Department of Human Nutrition

Edible Tarantulas and Crickets in Cambodia:

Informal Market and Potential Contribution to Rural Livelihood (preliminary findings from a field survey)

Mr. Christopher Münke

Master in Agricultural Development

University of Copenhagen

Background of the Study

The Tarantula and Cricket study is a part of the WINFOOD project, a collaboration between the University of Copenhagen, the Fisheries Administration Cambodia and University of Nairobi, Institute of Tropical and Infectious Diseases

WINFOOD Objective:

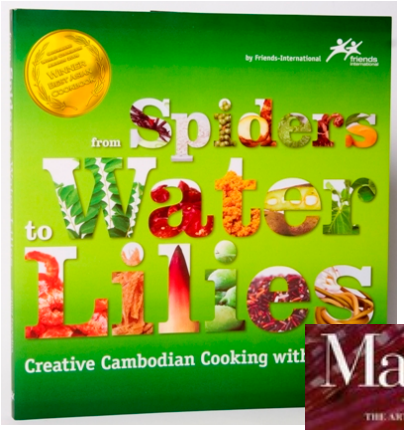
"To develop nutritionally improved foods for infants and young children in low-income countries, based on improved utilization of traditional foods (semi-domesticated and wild indigenous foods from uncultivated land or aquatic environment), together with improved traditional food technologies (e.g. fermentation)."

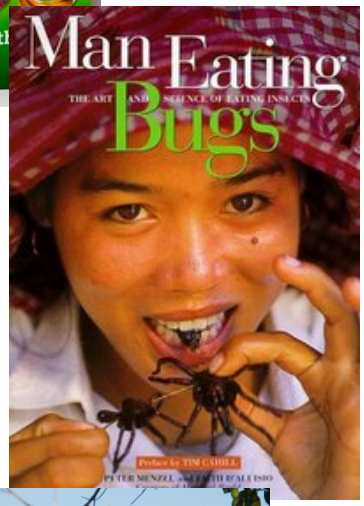
Tarantula & Cricket Study Objective:

"To investigate the informal market and value chain of the edible tarantula (Haplopelma longipes) and crickets in Cambodia for further use in the WINFOOD project."

Entomophagy in Cambodia

- Wide spread consumption of crickets, spiders, water beetles / bugs and high consumption of other aquatic animals (snails, frogs).
- Consumption common among rural and urban population
- Little known about the history of entomophagy in Cambodia
  - Often referred to as "hunger food" during Khmer Rouge Regime by different sources, **but** unproven.
- Lot of publication through different media channels: Newspapers, Travel blogs, Television, Books





Study Methodology

Period:

January-May 2012

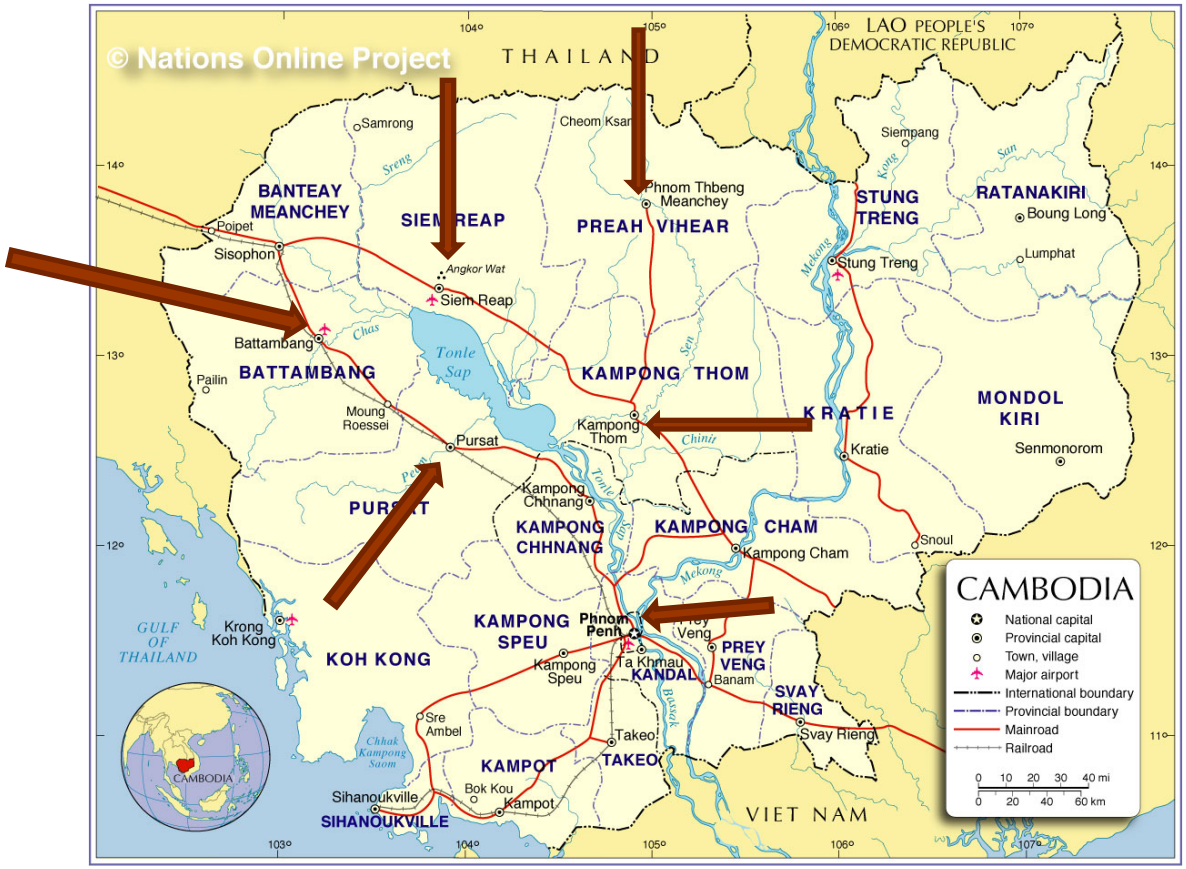
Methods used:

40 Semi structured interviews
6 Focus group discussion
50 Questionnaires
Observation

Sampling:

Random sampling with actors in the value chain

Study Area


© Nations Online Project
THAILAND
LAO PEOPLE'S DEMOCRATIC REPUBLIC
VIET NAM
GULF OF THAILAND
BANTEAY MEANCHEY
SIEM REAP
PREAH VIHEAR
STUNG TRENG
RATANAKIRI
BATTAMBANG
KAMPONG THOM
KRATIE
MONDOL KIRI
PURSAT
KAMPONG CHHNANG
KAMPONG CHAM
KOH KONG
KAMPONG SPEU
PREY VENG
KANDAL
SVAY RIENG
KAMPOT
TAKEO
SIHANOUKVILLE
Samrong
Cheom Ksan
Siempang
Phnom Thbeng Meanchey
Boung Long
Lumphat
Poipet
Sisophon
Angkor Wat
Siem Reap
Stung Treng
Battambang
Pailin
Tonle Sap
Moung Roessei
Pursat
Kampong Thom
Kratie
Senmonorom
Kampong Chhnang
Kampong Cham
Snoul
Phnom Penh
Ta Khmau
Banam
Svay Rieng
Krong Koh Kong
Kampong Speu
Sre Ambel
Takeo
Bok Kou
Kampot
Sihanoukville
CAMBODIA
National capital
Provincial capital
Town, village
Major airport
International boundary
Provincial boundary
Mainroad
Railroad
0 10 20 30 40 mi
0 20 40 60 km

Edible Tarantula a Delicacy in Cambodia

Value Chain and Livelihood in the Spider Business

- Wild collection in forest and shrub land
- Main collection areas are North of the Tonle Sap lake
- Shift in collection areas due to over collection and land use change

- Trade mainly in Cambodia
- Limited export to private persons in neighboring countries

- Collectors earn approx. 200 – 300 Riel per piece (0,07 USD)
- Street price 1500 – 2000 Riel per piece (0,37 USD)
  - (5 years ago 500 Riel per piece)
- Restaurant: 4 Dollar for 3 pieces

Nutrition and recipes

- High content of Zinc (40 - 50 mg /per 100 g dry weight)
  - Zinc is essential for child growth

- Means of preparation:
  - Deep frying in oil with seasoning
  - Roasting over fire
  - Fermenting with local ingredients
  - Spider Prahoc (Paste normally based on fish)

Edible Crickets a Growing Market

Edible Cricket Value Chain and Livelihood

- Country wide increase in wild trapping (Scale 1 – 100 traps)
- Seasonal variation of intensity and scale in the provinces
- Mainly along major roads around Tonle Sap lake
- Middlemen are mainly family businesses sharing the market
- High season November – February and April – June
- Cash income from catching, contributes in the dry season
- No official organizations among collectors but informal exchange

Cricket Farming in Cambodia

- Growing number of cricket farmers around the countries
- Informal network for exchange of techniques and eggs for breeding
- So far the better off invest into this business

- Open questions for cricket farmers
  - Pest / Diseases prevention
  - Max. Productivity?
  - Safe feed sources

Nutrition and Recipes

- Analysis for protein and micronutrient content have been carried out for several species by researchers.

- Means of preparation:
  - Deep frying in oil with seasoning
  - Mango-cricket salad
  - Probably more unknown recipes..

Conclusion

- Entomophagic behaviour is increasing in rural and urban areas, due to increase in availability
- Consumption of certain species also before the Khmer Rouge Regime, but scale unknown
- Its not only a food of the poor, but also popular among the urban middleclass
- It contributes significantly to the income of people in rural areas especially during the dry season
- Spiders likely to become scarce due to over collection, which increases market price
- Crickets trade is increasing, especially through the exchange with Thailand
  - But also local consumption seems to increase
- Market is completely informal and awareness about the topic among government, national and international organizations is limited

Recommendation

- Include entomophagy into food assessments of national and international organizations.
- Investigate the effect of wild harvest on biodiversity
- Investigate the bioavailability of micronutrients and proteins from consumption from processed and unprocessed insect
- Who is and will be responsible for policies in the long term
- Cricket farming can be assisted by “Best practice guides”
- Promote as a normal food, not as “freaky” food or food of the poor

Thank you very much for your attention

Please visit the WINFOOD poster stand for further information at the poster exhibition.

Special thanks to Mr. Lach Thea and Mr. Ao Veasna for assisting during fieldwork and all staff members at the Department of Post-Harvest Technologies and Quality Control, Fisheries Administration Cambodia for their excellent support.

Thanks for the supervision during this study by Dr. Nanna Roos and Dr. Carsten Nico Hjortsø from Copenhagen University.

Special thanks for financial support for this study to the Danish Development Agency (DANIDA), University of Copenhagen, Oticon Fund Denmark and the fellowship at the European League of LIFE Science Universities (ELLS).