

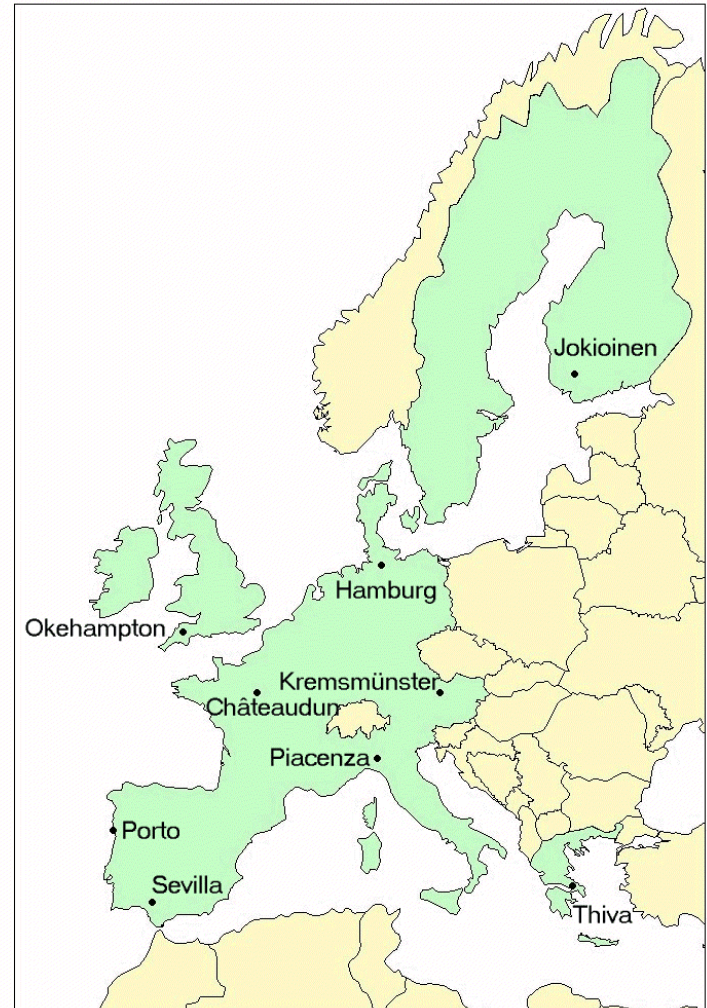
**Are different approaches  
required for the prediction of  
pesticide leaching to  
groundwater on EU and on  
national levels ?**

# European FOCUS Groundwater Scenarios

**Nine reasonable worst-case groundwater scenarios have been defined, which collectively represent agriculture in the EU.**

**Soil properties and weather data have been defined for all scenarios.**

**Crop information has also been defined for each scenario, including **five crops which can be grown across the whole EU**, and **a further twenty which are particular to specific parts of the EU**.**

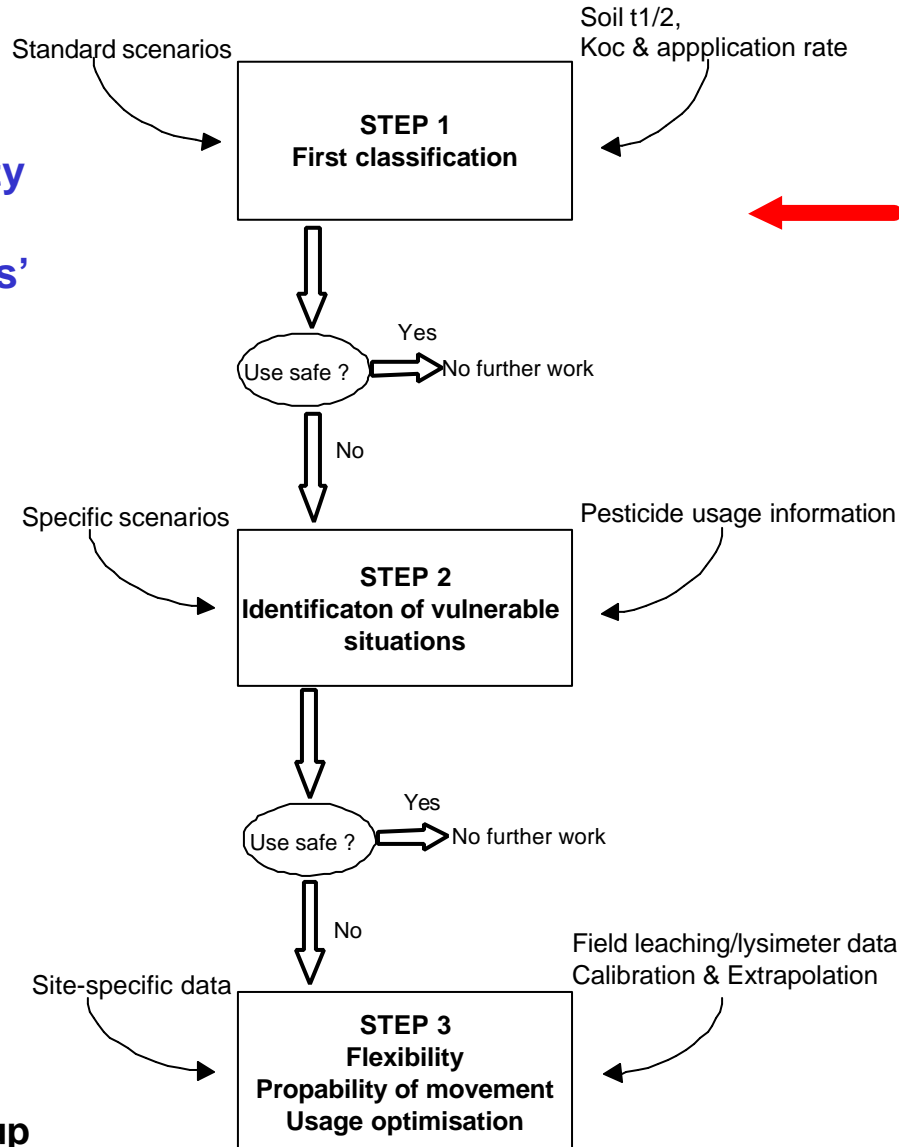


FOCUS (ground water)

# Tiered approach for PECgw calculations according to FOCUS

BASF

Increasing complexity  
and  
'realistic assumptions'



FOCUSgw (2000)  
stopped here

. . . The SCP also encourages the Commission to consider the wider implications of this (*FOCUS*) work . . ., such as:

- . . .,
- the development of relevant EU databases, how to extrapolate PEC's from 1m depth to a groundwater catchment area,

**–EU co-ordinated approaches for National assessments of leaching potential**

**FOCUS: Forum for the co-ordination of pesticide fate models and their use**

# In which aspects national approaches may differ from the FOCUSgw approach?

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- models
- parameterisation
- regulatory risk assessment
- climate, soils, cropping (scenarios) ?
- pp, loc

# National specifica and possible reasons for them

- National Models
  - *environmental processes are different on national compared to EU level (?)*
  - *FOCUS models were ,not invented here‘*
- Nat. model parameterisation
  - *FOCUS approach is different from historical ways of model parameterisation used in national registrations(!)*
- Nat. risk assessment
  - *FOCUS approach (using OECD definition) is not conservative enough for multiple-worst case assessment, which is politically wanted (!)*

personal preferences (pp), lack of confidence (loc)

# Reasons for having some confidence in FOCUS model calculations

## IVA project: Comparison of PELMO3.0 (Borstel Scenario) and FOCUS-PELMO (Hamburg Scenario) with Lysimeter Results

Model (Scenario)	Evaluation				
	XXX	++	+/-	0	-
PELMO 3.0 (Borstel, HH wet)	14	9	10	12	0
FOCUS-PELMO v2.2.2 (FOCUS Hamburg)	15	7	10	13	0

XXX = huge overestimation of measured lysimeter concentrations by model (factor 5 ... > 100)

++ = overestimation (factor >1..2 and 2 .. 5)

+/- = same range or underestimation of conc. but simulated conc. > 0.1 µg/L

0 = simulation < 0.1 and lysimeter < LOD

- = simulated concentration < 0.1 µg/L and lysimeter > 0.1 µg/L

**45 comparisons a.i. + metabolites  
vs. Lysimeter results**

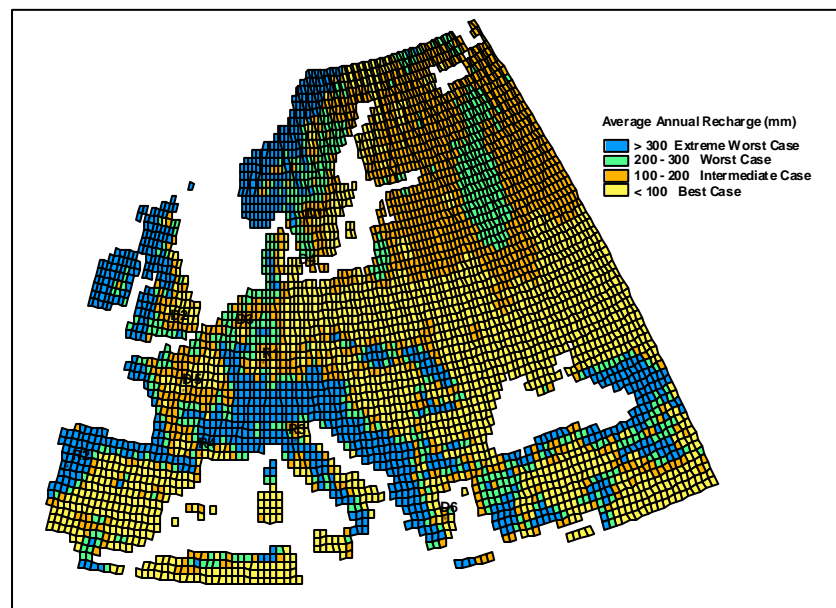
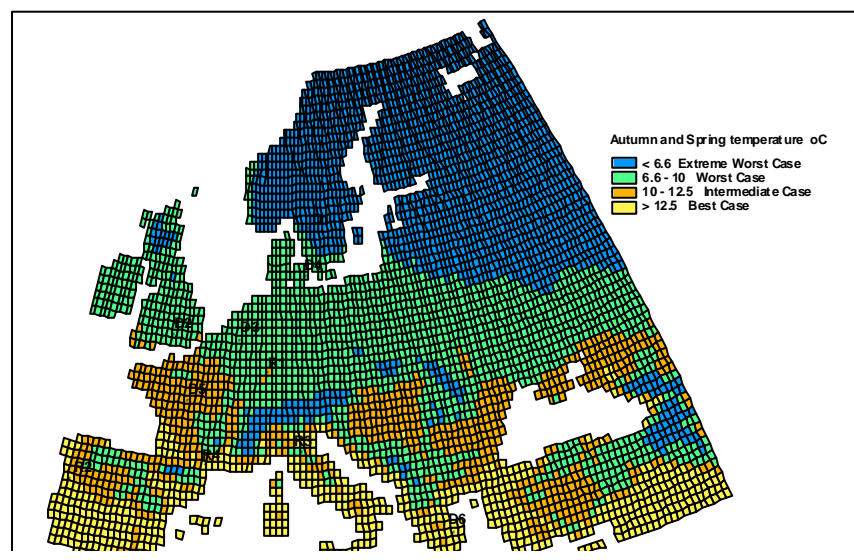
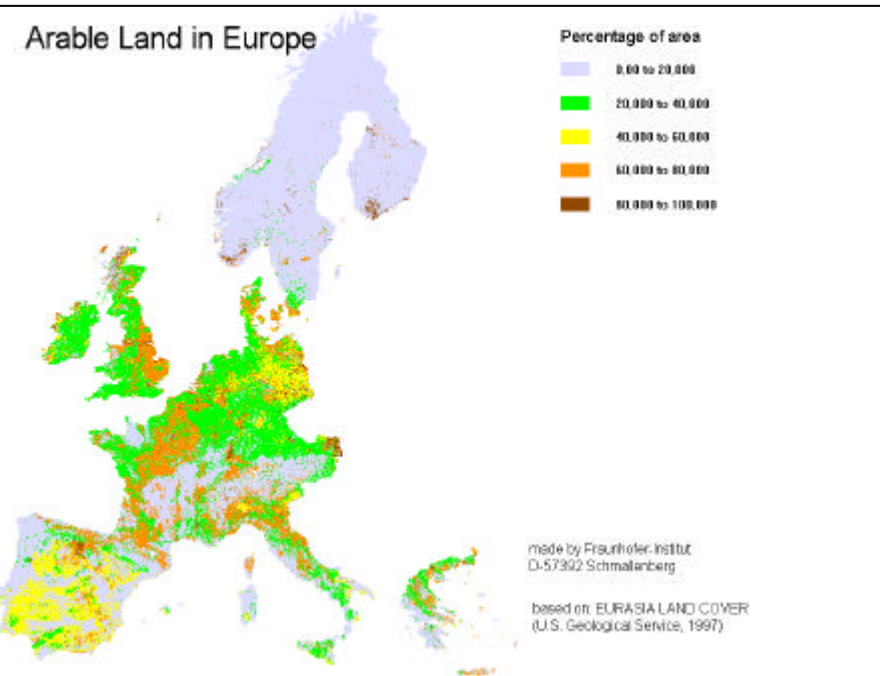
# Possible Reasons for National Scenarios

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- agricultural practice is very different from EU assessment  
e.g. use pattern, specific crops
- national environmental / agronomic conditions are  
not ,represented‘ or ,not covered‘ by FOCUSscenarios
- safe use identified on a regional / landscape basis,  
consideration of local conditions recommended



# Arable Land, Temperature and Recharge



(from FOCUS surface water)

... The Committee supports and endorses the recommendations of the report and proposes that this Tier 1 assessment methodology is adopted as soon as possible by the Commission, provided adequate resources and technical support are provided for:

- ...,
- ..., **version control** of the models ...,
- ...,
- ensuring models and their shells have adequate, ongoing expert technical support to ensure queries /problems are resolved efficiently and in a satisfactory manner,
- continued efforts to develop model capability/performance and approved updates are incorporated into the Tier 1 methodology.

# The need for a consistent harmonised approach

FOCUS scenarios	9
future member states in the EU	20
national scenarios per member state	3 - 8
<b><u>e.g.</u></b>	
a single use pattern	1
in a single crop in all of the EU	1
with a single a.i.	1
in a single formulation	1

no. of PECgw model calculations required -> **69 - 169**

different models, ways of  
parameterisation,  
ways of evaluation, many sources of errors

→ **CONFUSIO**

# FOCUS gw as a Basis for National Registrations

- Sound, harmonized approach
- Location scenarios designed to represent a variety of climate and soil conditions
- Wide range of crop scenarios
- Conservative assessment



Could be used as first step, starting point for national registration (already in some Member States)

**Are different approaches required for the prediction of pesticide leaching to groundwater on EU and on national levels ?**

**In general not !**

Check if your national ,differences from FOCUS‘ are really so different that the generation of a huge amount of additional scenarios is justified

Consider the existing information from FOCUS scenarios as much as possible

-> come to a coordinated consistent approach EU -> nat. level

# How to achieve consistency between EU Scenarios (+ RA) and National Scenarios (+RA)

- tiered approach starting at worst case conditions and getting less conservative and more realistic in higher tiers
- definition of worst case character of exposure assessment by worst case assumptions in scenario definition and not by worst case combinations of pesticide parameters
- realistic worst case scenarios, i.e. scenarios should describe an overall vulnerability approximating the 90<sup>th</sup> percentile of all possible situations
- model parameterisation and parameter selection according to FOCUS recommendations
- models supported within the FOCUS framework

These ideas may lead to a national exposure assessment which is consistent with the assessment done on EU level