

An inside-out perspective: a polluted environment and the impact of internal and external perceptions on an e-waste recycling community in 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

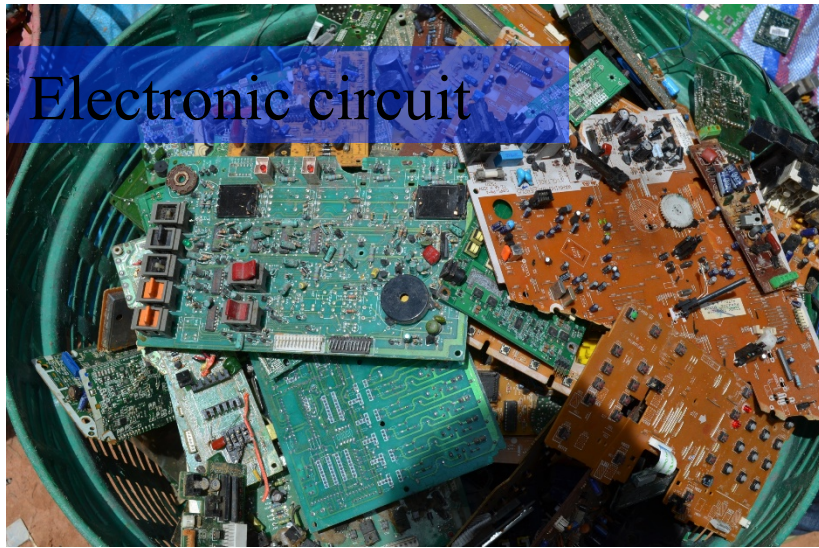
- Television, computer, printer, CD/DVD player, note book, screen, electric circuit, tablet, mobile phone
- Laundry machine, air conditioner
- Fan
- Motorcycle, car, farm machine, water pump
- Electric wire, PVC pipe, rubber wheel
- Iron, aluminium, stainless steel, lead, copper, brass
- Refrigerator

E-waste Activities

- Collecting
- Sorting
- Repair
- Dismantling
- Burning



Obtained product



Electronic circuit



Copper




Gold



Aluminium
Plastic
Iron

Work activity





Living area

Kitchen

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
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Impact on community

- Public landfill for e-waste

อบต.โคกสะอาด ก่อสร้าง
รั้วรอบบ่อขยะ

ก่อสร้างรั้วรอบบ่อ
ขยะ



Impact on community

- Illegal house hold waste dumping





ประกาศ
องค์การบริหารส่วนตำบลเกาะช้าง
เขตควบคุมขยะ พื้นที่ตำบลเกาะช้าง
โดยมีเขต อำเภอน้ำตก (เขตเทศบาล)
ไม่เกิน 7 (๗) กิโลเมตร
14,000 บาท หรือ
ตามที่กำหนดแล้ว
หนังสือฉบับนี้ มีเลขที่ 0-4334-9100

Impact on community

- Illegal house hold 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 work place 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



Health volunteer
training

Meeting with
Health Promotion
Hospital



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”

Acknowledge

- All kind participants
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- Nong Bua Primary Care Unit
- Kok Sa-ard Subdistrict Administrative Organization
- The Office of Disease Prevention and Control 7 Khon Kaen
- Rackham International Research Institute , University of Michigan Graham Sustainability Institute, USA

