



Cholangiocarcinoma and liver fluke infection in Lao PDR

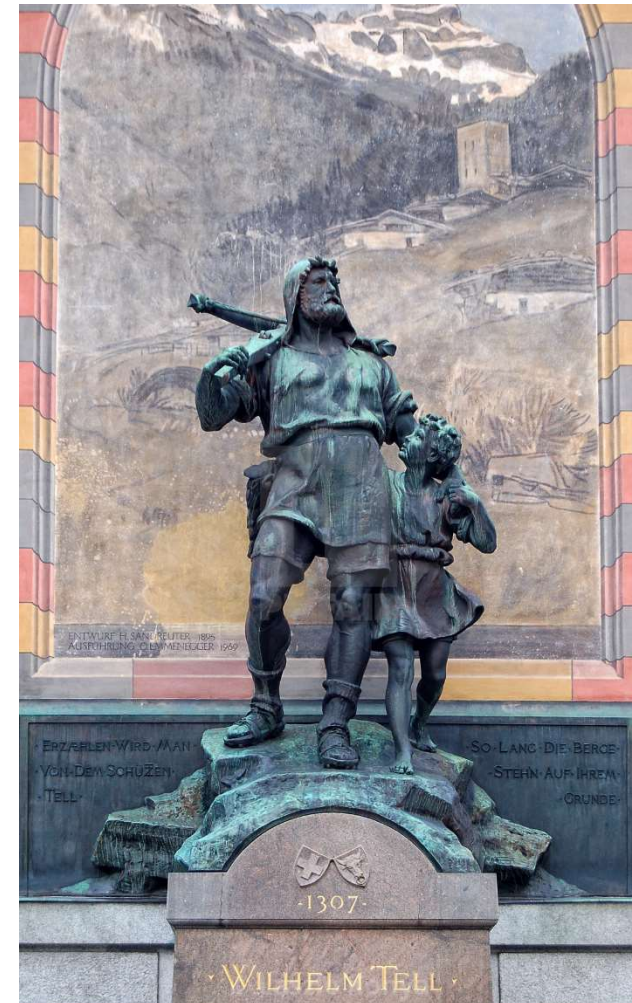
Cholangiocarcinoma UK Annual Conference

Nottingham, 14 November 2019

Peter Odermatt

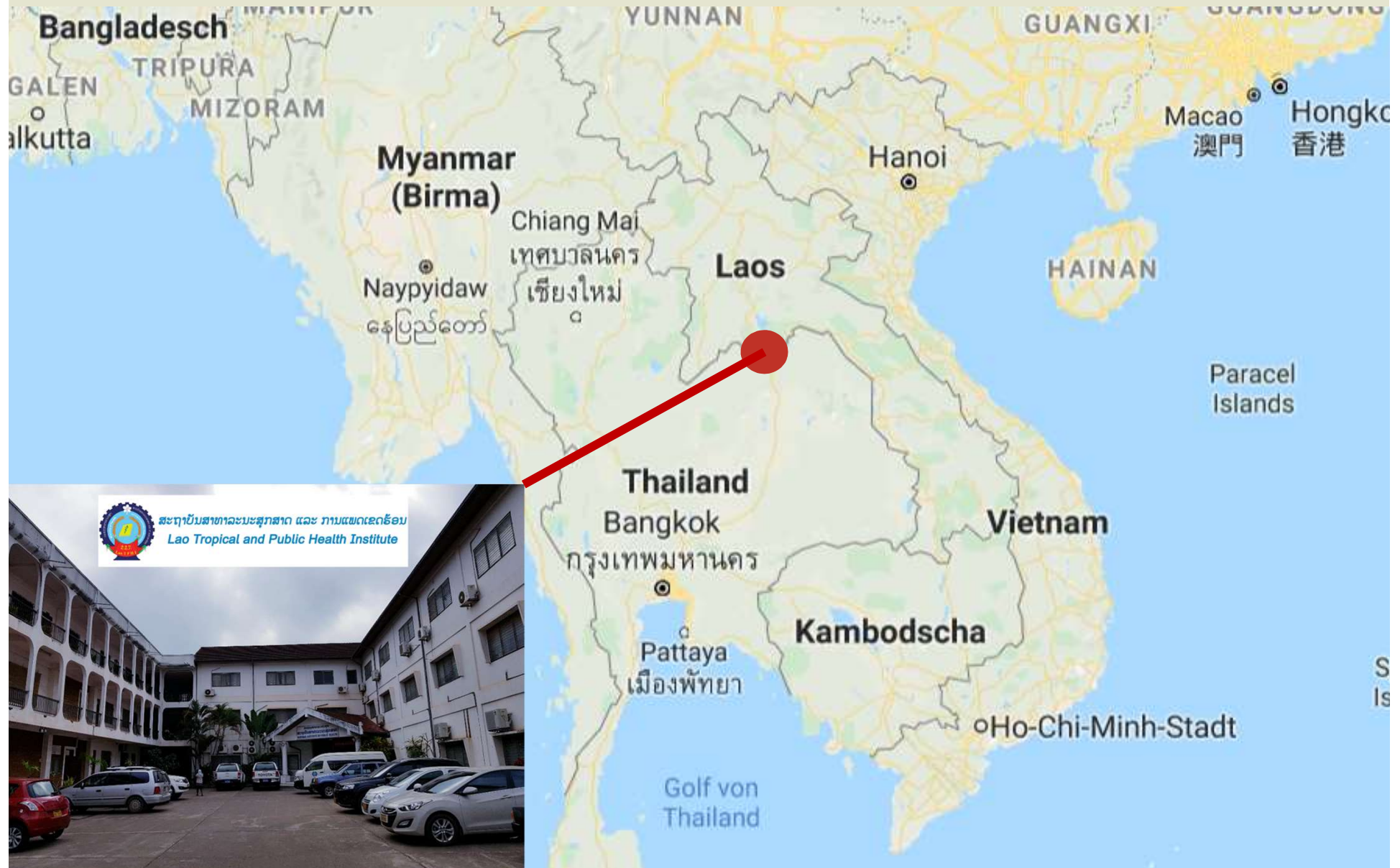


Robin Hood
Nottingham



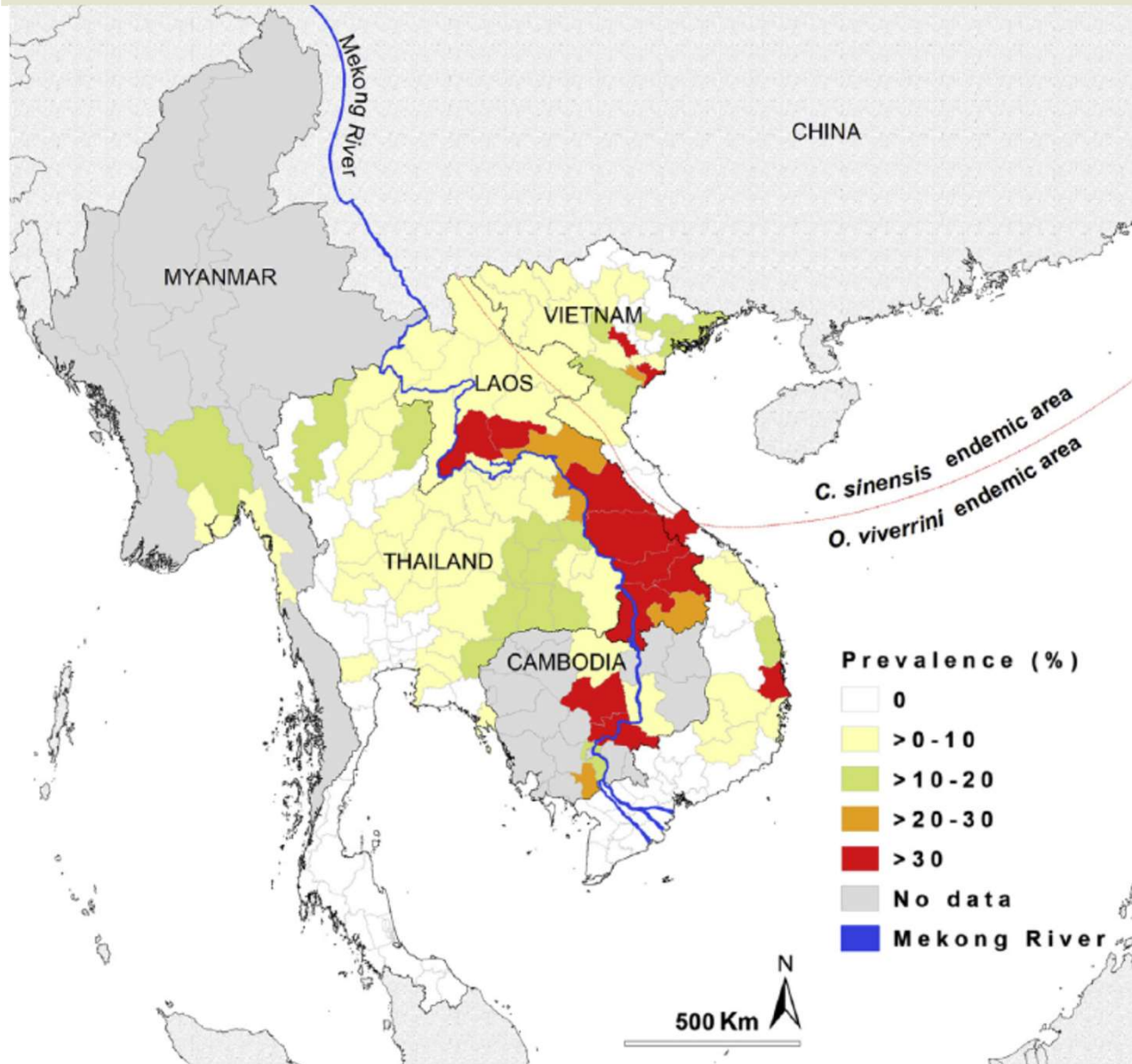
Wilhelm Tell
Uri, Switzerland



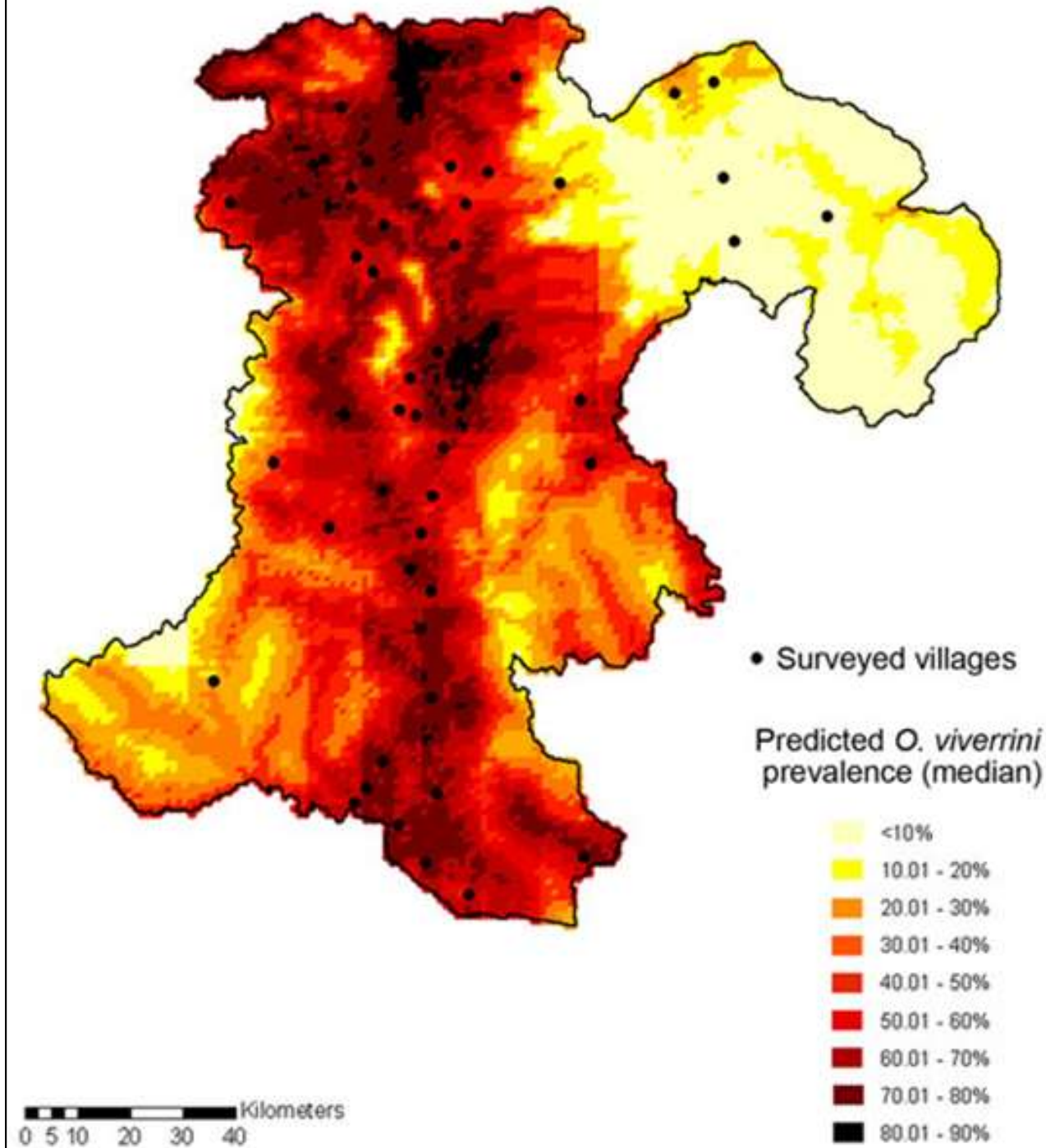


Lao Tropical and Public Health Institute, Vientiane

Epidemiology - *Opisthorchis viverrini*



Lao PDR: Champasack province



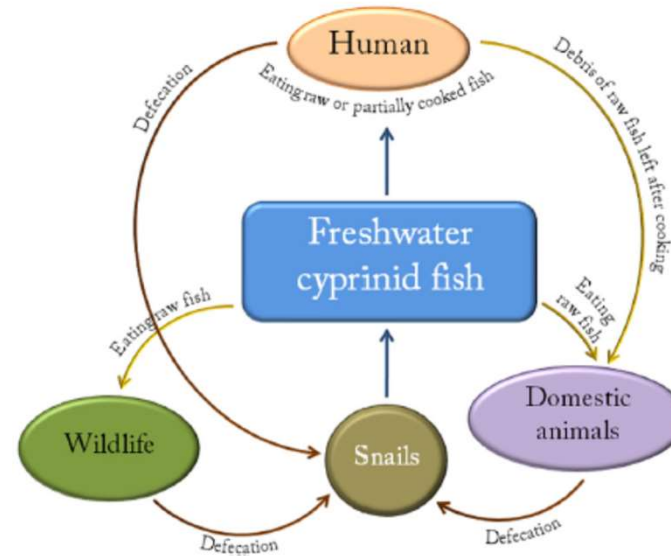
(Forrer et al 2012)



- O. viverrini***
- Adult worm
 - bile ducts



length ~ 10 mm



Metacercariae



- Cyprinoid fish:
- length: 5-10 cm

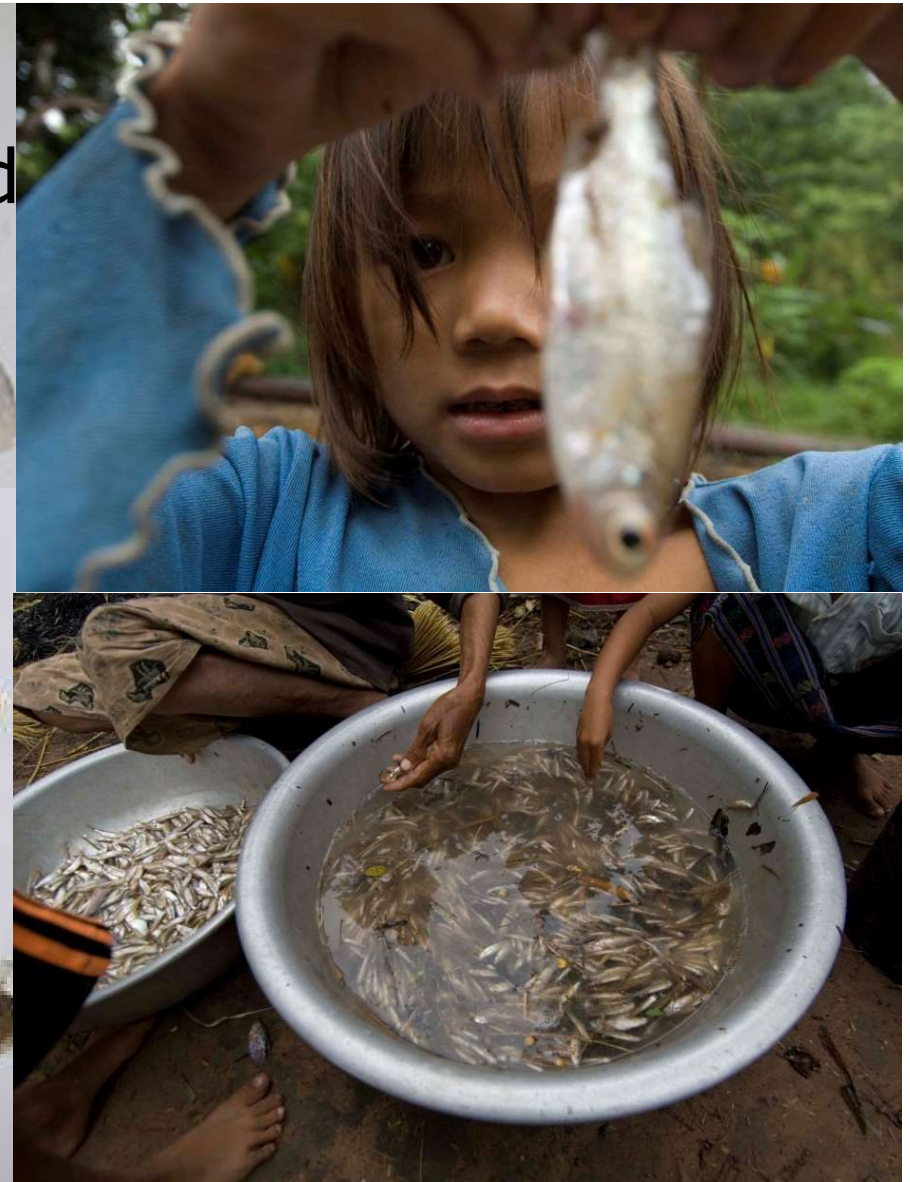
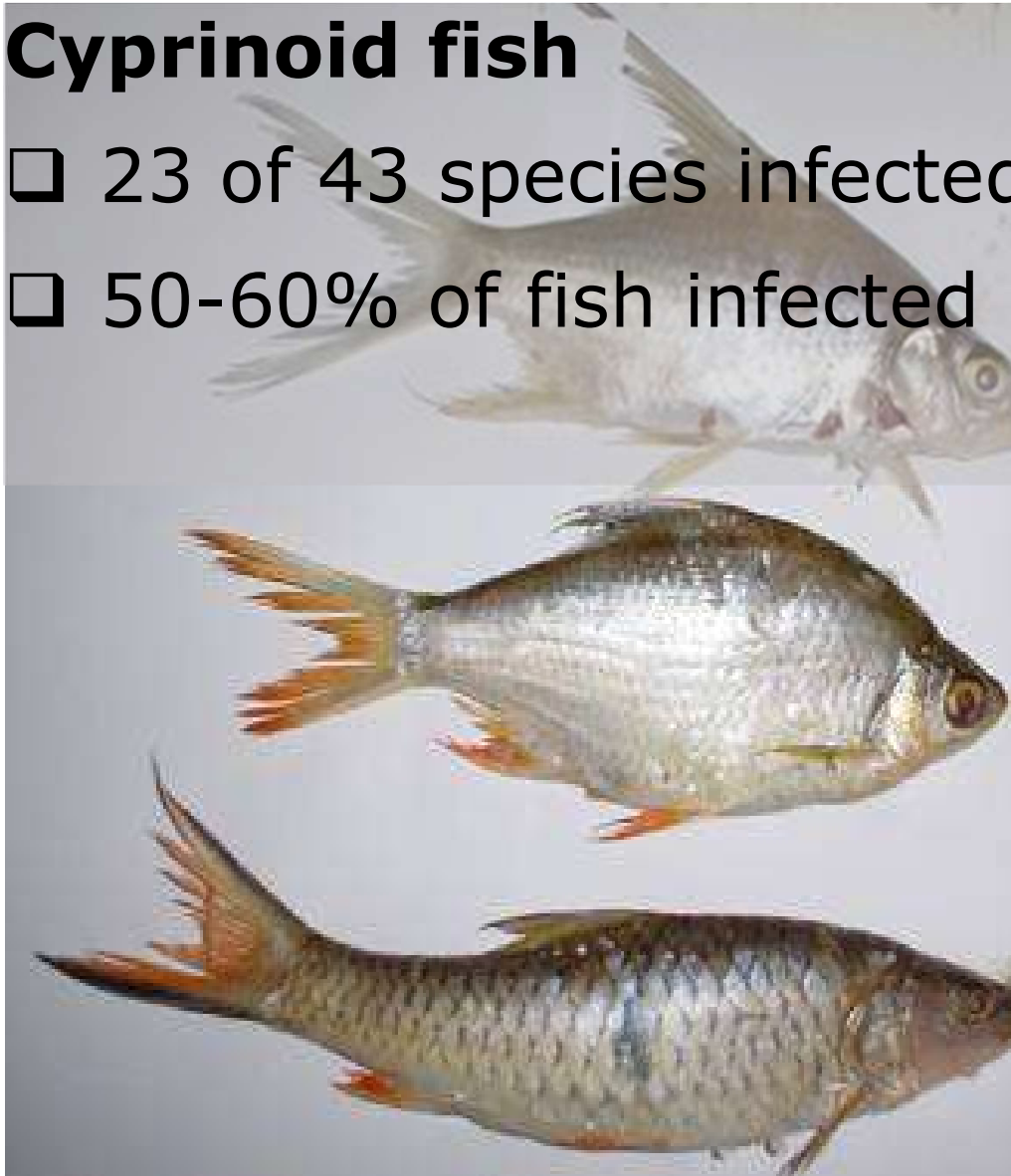






Cyprinoid fish

- ❑ 23 of 43 species infected
- ❑ 50-60% of fish infected

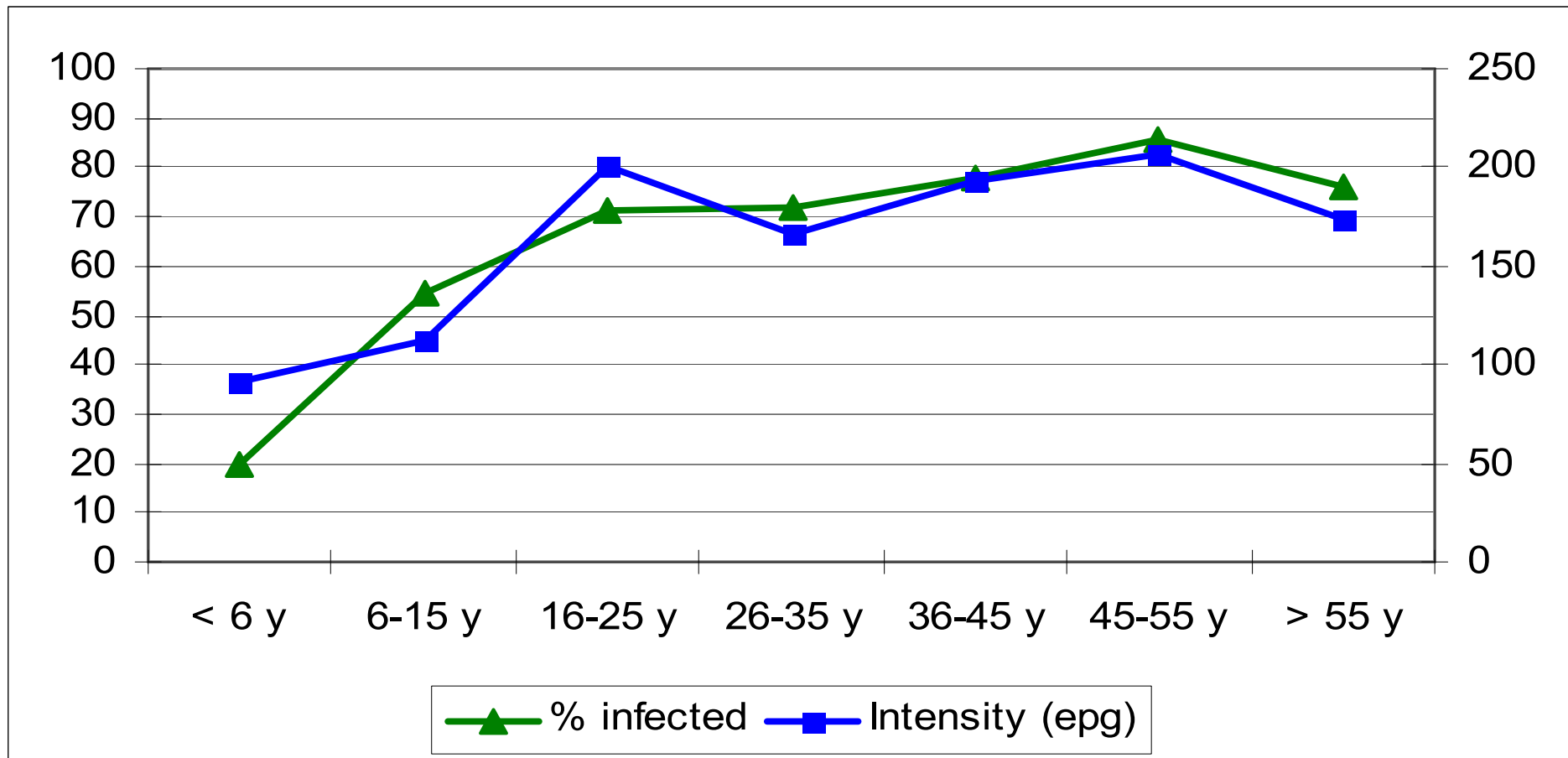


(Sayasone et al 2007)

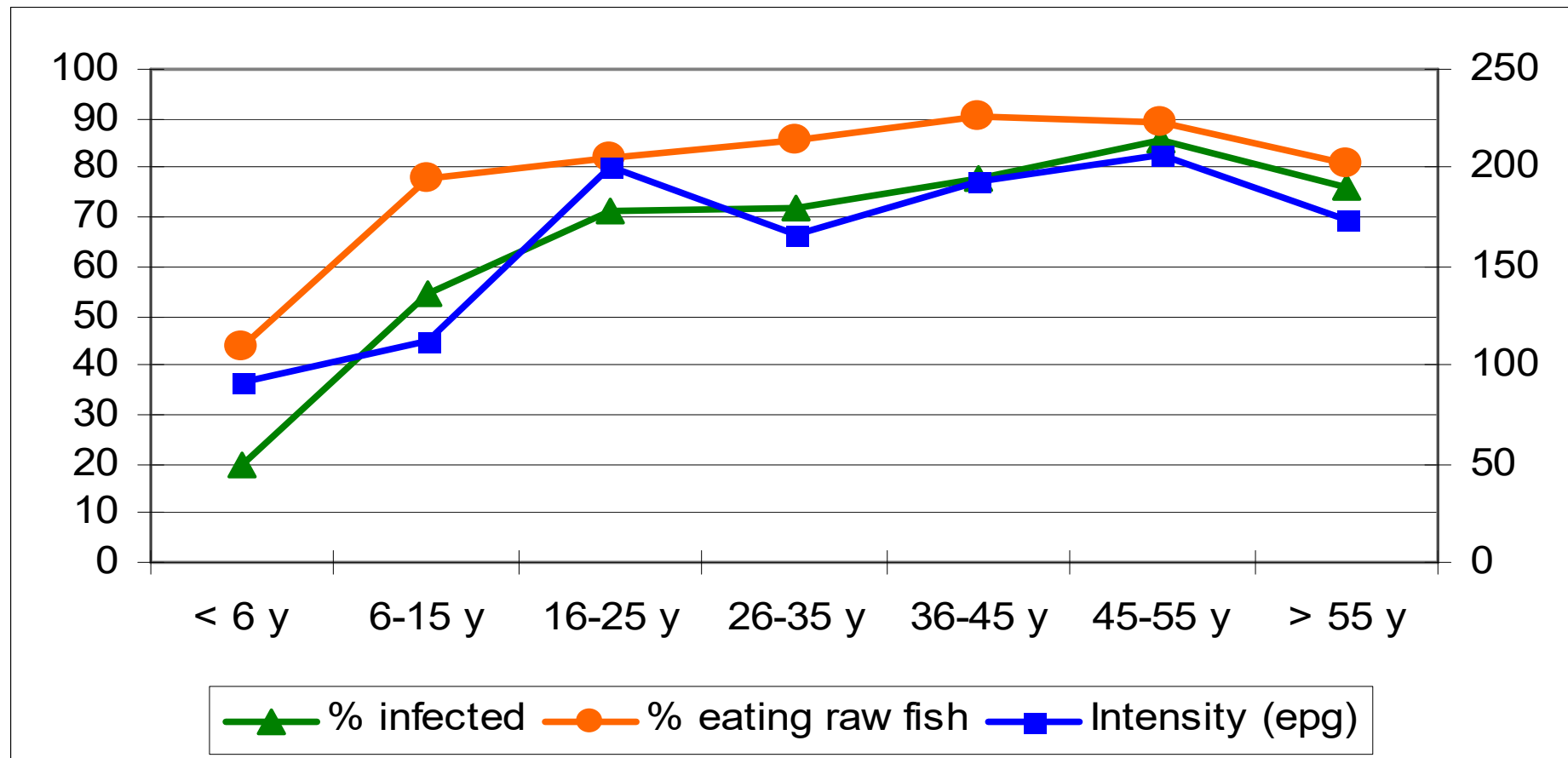


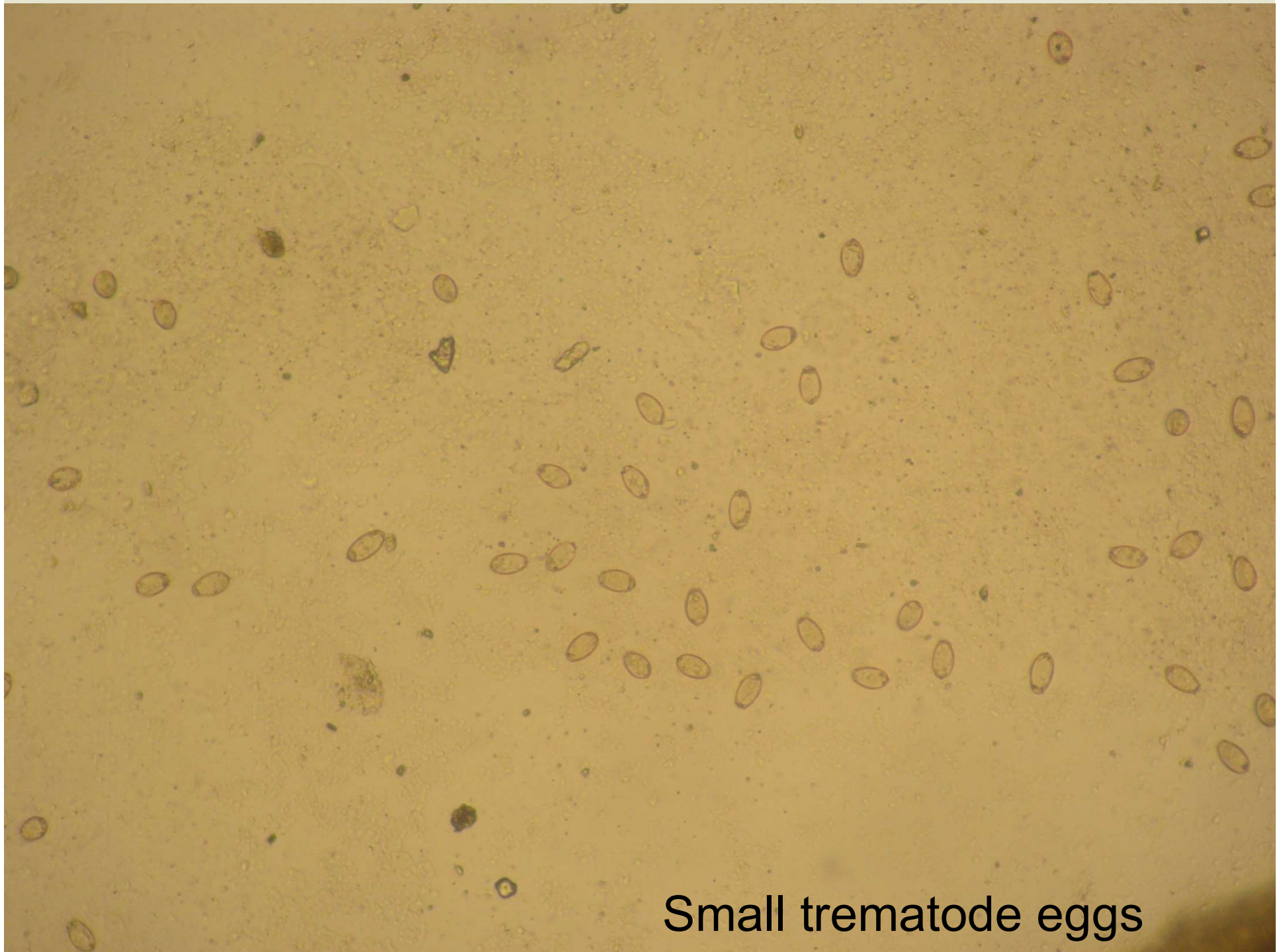


***O. viverrini* infection prevalence (%) und intensity (eggs/gram stool) per age group**



***O. viverrini* infection prevalence (%) und intensity (eggs/gram stool) per age group and consumption of raw fish**



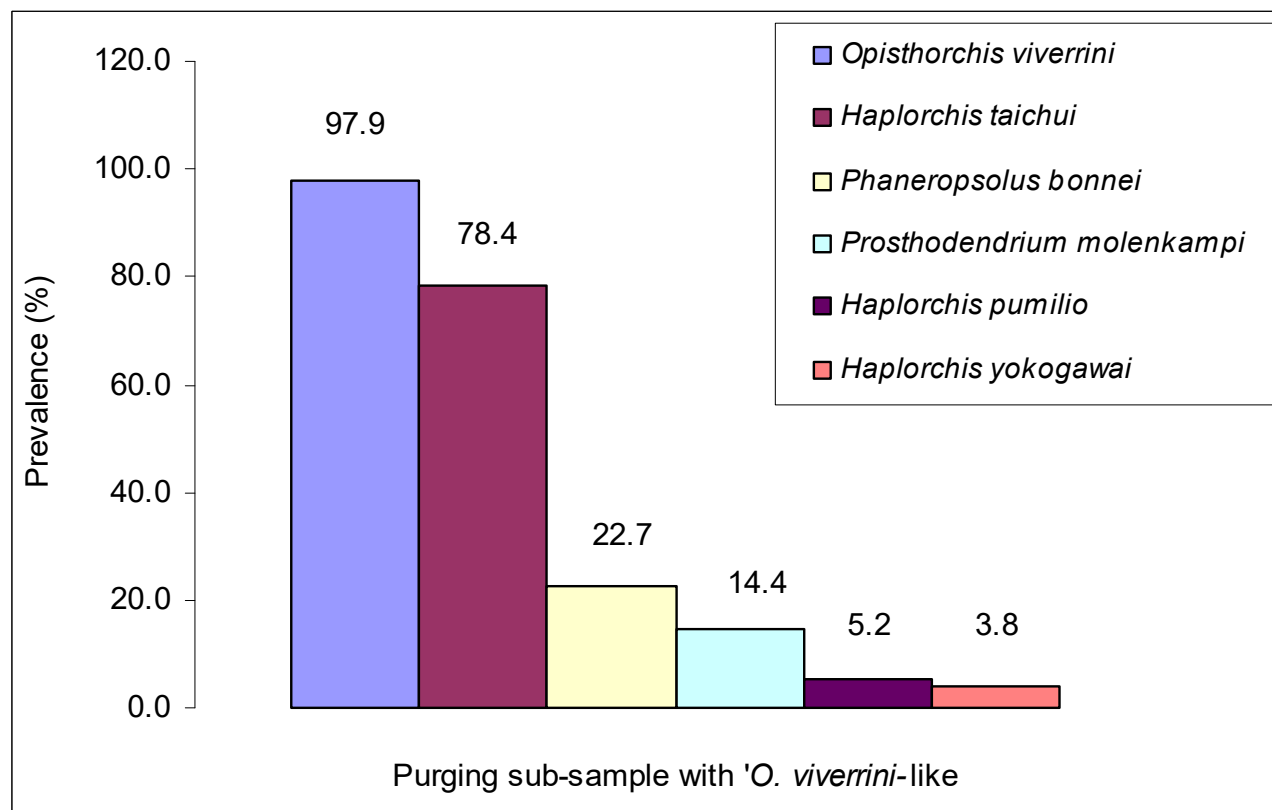


Small trematode eggs

Saravane: purgation of *O. viverrini* patients (n=97)

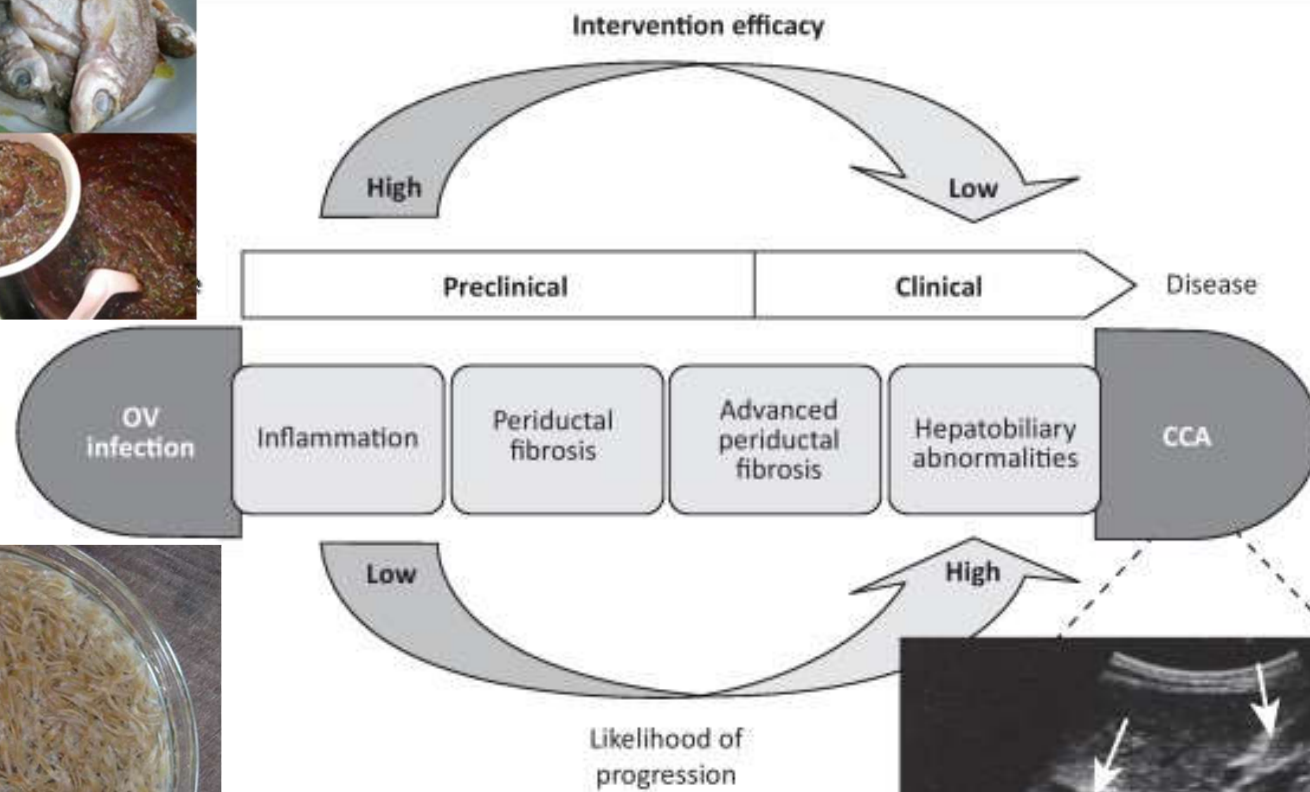
Community (n = 82) Hospital (n = 15)	Total / species	Mean / pers on	Range / person
Liver flukes			
<i>Opisthorchis viverrini</i>	14,802 2,953	181 227	8-2,189 3-785
Intestinal flukes			
<i>Haplorchis taichui</i>	14,530 1,025	211 146	2-3,450 25-300
<i>Haplorchis pumilio</i>	108 0	22 0	12-50 0
<i>Haplorchis yokogawai</i>	74 0	37 0	14-60 0
<i>Phaneropsolus bonnei</i>	735 175	37 88	5-280 75-100
<i>Prosthodendrium molenkampi</i>	482 80	37 80	4-195 0-80
<i>Echinochasmus japonicus</i>	10 0	3 0	2-4 0

O. viverrini and intestinal flukes



Helminth infections in household animals

Parasites	Dog (n = 68)	Cat (n=64)	Buffalo (n=94)	Pig (n=105)
<u>Trematodes</u>				
<i>S. mekongi</i>	14.7	0.0	0.0	0.0
<i>O. viverrini</i>	25.0	53.1	0.0	1.0 (1)
Intestinal Flukes	4.4	28.1	0.0	0.0
<i>Echinostoma</i> sp.	39.7	54.7	0.0	0.0
Large trematode eggs	0.0	0.0	19.2	0.0
<u>Nematodes</u>				
Hookworm	55.9	28.1	0.0	28.7
<i>A. lumbricoides</i>	10.3	7.8	0.0	48.6
<i>T. trichiura</i>	5.9	3.1	0.0	15.2
<i>Gnathostoma</i> sp.	0.0	0.01	0.0	0.0
<u>Cestodes</u>				
<i>Taenia</i> sp.	0.0	10.9	0.0	0.0



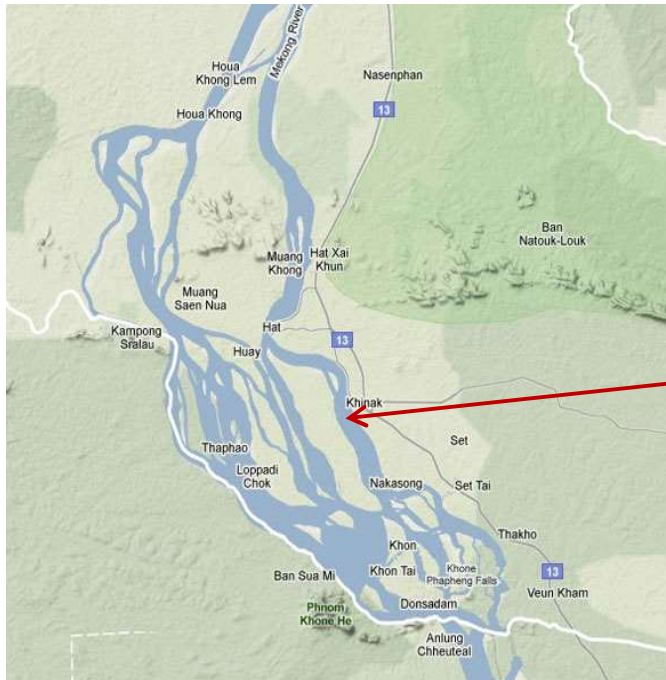
TRENDS in Parasitology

Study area

Champasack province,

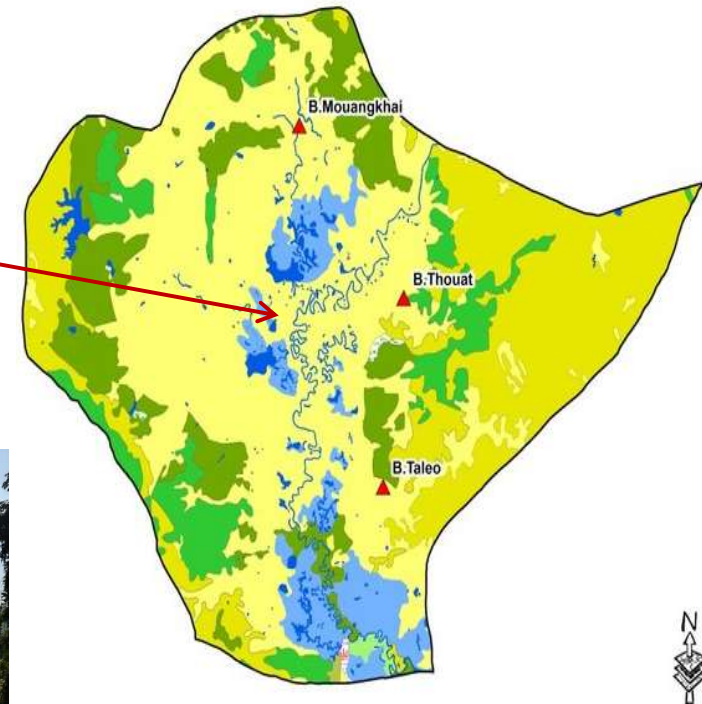
Khong district

(Si phan don) Region of the 4000 Islands



Savannakhet province,

(Champhone district)



Method

Village selection

- Champasack (Khong district), 12 villages
 - Savannakhet (Champhone district), 9 villages
- Enrolled participants:

Assessments:

- Risks (household, individual questionnaire)
- Helminth infection (2 faecal samples)
- Haemoglobin
- Biobank
 - urine sample
 - venous blood
 - faecal sample
- Clinical examination

Abdominal ultrasonography

Follow-up

- US
- CT scan
- MRI
- ERCP
- Hepatectomy

Informed consent



Blood taking



Physical exam



Individual Questionnaire





Lao CCA screening and care program (Lao CASCAP)

- Infection
 - High liver fluke (*O. viverrini*) prevalence rates
- Liver morbidity
 - High prevalence of suspected CCA which need follow up (US, CT, MRI/MRCP and ERCP)
 - Evolution is rapid
 - High prevalence of CCA (incidence)
- Patients (Lao CASCAP)
 - Benefit of clinical management
 - Multidisciplinary team required
- US assessment:
 - Useful for screening and follow up
 - Labor intense → training more sonographer in local hospital



Thank you for your attention!