

# Research perspectives for an analysis of risks of exposure in an hypothetical context of malaria reemergence Camargue (France)

## A socio-anthropological approach

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- Research linked with :

- *Eden Malaria programme*
- *WP 3 : Public health and human activities*
- *One of the objectives :*

*To evaluate the impact of public health activities, human movements (and parasite importation), and human activities.*

- This study

- Located in Camargue'site (South of France)
  - Is at its beginning
  - Could be useful for the other sites of Eden Malaria
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## ■ Three questions :

- ❑ which human activities can be linked with exposition to mosquito bites ?
  - ❑ which kind of population (residents/migrants) could be linked with the risk of reemergence ?
  - ❑ how importated or authochtonous cases are «managed» by health personnel and patients ?
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# 1. Activities and exposure to mosquito bites

## ■ Methodology

- ❑ To list all human activities in the research zone
  - ❑ To determine the distribution in time and space of these activities
  - ❑ To estimate the number of residents and persons passing through the zone throughout the different months of the year
  - ❑ To collect the discourse of the actors on how they protect themselves against the mosquitoes.
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# 1.1. Activities in the research zone



**c** = reed cutting ; **ch** = hunting ; **e** = cattle breeding (bulls and horses)  
**h** = horticulture ; **m** = gardening ; **r** = rice farming ; **t** = tourism ; **v** = wine-growing

## 1.2. Schedules of activities

	Summer	Winter		All the year
Agricultural Activities			Leisure Activities	
Horticulture	6 am-1 pm	8 am-2 pm	Guided tours	9 am-6 pm
Wine growing	6 am-10 pm	8 am-6 pm	Hunting	6 am-8 pm
Gardening	6 am-2 pm	8 am-2 pm		
Rice farming	9 am-7 pm	10 am-6 pm		
Cattle breeding	7 am-7 pm	8 am-6 pm		
Reed cutting	7 am-7 pm	8 am-6 pm		

**Most exposed activities : rice farming, wine-growing, reed cutting, cattle breeding**

## 1.3. Residents and persons passing through the zone

	« Low » season	« High » season
Residents	200	
Permanent workers	105	
Seasonal workers	11 (jan-feb)	106 (may-june)
Tourists	0 (nov-feb)	2840 (jul-aug)
Fishermen/hunters	0 (march-jul)	400 (aug-feb)

- Seasonal workers seem to come from the neighborhood (to verify)
- Fishermen and hunters could be the most exposed (considering the season and the schedule of their activities)
- Tourists are exposed, less because their schedule than their inappropriate preventive attitudes



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## 1.4. Protection against mosquito bites

The discourses reveals an opposition between « us » and « them ».

- « Us » = residents, people who do not mind mosquitoes
- « Them » = foreigners, tourists, people who adopt inappropriate attitudes, fears mosquitoes, claiming a more intensive fight measures against mosquitoes

Preventive attitudes facing mosquito bites is also a question of identity

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## 2. Population movements

- Migration from countries where malaria is present is one of the main issue
- A lot of migrants in the south of France come from Northern and Subsaharan Africa.

Questions, in the perspective of reemergence of malaria are :

- Who are the migrants and which countries they come from ?
  - What kind of activities do they have ?
  - Where do they live ?
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## 2. Population movements

An exemple of non « at-risk » [of reemergence] people :  
the Comorian population

- Comorian population is one of the most numerous migrant community in Marseilles
- One of the most often infected people by malaria (> 60% patients hospitalised for malaria in Hopital Nord in Marseilles)
- Resident Comorian people use to go to the Comoros for hollidays, with their children if they can

**But**

- They live in town and their activities are in town
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## 2. Population movements

Looking for « at risk » migrant population

- The variables we need :
    - The country they come from
    - Their residence place
    - Their activities
  - The difficulties to collect the information :
    - Not always available in medical data
    - Very disseminated
    - The illegal immigration
    - Fear of employers (seasonal workers)
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### 3. «Management» of malaria attack and prevention

- Malaria notified cases could be interesting for two reasons :
  - Considering the « snow ball » methodology, it could lead to identify groups (patient's family) exposed to malaria but not ill.
  - Patients are not always compliant to malaria treatments, especially children ; incompleted treatment, and so far inefficient treatment, are not rare. Could this patients be « at risk » of transmission ?

To go ahead with these questions should require micro-approach

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# Conclusion

- Three questions :
    - ❑ Relationships between human activities and adequate « milieu » for transmission
    - ❑ Populations movements, migrations, and risk of transmission
    - ❑ Declaration and treatment of malaria
  - These questions must be explored for other sites by social scientists ("not entomologists", Didier's remark) ?
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