VectorNet

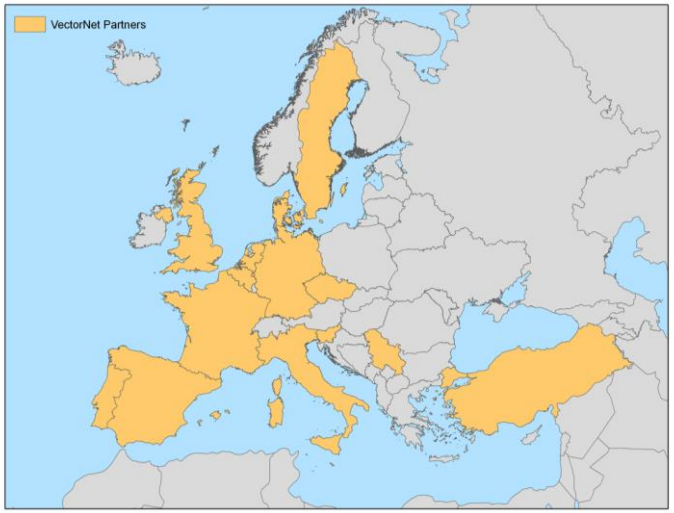
VectorNet

ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

efsa
European Food Safety Authority

What is VectorNet?

- Network project
  - Inter-institutional project (EFSA-ECDC)
  - Vectors of pathogens affecting human and/or animal health
  - Field work driven by:
    - Current vector maps/knowledge
    - Gaps (knowledge & distribution)
    - ECDC-EFSA requests
  - 21 partners from 14 countries
- Time-frame: 2014 - 2018



General objectives

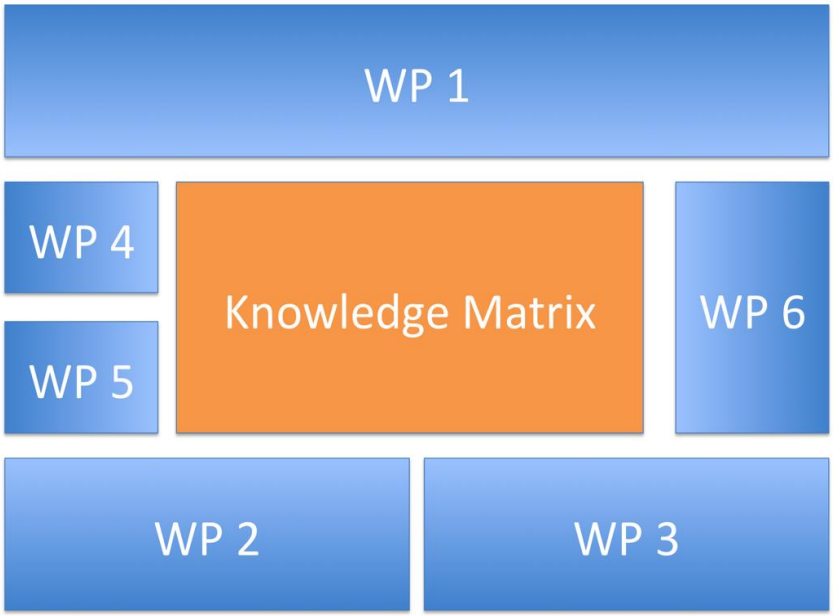
A collaborative approach to data collection activities on vectors

- To collect information on the geographical distribution of priority vectors;
- To further develop the network of medical entomologists and public health professionals, including veterinary entomologists and veterinarians working in the field of vectors or vector-borne diseases;
- To deliver ad-hoc scientific advice to support ECDC and EFSA;
- To carry out targeted entomological surveillance.

Expected outcomes

- **Bridge between vector community and PH & AH:**
  It is crucial that within the network, the entomological expertise is directly linked and applied to public and animal health
- **Information sharing between different stakeholders:**
  ECDC/EFSA website
- **Database on vectors from different sources:**
  individual expert, literature, field sampling, **PH surveillance**
- Vector sampling: **capacity building** & encourage **vector surveillance**
- **A synergistic effect and added value to individual databases**:
  coverage of vector species; avoid duplication; strengthening collaboration;

VectorNet organisation



Task1 – Project coordination
Task2 – Tools development and maintenance
Task3 – Networking and meetings
Task4 – Data collection and quality assessment
Task5 – Ad hoc technical and scientific advice
Task6 – Entomological surveillance and monitoring

6 Tasks divided over 4 Vectorgroups, a One health group and a modelling team

Collection of vector data

- Data is obtained in different ways:
  - regular screening literature
  - actively contacting identified experts (especially in specific regions)
  - via web platform
    - georeferenced data
    - Aggregated data at various administrative units
- Three-monthly updates of the geographic distribution maps : http://ecdc.europa.eu/en/healthtopics/vectors/vector-maps/Pages/VBORNET_maps.aspx

Entomological surveillance and monitoring

- Presence/absence data:
  - collected at a selection of sample sites over a more or less short time period;
  - collected at a limited number of selected sites, over one or more vector seasons, using a range of trapping and detection methods;
- Abundance data:
  - collected at a limited number of sites selected over a predefined geographical range, environment and time frame, according to a standardised method

Entomological surveillance and monitoring

- Gap-analysis techniques.
  - To guide surveillance
    - Gaps in maps
    - Distribution limits
- Adopt specific sampling strategies adapted to each vector group
  - SURVEILLANCE PROTOCOLS!!
- Integrate priorities of different vector groups
- Focus on capacity building and regional strengthening

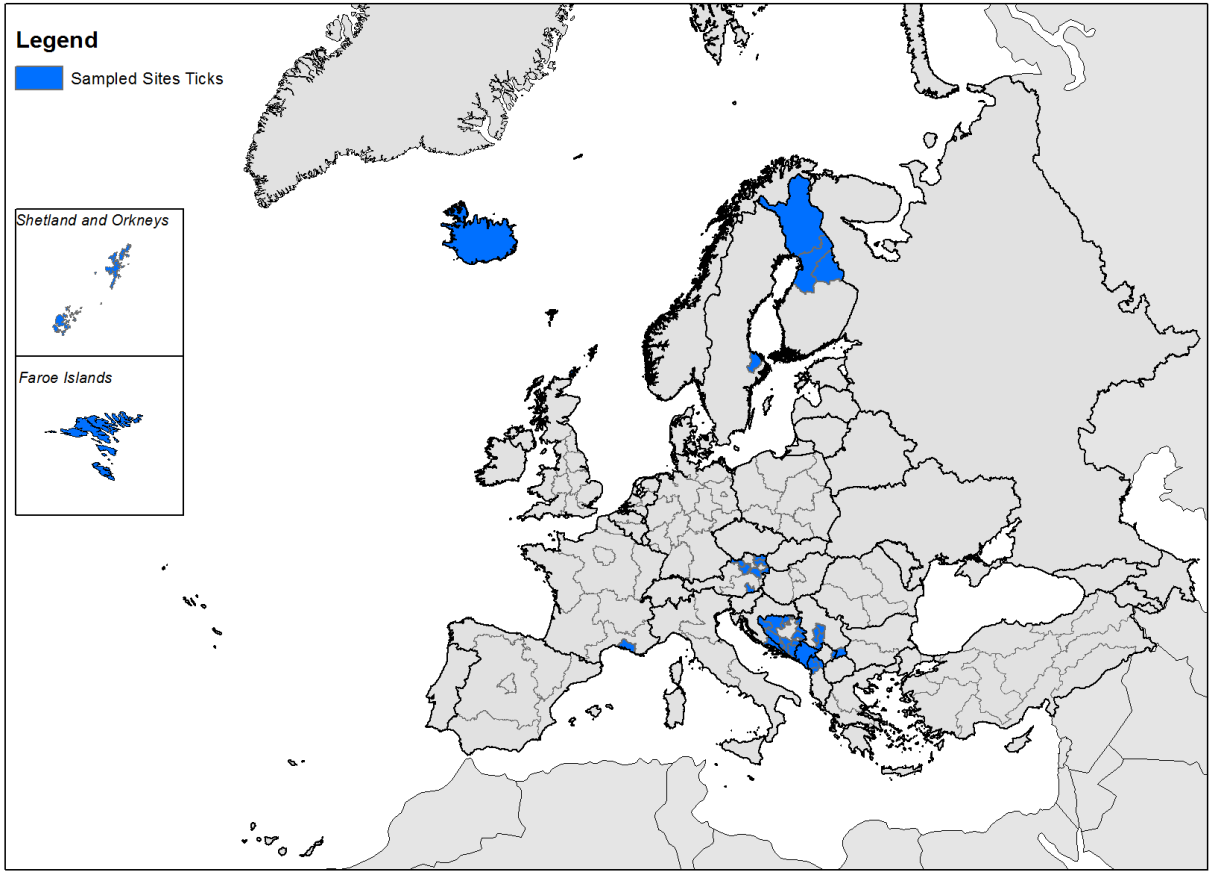
Entomological surveillance 2015

- 26 different projects
  - Ticks: 8 projects, 10 countries
  - Mosquitoes: 6 projects in 7 countries
  - Culicoides: 9 projects in 9 countries
  - Sandflies: 3 projects in 7 countries
- Training & set up fieldwork by consortium
- Fieldwork done by (or with) local team

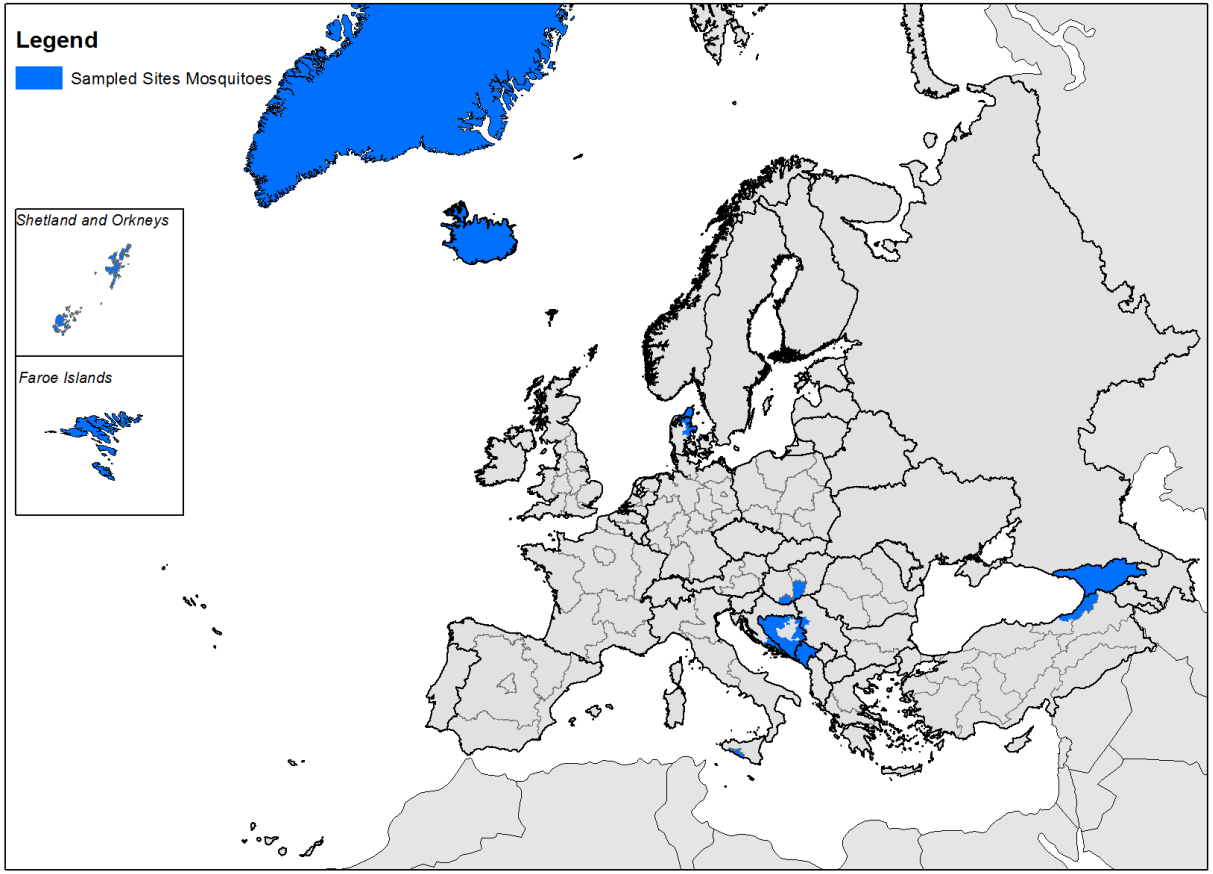
Entomological surveillance 2015

- Collected material
  - Identified by VectorNet partners
  - Otherwise: quality control
  - Can be stored if needed
- Data should be added to VectorNet maps beginning 2016
- To be continued in 2016, 2017 and 2018
- Use of mobile app (Vecmap) to monitor data collection

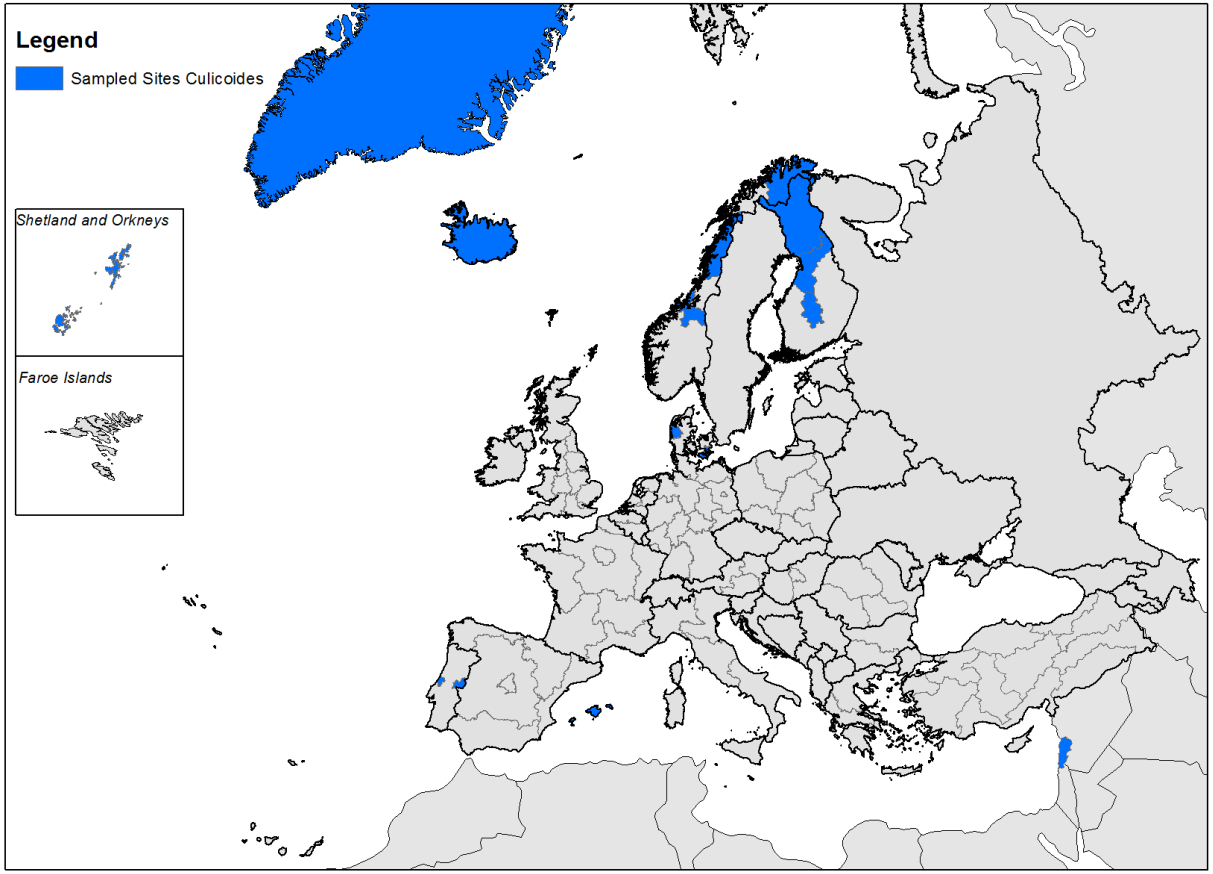
Entomological surveillance 2015-Ticks



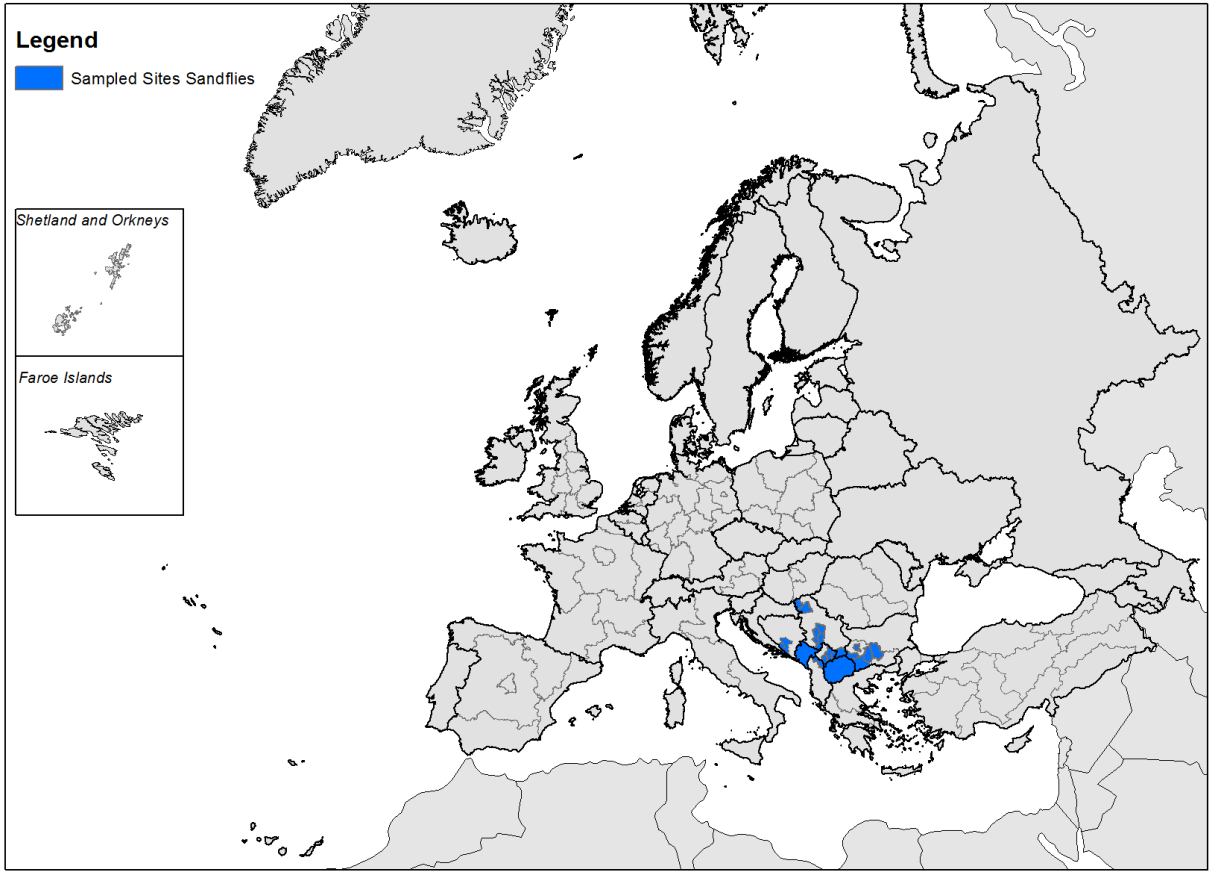
Entomological surveillance 2015- Mosquitoes



Entomological surveillance 2015
Culicoides



Entomological surveillance 2015
Sandflies



VectorNet membership

- *What is the value for you to become a VectorNet network member?*
  - access to the VectorNet raw VBD data and resources
  - possibility to contribute to VBD/PH/AH priority setting in Europe as a member of expert panels (e.g. annual VectorNet meeting)
  - A pdf with all contributors whose data was used to build the current distribution map will be put online along with the updated maps (stating “this map is based on data from: …)

http://vector-tool.ecdc.europa.eu/

Very welcome to join us!

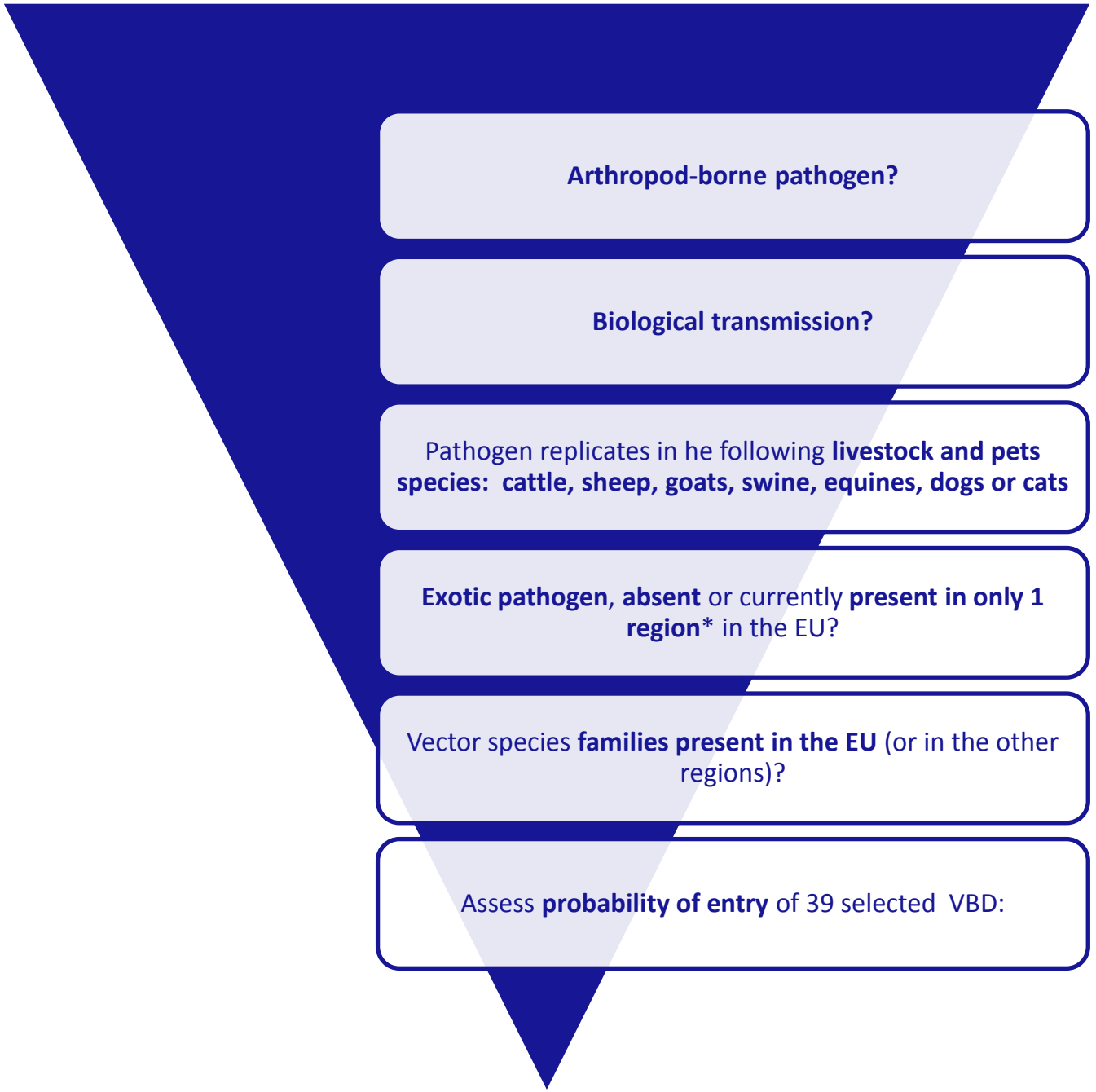
EFSA's activities on vector-borne diseases

Sofie Dhollander

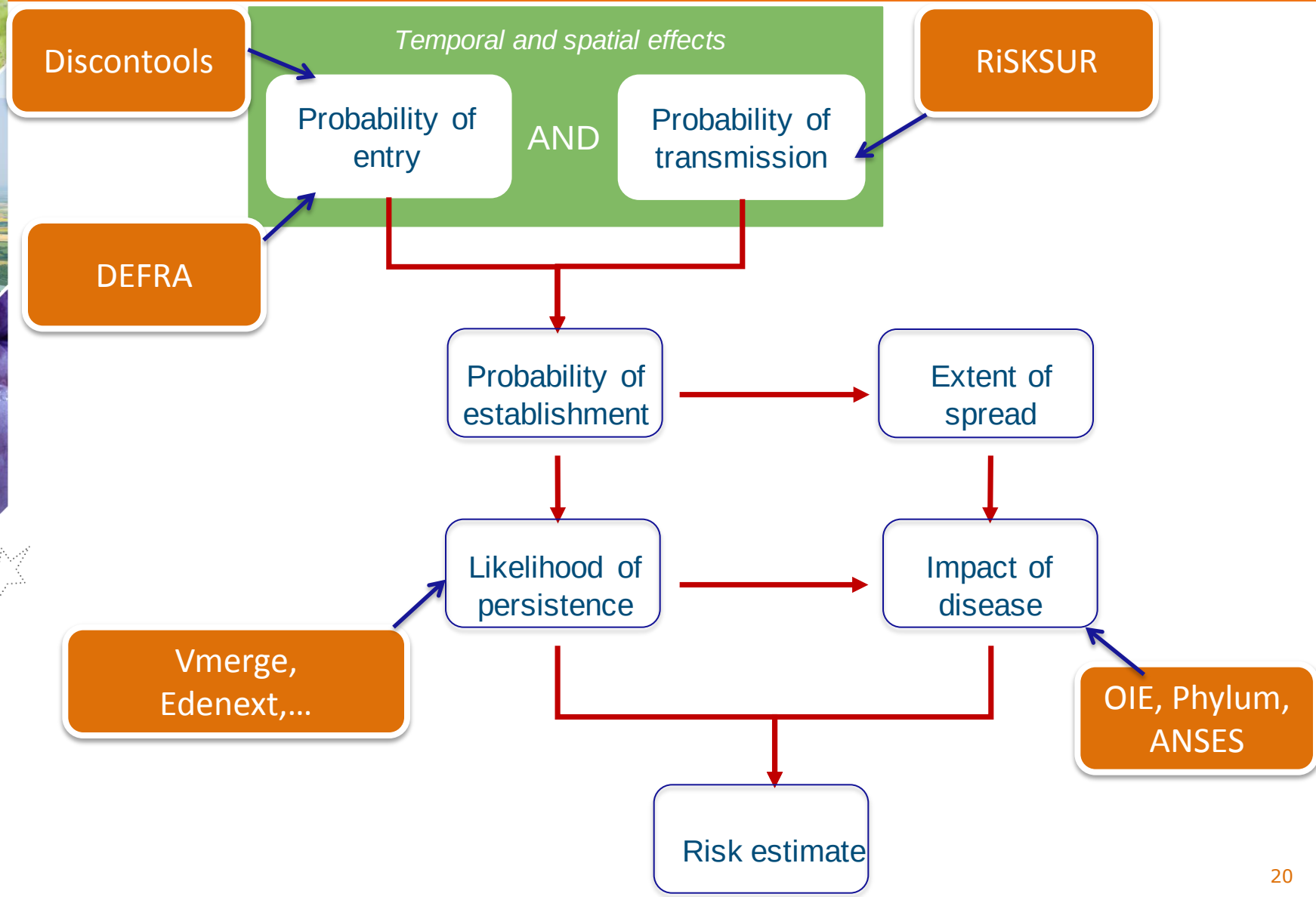
Animal Health and Welfare team
ALPHA unit

VBD MANDATE: TERMS OF REFERENCE

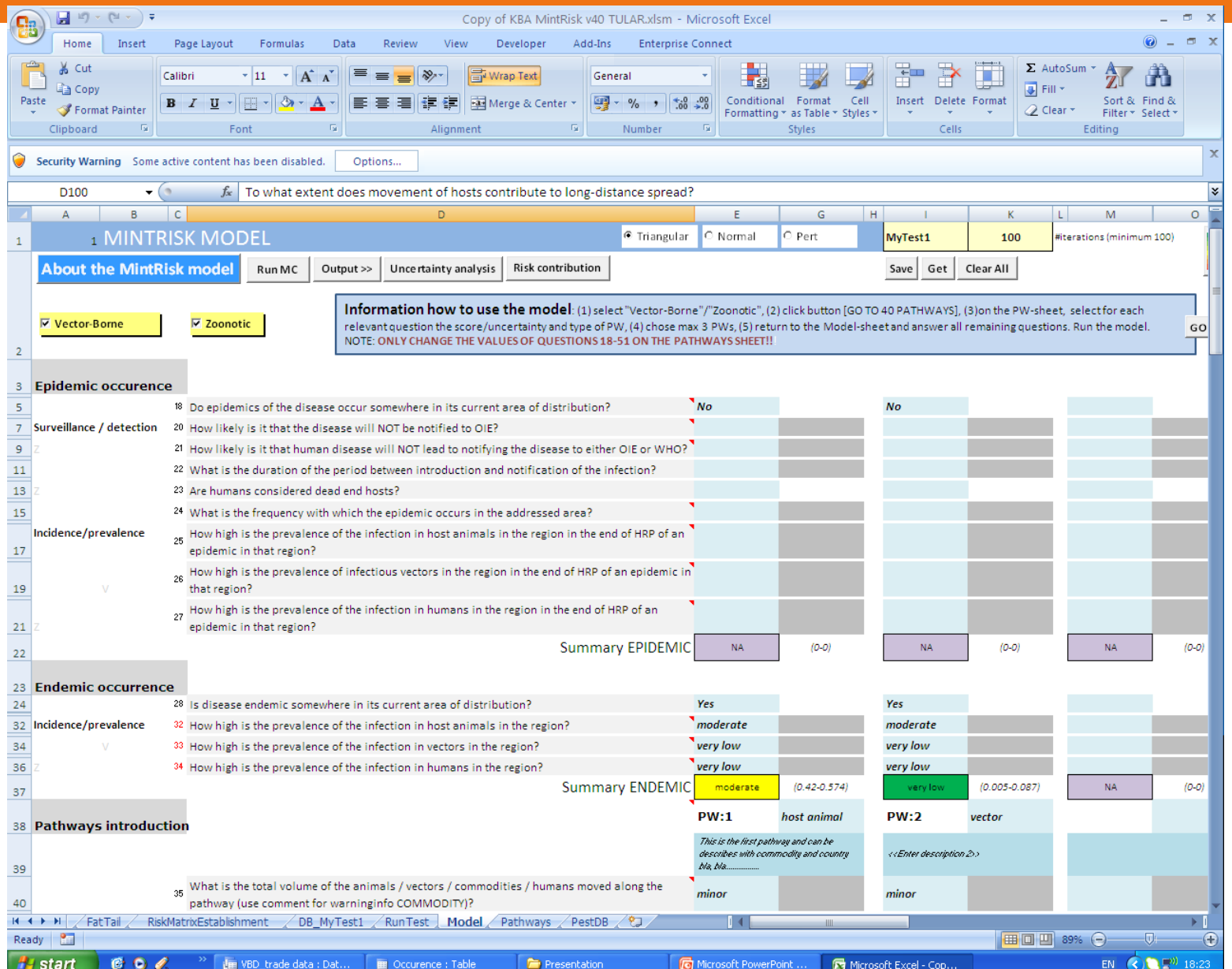
1. **Identify, rank and briefly characterise** the vector borne diseases that present a risk for the EU. This work should cover both **animal diseases and relevant zoonoses** that present a risk for the EU because of their **introduction, re-introduction or further spread.**
2. For each disease identified in point 1, identify and rank possible **pathways of introduction** (or re-introduction) and further **spread** into the EU and assess the potential **speed of propagation** in the EU.
3. For each disease identified in point 1, detail the potential **health consequences and other impacts** to the EU in relation to the existence of suitable vectors and their interaction with local animal populations.
4. Assess the **risk of each disease becoming endemic** in the animal population in the EU.
5. Briefly review the feasibility, availability and effectiveness of the main disease **prevention and control measures** (e.g. diagnostic tools, biosecurity measures,restrictions on the movement, culling, vaccination).


Arthropod-borne pathogen?
Biological transmission?
Pathogen replicates in he following **livestock and pets species: cattle, sheep, goats, swine, equines, dogs or cats**
Exotic pathogen, **absent** or currently **present in only 1 region*** in the EU?
Vector species **families present in the EU** (or in the other regions)?
Assess **probability of entry** of 39 selected VBD:

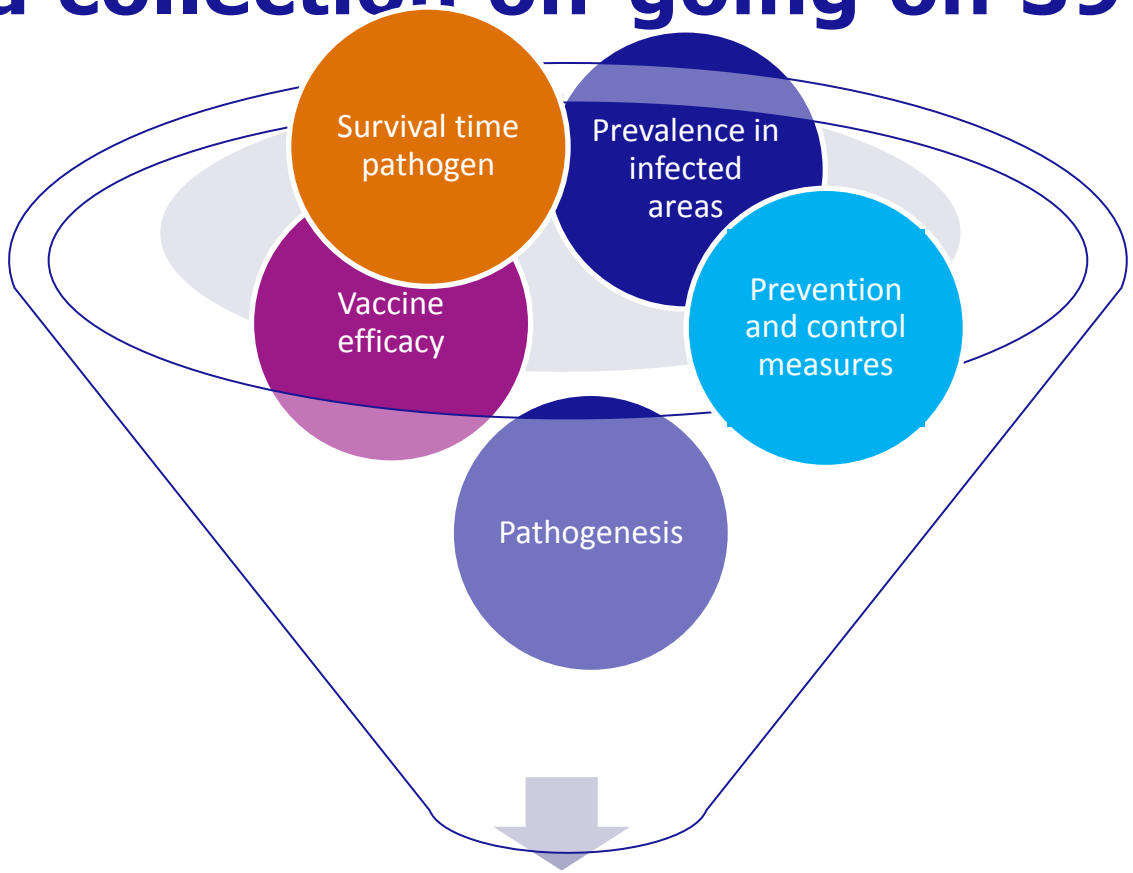
VBD MANDATE: RISK ASSESSMENT FRAMEWORK -CVI



MINTRISK MODEL- CVI



Data collection on-going on 39 VBD:



DYNAMIC INFOGRAPHICS

Contractor

DCF

Dynamic infographic

- ✓ Prevalence
- ✓ Disease distribution

EFSA

- ✓ Trade
- ✓ Regulations for import control
- ✓ Geographical data
- ✓ Impact assessment

- ✓ Pathogenesis
- ✓ Survival
- ✓ Diagnostics
- ✓ Treatments
- ✓ Vaccines

- ✓ Competent vectors

On-line Mint Risk

ECDC server

Vectornet

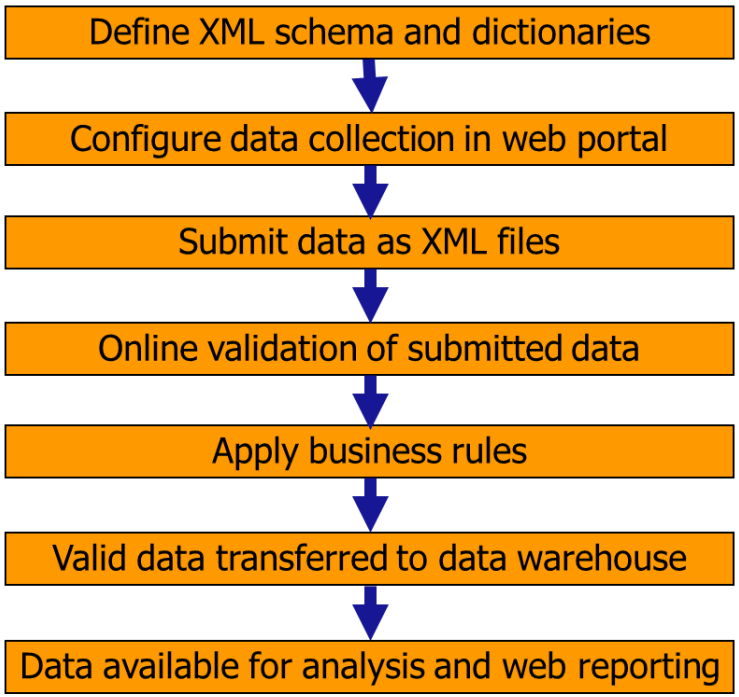
Maps vector distribution

Mintrisk model

CVI

OUTSOURCE DATA COLLECTION

Data Collection Framework is a secure web portal which supports the submission and validation of datasets transmitted to EFSA for use in risk assessment and opinions



Data model for vectors

Field name
StudyID
Id_Op
Study type
VBD
sampMatCode
Age
Route
Intervention
testsubstance
sampUnitSize
anMatCode
anMatText
anMethCode
paramCode
resValUnit

TIMELINE

Task	Jul 15	Oct 15	Nov 15	Dec 15	Jan 16	Mar 16	Jun 16	Jul 16	Sep 16		Dec 16
		TC	WG		WG	TC	WG	TC	TC	WG	
1. External data collection (ramework contract)					1. Pathogenesis 2. Survival 3. Diagnostics 4. Treatments 5. Vaccines						
2. External data collection Vectornet	1. List competent vectors 2.RA Entry-vectors										
3. External model development Mintrisk model	European version of model 1. On-line application 2. Adapted questions and answers										
4. EFSA 1. Data collection	1.Prevalence/disease distribution 2.Trade 3.Regulations for import control 4.Geographical data			Expert knowledge elicitation: -Illegal trade							
	5.Impact assessment Develop methodology										
2. Assessment			ENTRY/TRANSMISSION/ESTABLISHMENT/PERSISTENCE							IMPACT	
3. Dynamic infographics	Develop outline / web-applications								Connect data sources (collected information of prevalence, diagnostics, prevention and control, vector distribution)		
4. Draft opinion											