Malaria endemisch in Zuid Europa?

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Nederlandse Vereniging voor Parasitologie

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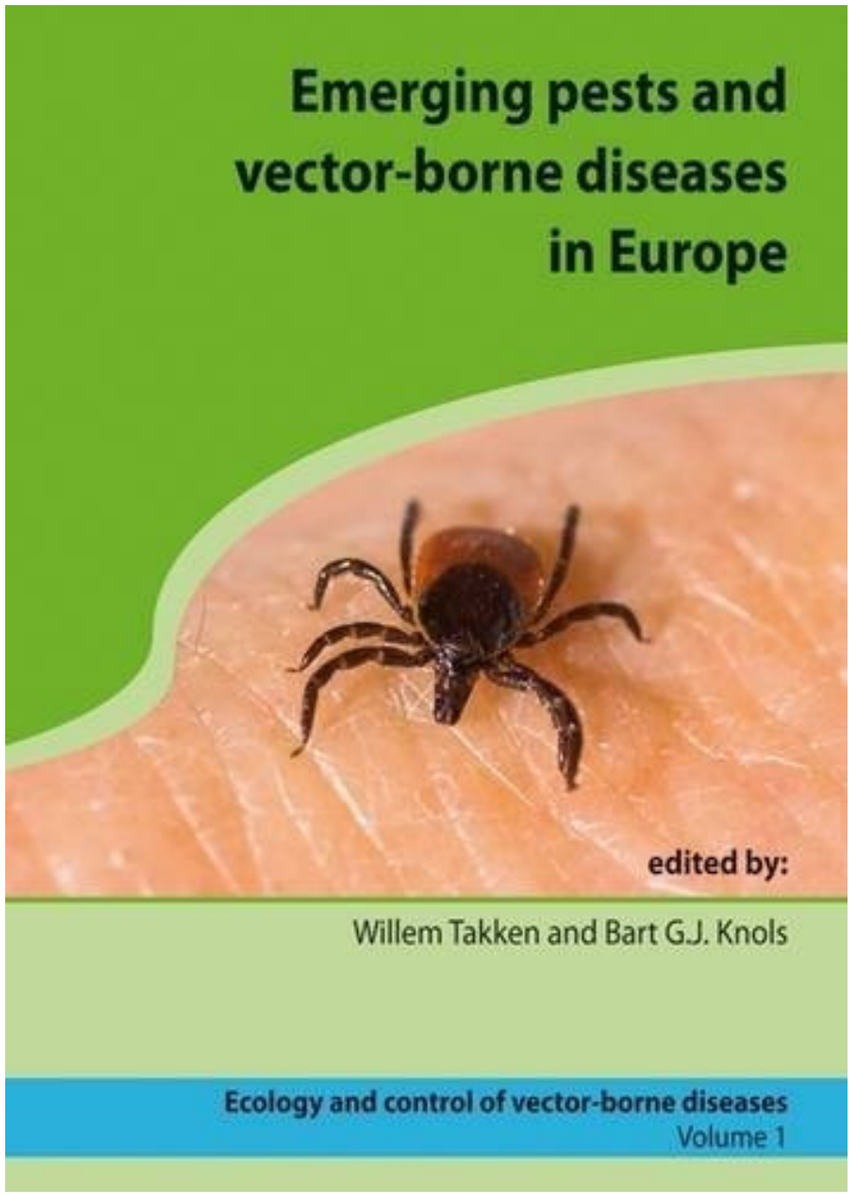
Wat denkt U: Hebben we een probleem?

- **Ja:** Er is een constante influx van parasietendragers (vluchtelingen), er wordt meer gereisd (kans op besmetting), er zijn vectoren in het Mediterrane gebied, en het klimaat is gunstig en wordt gunstiger.

- **Nee:** Er kunnen weliswaar incidentele infecties plaatsvinden, maar malaria zal nooit meer endemisch worden in het Mediterrane gebied.

Emerging Pests & Vector-borne diseases in Europe (2007)



- **Takken, Kager & Verhave (NW Europe):** ”Public health measures will preclude the building up of an infectious parasite reservoir”

- **Alten, Kampen, Fontenille (South Europe):** “…the southern European region remains vulnerable to malaria transmission; locally outbreaks may occur”

Recente gevallen in Europa

ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

RAPID RISK ASSESSMENT

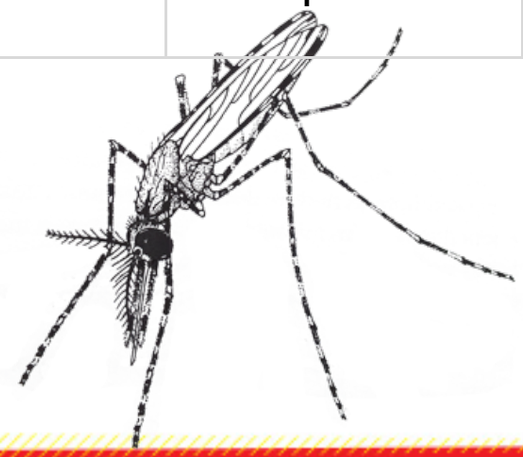
Multiple reports of locally-acquired malaria infections in the EU

20 September 2017

Radboud University

Recente gevallen in Europa (Mei-Sept 2017)

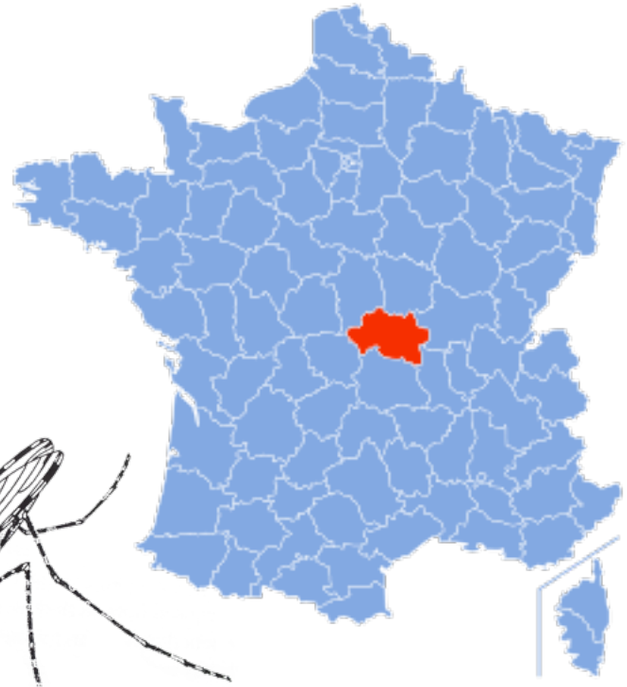
Country of report	No.	*Plasmodium* species	Date of onset	Suspected mode of transmission, place of infection	Date of report
France	2	*P. falciparum*	26 August	Mosquito-borne, Allier, France.	7 September
Greece	5	*P. vivax*	2 May–22 July	Mosquito-borne, regions of Dytiki Ellada and Sterea Ellada, Greece.	18 May, 21 July, 17 August
	1	*P. falciparum*	17–23 July	Mosquito-borne or nosocomial, region of Ipeiros, Greece.	17 August
Italy	1	*P. falciparum*	29 August	Mosquito-borne or nosocomial, Trento l, Italy.	5 September
United Kingdom	3	*P. vivax*	29 August	Mosquito-borne, the northern part of Cyprus.	8 September

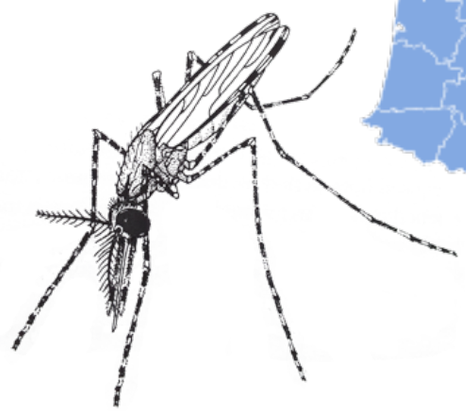


Recente gevallen in Europa (Mei-Sept 2017)

- **France (Allier region/Moulins), August 2017:**

- Two adults attending (the same) wedding in Moulins
- No travel history to malaria-endemic country
- None of the wedding participants with travel history
- Adult from Burkina Faso with *P. falciparum* was in Moulins 2 weeks before the wedding
- Both *An. maculipennis s.l.* and *An. claviger s.s.* were found





- 'Overlap' in Moulins
- Possibly local transmission (or airport malaria)
- Molecular typing should add definitive info

Recente gevallen in Europa (Mei-Sept 2017)

- **Greece (West & Central), May-July 2017:**

- 5 cases of *P. vivax*, 4 in west, 1 in central Greece (none with travel history)
- 1 Case of *P. falciparum* in NW Greece (no travel history)

- *Pv:* Local transmission following introduction events
- *Pf:* Nosocomial vector-borne transmission (no anophelines found)
- Molecular typing ongoing

Recente gevallen in Europa (Mei-Sept 2017)

- **Italy, Trento, August:**

- 4 yr old girl hospitalised with diabetes mellitus (16-21 August)
- No travel history
- Same ward: 2 patients with *P. falciparum* (16-21 August)

- Iatrogenic transmission unlikely
- No anophelines found
- Molecular typing ongoing

Recente gevallen in Europa (Mei-Sept 2017)

- **Cyprus, Trento, August:**
- 3 cases of *P. vivax* from northern Cyprus (2 and 1)
- Mosquito-borne

Recente gevallen in Europa (Oktober 2017)

Epidemiological update - indigenous Plasmodium falciparum malaria cases in the Apulia region, Italy

epidemiological update

6 Oct 2017

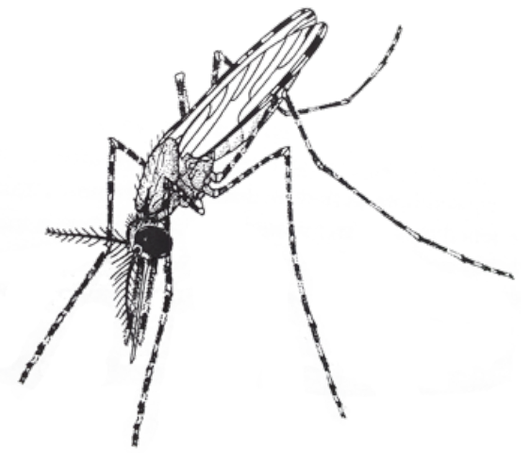
On 4 October 2017, Italy reported through the Early Warning and Response System (EWRS) the detection of four Plasmodium falciparum malaria cases in the Apulia region. Cases are 21 to 37-year-old men, originally from Africa. All stated that they had been in Italy for more than three months. Dates for onset of symptoms ranged from 20 to 27 September 2017. The cases are agricultural workers in Ginosa and Castellaneta. Malaria vectors such as Anopheles labranchiae and Anopheles superpictus are present in Italy.

The report of four *Plasmodium falciparum* malaria cases in Italy without travel history to malaria-endemic countries is unusual. The fact that all the cases had onset of symptoms within a week and all had been in Italy for more than three months suggests an indigenous transmission in Italy resulting from either a 'suitcase' event or an introduced malaria event.

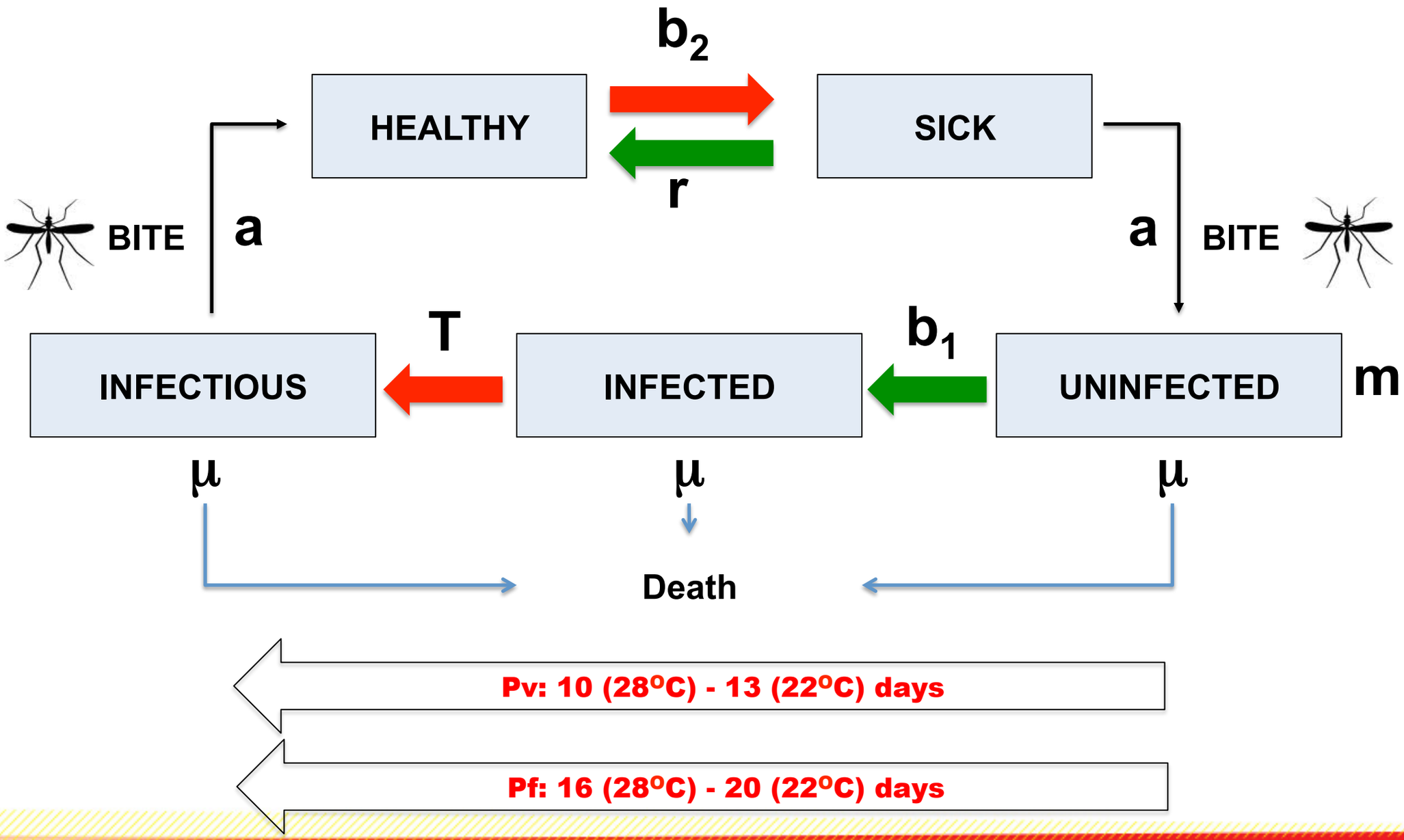
On 20 September, ECDC published the rapid risk assessment 'Multiple reports of locally-acquired malaria infections in the EU'. The conclusions of the rapid risk assessment remain valid. The risk of further spread of malaria in the EU is considered very low. At this time of the year, the risk of further transmission in connection with the cases is considered low. Epidemiological, parasitological and entomological investigations should provide evidence on the source of infection and should support further assessment of the risk for transmission.

The Italian authorities are investigating this event and ECDC is continuing to monitor the event through epidemic intelligence activities.

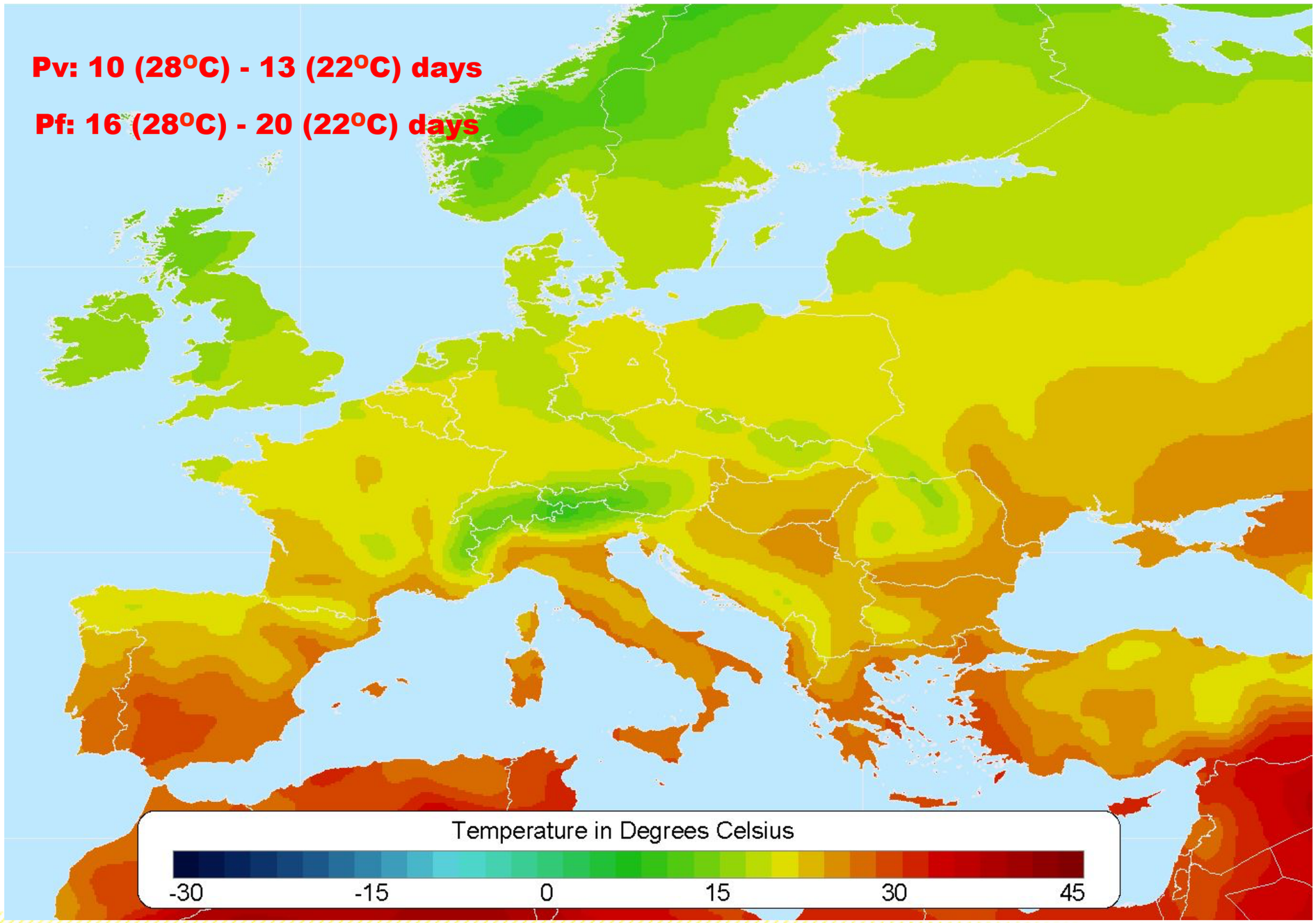
Italy | malaria | public health threat



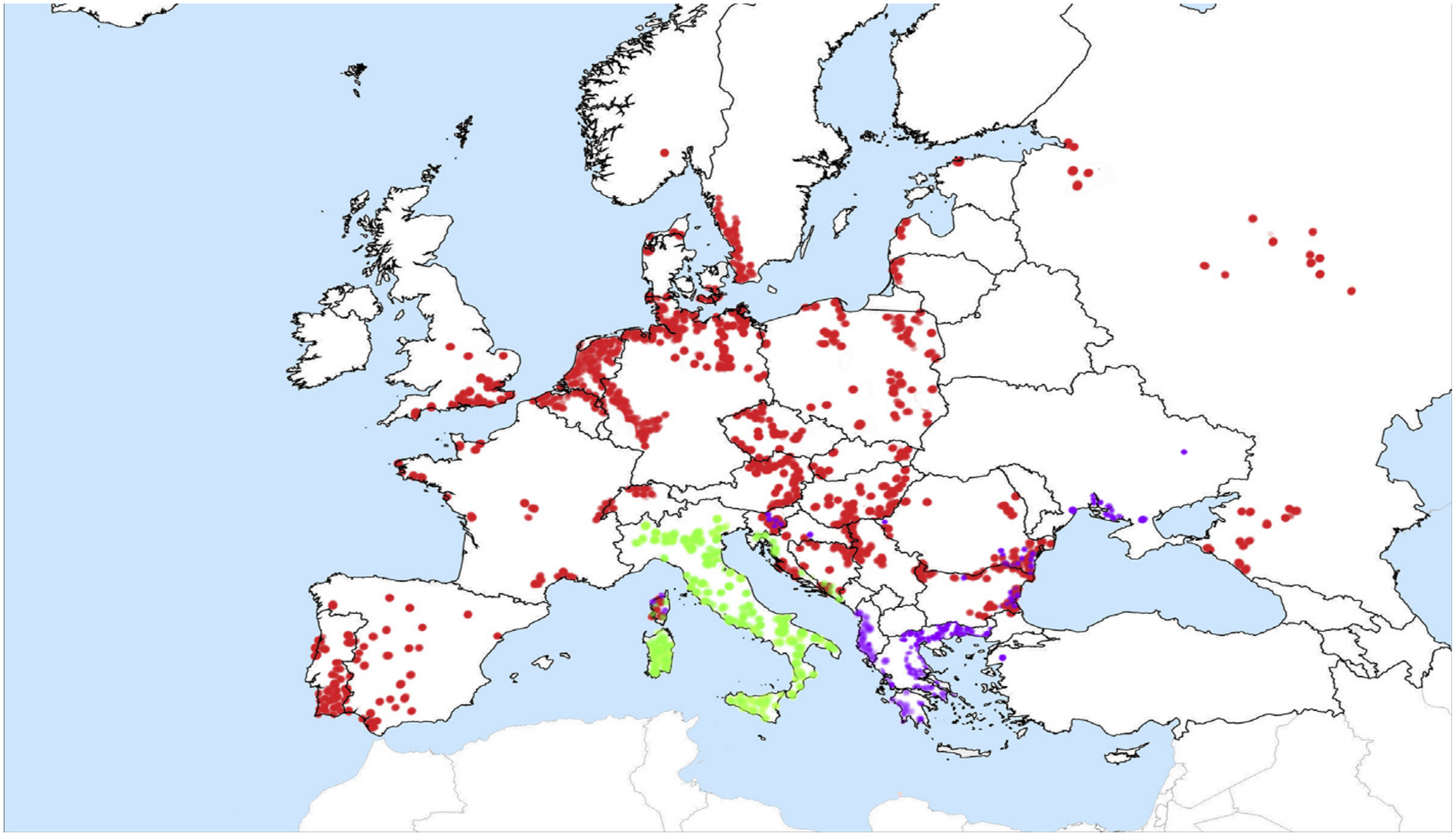
Basic Reproductive Number: $R_o = \frac{m\, a^2\, b_1\, b_2\, e^{-\mu T}}{r\, \mu}$



Climatic suitability (June-July-August average)



Vectoren

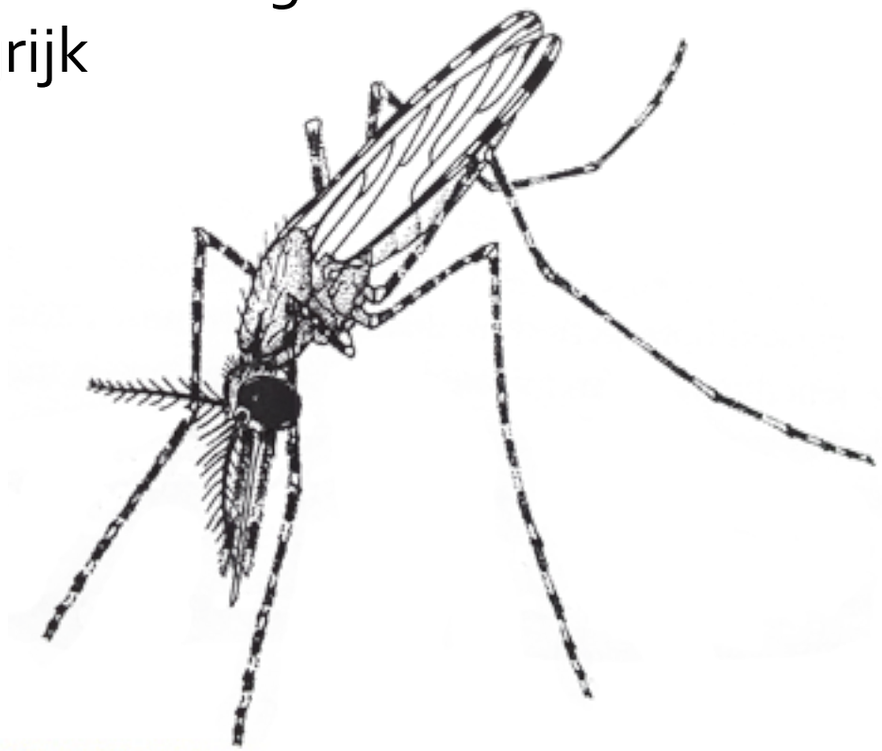


Piperaki & Daikos, 2016

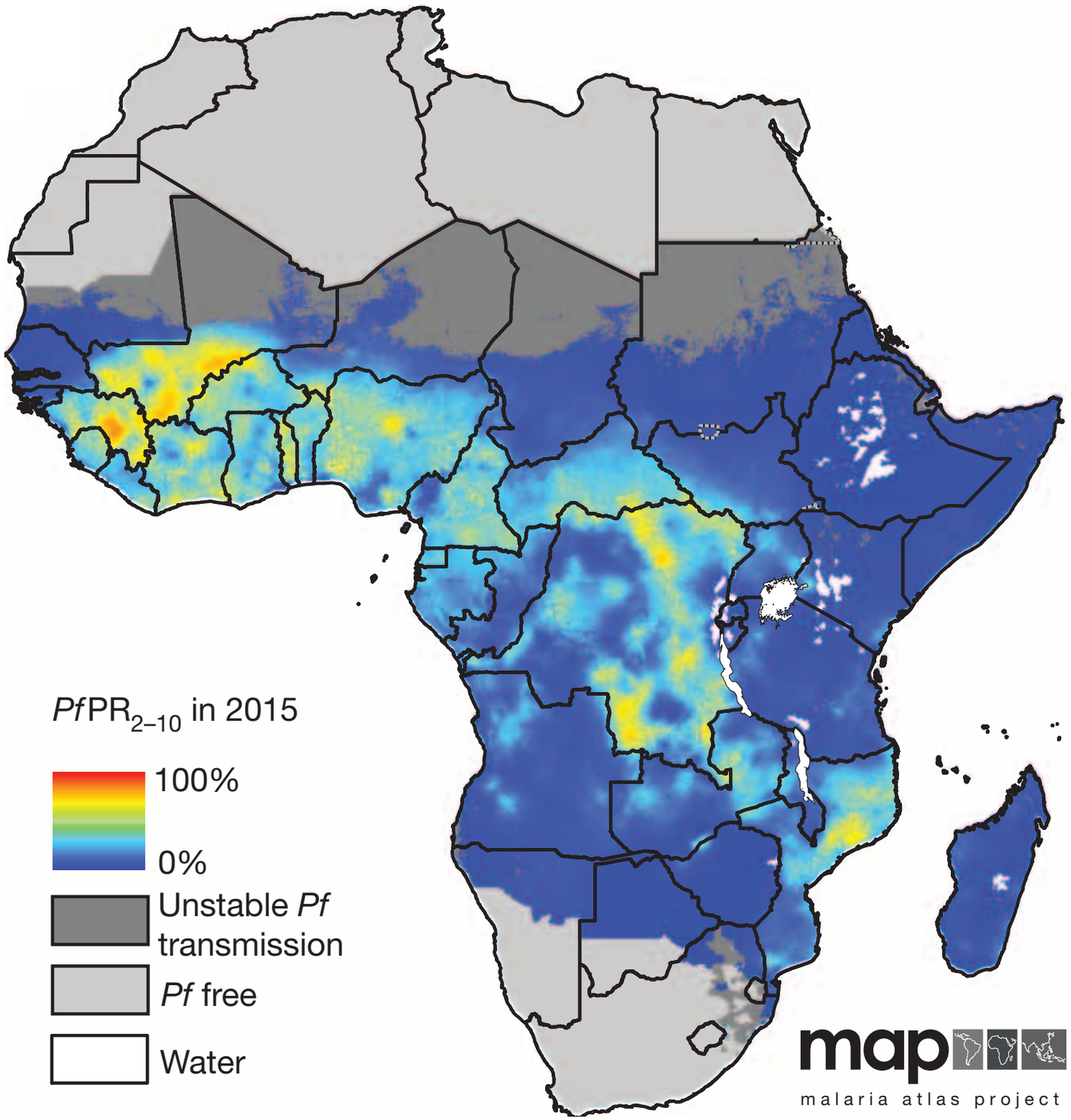
Risico inschatting

- **Ja:** Er is een constante influx van parasietendragers (vluchtelingen)
- **Ja:** Grotere kans op ‘suitcase’ of ‘airport malaria’ (ook Schiphol)

- **Nee**: Ondanks honderdduizenden bewegingen uit Afrika geen trend
- **Nee:** Vector competentie voor Pf gelimiteerd
- **Nee:** Zomermaanden gemiddeld (nog) niet warm genoeg voor Pf
- **Nee:** Monitoring, surveillance en bestrijding op orde; snelle diagnose
- **Nee:** Belangrijke ‘infectieroute’ wordt minder belangrijk



‘Buffer’



Bhatt et *al.* (2015)

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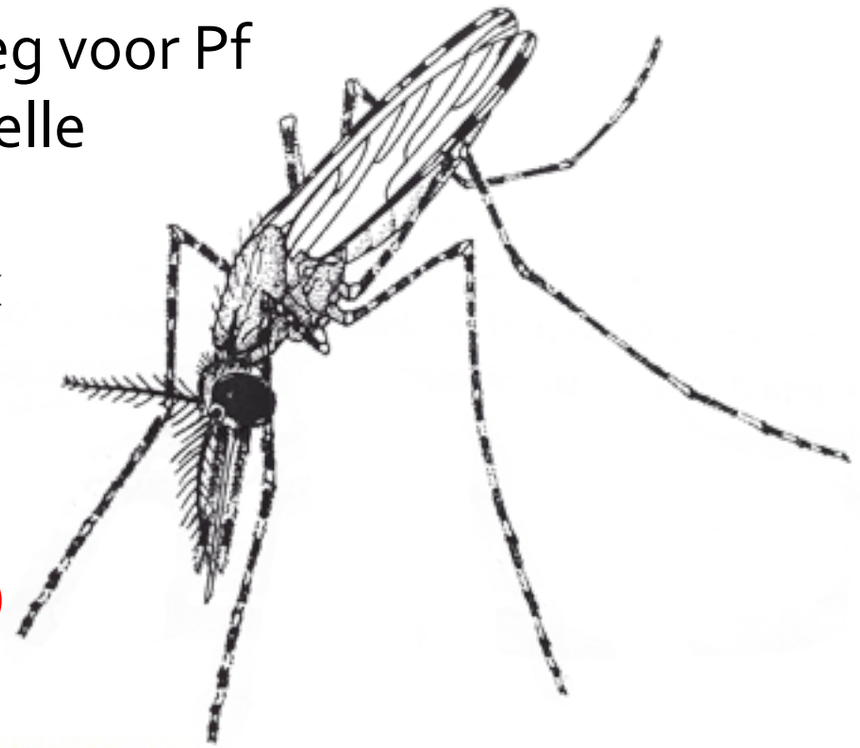

- **Ja – de risico’s voor Aedes (e.g tijgermug) gebonden virusinfecties is vele malen groter! (Bijv. Westnijlvirus)**

Conclusies

‘Any deterioration of organised services by a major catastrophe or war may bring back to Europe a series of communicable diseases among which malaria would not be the last’

Bruce-Chwatt LJ, de Zulueta J. The rise and fall of malaria in Europe: a historico-epidemiological study. Oxford: Oxford University Press; 1980.