Pesticide Risk Reduction Programme – Ethiopia

Environmental Risk Assessment, role of scenarios

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joint collaborative programme on pesticide registration and post-registration

MoA

ALTERRA

Towards a sustainable use of pesticides in Africa

Risk assessment – Proposed approach for WP B2.1

- B2.1: Development of a scientific evaluation system for the registration of pesticides – Evaluation of dossiers of chemical pesticides

So:

- It is about the registration procedure, this is not necessarily what happens in the field !
  So, NOT about
  Point sources such as losses during preparation of application, cleaning application tools after use, bad ways of stocking or waste management at farms, obsolete stocks
- It is about developing scientific methods to assess risks in Ethiopian context and for use pattern requested by registrant
- Risks assessed by GAP: Good Agricultural Practice

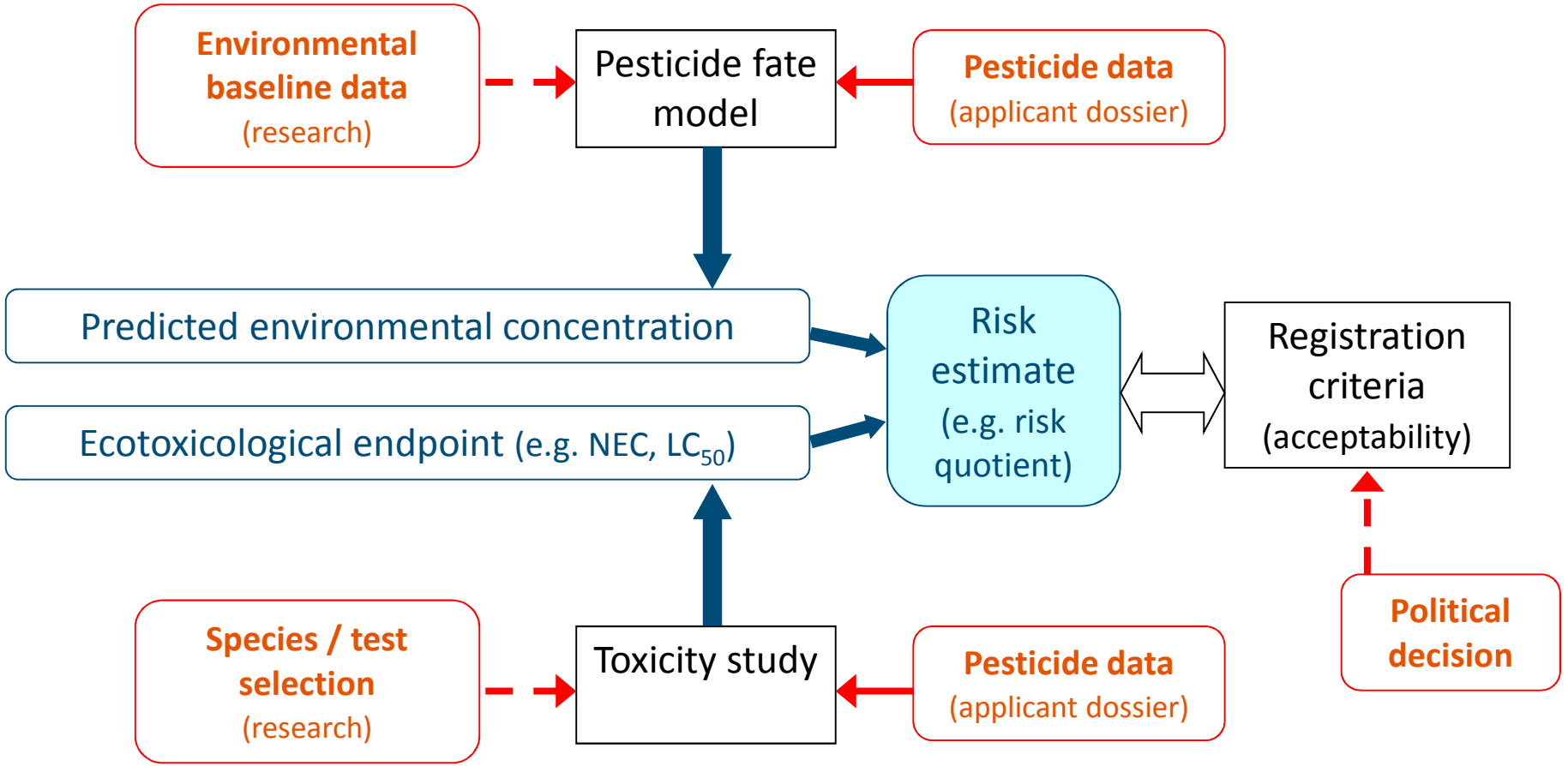
Risk assessment – Proposed approach for WP B2.1

- This workshop geared towards risks for the Environment (and indirectly human health, e.g. via drinking water)
- Focus on use of pesticides in agriculture, not for public health

- So, we have limited ourselves to only a part of the problems related to the use of pesticides, we now consider especially the ‘front door ‘ of Ethiopia

Environmental risk assessment – EU

EXPOSURE – ENVIRONMENTAL CHEMISTRY



EFFECT – ECOTOXICOLOGY

Risk assessment – Proposed approach for WP B2.1

- Back to basics of Environmental Risk Assessment:

$$Risk\ estimate = \frac{safe\ concentration\ or\ dose}{predicted\ environmental\ concentration}$$

Risk assessment – Proposed approach for WP B2.1

- PEC: local relevant exposure, so specific for Ethiopian conditions !

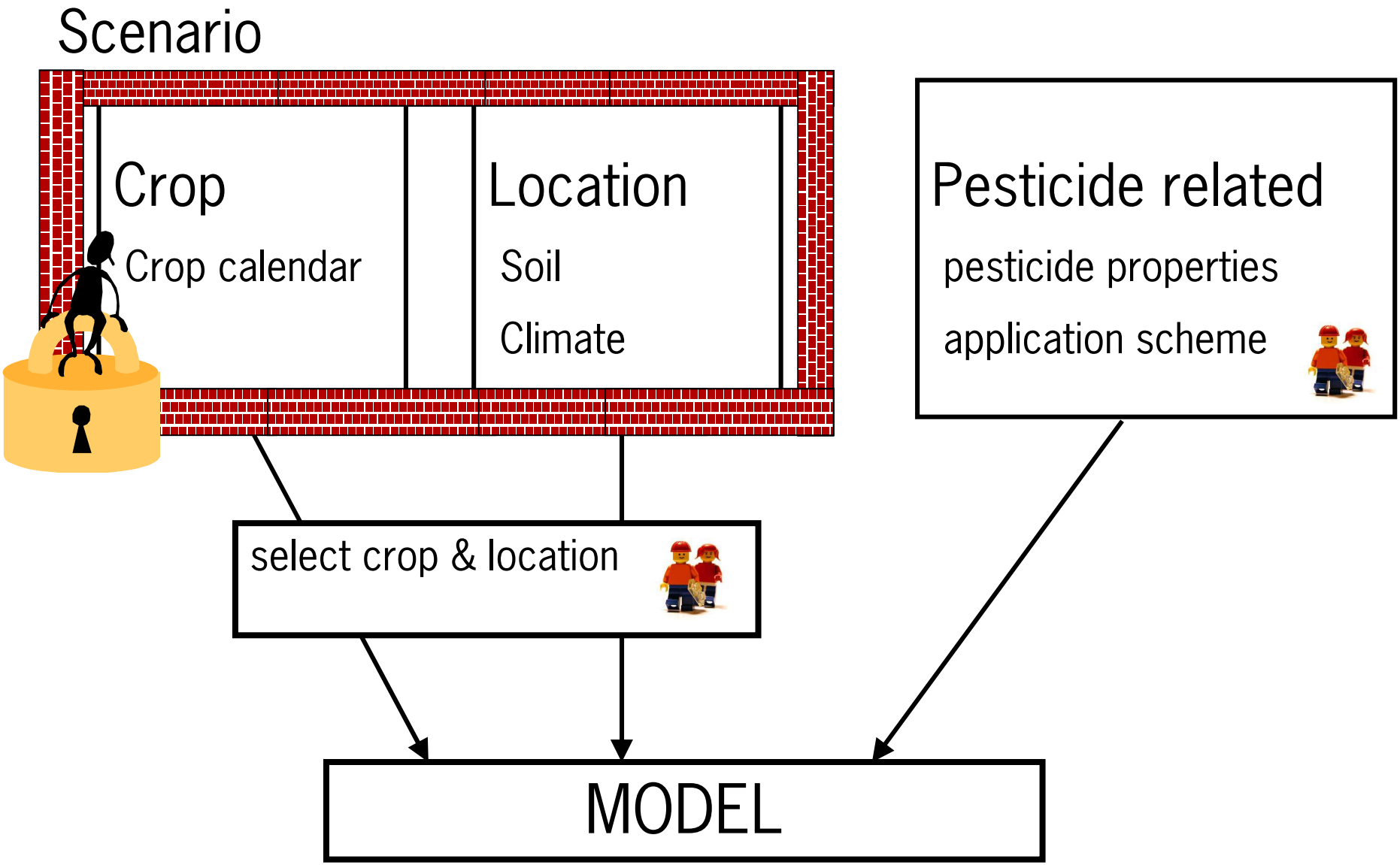
- Generic assessment method (not compound specific)

- Once designed: PEC can be calculated in cost-effective, reproducible and user-friendly way

Risk assessment – Proposed approach for WP B2.1

- General principles of PEC estimation:
  - Compound properties (Koc, DT_{50}, etc) plus
  - Requested use pattern (crops, applications: dose, number, interval)
  - Site-specific scenario (agro-environmental conditions)

2. Relation model, scenario, input data



Risk assessment – Proposed approach for WP B2.1

- General principles of PEC estimation:
  - Compound properties (Koc, DT_{50}, etc) plus
  - Requested use pattern (crops, applications: dose, number, interval)
  - Site-specific scenario (agro-environmental conditions)

- What is local relevant :
  # Compound properties: average/mean values reasonable estimate (based upon existing lab/field experiments, including e.g. correction for T, om), so no local values needed
  # Requested use pattern as stated in GAP form (defined by registrant, relation with Efficacy assessment)

Risk assessment – Proposed approach for WP B2.1

- What is local relevant (cont):
  # site-specific scenario !

- Scenario should be based upon
  EU: ‘realistic worst case approach’
  (Directive 91/414/EC of EU)
  Ethiopia: phrase in Proclamation ??
- e.g. Slovenia entered EU: no suitable scenario in existing EU assessment, because considerable agricultural area with higher rainfall than anywhere else in EU, so EU scenarios not realistic worst case for Slovenia, i.e. not sufficiently protective

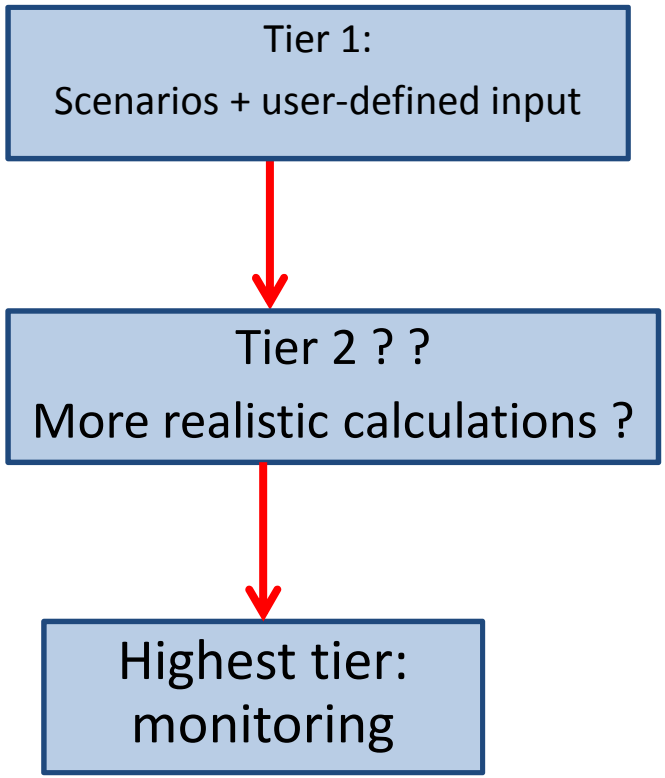
- Realistic worst-casedness is often translated as ‘90th-percentile occurrence in time and space’

Risk assessment – Proposed approach for WP B2.1

- Scenario development depends on set protection goals:
  - What ? E.g. groundwater, aquatic ecosystem, birds
  - Where ? E.g. gw under agriculturally used land; streams next to agriculture or horticulture
  - How strict ? <- worst-casedness

Risk assessment – Proposed approach for WP B2.1

- Where do we aim for ?
- First tier in PRIMET for sw and gw protection goals for Ethiopia
- For priority goals sw and gw: more site-specific exposure scenario, (based upon analysis Ethiopian situation)



Risk assessment – Proposed approach for WP B2.1

Welcome to questions, remarks and discussions !