

Nazava Impact calculation methods, parameters and underlying studies.

This file contains the main impact numbers, calculations and links to underlying datasets. Our impact calculation is based on 3 studies namely [an Impact Study by Santa Clara University](#) , an [impact study by HEC Paris](#) and a survey undertaken for the verification of Nazava’s carbon credit project. You can find the [dataset](#) of the surveys here. Please contact guido@nazava.com if you would like to get additional information.

Nazava Impact Matrix	
<p>Cost saving US\$21.64 per filter per year</p>	<p>Based on survey of 194 non-users and 757 users. 63% user LPG to boil, 23% uses wood, 26% buys water. People that boiled water on LPG before save on average IDR458K or US\$32.75 per year compared to non-users. People that buy water save on average US\$37.71 per year compared to non Nazava users. People who boil using wood infrequently buy fuel wood. We lack data to determine savings related to buying less fuelwood. The average cost saving per filter user is then $63\% \times \text{US\\$}32.75 + \text{US\\$}37.71 \times 26\% = \text{US\\$}30.39$.</p> <p>The average price that people paid for the filter to our resellers is US\$26.24. This figure is taken from 212 users that were interviewed for our carbon project. Nazava does not set the retail price and the price depends on transport costs and payment terms. The filter lasts for 3 years before the candle needs to be replaced. Within the first 3-year users save $3 \times \text{US\\$}30.39 - \text{US\\$}26.24 = \text{US\\$}64.93$ or US\$21.64 per year. After 3 years they will save more because the replacement filter is only US\$8 but we will use US\$21.64 to be conservative.</p> <p>Source: Survey Data</p>
<p>Time Saving 139 hours per filter per year</p>	<p>The Santa Clara study did a detailed analysis of time spend on obtaining water. They found that filter users save on average 139 hours per year which equals 0.07 FTE per filter saved per year. One full time equivalent is the number of hours in a full time labor contract. (https://www.wikihow.com/Calculate-FTE)</p> <p>The Santa Clara study surveyed 46 users.</p>
<p>People with improved health 4.32 per filter per year</p>	<p>This is the number of filters in use times the family size (4.32 persons per family).</p> <p>Nazava Water Filters remove 99.9% of bacteria as tested by WHO. Therefore, Nazava water filter users are less likely to get diarrhea. Users surveyed in the HEC study report 59% less diarrhea than non-users. The HEC study compared how often Nazava users and non-users had experienced diarrhea in the last month, half year, one year and two year. Sources: HEC report. HEC dataset.</p>

Carbon Dioxide reductions 0.26 tCO2 per filter per year	0.26 tCO2/year calculated Gold Standard methodology verified by Bureau Veritas. Source: Emission Reduction calculation spreadsheet & Verification Report by Bureau Veritas														
Additional revenue informal resellers 26USD	In the last 5 years we have had an average of 100 informal resellers. Together they purchased around 6000USD per month (Source sales database, audited financial reports, available on request). They sell the products on with a margin of around 30% which implies that they earn 26USD per month or about 14% of average monthly earnings ((185USD source: CEIC) Sales Database (accessible on request)														
Parameters															
Filters in Use 87%	<p>87% of all filters stay in use from one year to another. This is based on user survey done for carbon project verified by Bureau Veritas. The survey found usage rates fluctuates greatly between the years. We used Excel to find the best fitting use rate and found 87%.</p> <p>The table below shows the results from the carbon-credit survey and show the percentage of filters still in for each year they were sold. Source: survey data & emission reduction calculation</p> <table border="1" data-bbox="587 981 994 1301"> <thead> <tr> <th>Filters sold years ago</th> <th>Still in use</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>96.39%</td> </tr> <tr> <td>2</td> <td>97.56%</td> </tr> <tr> <td>3</td> <td>78.15%</td> </tr> <tr> <td>4</td> <td>71.67%</td> </tr> <tr> <td>5</td> <td>47.62%</td> </tr> <tr> <td>6</td> <td>4.90%</td> </tr> </tbody> </table>	Filters sold years ago	Still in use	1	96.39%	2	97.56%	3	78.15%	4	71.67%	5	47.62%	6	4.90%
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Family size 4.32	4.32 based on HEC, Santa Clara and Carbon project surveys (757 users) Sources: survey data														
Poverty Probability Index score 46.82	Averages 46.82 implying that Nazava users have a 1.4% probability of living below the poverty standard (of Indonesia) a 2.6% probability having a PPP below 1.25USD and 54.70% change of having PPP below USD2.5. This data is based on HEC study and Carbon Credit Survey with a total of 711 respondents. Non-users (194 respondents) have an average PII score of 44 which is not significantly different. Source: survey data , survey data PII for Indonesia														
63% user LPG to boil water before buying a Nazava	Based on survey of 194 non-users and 757 users from HEC, Santa Clara and Carbon Survey. survey data														
23% boil water on wood, before buying a Nazava															
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Water Consumption of non users
0.97 liter per day

Based on non-users that buy bottled water from HEC and SC study. Source: [survey data](#)