

BASELINE SURVEY RESULTS

Pekka NTT – Feb 2012

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(Presented on 18 May and 25 July 2012)



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Background

Nov 2011 partnership started with 4 Tech fairs, 522 participants

Feb 2012 finalize the technology distribution mechanisms



Feb 2012 technologies shipped:
637 Nazavas Water Filters,
346 UB.03-1 Biomass Stoves
263 d.light Solar lights



Feb 2012 baseline survey



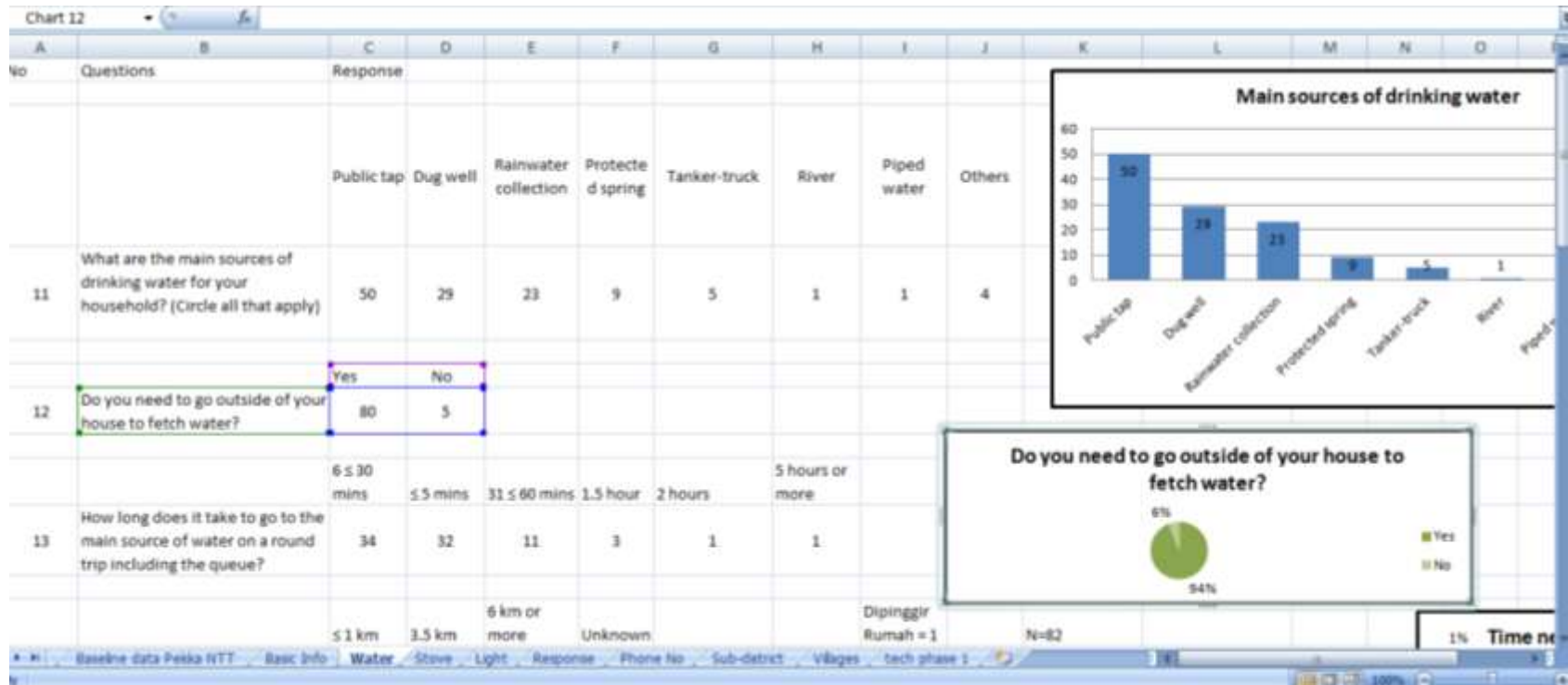
Methodology

- Quantitative data collection using one-on-one interview
- A questionnaire – 68 questions (10 general, 15 water, 15 stove, 25 lighting and 3 closing questions)
- 13 Kaders from Pekka were trained and the questionnaire was pre-tested
- Interview from Feb 17 to the Feb 24, 2012
- 104 participants were interviewed – each interview takes about 40 mins (between 10 mins– 2.5 hours) and a handkerchief towel is given as a gift



Analysis

- Ms. Excel:
- ✓ Excel Database (Excel functions and Pivot Table)
- ✓ Work Sheet, (Column and Pie Chart)

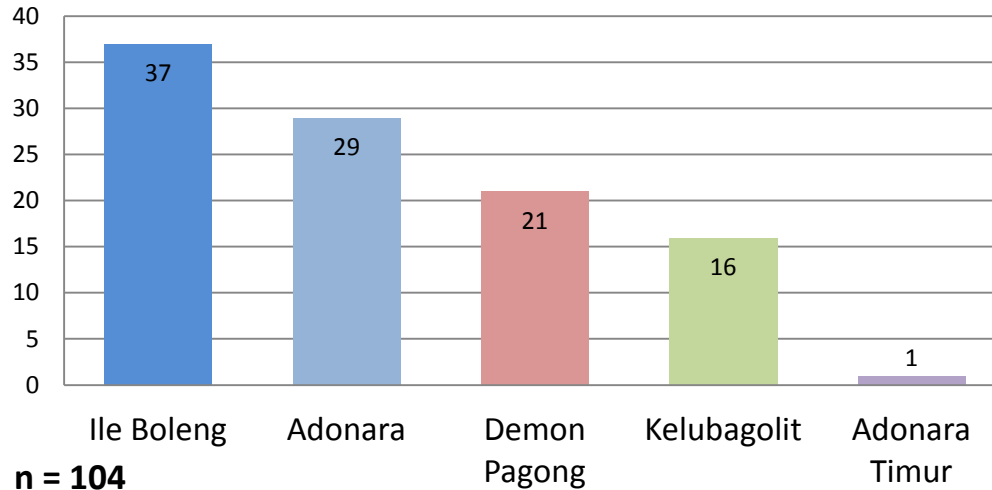


Baseline Survey Results



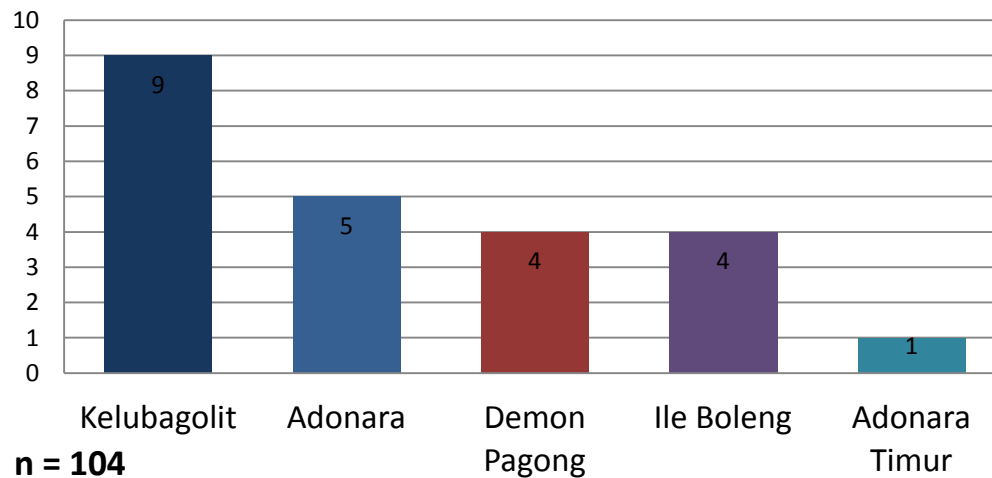
Participants

No. of Participants from Each Sub-district



- Total Participants: 104
- Total Sub-district: 5
- Total Villages: 23
- Age Min: 28
- Age Max: 90
- Age Average: 48.5
- 53 out of 104 have a mobile phone (51%)

No. of Villages



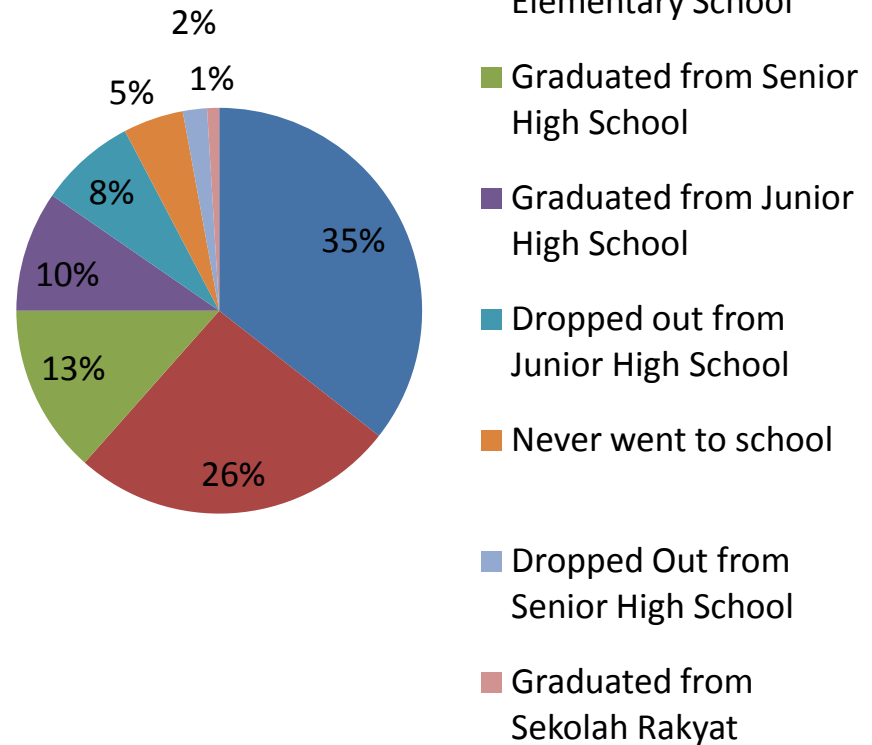
Education

Educational Background:

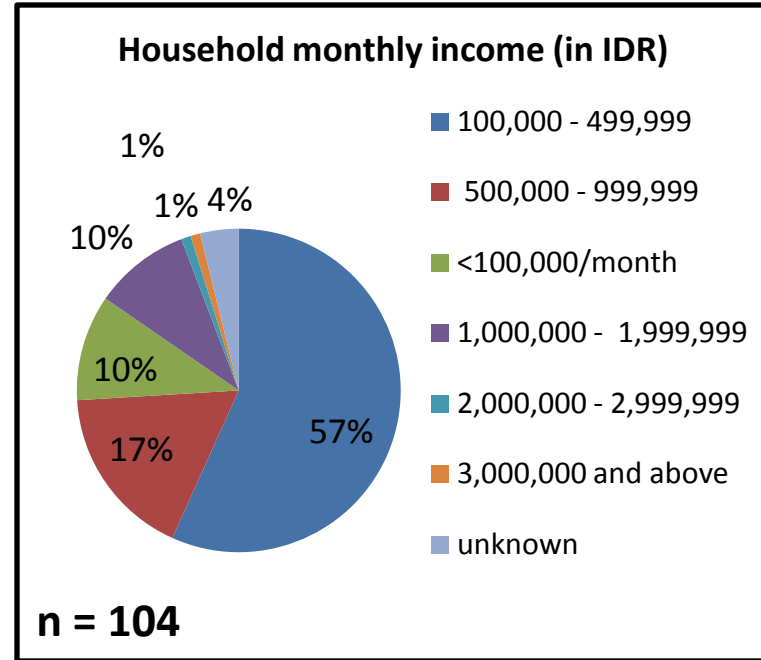
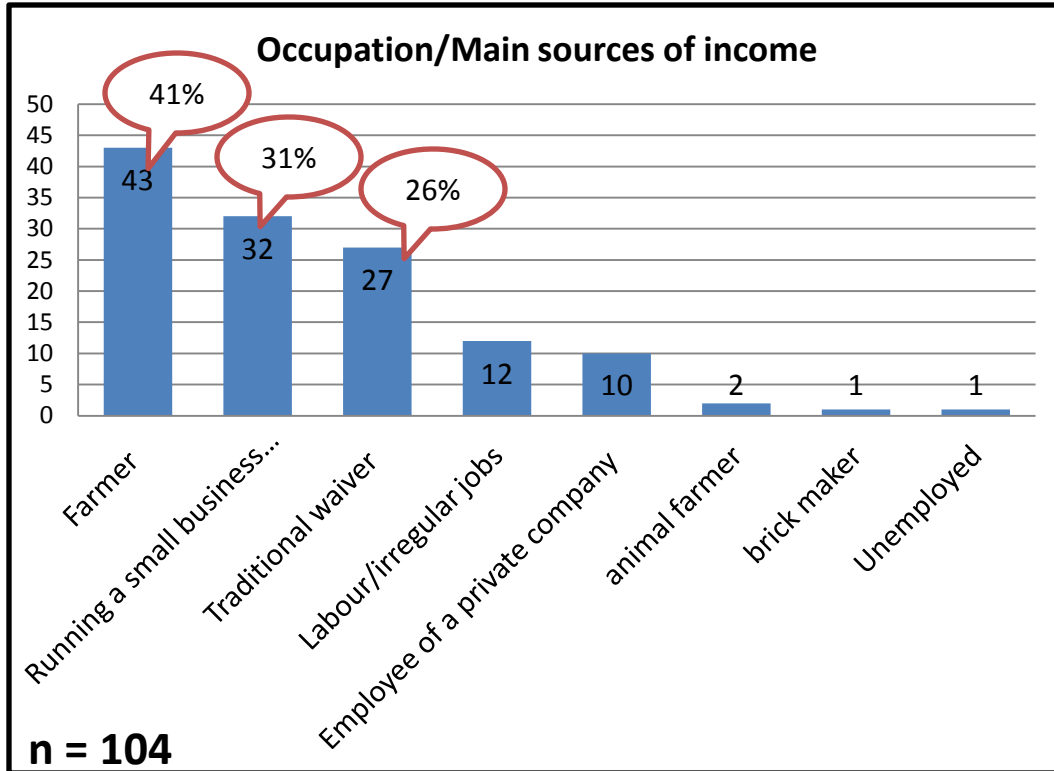
Never went to school	= 5%
Drop out from Elementary Sekolah Rakyat	= 26%
Elementary School	= 43%
Junior High School	= 12%
Senior High School	= 13%



Education



Economy

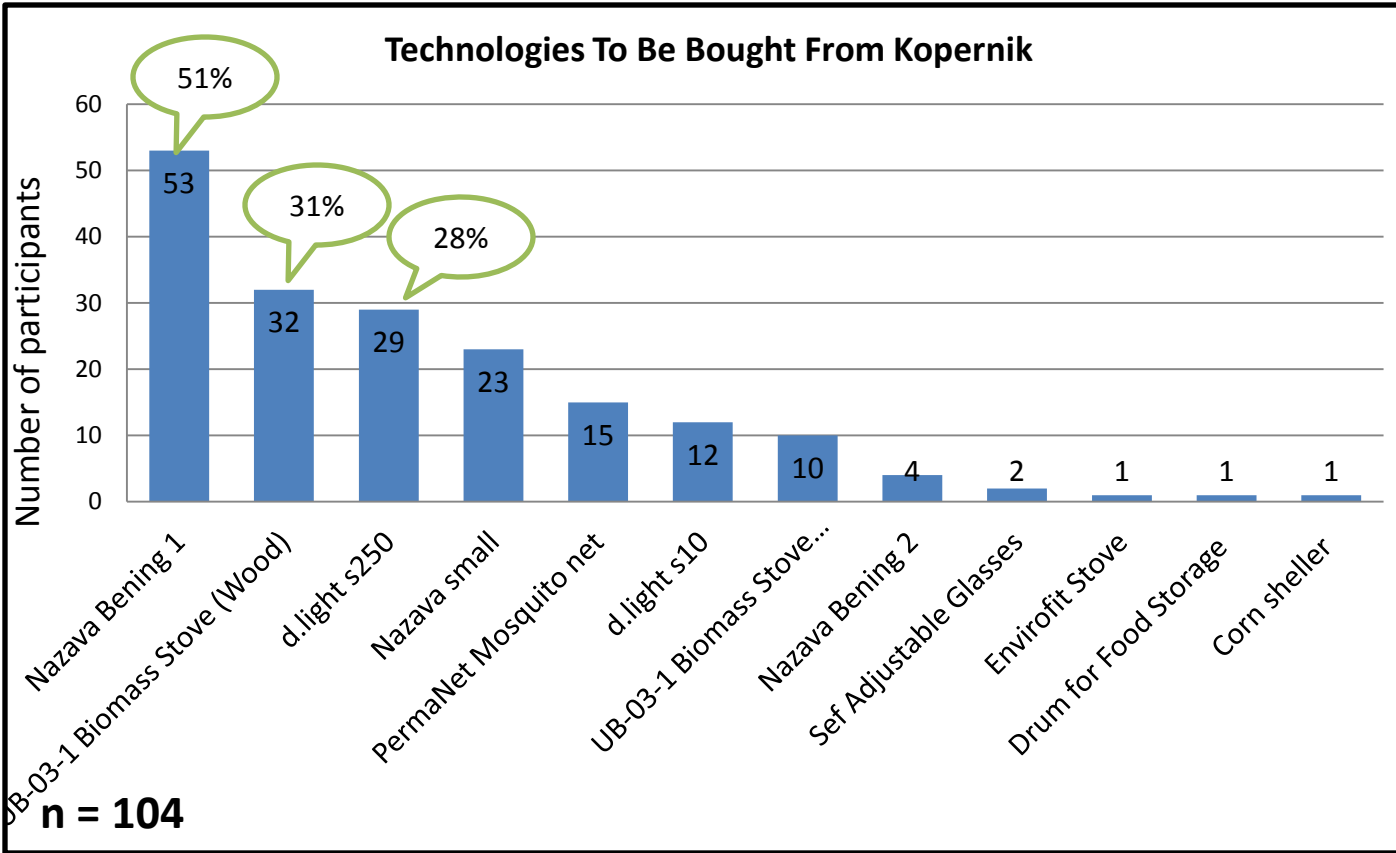


- 43 out of 104 participants are farmers (41%)
- Average household monthly income is **Rp. 434,500**
- 47% have no family members/relatives at home who have income
- 21% have children at home who have income
- The rest of 32% have other family members at home who have income

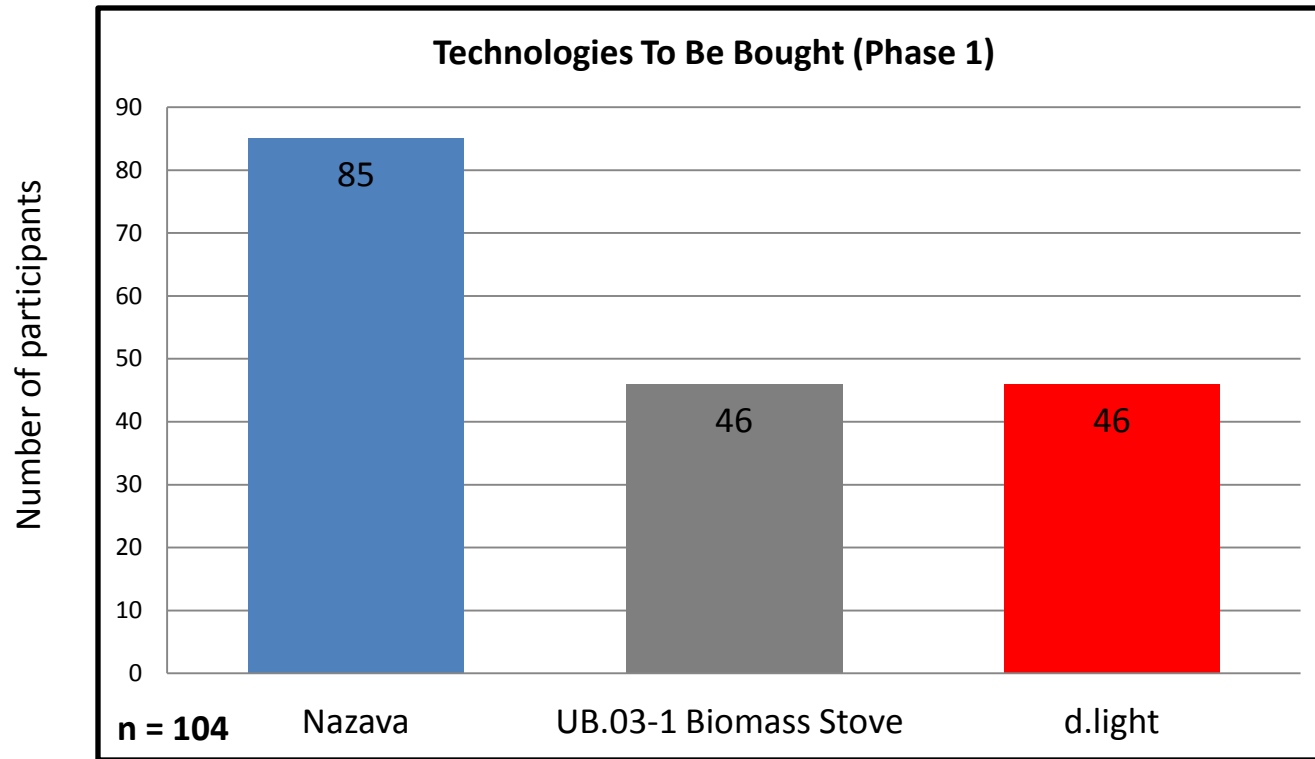
National Income per Household 2011:
Rp. 10,600,000/month
(with an assumption that 1 household consists of 4)



Technology Choices



Technology Choices

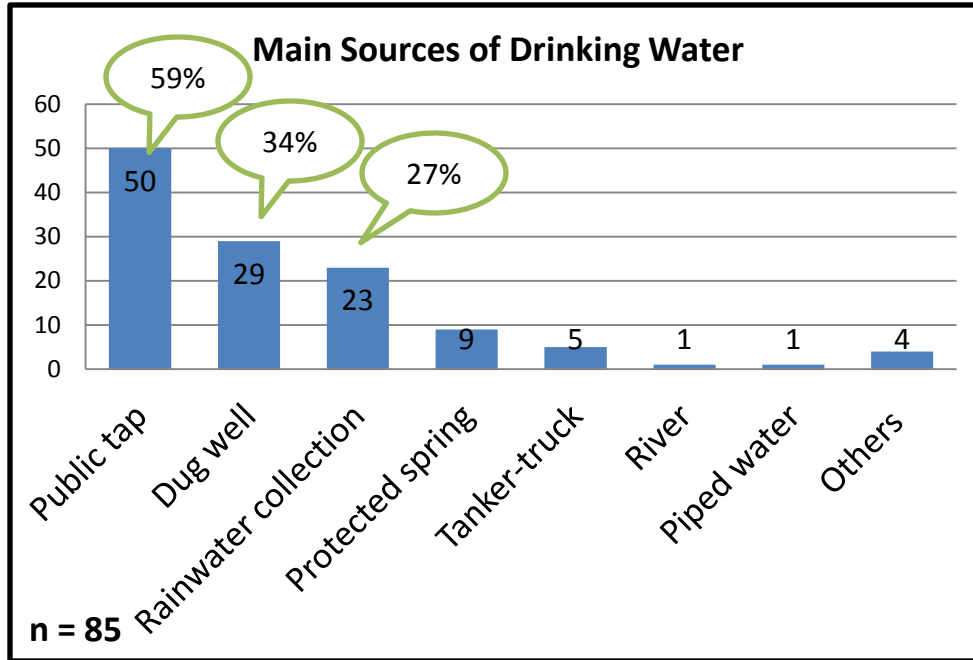


Baseline Survey Results on Water



Sources of Drinking Water and Monthly Spend on Water

Number of participants



Others: Unprotected spring, tube well/borehole, spring in rainy season

Monthly Spend to pay public tap water (n=31):

MIN: Rp. 1,000

MAX: Rp. 80,000

AVERAGE: Rp. 4,806

Monthly Spend to pay water from tanker-truck (n=23):

MIN: Rp. 3,000

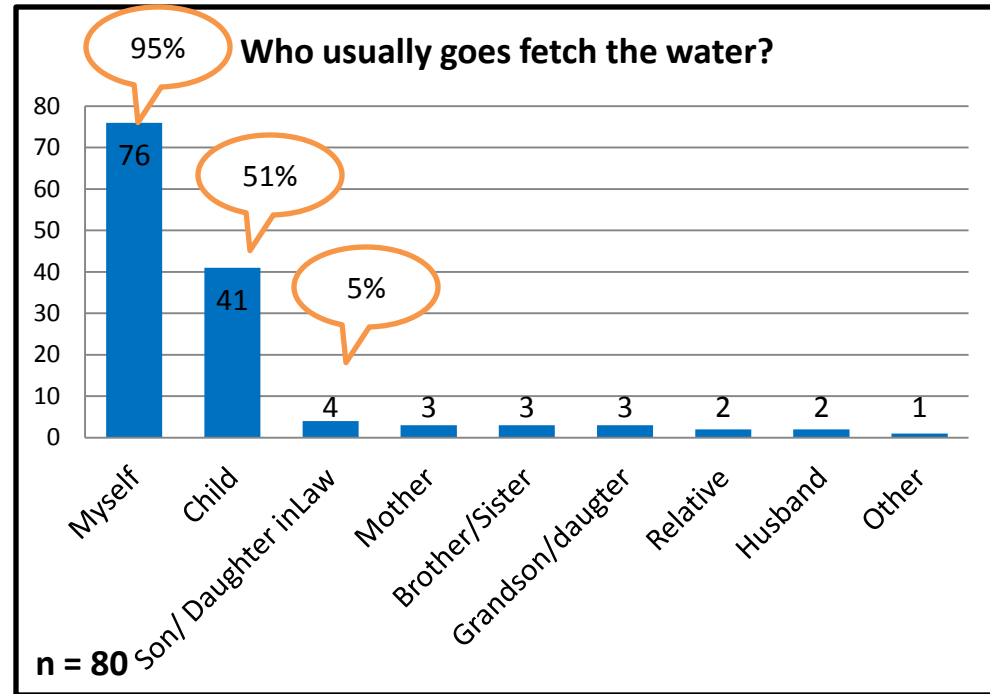
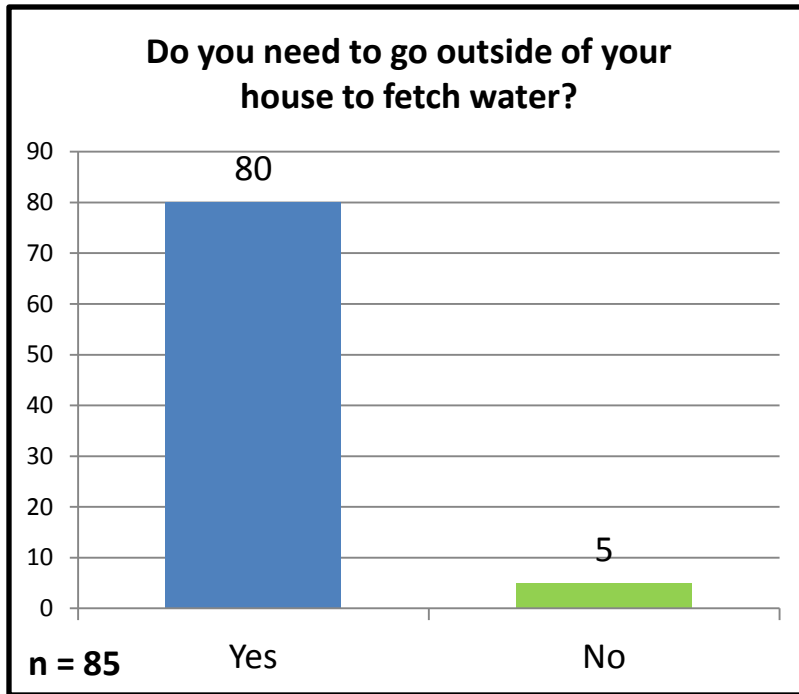
MAX: Rp. 225,000

AVERAGE: Rp. 74,130

Monthly Spend to pay piped water (n=1):

AVERAGE: Rp. 80,000

Fetching Water



94% of the women need to go outside of their house to fetch water

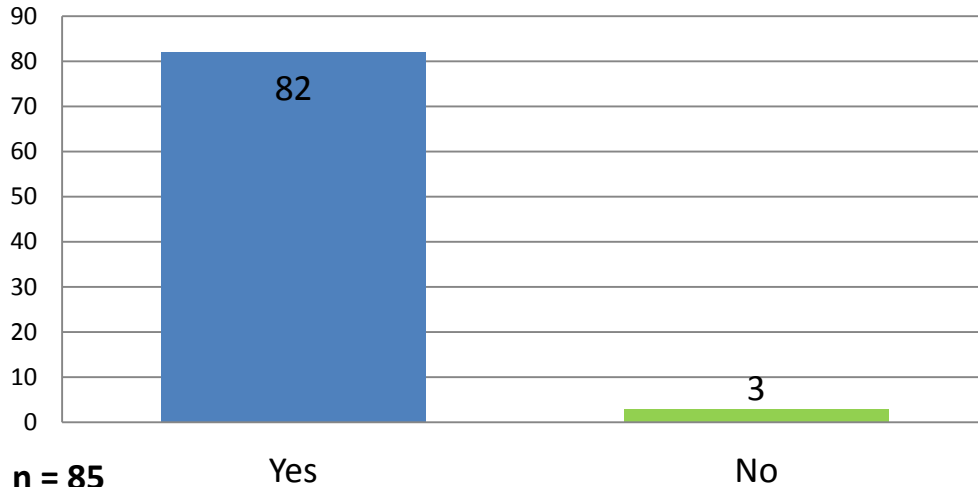
76 out of 80 participants (95%) fetch water by themselves

Average time needed to fetch water in one round trip including queuing is 27 minutes

Average distance traveled to fetch water is 404 meters

Boiling Water

Do you boil the water before drinking?



96% of the women boil water before drinking the water

Other than boiling water, the women do not treat water in any way to make it safer to drink

Average time needed to boil water per day is 65 mins

Average firewood used to boil water per week (in bundles) is 4 bundles (n=74)

Average firewood used to boil water per week (in sacks) is 3 sacks (n=5)

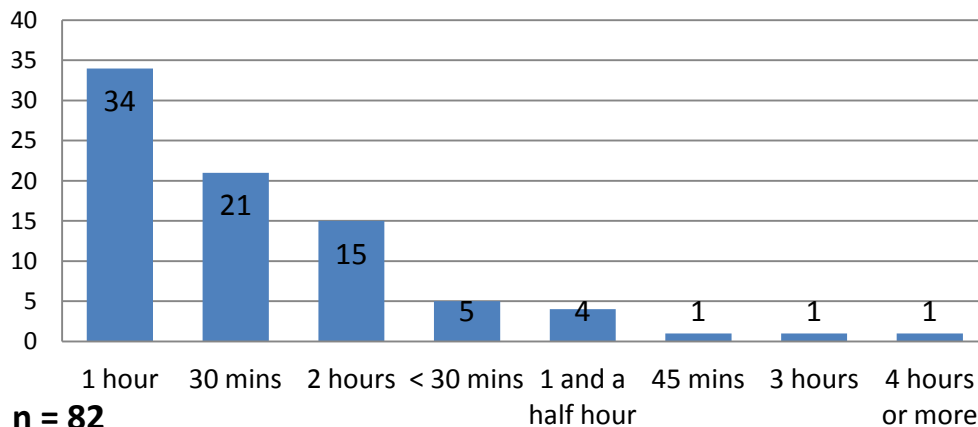
Average kerosene used to boil water per week is 4 liters (n=33)

1 liter = Rp. 5,000 → Rp. 20,000 per week

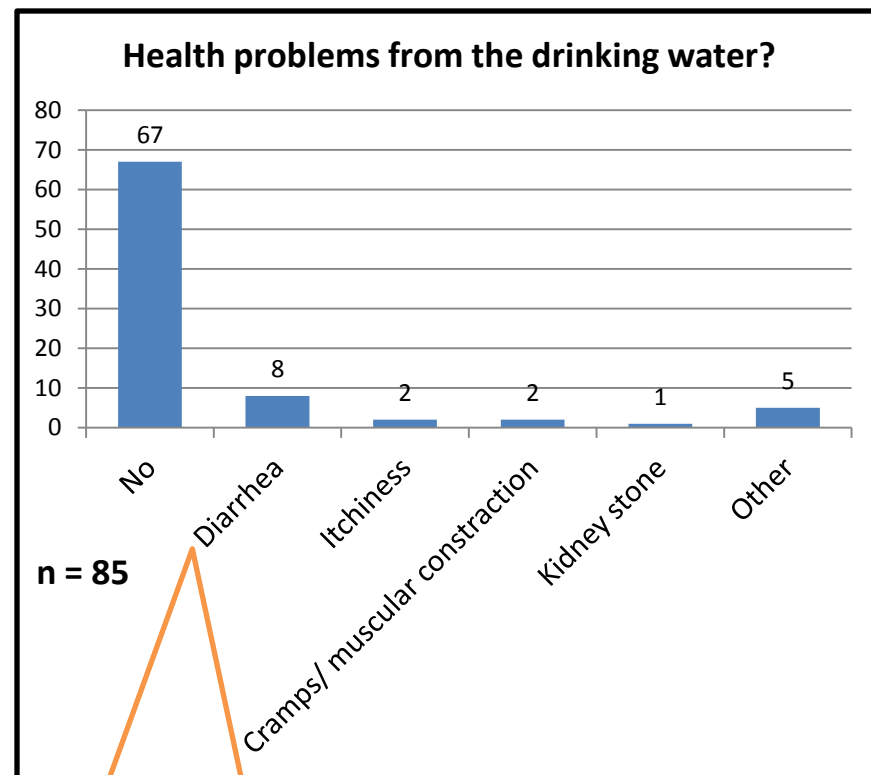
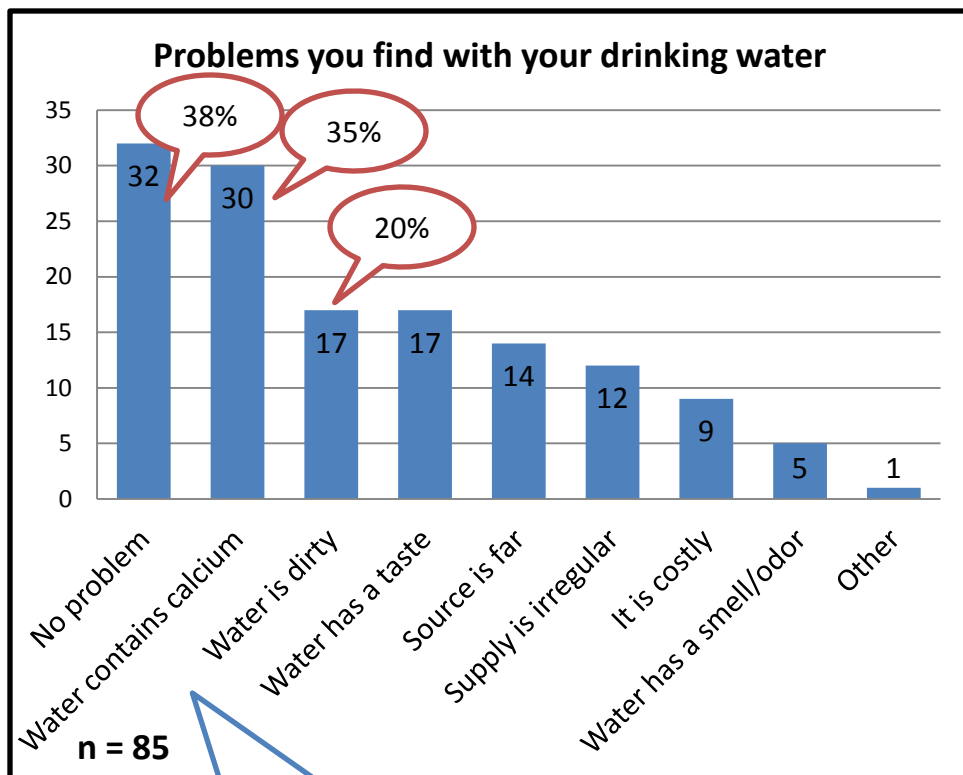
Average gas used to boil water per week is 0

Average monthly income
Rp. 434,500

Total Time Needed Per Day to Boil Water



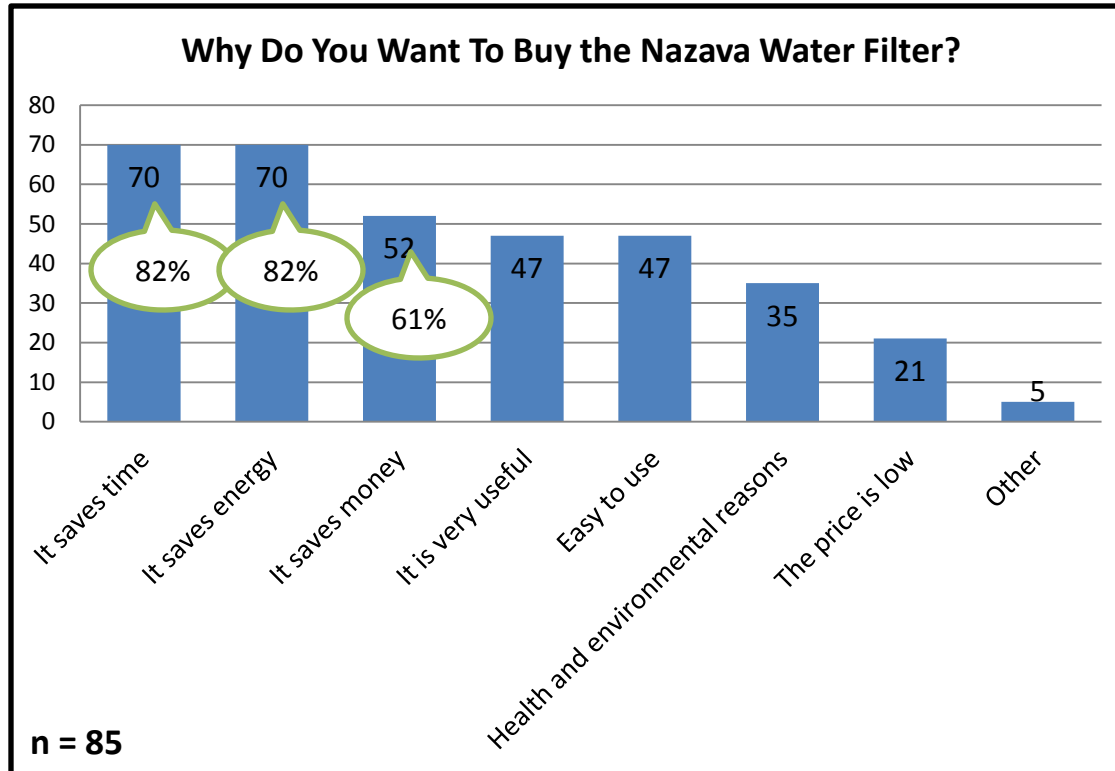
Problems with the Drinking Water



Major problems with drinking water:
Water contains calcium,
Water is dirty
Water has a taste

10% of the women have suffered diarrhea from the drinking water

Reasons To Buy the Nazava Water Filter



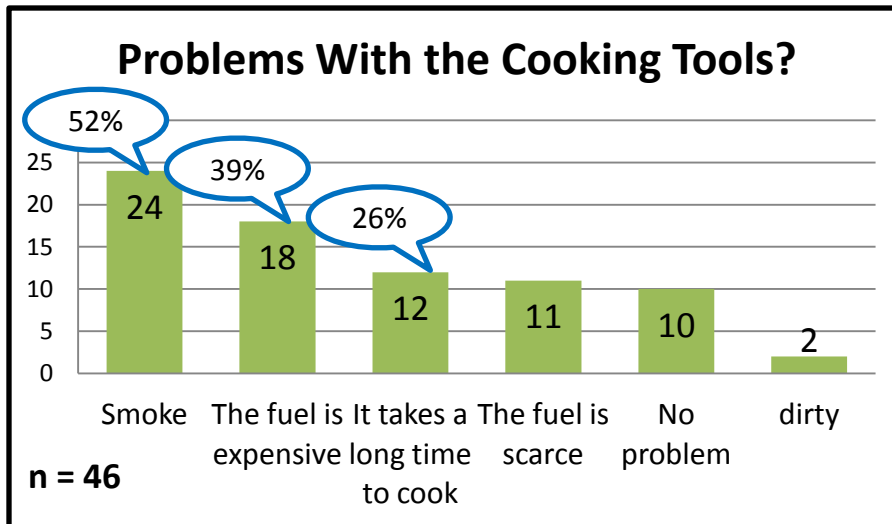
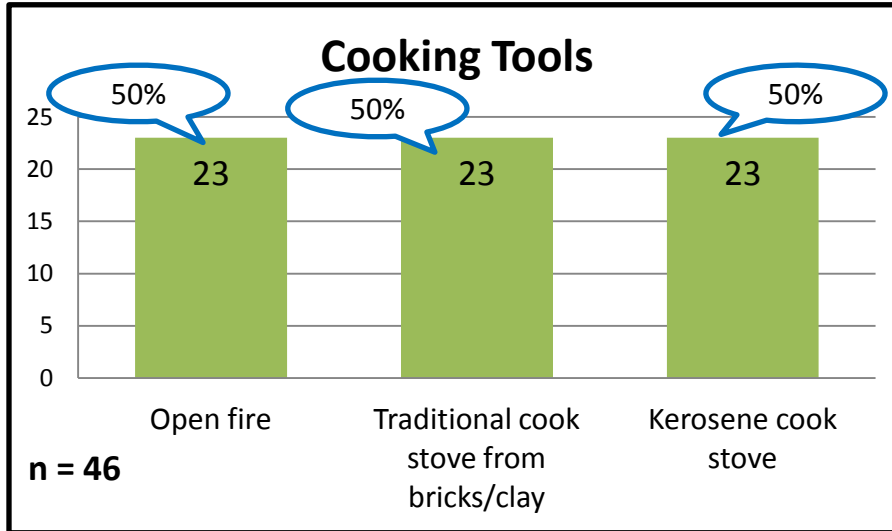
99% of the women make the decision by themselves to choose the technologies they want to buy (including the Nazava Water Filter).

Baseline Survey Results on Stove



Cook Stove

- Of 104 Participants, 46 (44%) want to purchase UB.03-1

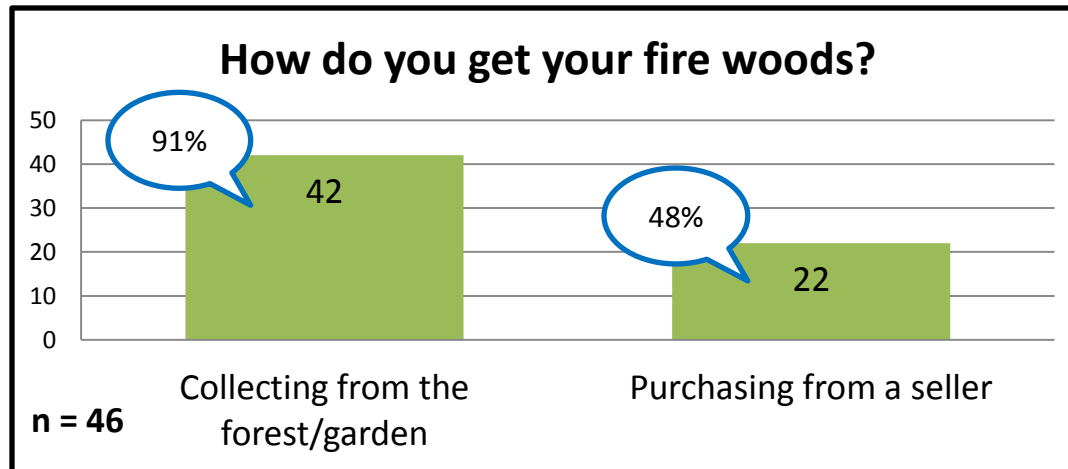


22 (48%) have experienced health problems from using their current cooking tools



Fire Woods

- All of the participants (46) use fire woods for cooking



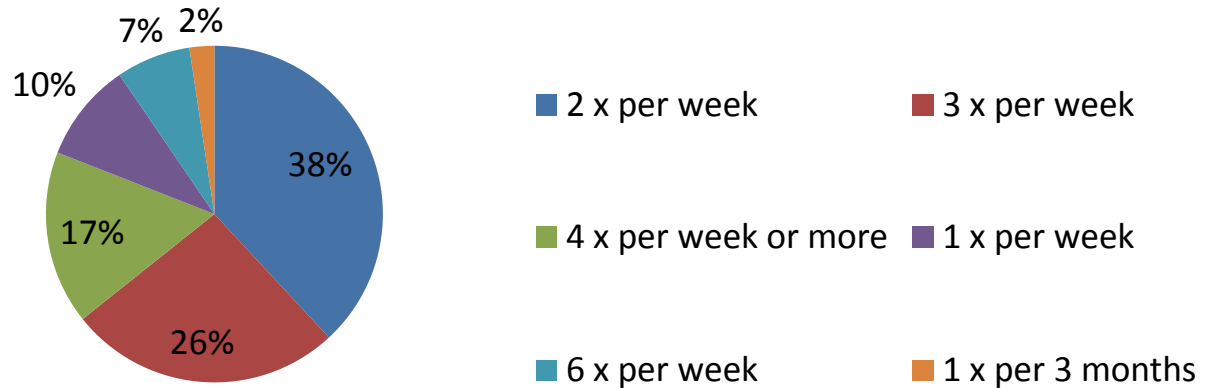
- Of 42 participants, 39 of them (93 %) collect The fire woods by themselves, the rest are helped by their children or relatives



Photo by yahoo Indonesia

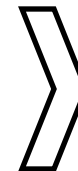
Fire Woods

Frequency to collect the firewood per week



n = 42

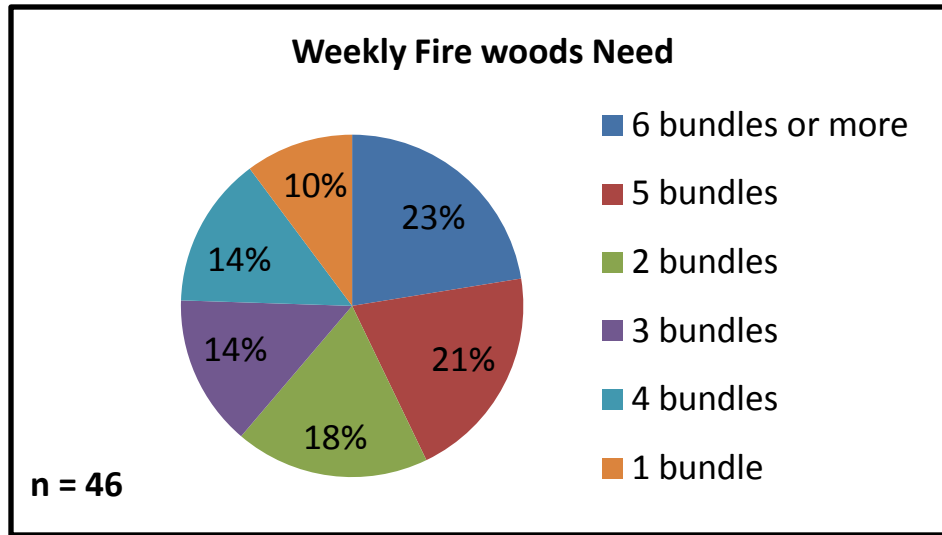
- Average distance to collect fire woods is 1,946 meters (almost 2 km)
- Average frequency to collect fire woods is 3 times per week
- Average time needed to collect fire woods on a round trip is 123 minutes (2 hours and 3 minutes)



1 week = 6 hrs & 9 mins
1 month = 24 hours & 36 mins

Pekka NTB:
Biomass Users: 5.8 hrs/month
Non users: 7.2 hrs/month

Fire Woods and Kerosene



**Average
Monthly
Income =
Rp. 434,500
(USD 45.7 *)**

- Average fire woods needed to cook is 4 bundles per week
- One bundle of wood can cook between 1 and 5 times of cooking
- Average weekly spend to purchase fire woods (n=22) is Rp. 27,091
(Rp. 108,364/month = USD 11.4*)

- 39 participants (85%) purchase kerosene to cook
- Average use of kerosene to cook is 4 liters/week
- Average spend on kerosene to cook is Rp. 17,915 per week
(Rp. 71,660/month = USD 7.5*)

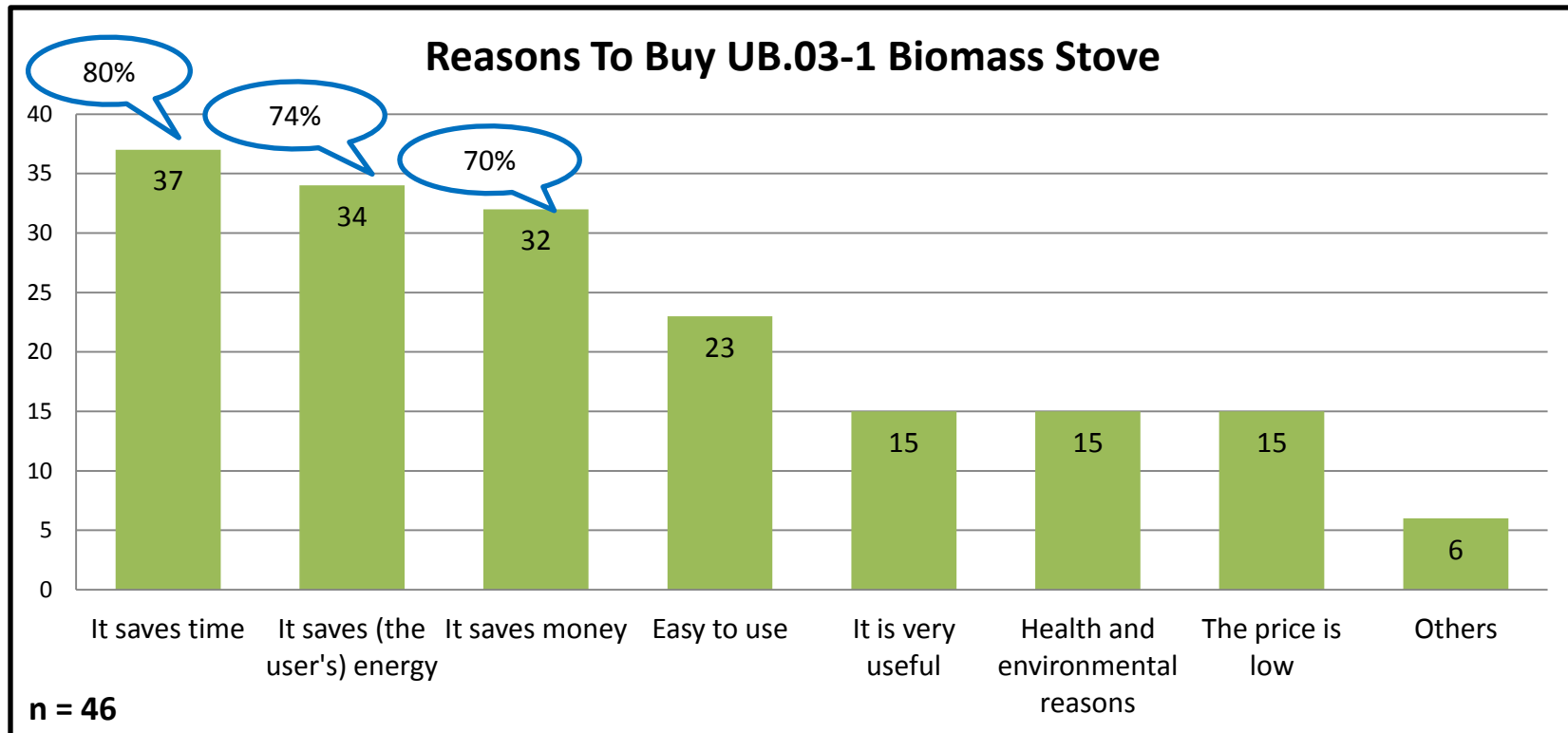
* USD 1 = Rp. 9,500

Pekka NTB: Average Monthly Spend on kerosene, LPG and fire woods

Biomass Users: Rp. 47,272
(54% have LPG)

Non-users: Rp. 49,237
(46% have LPG)

Reasons To Buy UB.03-1 Biomass Stove



Most of the participants want to buy the UB.03-1 Biomass Stove because (3 top reasons):

1. It saves time (80%)
2. It saves energy (of the user) (74%)
3. It saves money (70%)

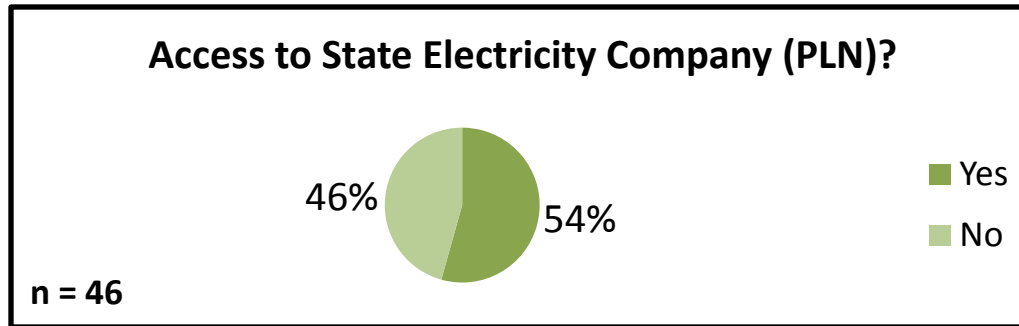


Baseline Survey Results on Lighting

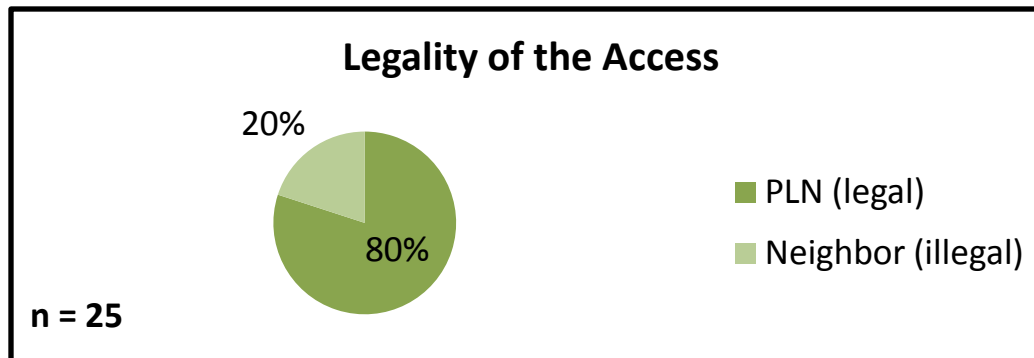


Access to State Electricity Company (PLN)

- Of 104 Participants, 46 (44%) want to purchase the d.light solar lights

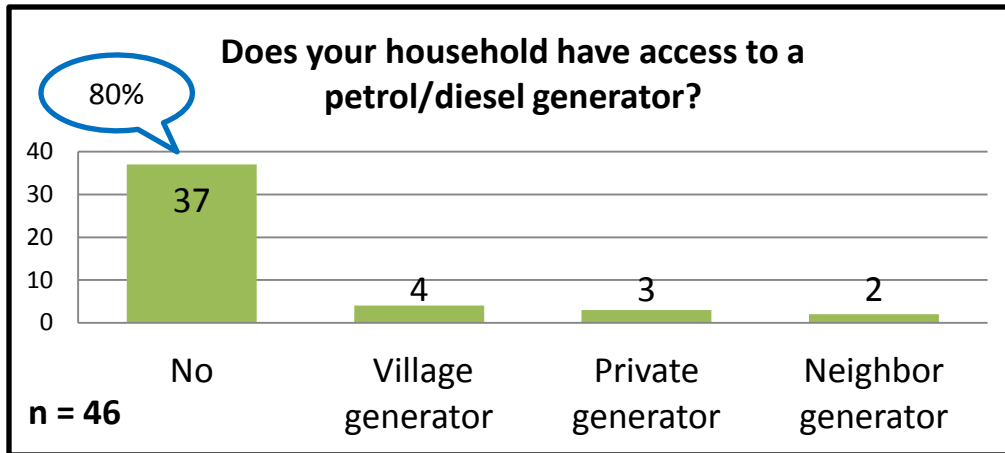


- Of 46 participants, 25 (54%) have access to the State Electricity Company (PLN) and 21 (46%) have no access

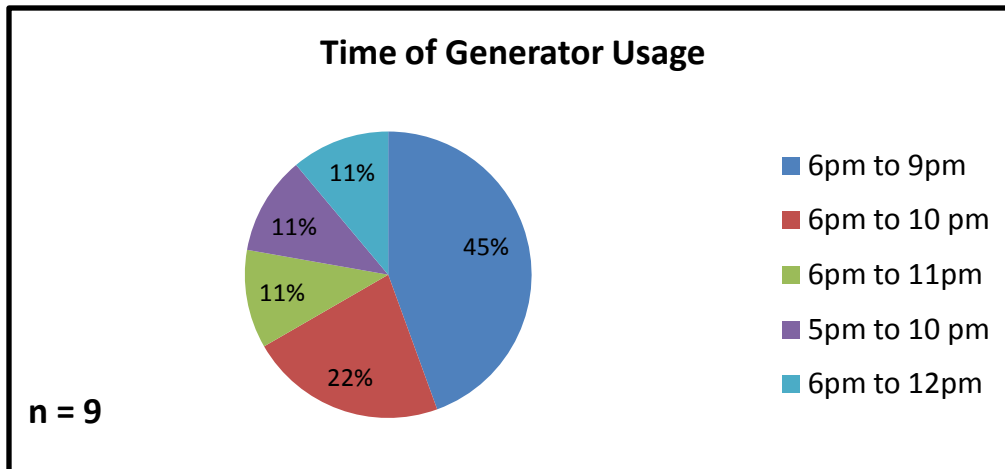


- Of 25 participants who have access to PLN, 20 (80%) have legal access and 5 of them (20%) have illegal access

Access to Generator



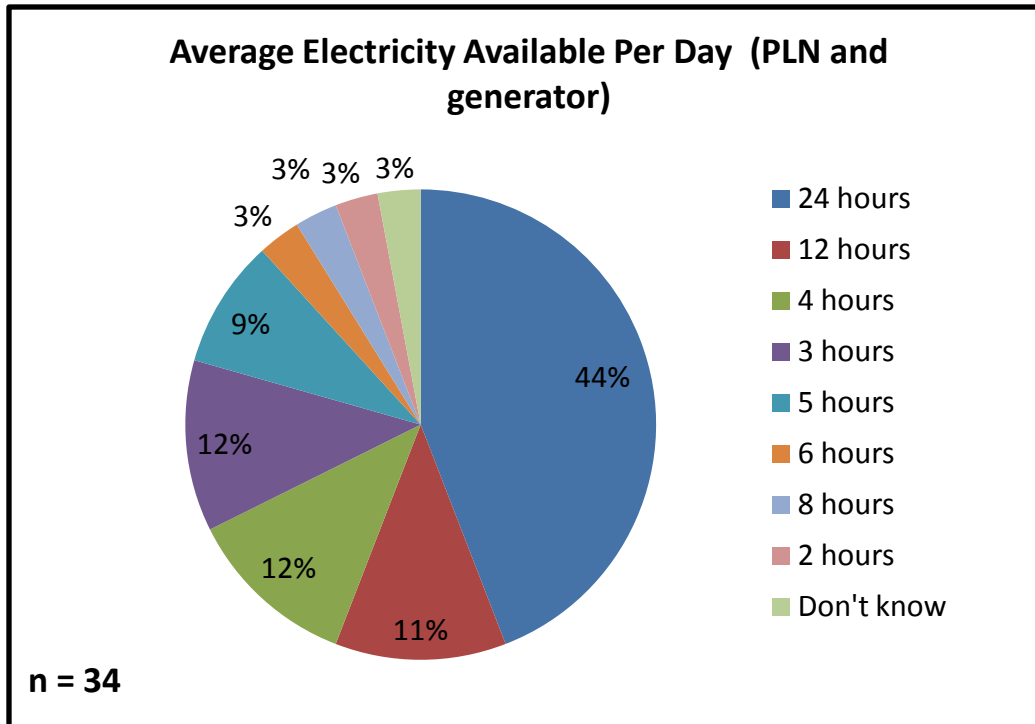
- 37 Participants (80%) have no access to a generator
- 9 Participants have access to a generator



- Average usage of generator is 4 hours per day
- Average monthly spend on generator for fuel and/or rent is Rp. 128,333 = USD 13.5*

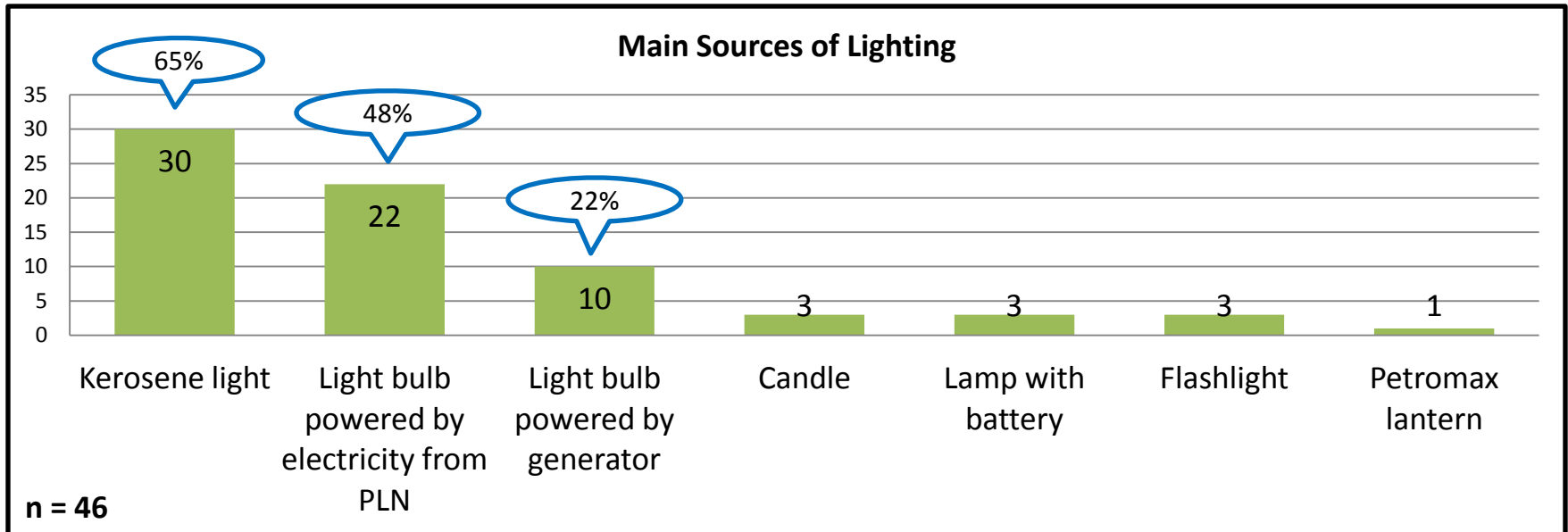
* USD 1 = Rp. 9,500

Electricity Availability



The average electricity power available from both PLN and generator is 14 hours per day

Main Sources of Lighting

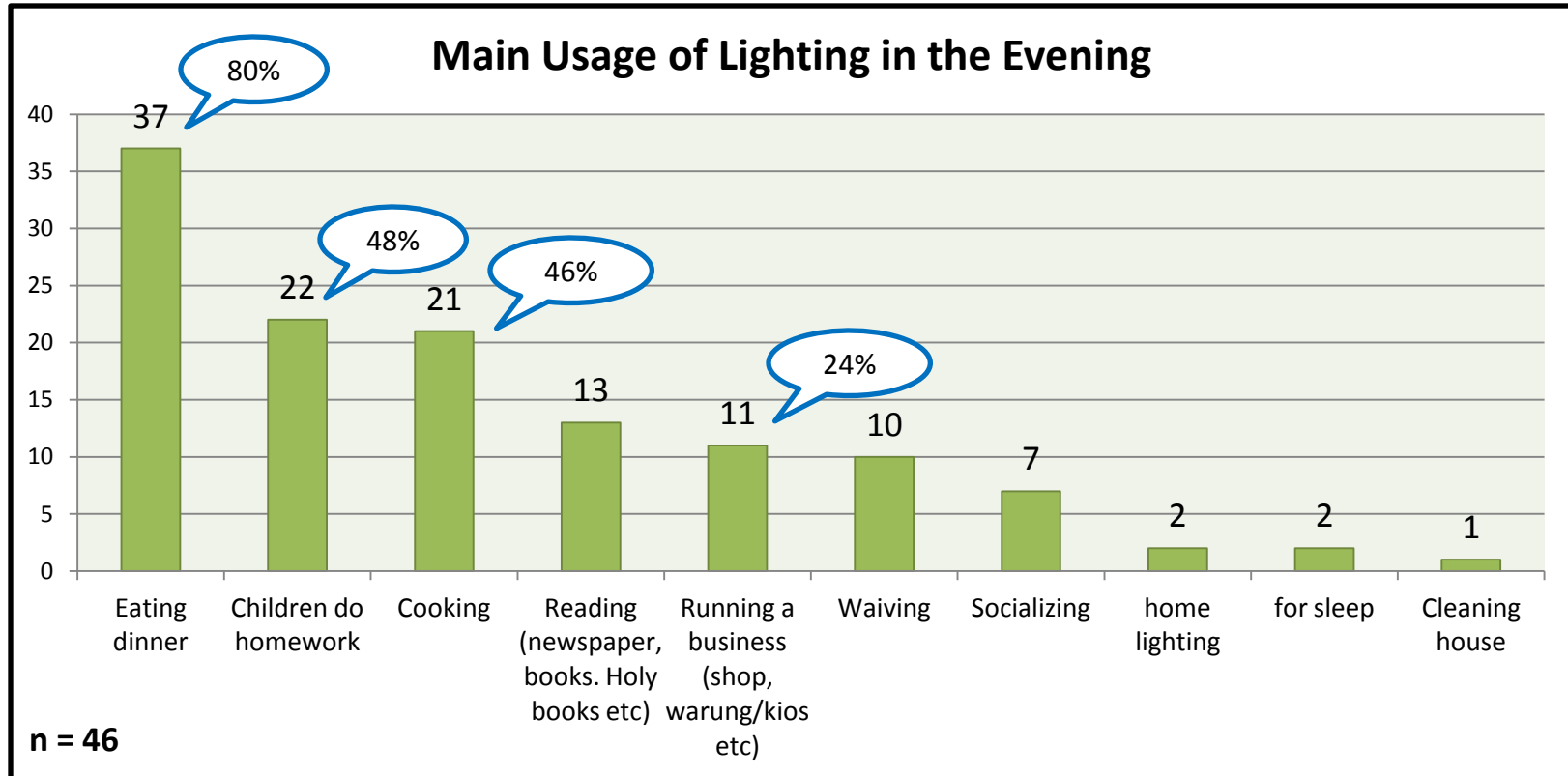


- While 54% of the participants have access to electricity, 65% of them rely on kerosene light as the main source of lighting



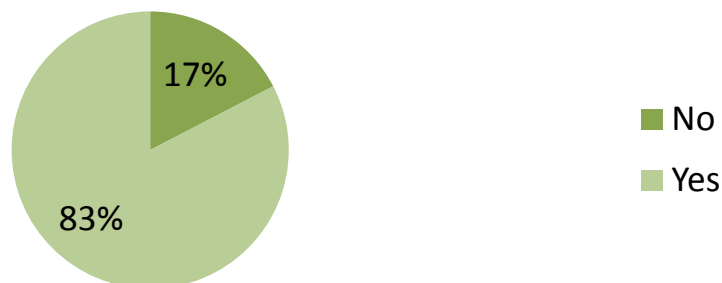
<http://www.purwokertoantik.com/2010/11/lampu-petromax.html>

Main Usage of Lighting



Kerosene Light

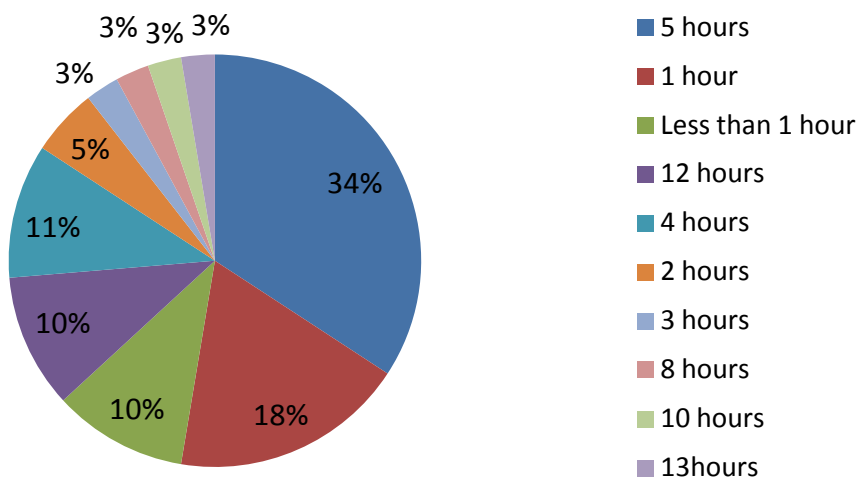
Does your household use kerosene light for lighting?



n = 46

- Of 46 Participants, 38 (83%) use kerosene light for lighting

Average Time Using Kerosene Light Per Day

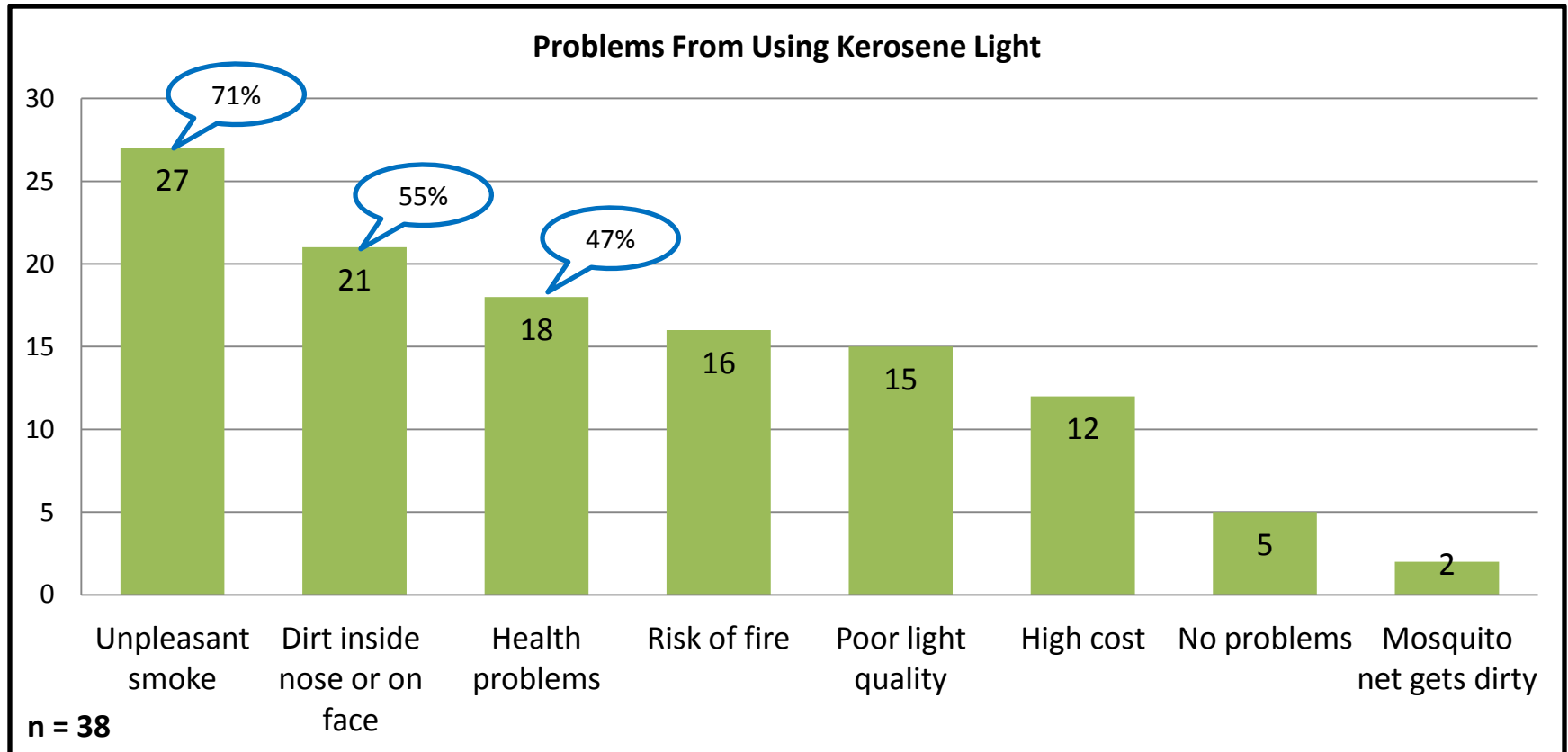


n = 38

- Average time using kerosene light is 5 hours per day
- Average amount of kerosene used is 2 litres per week
- Average weekly spend on kerosene for kerosene light is Rp. 10,587 or **Rp. 42,348/month** or USD 4.5/month*

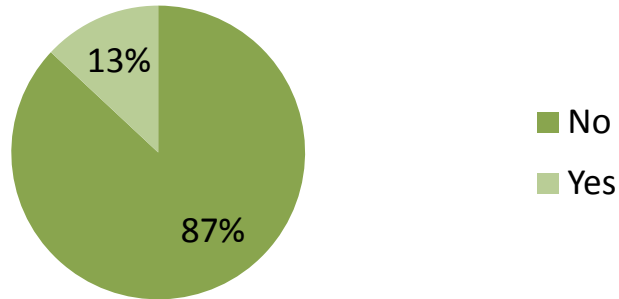
* USD 1 = Rp. 9,500

Kerosene Light



Candles for Lighting

Does your household use candles for lighting?

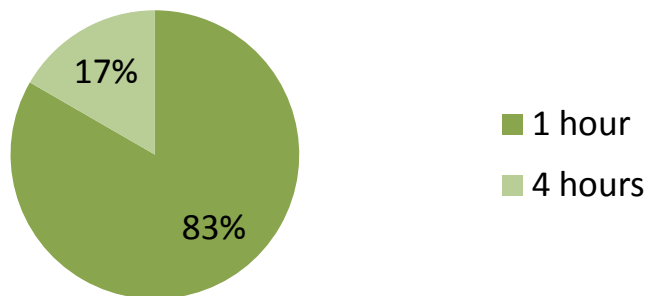


n = 46

- Of 46 participants, only 6 (13%) use candles for lighting

- Average monthly spend on candles is Rp. 6,750 or USD 0.7*

Average Time Per Day Using Candles for Lighting



n = 6

- Average usage of candles is 1.5 hours per day

* USD 1 = Rp. 9,500

Petromax for Lighting

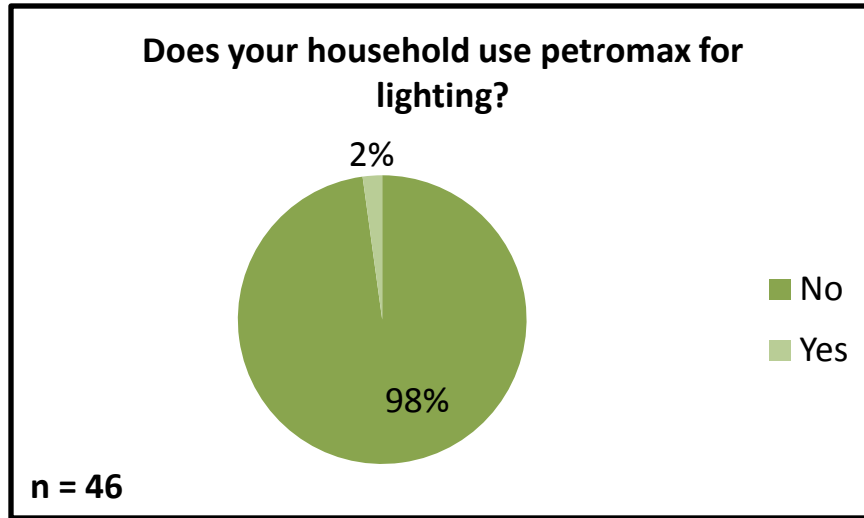
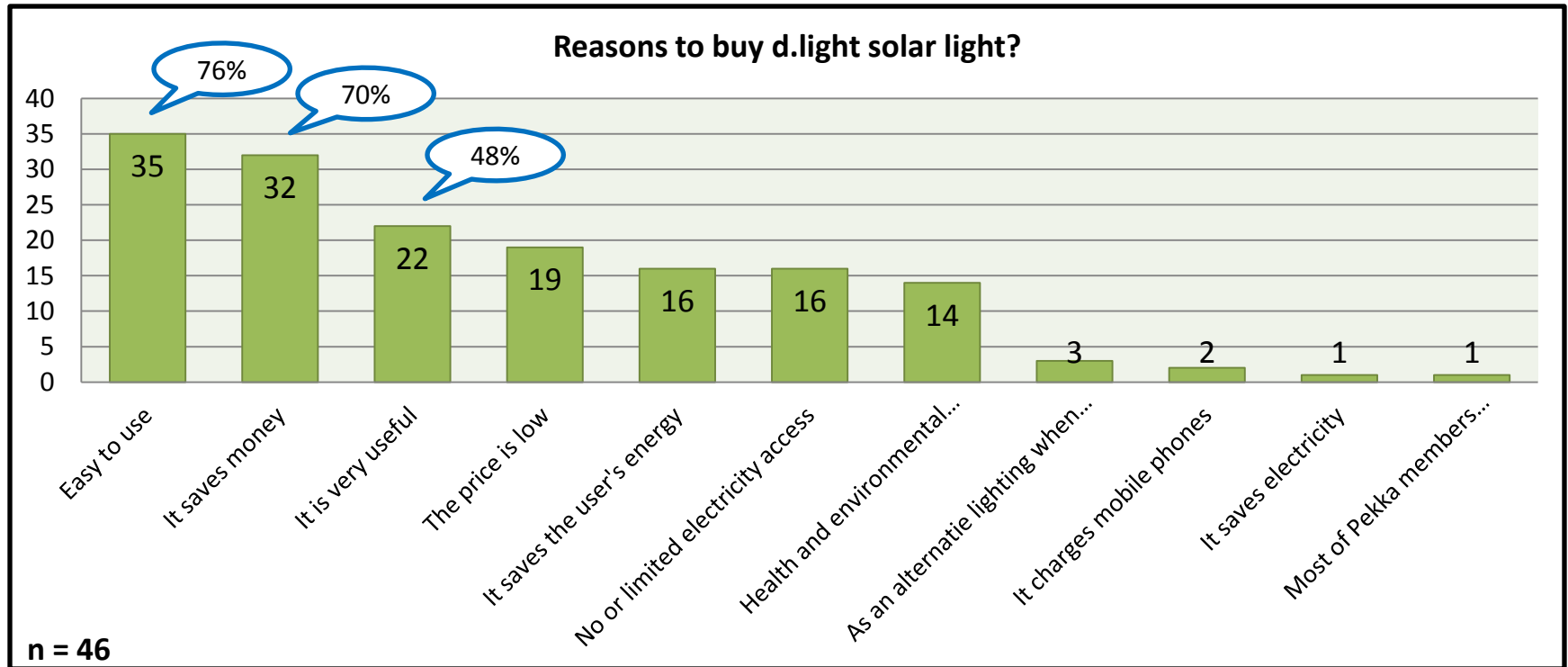


Photo by adequatebird.com

Of 46 participants, only 1 (2%) uses Petromax for lighting, who uses it averagely 5 hours per day and spends averagely Rp. 42,000 (USD 4.4*) per month to buy kerosene and mantle for the Petromax

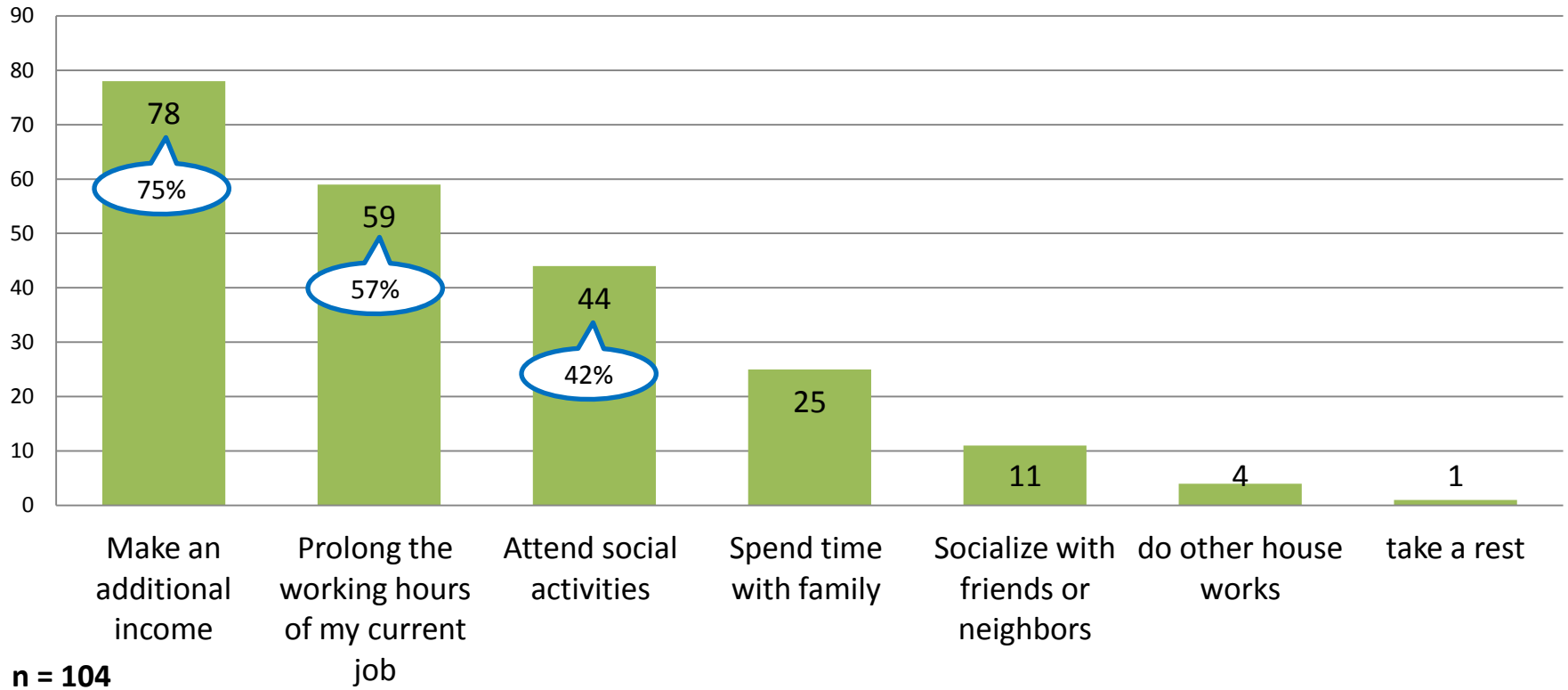
* USD 1 = Rp. 9,500

Reasons To Buy the d.light



What the Participants Would Do If the Tech Could Help Give Them More Spare Time

If the technologies you buy from Kopernik could give you more spare time, what would you do with this spare time?



Lessons Learned from the Process

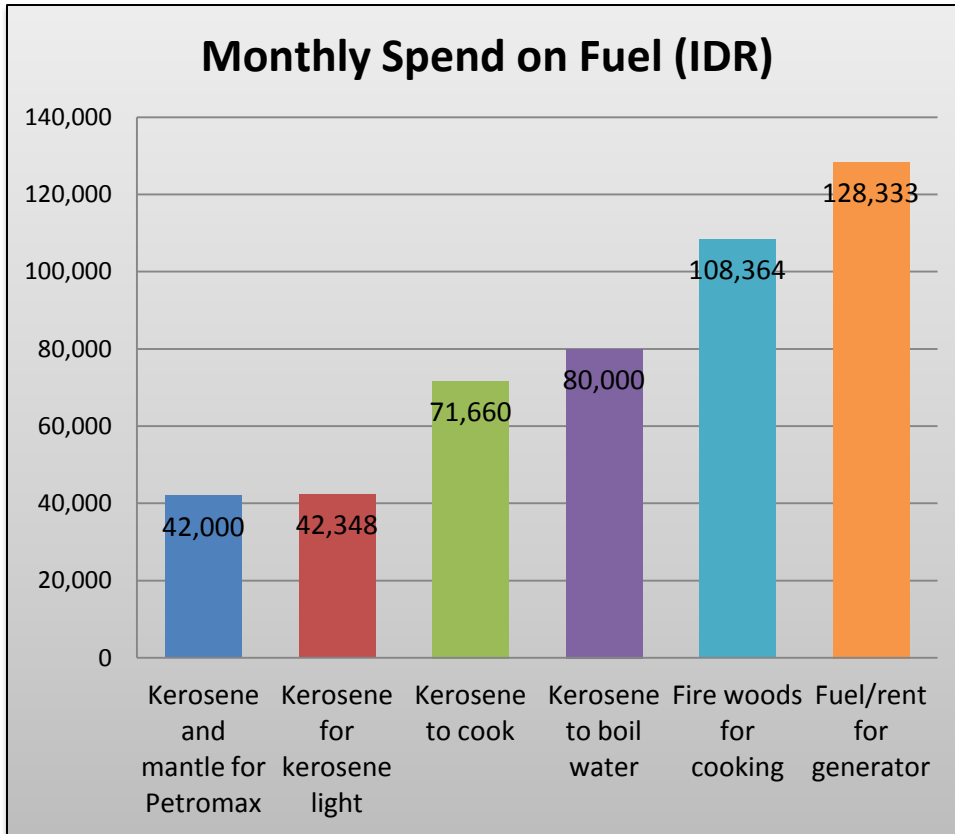
- Get the local partner involved (train the locals)
- Pre-test the questionnaires/interview questions



- To get data in detail, get each question answered
- Give a gift **but not money** to appreciate the participants of the survey, e.g. handkerchief

Lessons Learned from the Results - Recommendations

1. High spend on fuel:



Provide technology options that can help reduce monthly spend on fuel: Nazava, UB-03.1 Stove, d.light and other technologies (Envirofit, Sundaya, etc.)

Lessons Learned from the Results - Recommendations

2. Education and age background

Never went to school	= 5%
Drop out from Elementary Sekolah Rakyat	= 26%
Elementary School	= 43%
Junior High School	= 12%
Senior High School	= 13%
Age Min	= 28
Age Max	= 90
Average Age	= 48.5



Conduct **regular** trainings and awareness raisings on the **benefits** of the technologies and **how to use, maintain** and **fix** the technologies when they are broken

3. Low income

Average Monthly Income
(Rp. 434,500/month)
USD 45.7



1. Provide locally appropriate payment options: subsidy, installment payments, discount
2. Provide opportunity to increase their monthly income: Tech Agents, Wartek in every centres
3. Provide technologies that can help the women increase their income

NTT Average Monthly Income per household: Rp. 1,972,056*
Provincial Poverty Line per household: Rp. 701,232*

* With an assumption that each household consists of 4

Thank You

Thank you!!!

