An inside-out perspective: a polluted environment and the impact of internal and external perceptions on an e-waste recycling community in Thailand
Kalasin
Bangkok
521 km
THAILAND

Dry
Agriculture
Paddy field
Low income

Electronic waste
Mile stone

- Rice farming cannot support their living
- Low investment occupation
- Learning from recycle business
- Stay with family
- Keep paddy field
- Earn more money
- Give education to Children

“Better life”
Electronic waste

- Domestic
- Unwanted/broken/expired
- Leave in community
- Reduce abandoned waste
- Chance to get income
- Developed/developing country
- New vulnerable population

Valuable component
Electronic waste list at Kalasin

- Television, computer, printer, CD/DVD player, notebook, screen, electric circuit, tablet, mobile phone
- Laundry machine, air conditioner
- Fan
- Motorcycle, car, farm machine, water pump
- Electric wire, PVC pipe, rubber wheel
- Iron, aluminium, stainless steel, lead, copper, brass
- Refrigerator
E-waste Activities

- Collecting
- Sorting
- Repair
- Dismantling
- Burning
Obtained product

- Electronic circuit
- Copper
- Gold
- Aluminium
- Plastic
- Iron
Work activity
Illegal open burning
Complain from a neighbor village
Out of control dumping
Impact on community

• Contamination of mercury, lead, nickel, manganese to soil
• Paddy field, water resource
• Air pollution from open burning
  – Electric wire for copper
  – Rubber wheel, foam from refrigerator to reduce waste volume
• Glass waste accumulation in landfill
Impact on community

• Contamination of mercury, lead, nickel, manganese to soil

• Air pollution from open burning
  – Electric wire for copper
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• Glass waste accumulation in landfill
Impact on community

• Public landfill for e-waste
Impact on community

• Illegal house hold waste dumping
Impact on community

• Illegal household waste dumping
Economic impact

• High competition rate
• Loan
• Network for e-waste collector, trader
• Market need challenge
• Social hierarchy
• Community conflict
Health Effect

• Multiple toxicants co-exposure, more effect
  Additive, Synergistic
• Personal hygiene, living area, kitchen
• Noise induce hearing loss
• Stress
• Accident
External perception on e-waste comm.
External perception

• Reporter: report an awful picture and “a looked like danger activity on news”
• Create a conflict between e-waste community and neighbor
• Create a “hot spot” for researcher
• Convince more researcher and governmental agency to the area
• **Polluter/culprit**
• E-waste recycling must be **“stopped”**
E-waste worker perception

- Occupation to serve their life
- They are healthy
- It is better than farming
- If they have another choice they will choose
- Outsider make them looked bad
- Too!!!!!!! much activities in the community
- Researcher comes and goes nothing change
Outsider/society

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Government limitation

• Try to set up a practical policy
• Balance villager economic and environmental problem
• Make a suitable landfill
• Budget allocation from central government
• Small affected population compare to other public health problem
• Burden to take care researcher and other government agency
Government limitation

- No center to specifically take care e-waste problem
- Limit in robust report to inform a situation in community
- Limit in staff number
- Limit in technology and knowledge to support safety workplace condition set up
- Instability of government
 UM, MFU and KU Jointed research project

Approach

Meeting with regional and local staffs at Klong Chai

Meeting with MOPH at Bangkok
Approach

Meeting with Health Promotion Hospital

Health volunteer training
Learning from village
Outcome

- Noise induce hearing loss increase
- Accident; frying debris, fall, cut
- No pathology with lung
- Low level of Cadmium, Lead
- Metal is needed for health monitoring
Conclusion from 1st study

- Toxicant co-exposure?
- Increase oxidative stress and metal
- Smoking relate to high B-Cd, B-Pb
- Chronic disease/cancer/long term
- Health promotion, **choices**

“Health is a second concern if they have not enough money to buy food”
Success and Limitation

- **Health volunteer**, information transfer
- Multi level of PH organization approach
- Health check up result report 100%
- Information center
Challenge from Community

- Reporter and internet media
- Villager and stranger
- Fast change expectation
- Government officer and local staff
- Government budget allocation
- Complicate situation
- Culture, tradition, economic balance require

“Idea sale and get an appropriate point”
Future project

- Job safety analysis, make choices
- E-waste neighbor impact
- Participant engagement
- Landfill management
- Management model
- Local officer support

“Technology support human life, it should not create a new disease to vulnerable population”
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