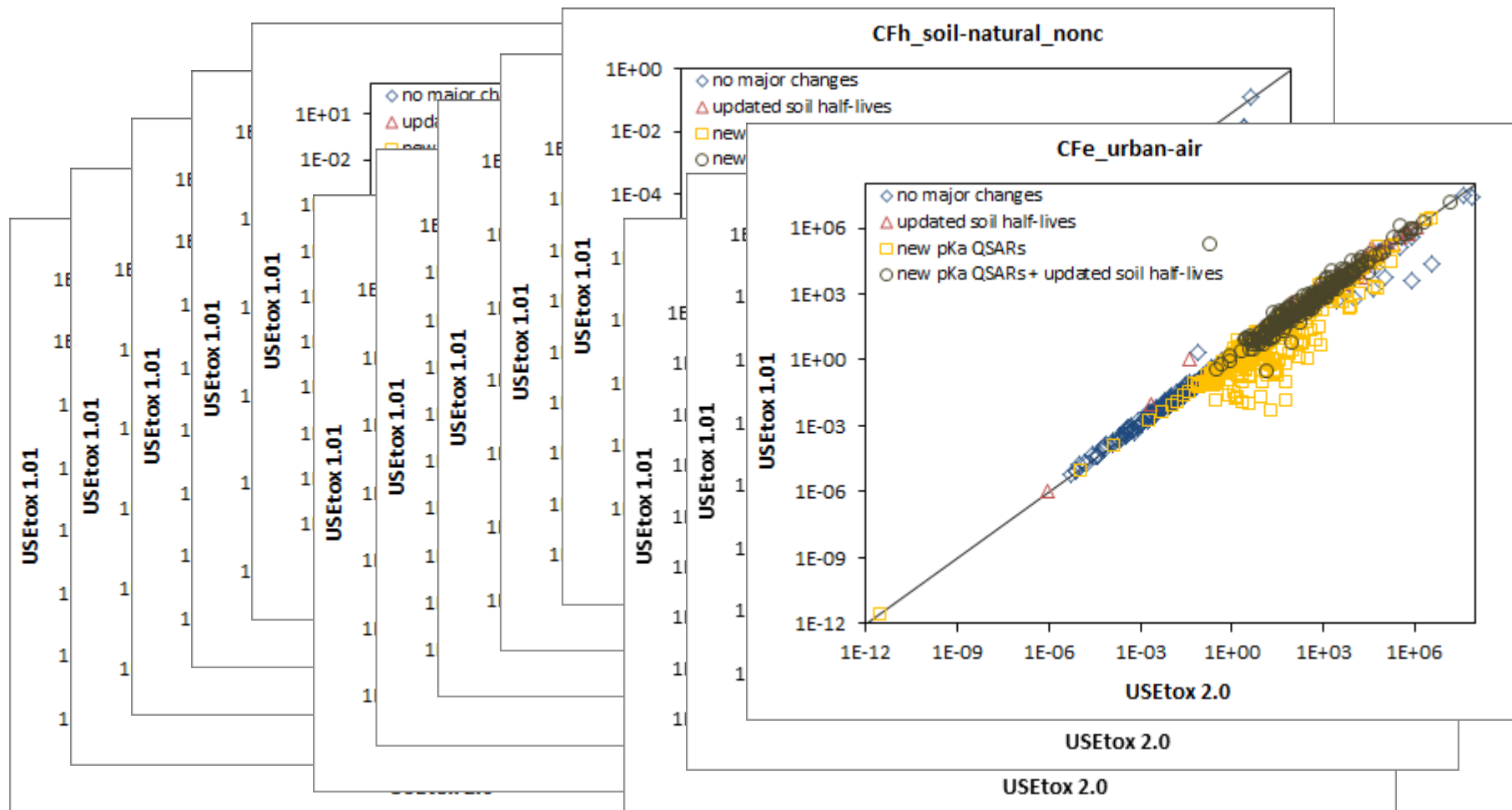
Dynamic output graphs

What else is new?

- Environmental fate of **ionizing** organic substances
- Acids, bases, amphoters **partitioning in soil** considered
- Generic **freshwater ecotoxicity** characterization for cationic metals
- Partitioning adjusted for **truly dissolved fraction**
- Based on parameterized **freshwater archetypes**
- Data and factors for **new chemicals** (few PAHs and metals)
- Updated **soil degradation half-lives** for pesticides
- Corrective updates of **fate data** (irrigation, run-off, ...)
- USEtox 2.0 description/comparison with USEtox 1.01 **peer-reviewed paper** to be submitted in fall 2015
- Comprehensive **documentation** to be released end of 2015
- Several 100 **new substances** to come within next months

What About USEtox 2.0 vs. USEtox 1.01?

Generally, good agreement for most substances, BUT significant differences (improvements!) for some substances...





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USEtox 2.0 Model and Factors available at:

<http://usetox.org>

Please contribute with updates – contact:

contact@usetox.org