

# **VBorNet**

## **Emerging vector-borne diseases in southern Europe**

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# Work Package 4

- “Link vector and public health experts”
- “Identify the relevant public health issues and gaps for Europe’s preparedness for VBD”

→ Implementation of a network of experts to achieve this goal



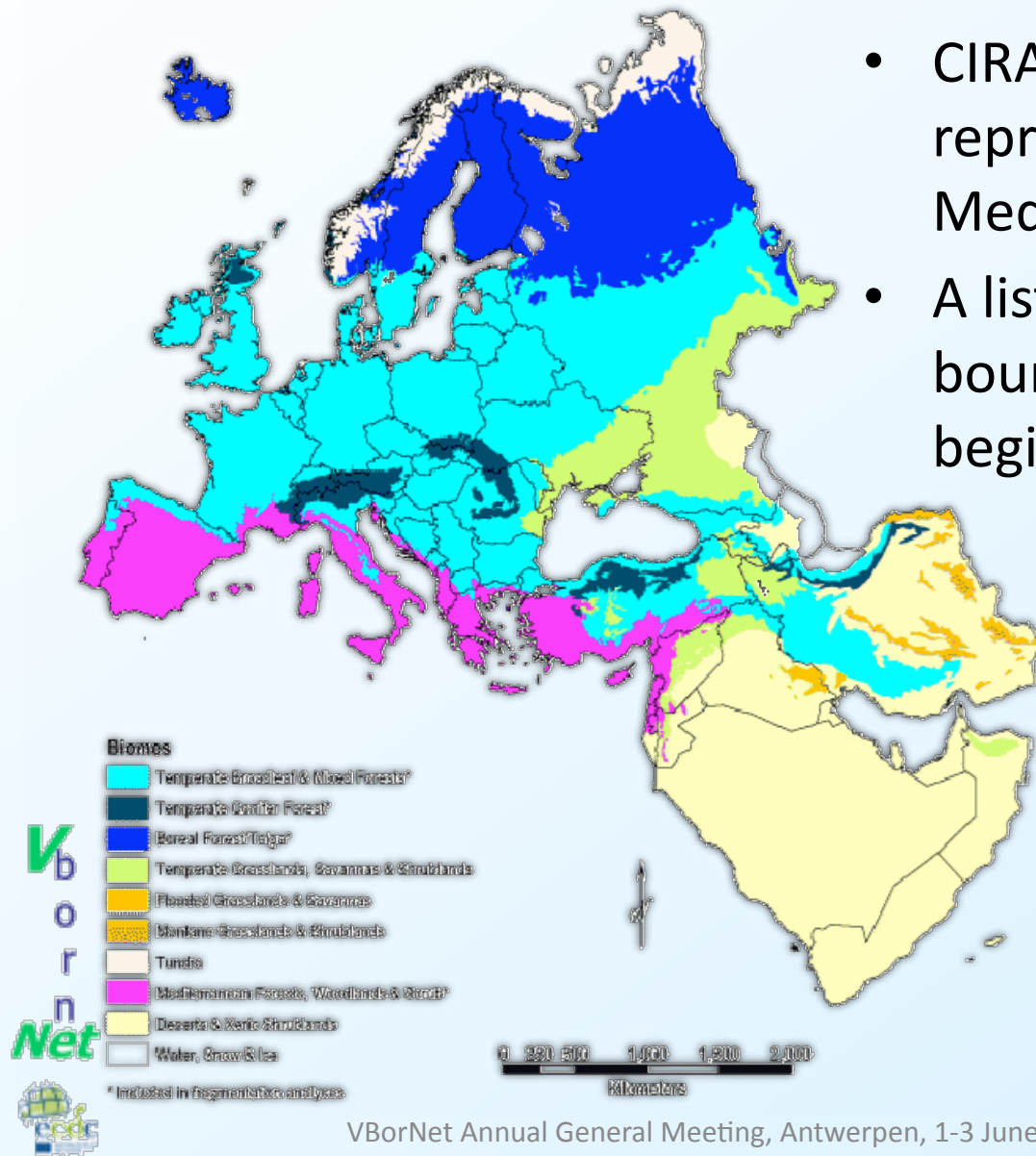
# VBorNet expert database

- “A database including references to all known actors of the VBD related researchers and PH activities in Europe.”
- Identification of public health resources through:
  - the VBorNet PH Focal point (CIRAD, etc.)
  - ECDC PH national focal point (InVS, etc.)



# Public Health Regions

- CIRAD has been chosen to represent, as PH focal point, the Mediterranean basin
- A list of countries within those boundaries was set up at the beginning of the internship



# List of countries

## EC(DC) countries

- Portugal
- Spain
- France
- Italy
- Slovenia
- Croatia
- Bosnia and Herzegovina
- Former Yugoslavia
- Albania
- Macedonia
- Serbia
- Greece

## Middle East and northern Africa

- Turkey
- Cyprus
- Syria
- Lebanon
- Israel
- Palestinian authorities
- Egypt
- Libya
- Tunisia
- Algeria
- Morocco



# List of Diseases

- **Mosquito-borne diseases:** chikungunya, dengue, West Nile.
  - (Yellow fever, Malaria, Rift Valley fever)
- **Tick-borne diseases:** TBE, CCHF, Lyme disease, tularemia, rickettsiosis.
  - (Israeli spotted fever, relapsing fever, spotted-fever)
- **Phlebotomine-borne diseases:** leishmaniasis, sandfly fevers
  - (Sandbis virus)



# Bibliographic database

- Year 1999 to 2010 as the study period
- Medline to retrieve references
- JabRef software to manage references
- Query keywords: time period / countries / names of the diseases / pathogens







Medline

Rechercher Réinitialiser

Recherche

Recherche dans tous les champs

Vider

Incrémentale

Flottante

Filtre

Nouvelle fenêtre

Recherche globale

Paramètres

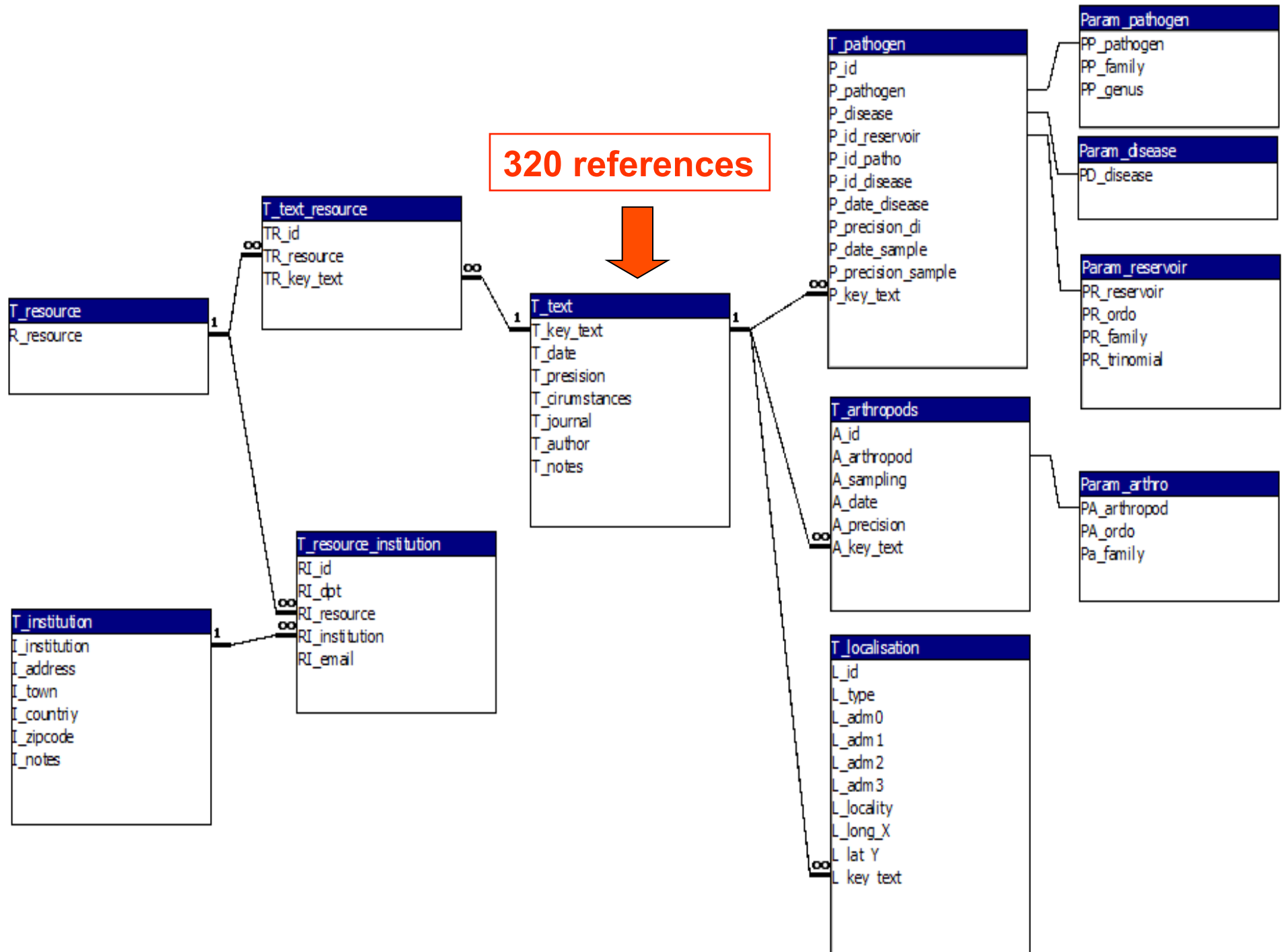
#	Entryty...	Author	Title	Year	Journal	Bibtexkey	Owner	Timest...
1	Article	Darwish et al.	Results of a preliminary seroepidemiological survey for Crimean-Congo hemorrhagic fever virus in Egy...	1978	Acta Virol	DarwishImamO...	Cécilia	14.01.2...
2	Article	Filipe and d...	Arboviruses in the Iberian Peninsula.	1990	Acta Virol	FilipeAndradeArb...	Cécilia	06.01.2...
3	Article	Morrill et al.	Serological evidence of Crimean-Congo haemorrhagic fever viral infection among camels imported int...	1990	J Trop Me...	MorrillSolimanIm...	Cécilia	14.01.2...
4	Article	Berthet et al.	Extensive nucleotide changes and deletions within the envelope glycoprotein gene of Euro-African Wes...	1997	J Gen Virol	BerthetZellerDro...	Cécilia	08.01.2...
5	Article	Aoun et al.	[Lyme disease in Tunisia, results of a clinical and serological study (1992-1996)]	1998	Sante	AounKechridLag...	Cécilia	27.01.2...
6	Article	Aharonowitz...	Epidemiological characteristics of spotted fever in Israel over 26 years.	1999	Clin Infect...	AharonowitzKoto...	Cécilia	19.01.2...
7	Article	Alptekin et al.	Sandflies (Diptera: Psychodidae) associated with epidemic cutaneous leishmaniasis in Sanliurfa, Tur...	1999	J Med Ent...	AlptekinKasapLu...	Cécilia	12.01.2...
8	Article	Aoun et al.	[Confirmation of the presence of Leishmania infantum MON-80 in Tunisia]	1999	Bull Soc ...	AounBouratbine...	Cécilia	02.02.2...
9	Article	Bacellar et al.	Israeli spotted fever rickettsia (Rickettsia conorii complex) associated with human disease in Portugal.	1999	Emerg Inf...	BacellarBeatiFra...	Cécilia	19.01.2...
10	Article	Badiaga et al.	[Imported dengue: study of 44 cases observed from 1994 to 1997 in 9 university hospital centers. Infect...	1999	Pathol Bi...	BadiagaDelmont...	Cécilia	14.01.2...
11	Article	Borci? et al.	Some epidemiological data on TBE and Lyme borreliosis in Croatia.	1999	Zentralbl ...	Borci?Kai?KraljS...	Cécilia	19.01.2...
12	Article	Bouattour et...	Distribution and ecology of ticks (Acari: Ixodidae) infesting livestock in Tunisia: an overview of eighth ye...	1999	Parassito...	BouattourDargho...	Cécilia	27.01.2...
13	Article	Chastel et al.	Chizé virus, a new phlebovirus isolated in France from Ixodes (Trichotoxodes) frontalis.	1999	Acta Virol	ChastelChandler...	Cécilia	18.01.2...
14	Article	Chiheb et al.	[Leishmania tropica cutaneous leishmaniasis in an emerging focus in North Morocco: new clinical for...	1999	Ann Der...	ChihebGuessou...	Cécilia	13.01.2...
15	Article	Cizman et al.	Severe forms of tick-borne encephalitis in children.	1999	Wien Klin...	CizmanRakarZak...	Cécilia	20.01.2...
16	Article	Cohen et al.	Prevalence of antibodies to West Nile fever, sandfly fever Sicilian, and sandfly fever Naples viruses in h...	1999	Public He...	CohenZaideKara...	Cécilia	11.01.2...
17	Article	Craig et al.	An accelerated schedule for tick-borne encephalitis vaccine: the American Military experience in Bosnia.	1999	Am J Tro...	CraigPittmanLew...	Cécilia	20.01.2...
18	Article	le Fichoux e...	Occurrence of Leishmania infantum parasitemia in asymptomatic blood donors living in an area of end...	1999	J Clin Mic...	FichouxQuaranta...	Cécilia	02.02.2...
19	Article	Gad et al.	Host feeding of mosquitoes (Diptera: Culicidae) associated with the recurrence of Rift Valley fever in E...	1999	J Med Ent...	GadFaridRamzy...	Cécilia	18.01.2...
20	Article	Hanafi et al.	Colonization and bionomics of the sandfly Phlebotomus kazeruni from Sinai, Egypt.	1999	Med Vet E...	HanafiKanourBe...	Cécilia	18.01.2...
21	Article	Lotric-Furla...	Lyme borreliosis and peripheral facial palsy.	1999	Wien Klin...	Lotric-FurlanCim...	Cécilia	19.01.2...
22	Article	Mannelli et al.	Low risk of Lyme borreliosis in a protected area on the Tyrrhenian coast, in central Italy.	1999	Eur J Epi...	MannelliCerriBuff...	Cécilia	19.01.2...
23	Article	Pichon et al.	Density of deer in relation to the prevalence of Borrelia burgdorferi s.l. in Ixodes ricinus nymphs in Ram...	1999	Exp Appl ...	PichonMousson...	Cécilia	19.01.2...
24	Article	Psaroulaki ...	Detection and identification of the aetiological agent of Mediterranean spotted fever (MSF) in two gener...	1999	Trans R ...	PsaroulakiLouka...	Cécilia	19.01.2...
25	Article	el Rahim et ...	An epizootic of Rift Valley fever in Egypt in 1997.	1999	Rev Sci T...	RahimHakimHu...	Cécilia	18.01.2...
26	Article	Sall et al.	Genetic reassortment of Rift Valley fever virus in nature.	1999	J Virol	SallZanottoSene...	Cécilia	18.01.2...
27	Article	Savage et al.	Entomologic and avian investigations of an epidemic of West Nile fever in Romania in 1996, with serol...	1999	Am J Tro...	SavageCeianuNi...	Cécilia	06.01.2...
28	Article	Schuhmach...	[Seroprevalence of Central European tick-borne encephalitis in the Lorraine region]	1999	Presse M...	SchuhmacherHo...	Cécilia	20.01.2...
29	Article	Senol et al.	Tularemia: a case transmitted from a sheep.	1999	Cutis	SenolOzcanKarim...	Cécilia	15.01.2...
30	Article	Sideris et al.	Asymptomatic canine leishmaniasis in Greater Athens area, Greece.	1999	Eur J Epi...	SiderisPapadop...	Cécilia	12.01.2...
31	Article	Strle	Lyme borreliosis in Slovenia.	1999	Zentralbl ...	StrleLymeborreli...	Cécilia	19.01.2...
32	Article	Strle	Principles of the diagnosis and antibiotic treatment of Lyme borreliosis.	1999	Wien Klin...	StrlePrinciplesof...	Cécilia	19.01.2...
33	Article	Turkovi? an...	Natural foci of some viral zoonoses in Croatia.	1999	Acta Med ...	Turkovi?Brudnjak...	Cécilia	20.01.2...
34	Article	Uzun et al.	Cutaneous leishmaniasis: evaluation of 3,074 cases in the Cukurova region of Turkey.	1999	Br J Der...	UzunUslularYuec...	Cécilia	12.01.2...
35	Article	Vazeille-Fal...	Aedes albopictus from Albania: a potential vector of dengue viruses.	1999	J Am Mos...	Vazeille-FalcozAd...	Cécilia	15.01.2...
36	Article	Waner et al.	Antibodies reactive with Ehrlichia canis, Ehrlichia phagocytophila genogroup antigens and the spotted f...	1999	Vet Paras...	WanerBanethStr...	Cécilia	19.01.2...
37	Article	Zaffaroni et ...	Epidemiological patterns of canine leishmaniasis [correction of leishmaniosis] in Western Liguria (Italy).	1999	Vet Paras...	ZaffaroniRubaud...	Cécilia	19.01.2...
38	Article	Zhioua et al.	Infection of Ixodes ricinus (Acari: Ixodidae) by Borrelia burgdorferi sensu lato in North Africa.	1999	J Med Ent...	ZhiouaBouattour...	Cécilia	27.01.2...
39	Article	Zore et al.	Infection of small mammals with Borrelia burgdorferi sensu lato in Slovenia as determined by polymer...	1999	Wien Klin...	ZorePetrovecPro...	Cécilia	27.01.2...



# Public health and resource database

- MS Access database management system
- Two different parts (main tables) linked with a single key identifying each article
  - **Epidemiology**
    - Information on diseases, pathogens, localization of the case / outbreaks / survey
  - **Human resources**
    - Name of the authors (person resources) and the institution associated with them





## Mapping of the PH findings in Europe

- Report of the localization by geographical coordinates when available in the article
- Creation of maps for the main diseases with ArcGIS software
- Resolution: Admin2 (e.g., district level in France)

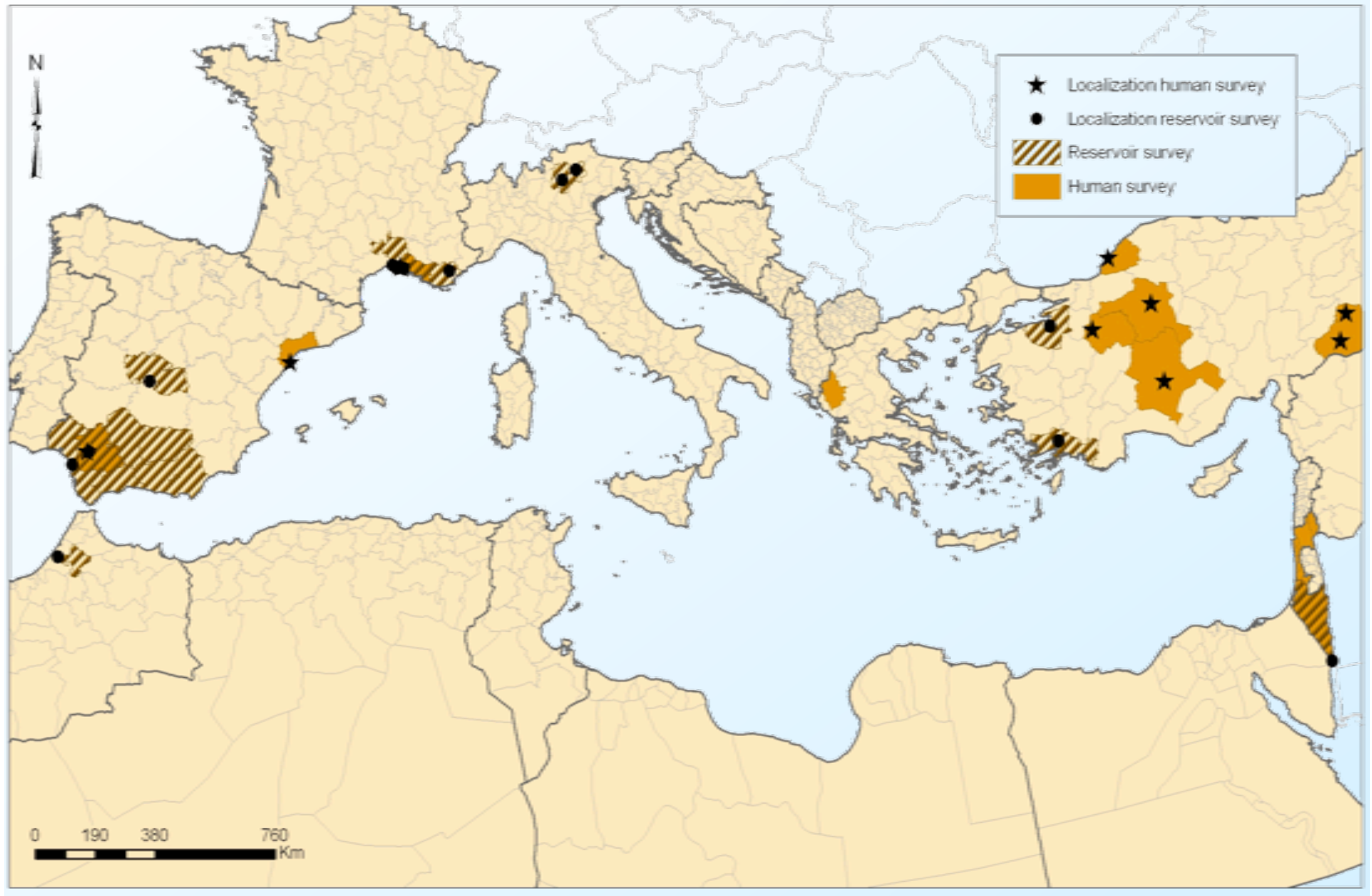
- 530 publications in the BDB
- 320 entries (publications) in the RDB
  - Leishmaniasis (16%), Rickettsiosis (16%), Lyme disease (15%) and West Nile (14%) represent 65% of the diseases of the RDB

# West Nile cases and outbreaks





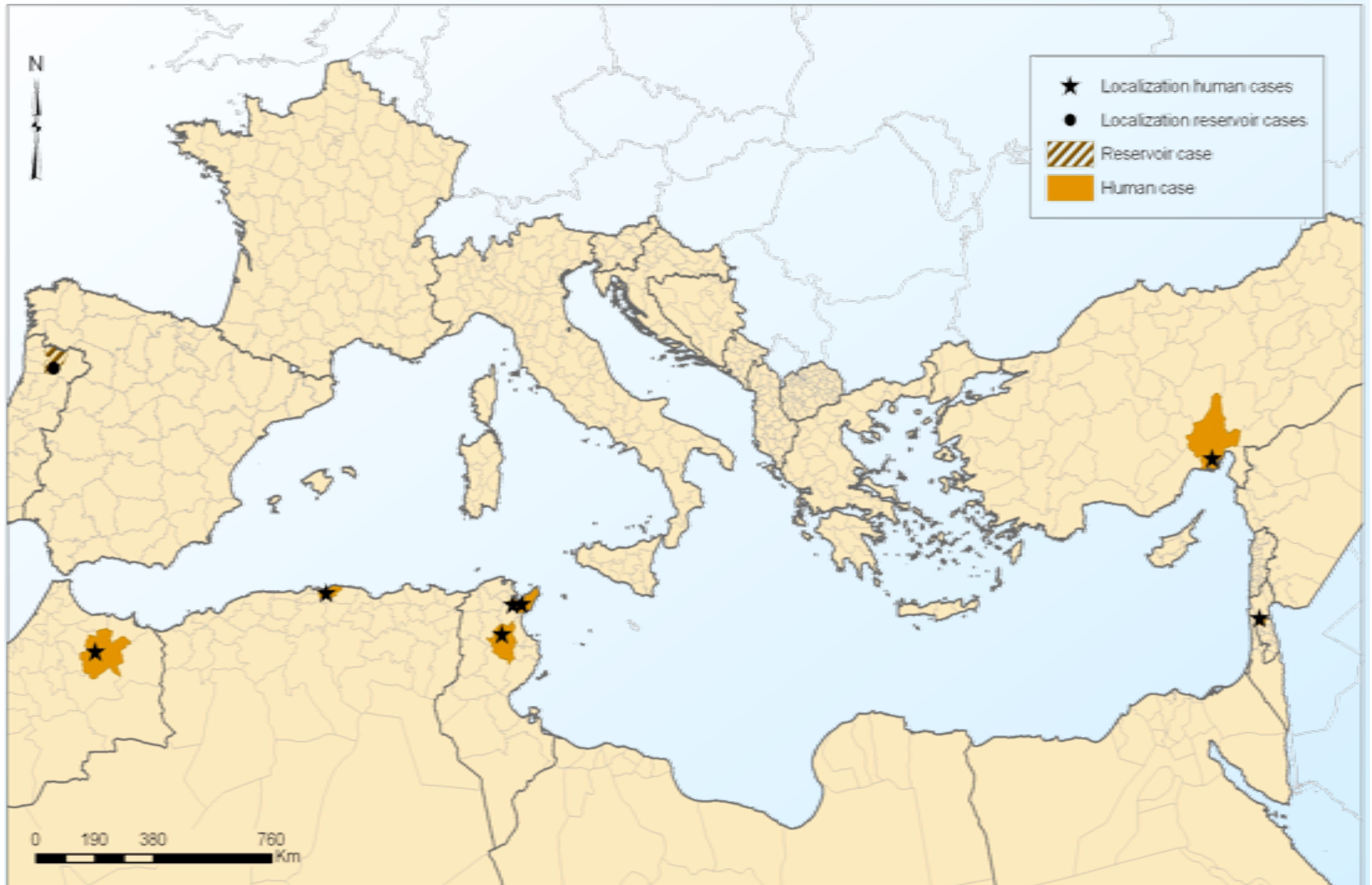
# West Nile surveys with positive findings



# Entomological surveys with WNV isolates / detection



# Leishmaniasis cases and outbreaks





# Leishmaniasis surveys with positive findings



# Entomological surveys with Leishmaniasis isolates / detection





# Resources

- **This database**
  - 266 PH experts identified
  - 168 institutions recorded
    - France 17%, Italy 16%, Spain 13%, Turkey 13%, Israel 8%
- **VBorNet experts list for the countries of interest:**
  - 255 experts identified
    - 188 experts aren't in this database
    - 37 experts are in this database



# Possible improvements

- Medline was the only source of information
- Extraction of information was somewhat tedious: automatic searches (scripting) may facilitate the process
- Negative findings have not been taken into account during the geo-localization
- Complete the list of diseases (and thus VBD experts)?



# Conclusion

- This database has provided additional experts to the provisional list established within the WP4 objectives
- Updates of the database are easy to implement for other time periods, diseases...
  - Management tools for duplicated publications exist
- Some improvement are needed regarding the database (Medline and others) query methods



THANK YOU FOR YOU ATTENTION

