



Collecting and sharing data on (honey)bee health: European Commission

Pierangelo Bernorio / Laszlo Kuster

Unit G2: Animal Health and Welfare
Directorate-General for Health and
Food Safety (DG SANTE)

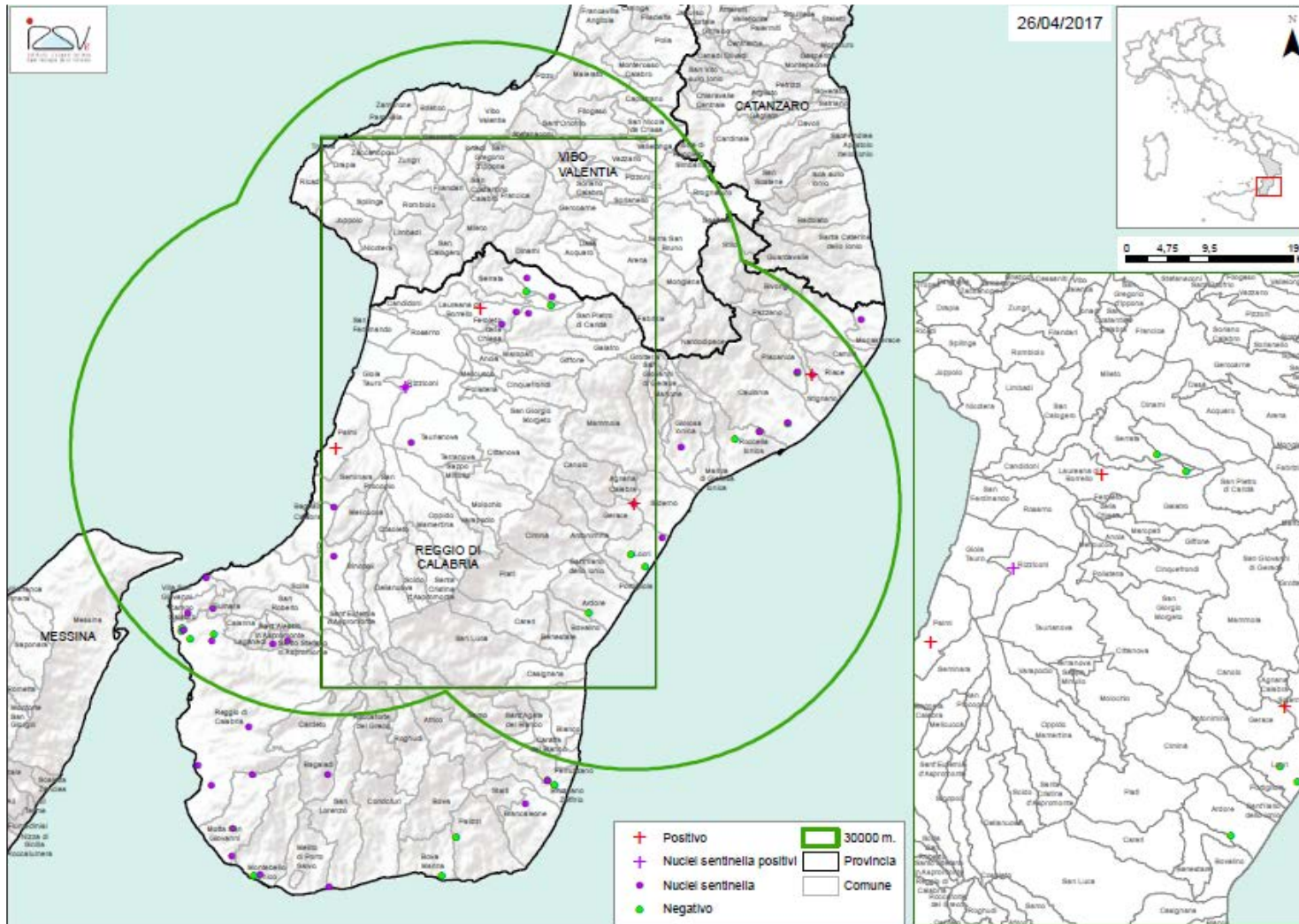
European Commission context

- *Inter-Services Group*
 - **SANTE, AGRI, ENV, RTD, GROW, TRADE, SG (JRC, CNECT, SJ...)**
- *Main areas of responsibility*
 - **Animal health rules: pathogens (+ horizontal)**
 - **Pesticides**
 - **Veterinary medicines**
 - **Honey safety: residues, fraud**
 - **(Apiculture programs and honey quality)**
 - **Agri-environmental measures**
 - **Research**
 - **Habitats, species conservation, invasive alien species, etc.**
 - **Information technology...**

Notification of pathogens + more

- *Obligations*
 - **Veterinary authorities**
 - **Serve specific purposes**
- *Council Directive 82/894/EEC: outbreaks*
 - **Small hive beetle, *Tropilaelaps* spp.**
- *Council Directive 92/65/EEC: trade of honeybees*
 - **National notifications for SHB, Trop. + American foulbrood**
- *International rules: OIE*
 - **6 diseases**
- *More data to specialist fora*
 - **Epidemiological inquiry, analysis, etc.**
 - **Public:**
http://ec.europa.eu/food/animals/health/regulatory_committee_en

Example: an epidemiological situation



Epilobee: 2012-2014

- *Monitoring of colony mortalities*
 - **Veterinary authorities**
- *Voluntary*
 - **17 MS**
 - **Beekeepers: random sampling, "semi-voluntary"**
- *EU co-financed*
 - **For policy development**
- *Representative*
 - **For majority of EU colonies**
 - **Temporal and spatial differences**
- *All objectives achieved*
- *Much data, its further analysis takes years*
 - **EURL + EFSA**

Epilobee preparations: extensive

- *Guidelines, sampling protocol by EU Reference Lab*
 - **Case definitions etc.**
- *Questionnaire by EU Ref Lab*
 - **138 variables**
- *Financing decisions by EC*
 - **5,2 mEUR allocated**
- *Training by EURL to MS officials*
 - **To central authorities and labs**
- *Trainings in MS to inspectors*
 - **3 visits in apiaries**
- *Electronic database*
 - **EU and national level**
 - **Design and training**

Epilobee numbers

- *17 MS*
- *EURL team in 2 locations*
 - **Epidemiologists**
 - **Bee experts**
- *Hundreds of staff of competent authorities and labs*
- *1573 inspectors*
- *6200 apiaries checked*
- *62 500 colonies checked*
- *177 000 checks*

Epilobee data checks, completion and statistical analysis

- 2012-2013
 - 3053 apiaries → 2332 → 1139 usable data
- 2013-2014
 - 2745 → 2426 → 1020
- *Missing data completion*
 - **Data imputation method**
- *Subsequent clustering*
 - **7 synthetic variables**
- *All data shared*
 - **EFSA, publications, presentations, etc.**
 - http://ec.europa.eu/food/animals/live_animals/bees_en



European
Commission

Epilobee lessons

- *Language issues*
 - **"Oxalic acid"**
- *Length of questionnaire*
 - **If too long → incomplete datasets**
- *Shortcomings in implementation*
 - **Adherence to protocol**
- *Quality shortcomings despite of preparations*
 - **Check logical conditions**
- *Apiary → vet service → 1 NRL → 1 EURL*
 - **More problems, if wider scope**
- *Some stakeholder reactions*
 - **"Nothing new"**

Availability of data on pesticides

- *Conclusion on EFSA website*
 - **Contains peer review by EFSA of RMS risk assessment**
 - **Includes list of endpoints**
- *EFSA Peer Review Report*
 - **Available in EFSA Register of Questions**
 - **Includes eg. comments on assessment report and EFSA conclusion and pesticides peer review meeting reports**
- *Assessment report on active substances*
 - **Available in EFSA Register of Questions**
 - **Includes summaries of available studies and endpoints**
 - **Includes risk assessment**
 - **Does not include raw data**

EU Pesticides Database

- *Lists all approved and non-approved substances in the EU:*
 - Status under Reg. (EC) No 1107/2009 (RMS, Expiry date)
 - Classification according to Reg. (EC) 1272/2008
 - Toxicological information (ADI, ARfD and AOEL)
 - Member States with authorisations at national level
 - EU - Maximum Residue Levels (Reg. (EC) No 396/2005) (MRLs)
- *Available via*
<http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public>



Plant Protection Products Application Management System (PPPAMS)

- *Online system enabling the submission of applications and processing of authorisations for Plant Protection Products (PPPs):*
 - **Applicants create and submit applications to Member States;**
 - **Member States manage applications concluding with authorisation of the PPP or refusal of the application.**
- *A publicly accessible area within EU Pesticides Database is being developed where data on authorisations can be searched*
- *Data collection exercise is ongoing with Member States to collect data on all existing authorisations*

Further information can be found at:

http://ec.europa.eu/food/plant/pesticides/authorisation_of_ppp/pppams_en

Data collection on *Vespa velutina*

- *An EU listed Invasive Alien Species*
- *MS must have a surveillance system*
 - **To cover their territory**
 - **Be sufficiently dynamic to detect rapidly the appearance in the environment**
 - **Build upon, be compatible with, and avoid duplication of relevant provisions**
- *An implementing act on reporting*
 - **To be adopted soon**
- *Reporting from 1 June 2019*
- *Current maps:*
<https://easin.jrc.ec.europa.eu/Documentation/Baseline>

Across sectors, existing databases and beyond

- *EC pilot on an IT application (www.data4policy.eu)*
 - **Collecting data from hive and ...?**
 - **Apiary, landscape and national level**
- *What else is available?*
 - **Open source?**
 - **Meteorological databases, air pollution,**
 - **CORINE land cover**
 - **Pesticide use**
 - ...
- *Smart hives*

Data collection and handling in EU context

- *EC priority: EU growth and jobs*
 - **Does data collection deliver it?**
- *If required by EU rules*
 - **Information obligation**
- *If double reporting or not used*
 - **Administrative burden**
- *To decrease red tape*
- *Data ownership issues*
- *Access to documents issues*
- *Intellectual property rights issues*
- *Analysis, interpretation and presentation issues*



European
Commission

Final thoughts on data collection and handling

- *Demanding, cumbersome and expensive*
- *Questions to be answered → design is vital*
- *Multifactorial: causalities, correlations or none?*
- *Quality is key*
- *Uniform = comparable*
- *With wider scope, problems multiply*
- *Many question marks*
 - **Voluntary stakeholders, e.g. beekeepers?**
 - **Citizen science?**
 - **Remote sensors and modern IT technology?**
 - **Control cases?**
 - **Representativeness?**
 - **Synthetic indicators?**
 - **Proxies?**
 - ...
- *Beyond honeybees...*