

SOCIO-CULTURAL UNDERSTANDINGS OF HEALTH AND DISEASE IN INFECTION CONTROL PROGRAMS

The case of Liver fluke and CCA



Pierre Echaubard & Bruce A. Wilcox



Rationale



SOCIO-CULTURAL and ECOLOGICAL factors
directly and indirectly influencing **Disease manifestation** and related to **Community Resilience**
(broader health considerations)

- Disease control procedures or campaigns conflict with broader health development imperative: physiological risk vs biosychosocial risk
- Campaigns are only quick fixes as the broader socio-economic context is not addressed.

Rationale



SOCIO-CULTURAL and ECOLOGICAL factors
directly and indirectly influencing **Disease manifestation** and related to **Community Resilience**
(broader health considerations)

As we need health in all policies we also need “all” developmental components to be accounted for in sustainable health initiatives (systems approach)

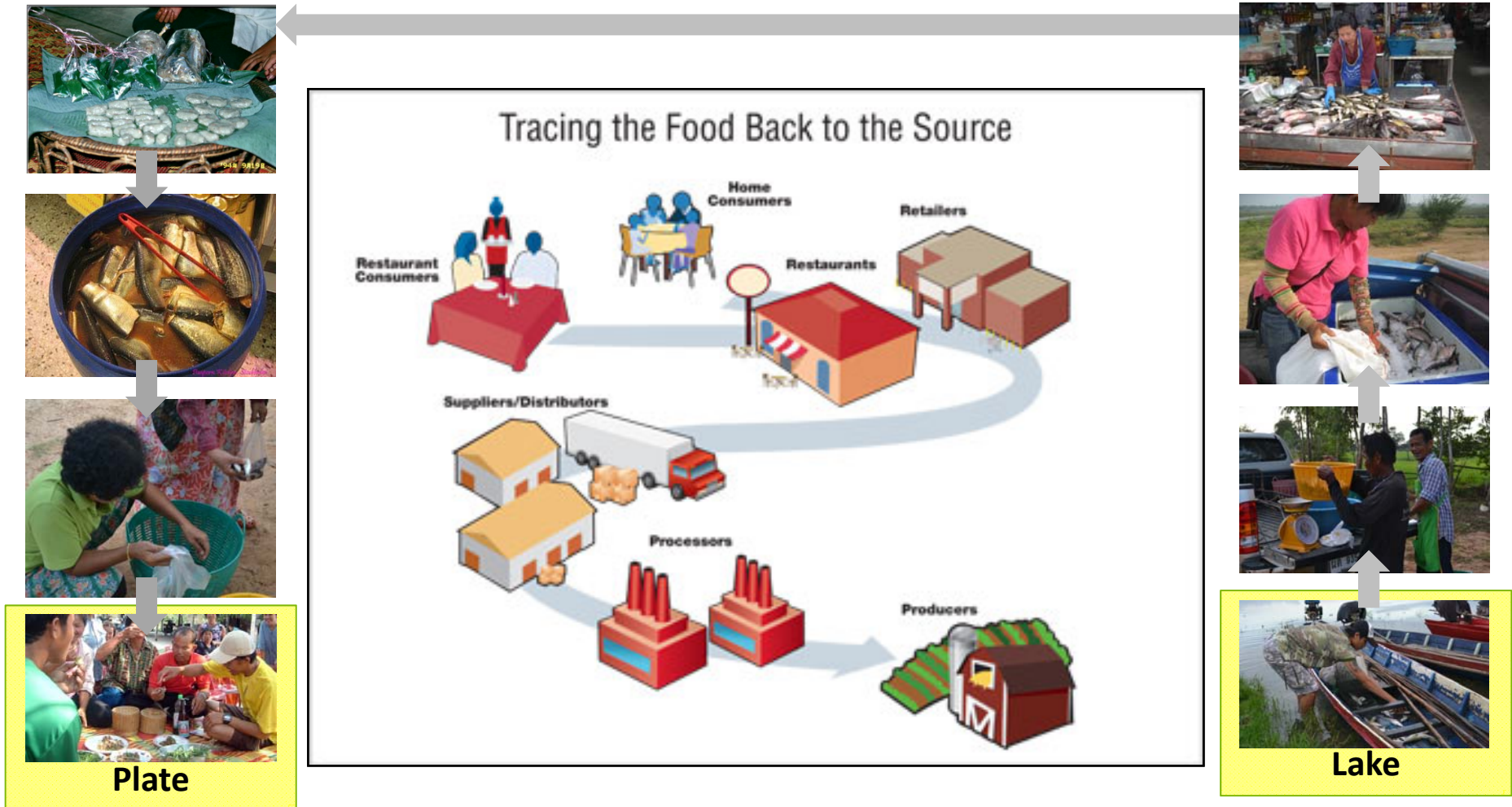
How can we design disease control interventions that do not harm communities resilience and adaptive capacity?

Design “community needs discovery and assessment” - adapted program design and monitoring for community benefits beyond public health agendas.

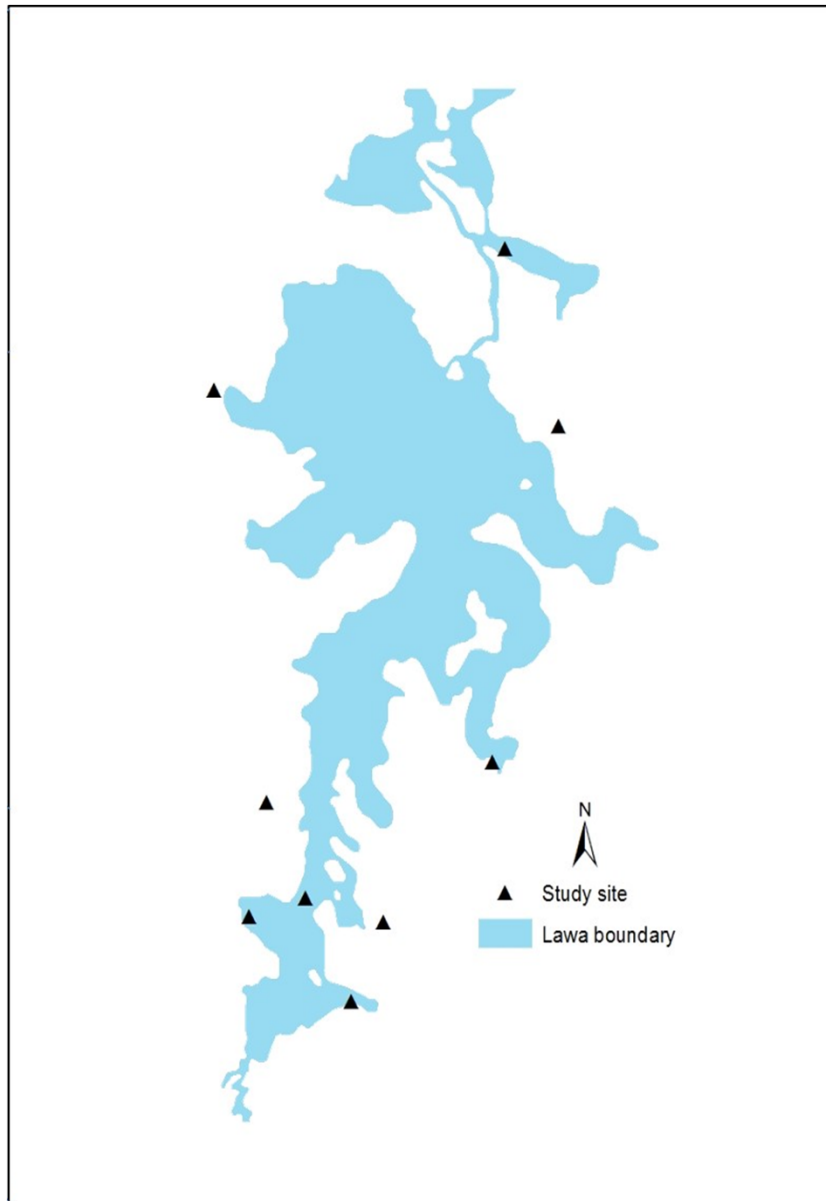


The role of Socio-cultural factors and economic drivers in cyprinid fish distribution networks and consumption: novel perspectives on *O. viverrini* transmission dynamics

Christina Sunyoung Kim, John F Smith, Pierre Echaubard, Apiporn Suwannatrai, Bruce Wilcox, Sasithorn Kaewkes, Paiboon Sithithaworn, Banchob Sripa



METHODOLOGY

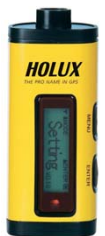


FOCUS GROUP DISCUSSION (FGD)

- Study Design
 - 7 villages
 - Discuss village fish distributors
 - Then open-discussion about what has changed most in last 10-20 years.
- Participants
 - Head villagers (*puyaiban*)
 - Health volunteers (*aorsamor*)
 - Government officials (*aorbortor*)
 - Village helpers (*pu-chuoi*)

IN DEPTH INTERVIEW (IDI) + GPS

- Study Design
 - 7 villages
 - Interview fish distributors
 - Ask them to wear GPS devices during their working hours
- Participants
 - Fishermen (*kon ha-pla*)
 - Middlemen (*kon kai-pla*)
 - Fishmonger (*kon kai-pla tee dtalat*)
 - Shopkeeper (*kon kai-korng*)
 - Motorbike street vendor (*kon kai-korng bon motosai / rot dtong dtaeng*)



RESULTS – focus group discussion

1. Modernization & Globalization

- **Definition:** The becoming of an industrial society concurrent with comprehensive cultural shifts away from traditional value systems (Inglehart & Baker, 2000).
- **Definition:** The opening of borders to increase the flow of goods, services, finance, people and ideas across international borders in pursuit of a globally integrated market place (World Health Organization, 2015).
- *“It is easier to get food now because we have food delivery services.”*
- *“Our children prefer this kind of food more than rice.”* and, *“I drink coffee before I go out to work.”*

2. Impact of liver fluke education

- **Definition:** Massive liver fluke health education via nationwide health campaign to reduce multiple food-borne infections (Jongsuksuntigul & Imsomboon, 2003).
- *“You shouldn’t eat raw fish when you’re young because of cancer, but you can eat it after you are 40 years old because you will die naturally before you get liver cancer.”*
- *“We do not eat raw fish anymore because we’ve learned that it is bad for our health and causes cancer in the liver,”* and, *“putting lime over the fish cooks the dish and you won’t get infected.”*

RESULTS – In depth Interviews

3. local relationships and local foods

- Indigenous groups and long-standing environmentally-mediated and cultural influences over lifestyle and food choice and preference
- Bought fish from 3 major areas:
 - “I buy from fishmonger in Ban Phai market.”
 - “I buy fish from the middleman in my village.”
 - “I buy my fish from the fishermen in my village.”
 - “I get fish from my husband, who can fish.”
- Lawa villagers often mentioned their preference for cyprinid fish from Lawa Lake because they were: convenient, fresh, cheap, and tasted delicious.
 - “I don’t like it that much but I eat it because sometimes we don’t have another choice.”



RESULTS – Economic value of fish

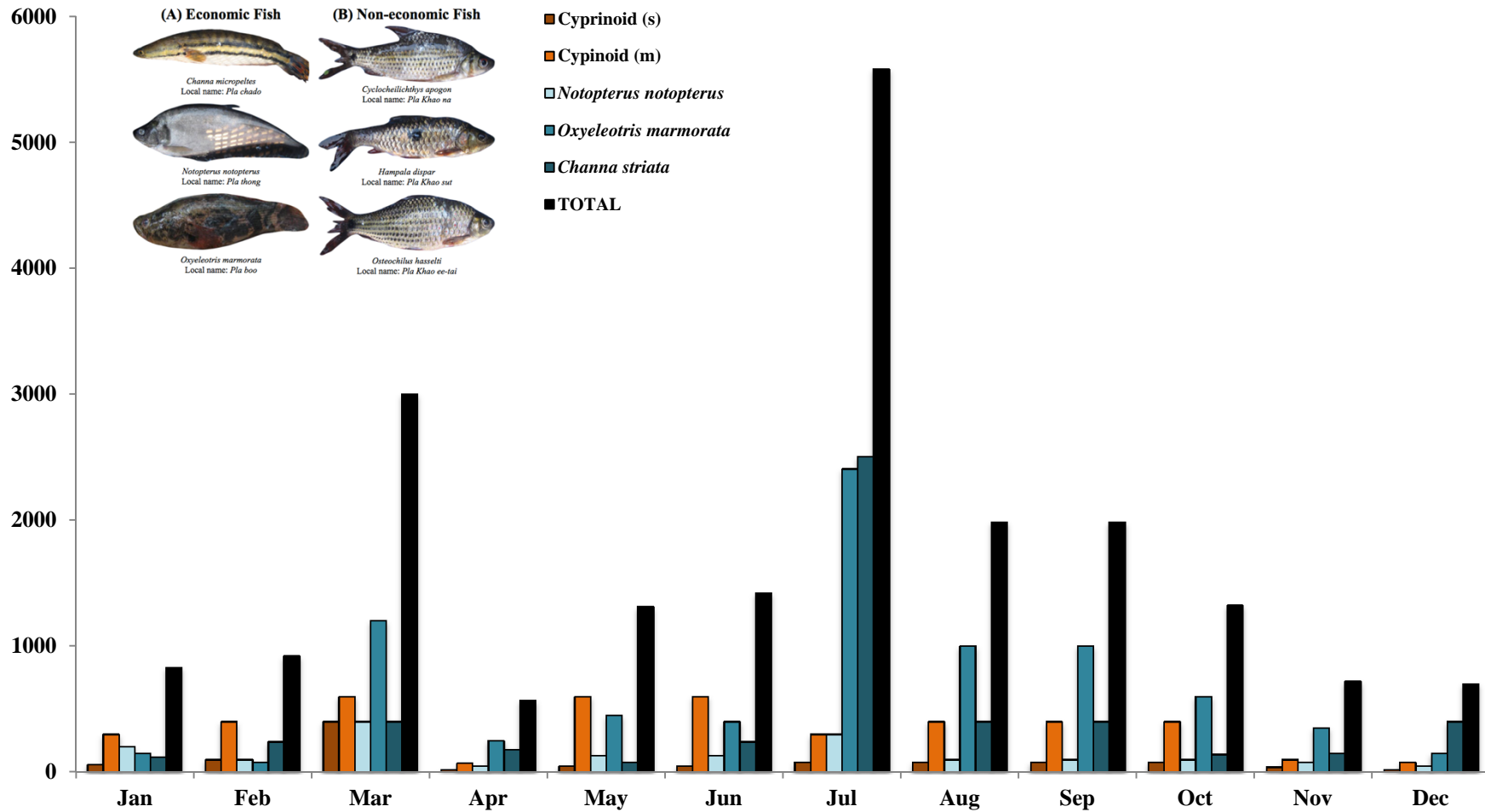
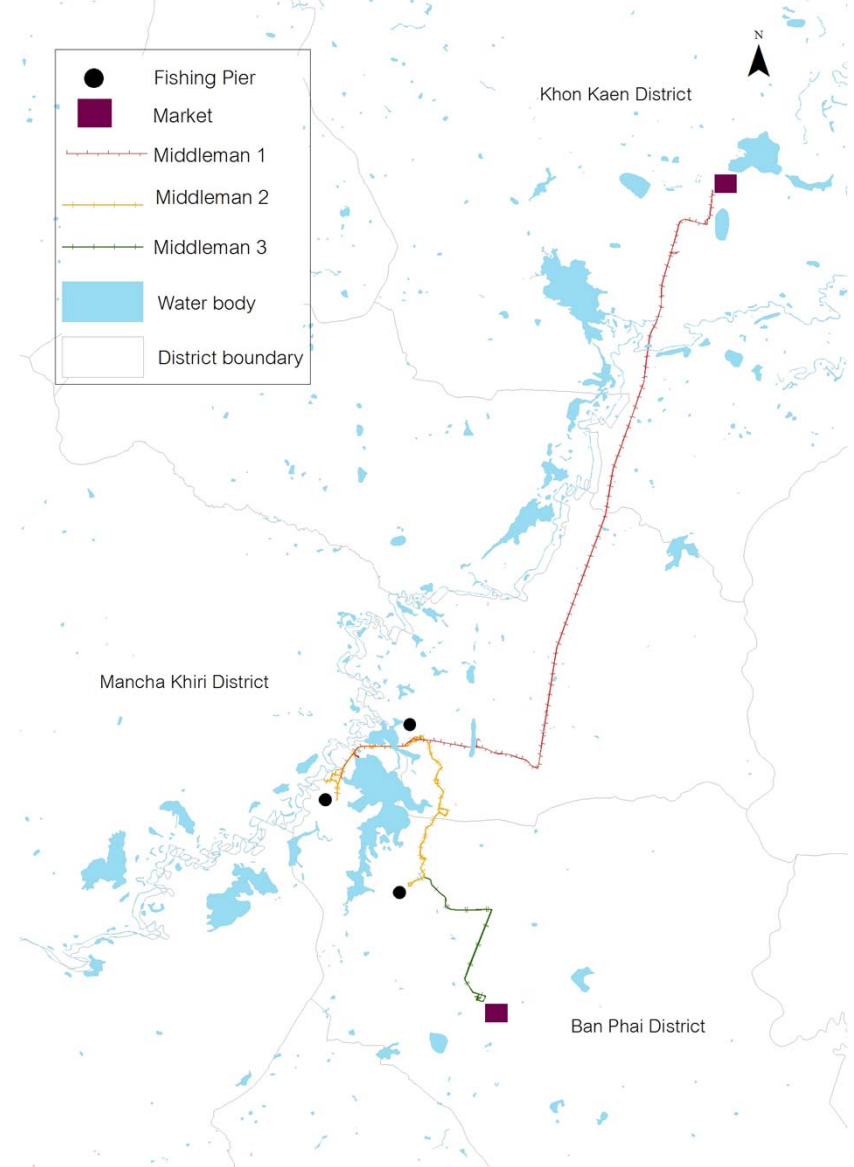
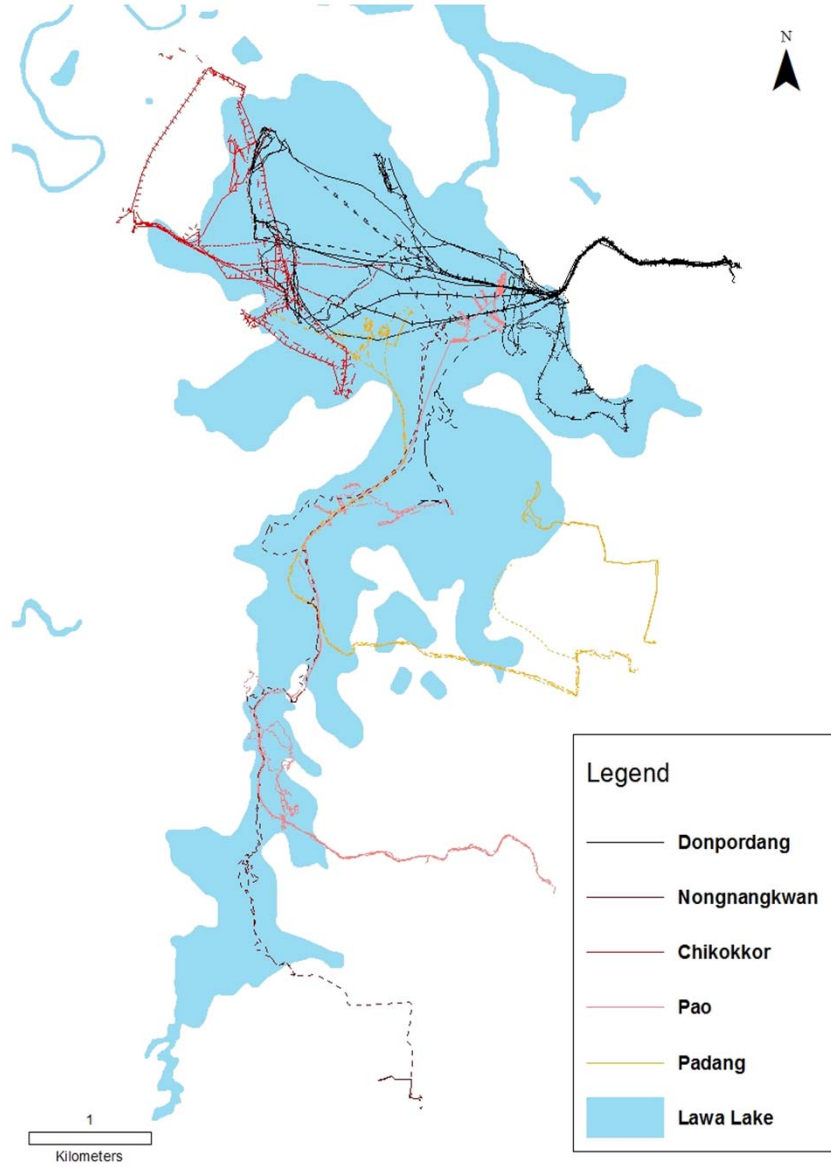


Fig. The daily income generated of a middleman by the 5 most popular groups of fish throughout 1 year in Thai Baht

RESULTS – fish distribution network



TAKE HOME MESSAGES

- **Discussions and interviews**

- Economic component of *Ov* transmission.
- Market driven fish distribution that heightens disease risk.
- Modernization and livelihood shift: illustrate epidemiological transition?

- **GPS tracks**

- Small cyprinids are not going beyond Khon Kaen District
- Small cyprinids not economically valuable to those who catch, buy, and/or sell.
- They are cheap and affordable for local people who have a preference for it due to the fact they have been utilizing them for their traditional dishes for decades.

- **Social Desirability**

- Thai compliant culture influencing their interview responses and social stigma of raw fish consumption in areas that have undergone serious PH campaigns.
- *Por-Jai* = Being satisfied with what one has.
- *Graeng-Jai* = Literally, fear heart or awe heart. Or the refraining from these out of ones concern for the welfare, feeling and/or situation of another.

Food Sharing as a Risk Factor in *Opisthorchis viverrini* Infection: Evidence from Two Villages in Northeastern Thailand

Parichat Saenna, Cameron Hurst, Pierre Echaubard, Bruce A. Wilcox, Banchob Sripa

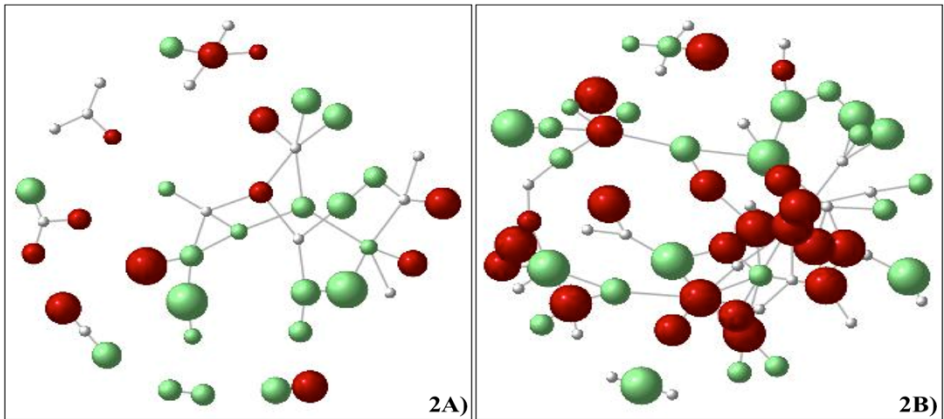
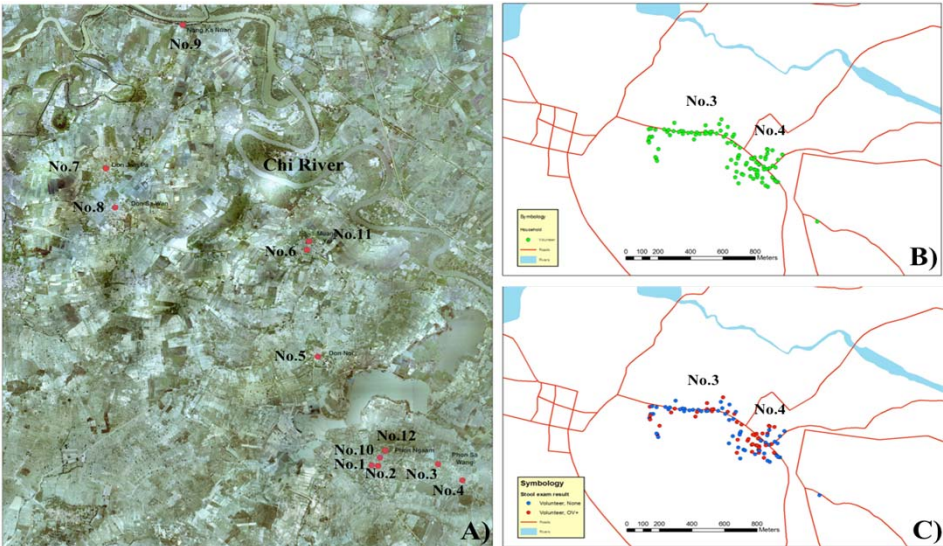


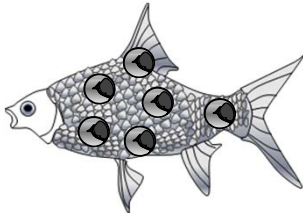
Table 4. Crude association of household sharing with *O. viverrini* infection and other various *O. viverrini* infection risk factors.

Outcome	Ratio	L95	U95
<i>O. viverrini</i> infection	1.33 ^{a**}	1.06	1.65
Raw fish frequency	1.25 ^{b*}	1.03	1.52
Type of consumed raw fish dishes	1.08 ^{c**}	1.02	1.13
Village	1.60 ^{a***}	1.23	2.07

Denser connectivity in social network → higher food sharing → higher prevalence

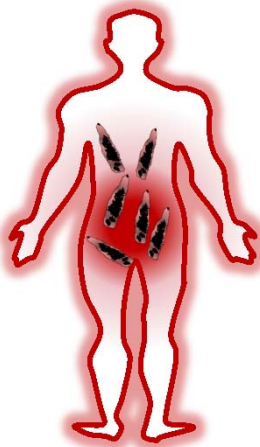
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NO FOOD SHARING

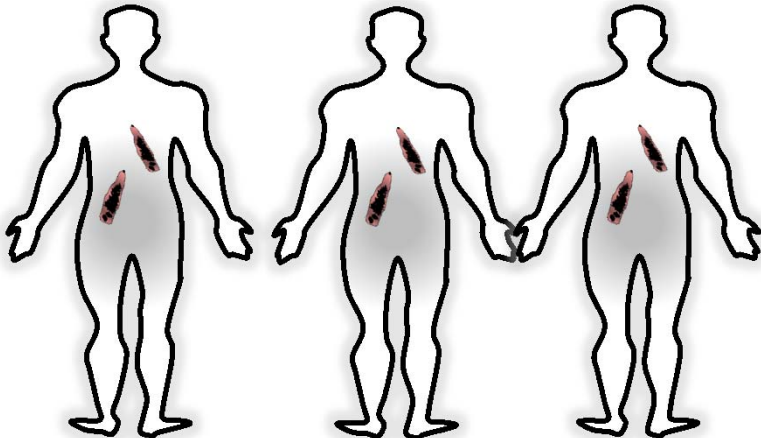
LOWER PREVALENCE – HIGHER INFECTION INTENSITY



HIGHER INFLAMMATION RISK

FOOD SHARING- INFECTION DILUTION

HIGHER PREVALENCE – LOWER INFECTION INTENSITY



LOWER INFLAMMATION RISK

How do interventions reduce the consumption of risky fish dishes without discouraging the food-sharing behavior that reinforces social coherence, a well known positive health factor contributing to social capital?

Evidence-Based Public Health (EBPH)

TRANSPARENCY, VALIDITY, & REPRODUCIBILITY underpin both EBM and EBPH. Further conceptual assumptions are key to an EBPH approach.

- that *social, economic, cultural, educational variability* are defining characteristics of communities, *not merely potential artifacts to be experimentally controlled for.*
- This complexity, means we cannot assume that what works for one community, will also work in another community.
- Interventions require sensitivity to communities' understanding of health issues, their readiness and capacity to engage with projects , and **multiple data sources, "evidences", (qualitative and quantitative) *to develop and assess if a community program worked, and if so, why, and how.***
- Bottom-up community participation approaches in program design, management and evaluation are critical to optimize outcomes and long-term program sustainability.

Community Based Participatory Action

- Collaborative participation of communities in health interventions is key *to program effectiveness and long term sustainability.*
- Community collaboration promotes a sense of community ownership and commitment and community skills and capacities incorporating local knowledge.
- This bottom-up approach increases the likelihood of program practices becoming routine social and community practice to ensure its sustainability.

Program Planning

Assessing needs:

Formative evaluation

BEYOND
DISEASE/EPIDEMIOL
GICAL CONSIDERATIONS

Setting goals & objectives:

Governance arrangements

Developing an intervention:

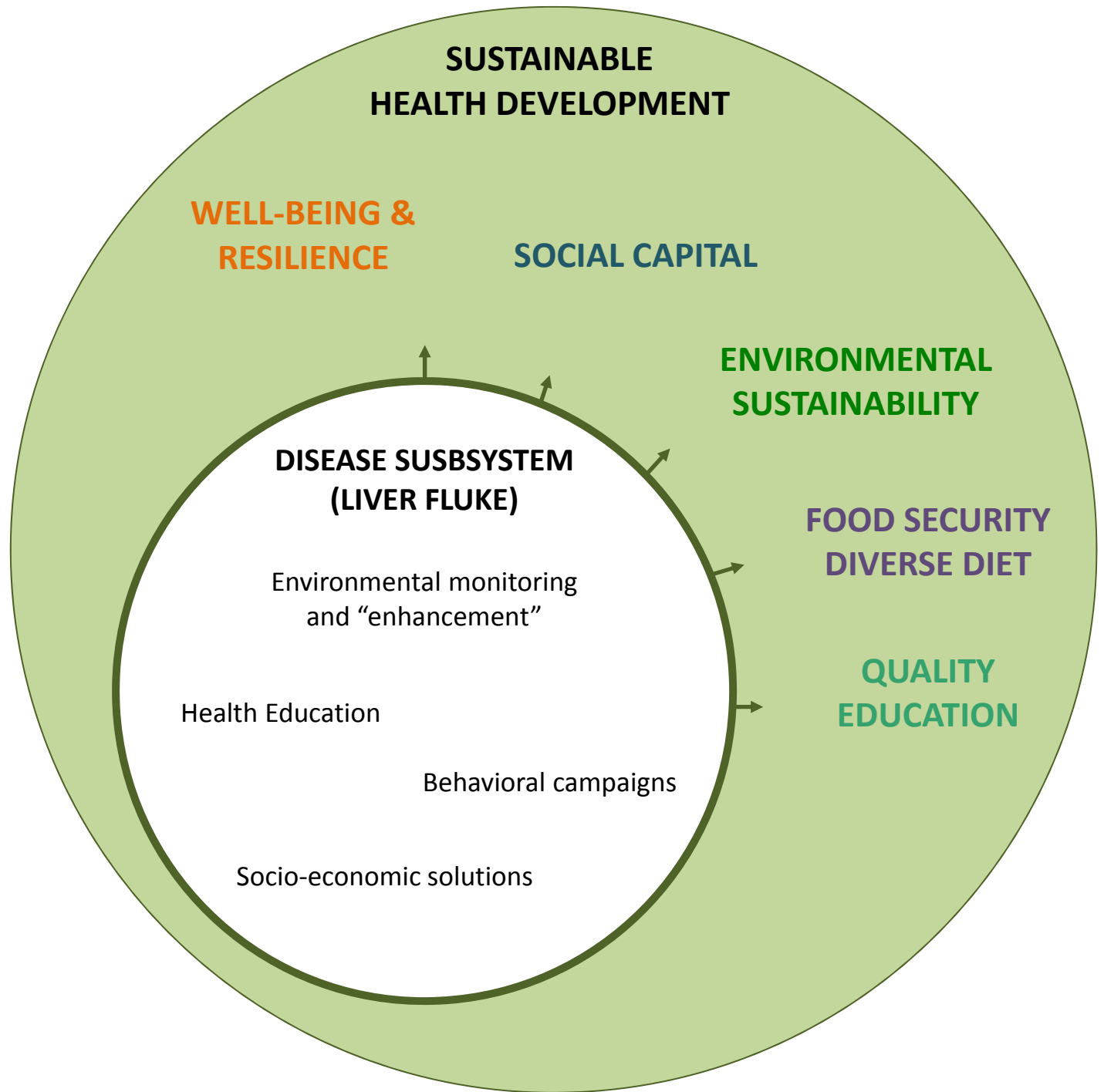
Informed health promotion theory

Implementing the intervention:

Project management

Evaluating the result:

Impact & outcome evaluation



THANKS TO THE INTERDISCIPLINARY TEAM!

Parichat Saenna
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Alan Ziegler

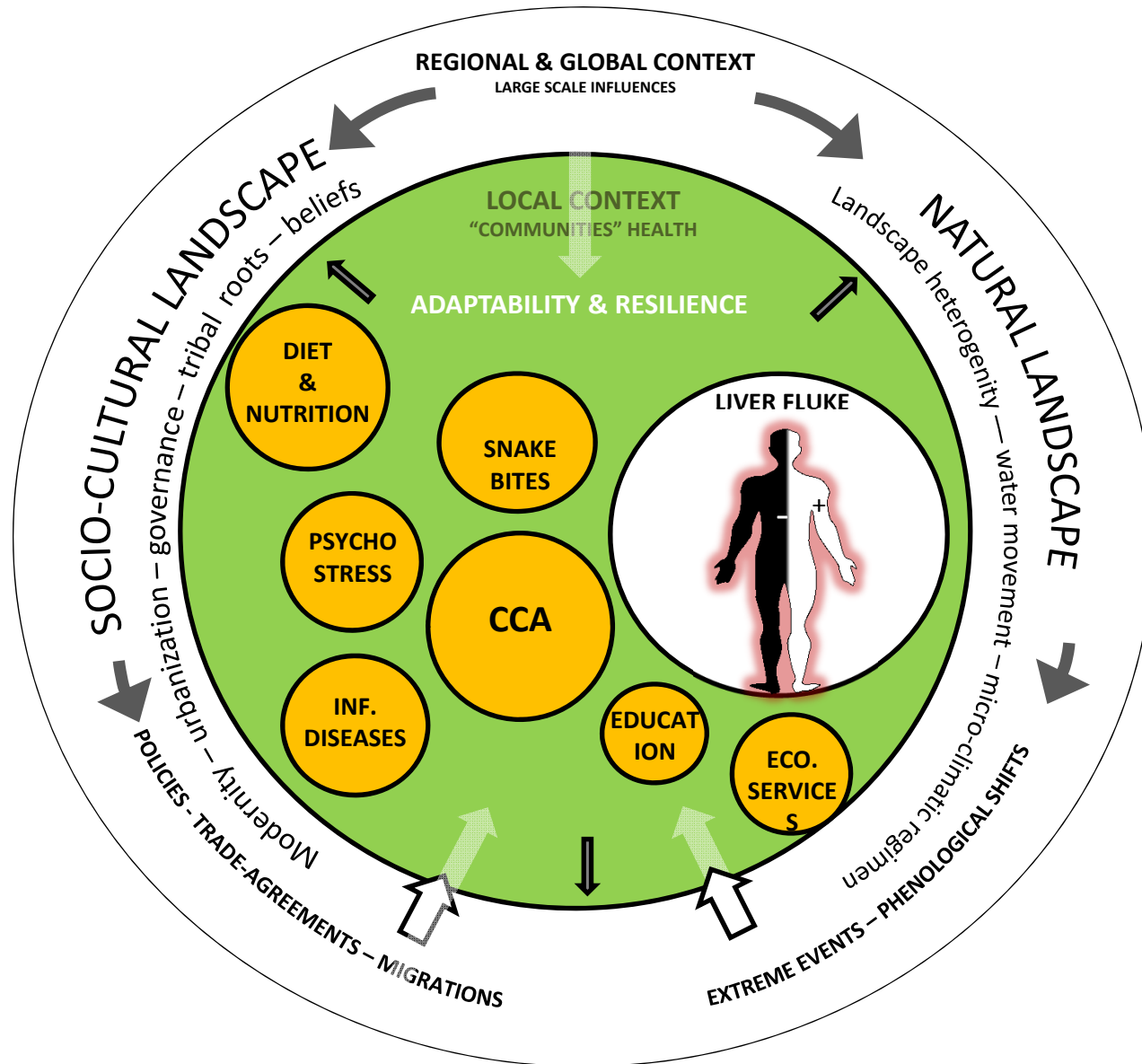
Carl Grundy-Warr
Tomas Leon
Jennifer Steele
Carsten Richter
Boripat Sririaroonrat



Logic Model

- Crucial outcome of formative evaluation.
- Clear schematic showing conceptual model of the health issue, clear linkages between program components, its presumed determinants and risk factors, and appropriate outcome indicators.

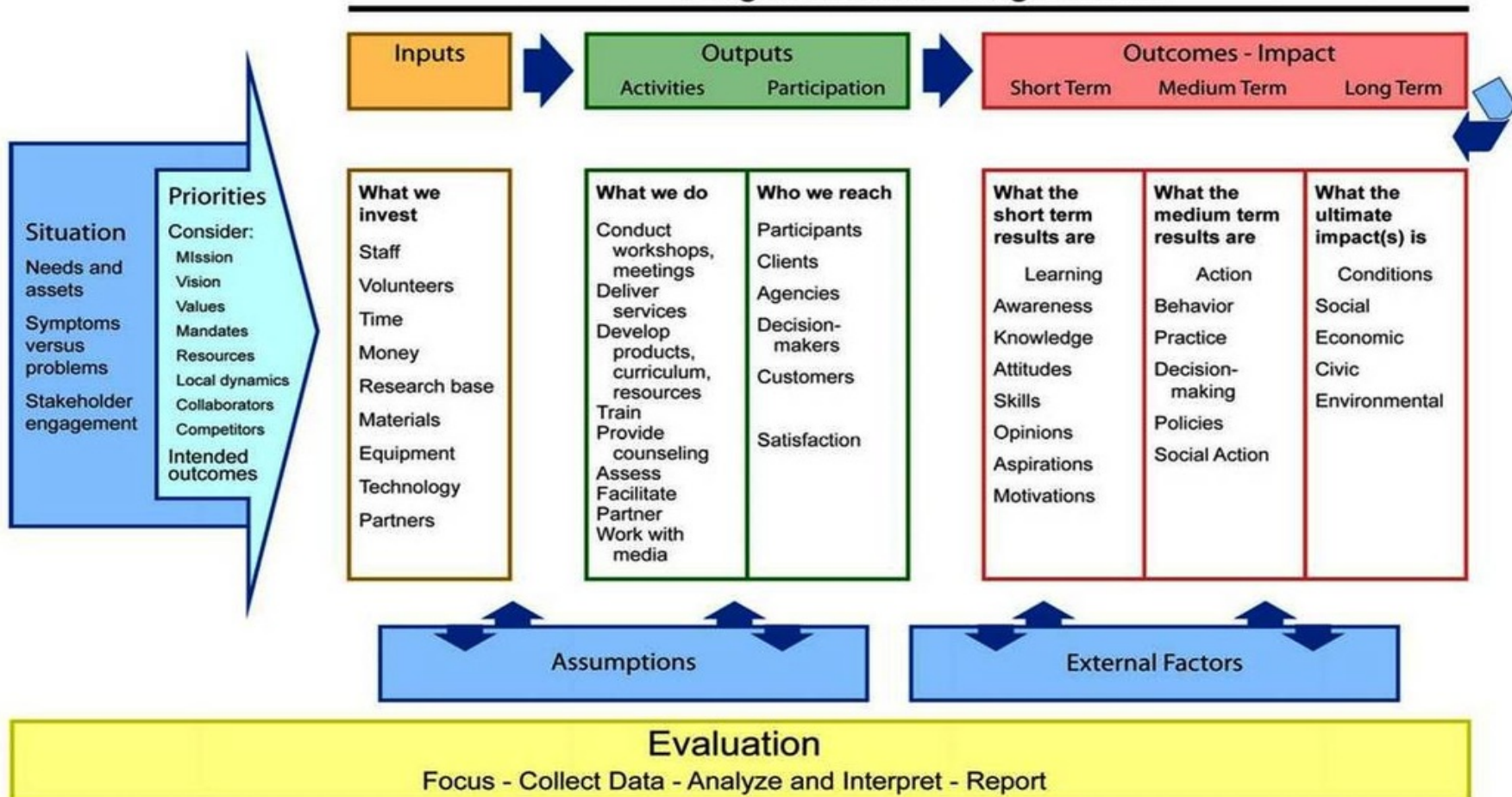
SYSTEMS APPROACH / PARTICIPATORY PROTOCOLS / TRANSDISCIPLINARY

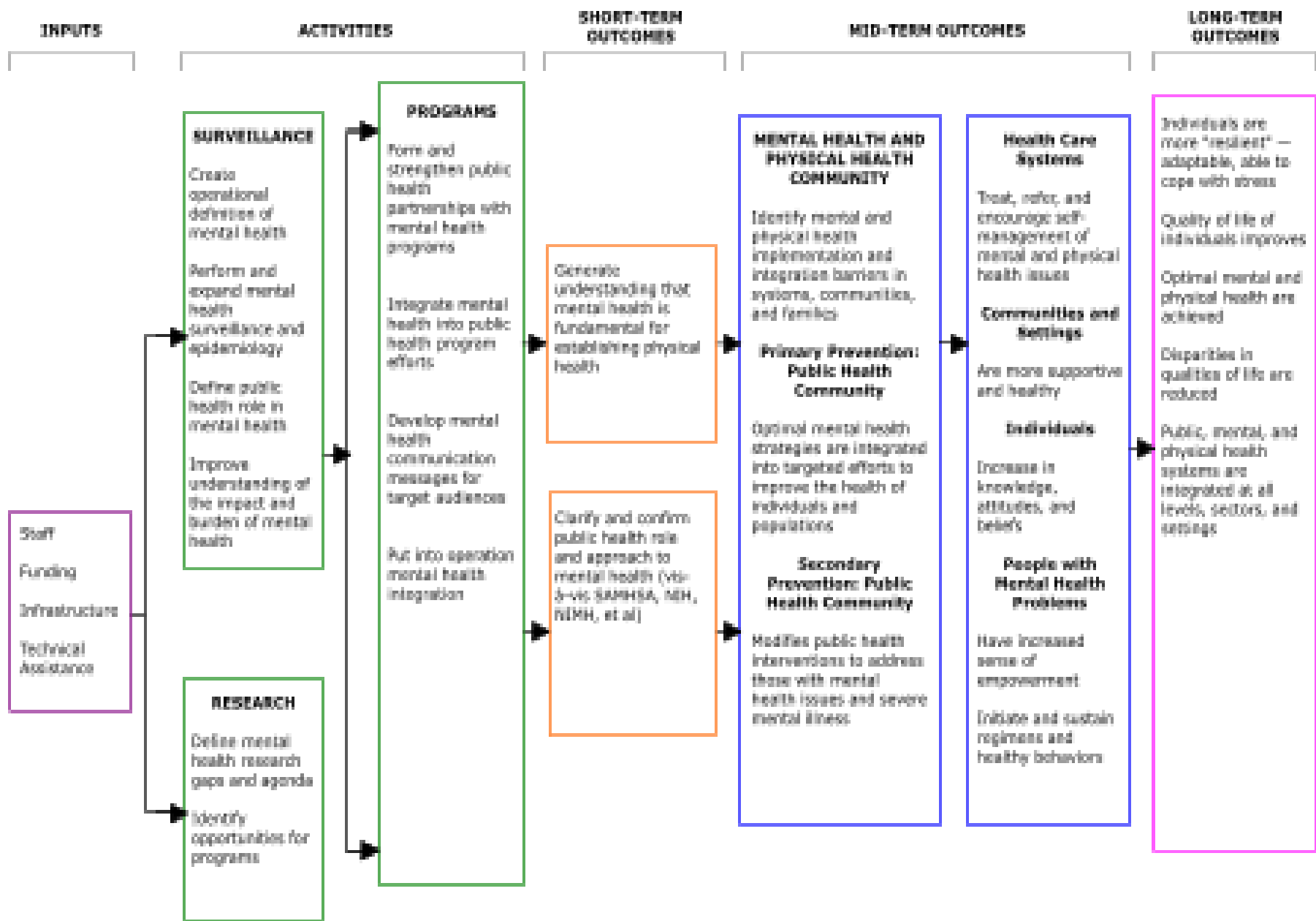


PROGRAM DEVELOPMENT

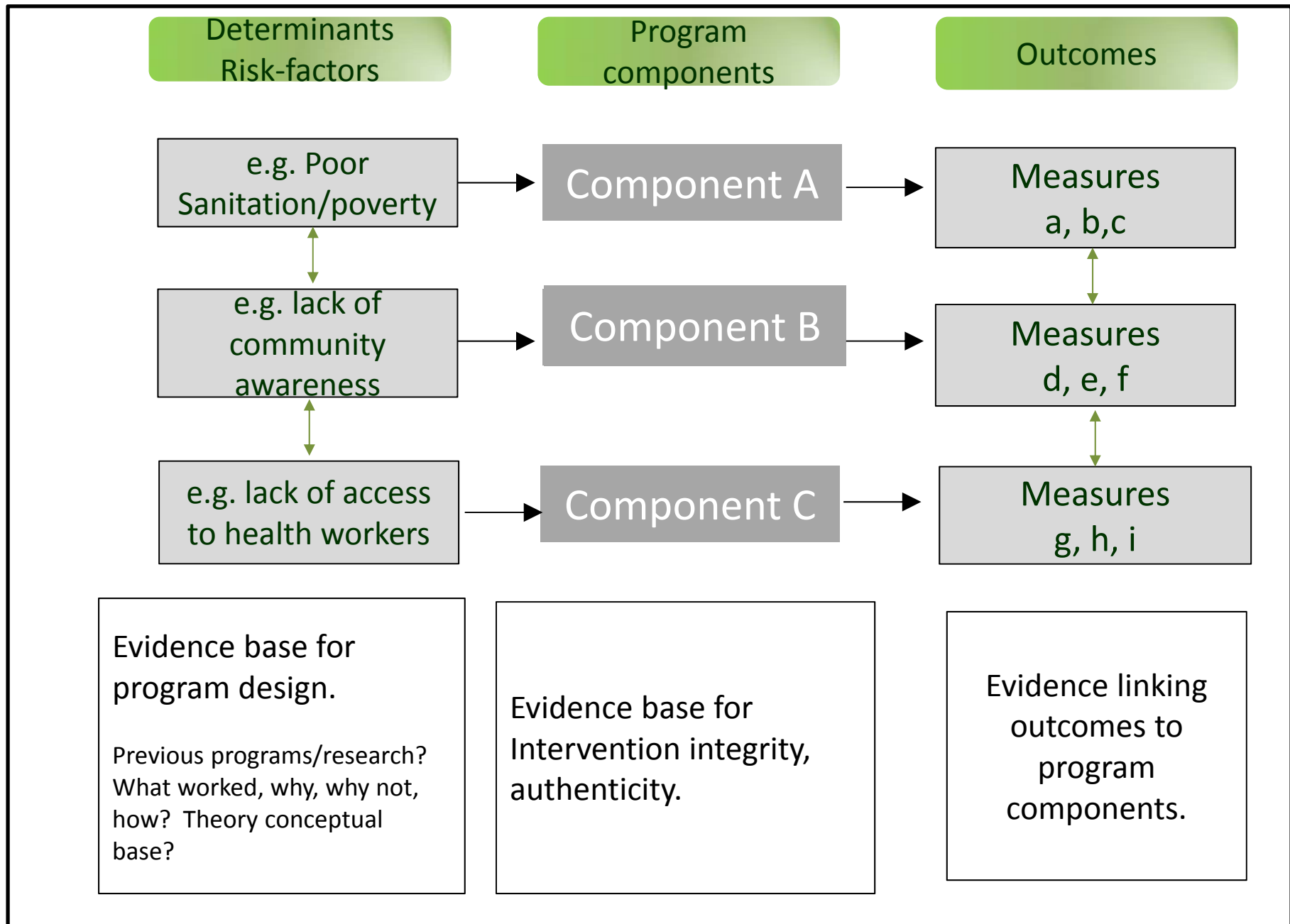
Planning – Implementation – Evaluation

Program Action - Logic Model



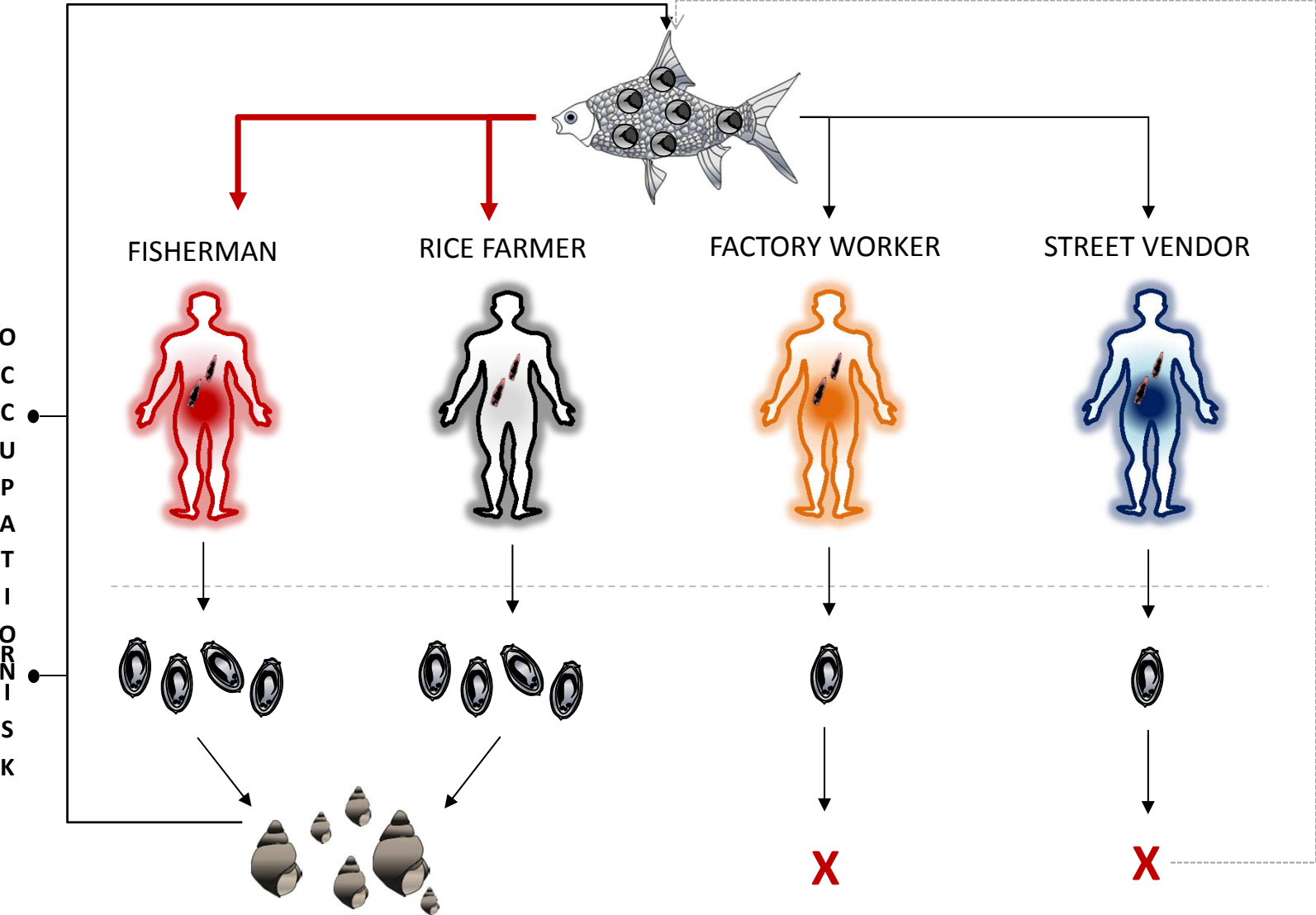


Evidence-informed Program Logic



Food Sharing as a Risk Factor in *Opisthorchis viverrini* Infection: Evidence from Two Villages in Northeastern Thailand

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TOTAL SYSTEM CONCEPTION OF LIVER FLUKE AND CCA

“Unraveling the Complexity of Liver Fluke Infection in NE Thailand Through a Transdisciplinary Learning Approach”

Ziegler et al 2016, EcoHealth



RAW FOOD CULTURE

- Are there cultural behaviors and elements that influence raw-fish consumption?
- How important is the cultural behavior of eating raw fish in terms of psychosocial health?
- Raw fish consumption behavior is a remnant of traditional practices and a disappearing landmark increasingly associated with a disrupted sense of cultural coherence/identity.
- *Isaan* identity → Health perception



Grundy-Warr et al. 2012 Raw attitudes wetland cultures, life cycles: socio-cultural dynamics relating to *Opisthorchis viverrini* in the Mekong Basin. *Par. Int.* 61:65-70