



Expert knowledge elicitation process and data support to JRC activities on priority pests by EFSA

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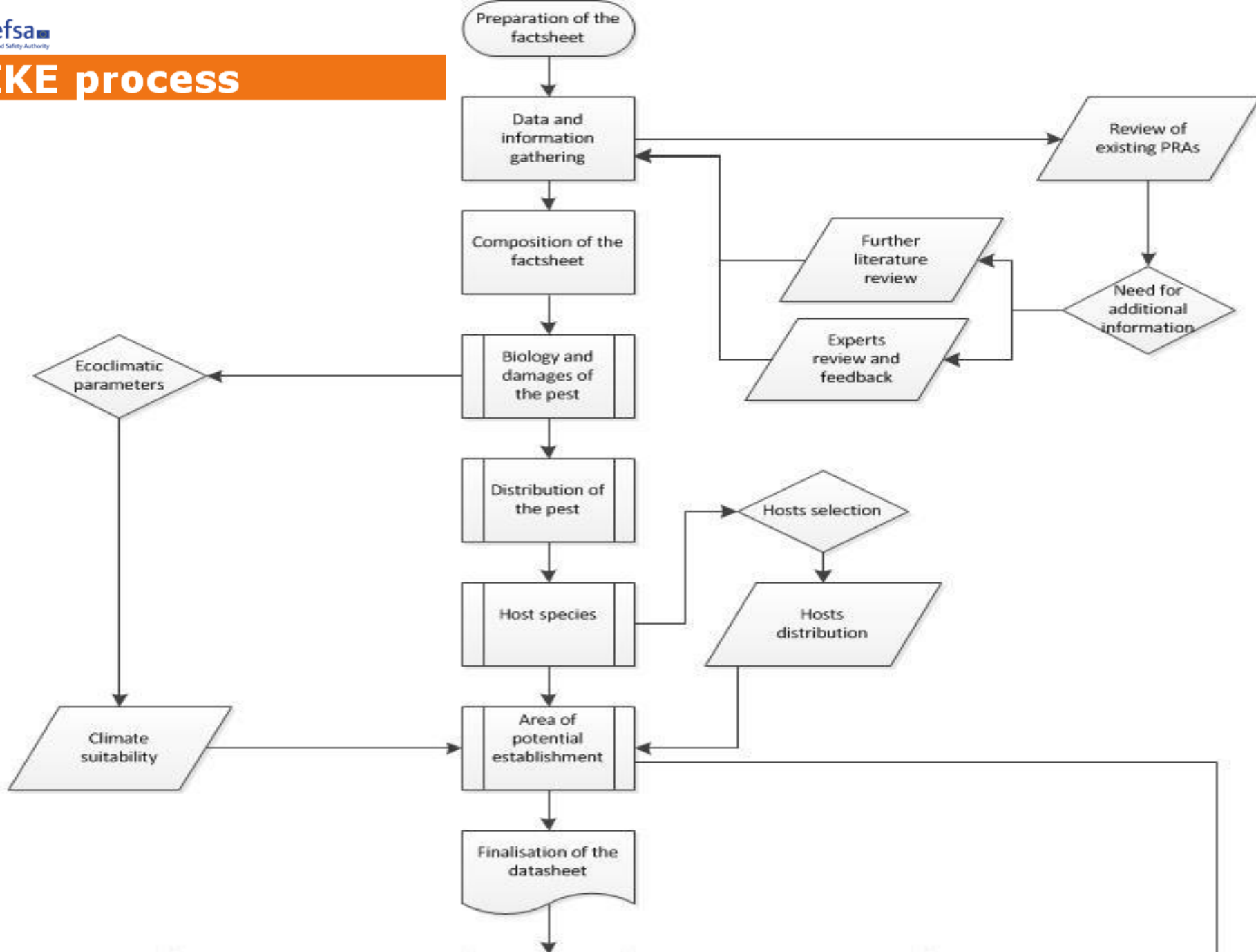
Data provided by EFSA

- Data extracted from publications and DBs:
 - Distribution of the pest in the different countries: EPPO Global DB
 - List of potential host plants: PRA > EPPO/CABI > others
 - Quarantine countries: EPPO Global DB

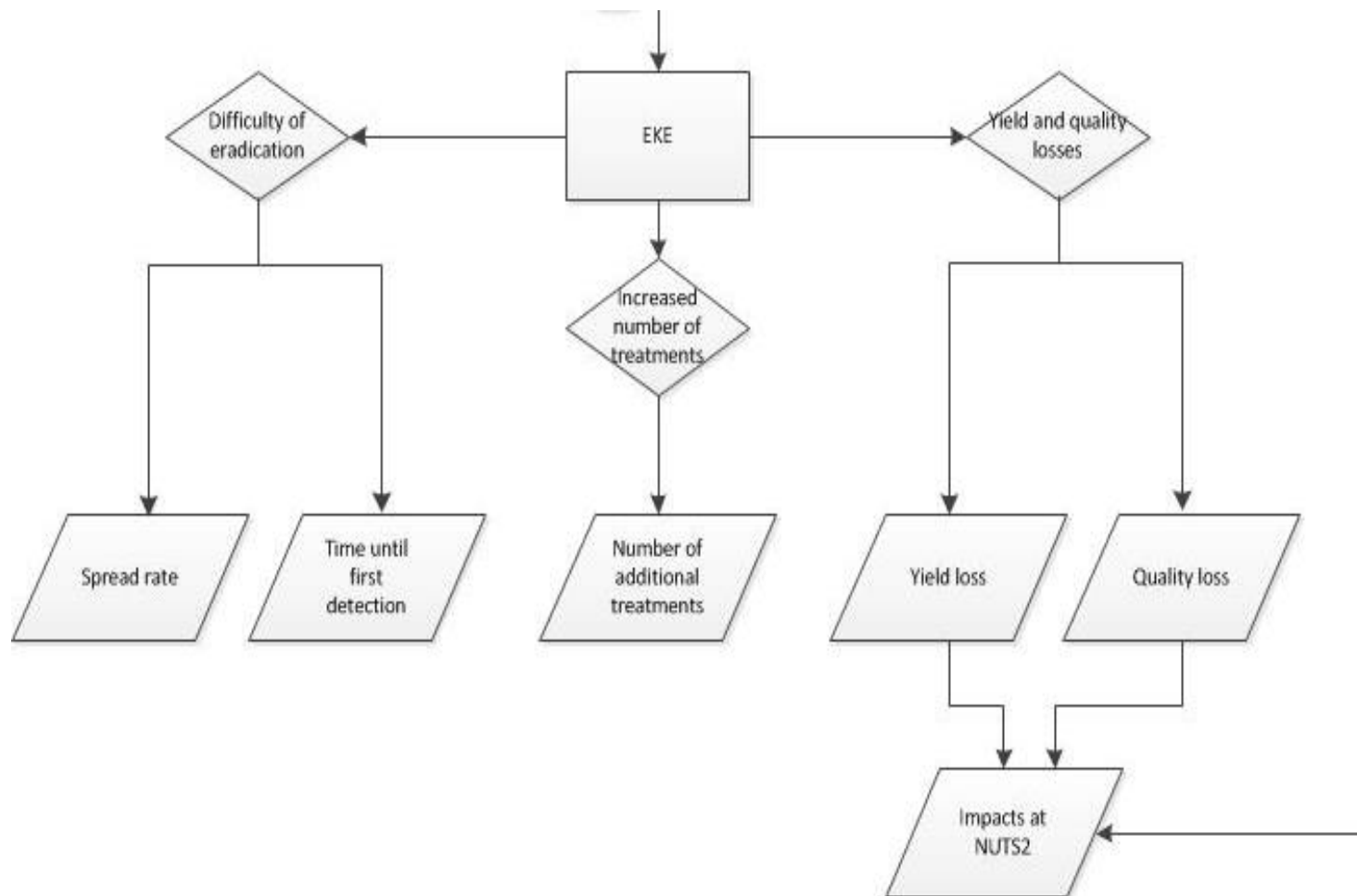
- Area of potential establishment: PRA + JRC + EUROSTAT + Climex + other sources

- Parameters estimated using EKE:
 - Impact (% losses at NUTS 2):
 - Potential impact on yield
 - Potential impact on quality
 - Difficulty of eradication:
 - spread rate
 - time until first detection
 - Increased number of treatments

EKE process



EKE process



Preparation of the factsheet and Evidence selection

Preparatory phase (EFSA draft + experts review)

Content:

- Brief description of the pest
- Distribution of the pest: map from EPPO Global DB
- Host plants: identification of plant species for EKE
- Area of potential establishment: maps (already existing / updated / created *ad hoc*)
 - host presence: at least 0-1 at NUTS2 level (better when in % for each grid or node at NUTS3)
 - pest presence / climate suitability: at least 0-1 at NUTS2 level (better when in % for each grid/NUTS3)
- Tables summarizing the evidence and uncertainty for each parameter

Source of information

- The preliminary source of information is the most valid PRA or categorization published by EFSA, EPPO, MSs (or extra-EU institutions)
- Additional papers obtained by
 - literature search (more recent than available PRA)
 - experts review
- For each paper cited in the factsheet
 - Full reference (.pdf) is stored
 - Content screened for relevance
 - Evidence extracted and data included in the parameter tables
- EPPO Global Database
 - map with the pest distribution
 - list of countries where the pest is a quarantine pest
- JRC data for forests and crops, EUROSTAT
 - Host distribution/production maps
- **EXPERTS KNOWLEDGE**

EKE questions

Yield and quality losses

- 1. What is the long term and EU average of the proportion (in %) of yield losses (e.g. tree decline, fruit drop, fruit not harvested), under current EU cropping practices?*
- 2. What is the long term and EU average proportion (%) of harvested crop damaged by the pest that would lead to downgrading of the final product because of quality issues?*

Difficulty of eradication

- 1. What is the spread rate in 1 year for an isolated focus within this scenario based on average European conditions? (units: m/year)*
- 2. What is the time between the event of pest transfer to a suitable host and its first detection? (unit: years)*

Increased use of treatments

- 1. How many additional treatments with the identified PPP(s) per year in long term European average would be applied under general scenario (see impact assumptions) to effectively control the pest?*

Reference scenario for impact assessment

- Impact is assessed under the condition that entry, establishment and spread of the pest are not relevant. This corresponds to a scenario where the pest is already present throughout the area of potential establishment in the EU (i.e. it has spread to its maximum extent) and there are no ongoing eradication or containment programmes.
- The pest has reached a stable spatial distribution and its maximum potential abundance is based on the current environmental conditions (including climate, ecosystem resistance and resilience) and crop production practices (e.g. pest management measures including the efficacy of pesticides targeted at other pests and agronomic factors).
- The yield/quality loss is evaluated in a time frame long enough to take into account the temporal variation in pest population dynamics (e.g. population cycles), impacts, and cropping practices (e.g. the crop replacement time).
- Current quality definitions and thresholds are applied in order to assess quality losses setting the quality standards for the internal market equal to those for export.
- Only already existing measures that may control the pest under consideration are evaluated. Any changes in agricultural practice as a result of the pest incursion are not taken into account.

Reference scenario for difficulty of eradication

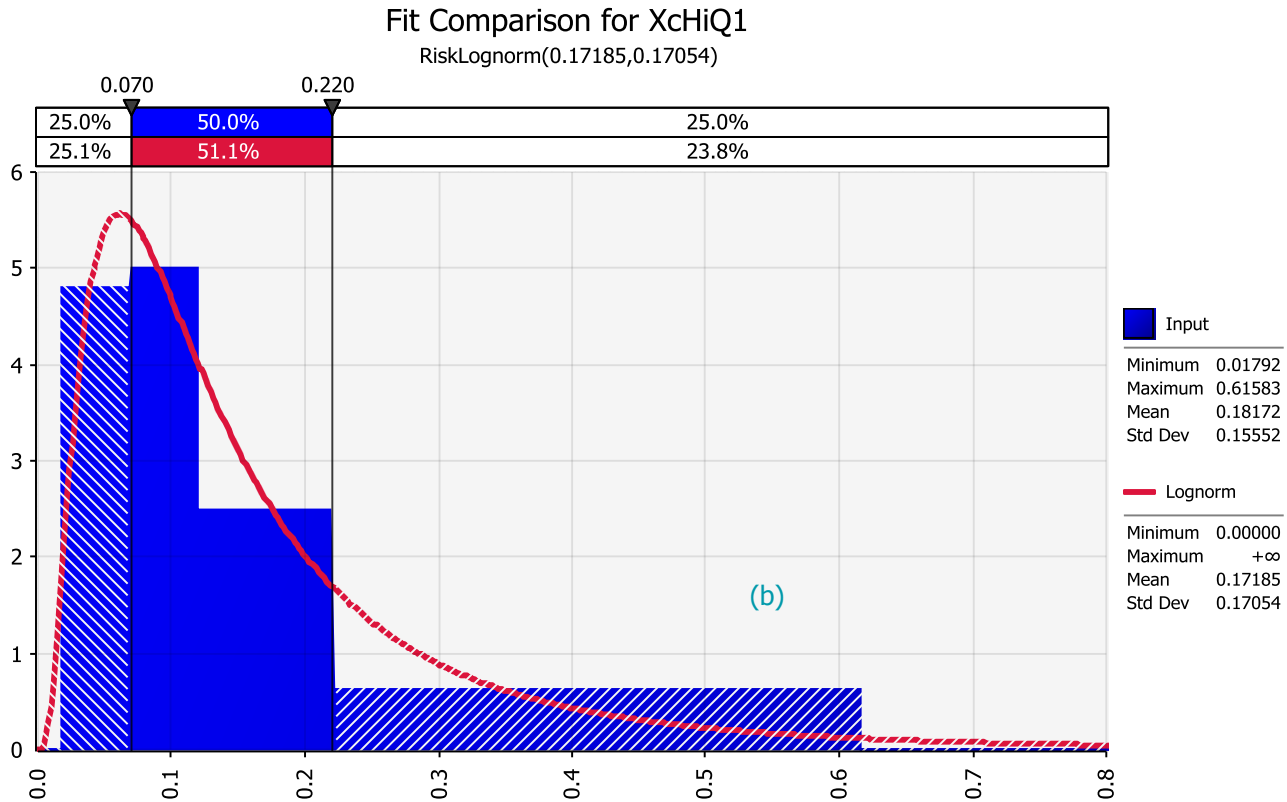
- The pest is present in the area of potential establishment either as one isolated population not known to be established, but expected to survive for the immediate future or there is one outbreak of an established population
- There is an optimum abundance of host plants.
- Climatic conditions are optimal for population growth/epidemics and spread of the pest.
- The monitoring activity for this pest is conducted according to current practices in the outbreak area.
- The population is present in a defined area (focus), is adapted to the local environment and there are no effects due to demographic stochasticity (e.g. the Allee effect)
- The spread rate is the outcome of the contribution of natural spread (including hitchhiking) together with local human assisted spread through normal agricultural practices, e.g. contamination of pruning equipment. Spread due to post-harvest movement, such as the trade in commodities, is not included in the estimation.
- Spread is considered only when it results in the successful infection of the host on arrival

Reference scenario for increased use of treatments

- Treatments to prevent yield losses and quality losses are evaluated in the same way for all categories of host susceptibility.
- The most relevant control strategy (i.e. among the different active ingredients/class of products, release of biocontrol agents, etc. available) currently applied against the pest is taken into account.

Example of a distribution curve

Percentile	1%	2.5%	5%	10%	17%	25%	33%	50%	67%	75%	83%	90%	95%	97.5%	99%
Expert elicitation	2%					7%		12%		22%					60%
Fitted distribution	1.8%	2.4%	3.1%	4.2%	5.5%	7.0%	8.5%	12%	17%	21%	27%	35%	48%	62%	84%



When the number of additional treatments apply

Case 1

- No effective control measures are currently available/feasible (including the case when all effective control measures by PPP are not authorised in the EU). In this case, no EKE is carried out.

Case 2

- Some control measures are already in place in the assessment area, including PPPs allowed on crops other than the host species. Only in this case the experts are requested to conduct the EKE to estimate the number of additional treatments required to control the pest.
 - How many additional treatments / % of increase with the identified control strategy per year would be applied under general scenario (see impact assumptions) to control the pest?
 - (including a.i. allowed for different crops but not for the host species)

Case 3

- The current practices, even with additional treatments, would not be effective and therefore new control strategies/tactics need to be developed. In this case, no EKE is carried out.

Resources needed for EKE process

- Group of experts (3-6)
 - Pest
 - Host
 - Quantitative PRA
- Elicitor
- Rapporteur

- 4-7 parameters to estimate → 1 day of physical meeting (in case of 'easy' pests)

- New EFSA toolkit for EKE
 - E-training material (online since last week)
 - Web tools for experts judgement (testing phase) and probability distribution curves (online)

Complex scenarios – Vector borne diseases

- Impact of the pathogen (unless the vector's damage is particularly relevant)
- Spread of the disease
- Time for detection of the disease: to be discussed with the WG
- Control: Case 3

Complex scenarios – Polyphagous pests

- The host plants may be grouped by categories considering one or more of the following criteria:
 - Similar level of susceptibility of the hosts, feeding preference of the pest within the same taxonomic group (e.g. family, genus, species)
 - Environments of the production systems (e.g. row crops, greenhouse crops, orchards, forest plants)
 - Type of damage (e.g. on roots, leaves, fruits, flowers)
 - Final use of the product (e.g. forage crop, grain crop, fresh consumption)

- Ornamentals : damage to production and to plants
- Nurseries: presence/absence (EFSA contact with EU nurseries association)
- Time for detection could change depending on host / conditions (e.g. forests, orchard, greenhouse)
- Spread rate should be 1 value

Questions

- Relevance for MSs of the parameter called “number of treatments”
- Any other question to EFSA



**THANK
YOU**