

# Price, peers and Perception (P3)

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## Final project report

Drafted By: Clifford Amoah

ORGIIS GHANA | BOX PG16 , PAGA, UPPER EAST REGION

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## Introduction

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This report is an end of project report of the Price, peers and perception project implemented over the period 2017- 2018.

The P3 project is a collaborative research project between the Navrongo health research Centre, the university of Colorado and ORGIIS Ghana. Under the project arrangement, ORGIIS was selected as the local implementing partner for the project for sustainability reasons. ORGIIS was also mainly responsible for the direct implementation of the interventions while the two other institutions focused on the other aspects of the project research activities.

The project focused on developing effective strategies for getting cleaner stoves into households *and* inducing sustained use of these technologies in place of traditional stoves. The project looked at what barriers currently limit LPG use, and what opportunities exist for overcoming these barriers. The project also looked at the adoption and use of efficient and modern biomass cookstoves with particular attention on the supply side and demand side of the value chain. The research also looked at the opportunities that exist for upscaling. In addition, how that affect rural and urban access to LPG and biomass cookstoves in the district.

The project reports have also been published in journals, which it is believed will contribute significantly to global learning on clean cooking initiatives.

## Monitoring and Evaluation

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During the period of the project implementation several monitoring mechanisms were deployed to ensure that set targets were achieved. Joint monitoring of field activities were carried out between ORGIIS and the Centre to assess progress of work in the field. In addition, weekly skype calls were institutionalized as part of the mechanism to track progress and checking in with the teams. This was used to gather relevant information useful for the implementation.

ORGIIIS also had a monitoring team that held monthly field visits to validate field workers activities and to advise them on the best approaches to enhance the delivery of the project objectives.

Weekly, monthly and quarterly reports were prepared and submitted which provided information on the progress of work.

ORGIIIS will particularly recommend the use of weekly check-ins and skype calls to engage in project implementation since it was very useful and helped us to achieve the desired results.

## P3 Bio Stove Sensitization and Education Meetings

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ORGIIIS at the beginning of the project carried out cluster sensitization of the households that had been selected to participate in the P3 project. The sensitization involved the financial heads of the households and those responsible for cooking. The sensitization's was done for households in both the biomass and LPG study groups. Different communication messages were deployed

considering that the products were also different. The sensitization messages contained marketing and research components of the project, pricing, payment framework, timeframe as well as after sales services. The benefits of the Ace and Greenway stoves (biomass stoves) and that of the LPG packages were adequately explained comparing to the traditional cooking approaches.

The team also explained to the participants about the various components of the projects, the benefits of the various stoves and LPG.

Participants were also educated on the key issues to note and DON'Ts of the stoves. That aside, the household were made to understand that their selection to be part of the study was based on chance (random sampling). They were also encouraged to make time to answer questions from interviewers who will be visiting them, as this is a very important aspect of the study.



*Figure 1: Bio stoves sensitizations in pictures*

## **Stove Offers**

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Stove offers were held in all the selected clusters participating in both bio and LPG study. Total number of Bio stove offer meetings that were held are 49 and LPG was 10 meetings for 12

clusters. Some clusters were merged based on their proximity to each other to manage time and ensure effectiveness.



For Bio, the first offer meeting started in March 2017 and the last meeting was recorded in May 2017 involving 294 household members. However, five households did not attend the bio stove offers. See breakdown of those households for your attention: NBG 63, WCA 09, WFD 64, SEI 29, and SDF 35. Out of these households NBG 63 and WCA 09 were not gotten after the follow up, the remaining 3 households however were gotten and offers made. (NBG 63 is a trader and couldn't find time for us whereas

WCA 09 details were missing from the master list given us by the NHRC).

At the end of the stove offers, 265 ACE stoves and 228 Jumbo stoves orders were received from all the participating households.

*Figure 2: Signing of offer agreements by a participant*

*Table 1 Break Down of stove offers*

| Zone         | Ace        | Jumbo      |
|--------------|------------|------------|
| North        | 70         | 62         |
| South        | 80         | 74         |
| East         | 40         | 40         |
| West         | 75         | 53         |
| <b>Total</b> | <b>265</b> | <b>229</b> |

### P3 Bio Stove Distribution

After we successfully carried out the stove offers for all the clusters, we proceeded with the distributions so that we stay within time. Stove distribution started in October 2017 and ended by November 2, 2017. Initially, ORGIIS had challenges with the distribution on time as stoves had to be labeled and sums for the data collection had to be attached to them.

ORGIIS received two different types of bio stoves thus the African Clean Energy (ACE) and green Jumbo stoves totaling 509 from the Navrongo health research Centre. ACE stoves were 270 and jumbo 239. At the end of distribution, 253 ACE and 215 jumbo stoves were distributed to all the 294 households' beneficiaries. During the distribution, we observed that some of the households

who had placed orders had declined to receive their stoves because they could not raise the initial deposits citing delays in the distribution, loss of breadwinner of households, health and payment of their wards school fees.

We also recorded during the distribution that 11 stoves were spoilt. This were made of eight ACE stoves and three Jumbo. The summary of the stoves distribution is found in the below table. Five ACE stoves were dismantled and used as spare parts for repairs.

*Table 2 Bio Distribution*

| S/N | Stove Type | No. of Stoves Received from NHRC | No. of Stoves Distributed | Stoves Remaining | Stoves Spoiled | Total |
|-----|------------|----------------------------------|---------------------------|------------------|----------------|-------|
| 1   | Ace        | 270                              | 253                       | 9                | 8              | 270   |
| 2   | Jumbo      | 239                              | 215                       | 21               | 3              | 239   |
|     |            |                                  |                           |                  |                |       |

### Home Visit (Repairs & Maintenance)

At the beginning of the project implementation, one ORGIIS staff (Bernard Ayaro Gubilla) was sponsored by the project to go for a technical training in Lesotho on the repair of the ACE stoves. This training was successful and contributed significantly to the project objectives. After the officer returned he impacted the training received to some of the staff who were directly involved in the project to complement each other. Two staff (John Bosco Aburiya & Bernard Ayaro Gubilla) were dedicated to receiving and repairing spoilt stoves as they were overwhelmed with repair works at some point. Field officers were in charge of connecting the technician with consumers at community level for repair works. Stoves at some point had to also be moved to the office before they could be fixed due to absence of some accessories.

The challenges that households had with regards to their stoves were largely related to handling by people responsible for cooking at the household level. Some were also default problems emanating from the factory mainly on the charging units and the lighting components of the stoves.

Generally, repair issues related to malfunctioning of the stoves fans, batteries not charging, broken pins on the solar panel and chargers, and in other cases these lamp / LEDs were malfunctioning.

In instances where the officers could not repair the stoves at the field they will have to bring them back to the office for repairs.

Going forward orgiis would have wished that the study also considered the cost implications in maintaining the stoves because we believe that any significant expenditure by households towards repairing or maintaining the stoves can influence adoption.

### LPG Sensitizations and auctioning

LPG sensitization commenced on July 5, 2017 and last meeting was January 24, 2018. This was after the successful distribution for the bio packages to beneficiaries. The LPG program design had different types of packages ranging from package #1 to package #6. Selected participants were requested to play a game of chance and if they were lucky, they will win from the various packages. At the end of the auctioning process, 183 house won various packages while 80 were



unsuccessful in the bidding / game played. From the 300 households that ORGIIS engaged, 13 of the participants said they were not interested in playing the game, 7 participants said they cannot afford to pay, 6 household members had travelled, 5 household members had relocated (been transferred or married elsewhere). Three participants also passed on and three participants could not be traced due to wrong names on the list.

From the table provided below, 61 persons won package number 1, 45 won package 2, 41 won package 3, 24 won 4, 7 and 5 won package 5 and 6 respectively. The summary for each of the clusters can be found in the table for further study.

*Table 3 Packages won according to clusters*

| S/N | Cluster Code | Section             | Breakdown of Packages won |    |    |    |    |    | Total |    |
|-----|--------------|---------------------|---------------------------|----|----|----|----|----|-------|----|
|     |              |                     | #1                        | #2 | #3 | #4 | #5 | #6 | YES   | NO |
| 1   | CAM          | Nogsenia/Sebagnabia | 11                        | 2  | 4  | 1  | 0  | 0  | 18    | 12 |
| 2   | CAS          | Gia/Tono Township   | 6                         | 4  | 2  | 1  | 1  | 1  | 15    | 7  |
| 3   | CAX(CAF)     | Nogsenia/Yipugnia   | 3                         | 2  | 0  | 1  | 0  | 1  | 7     | 2  |
| 4   | CAQ          | Nogsenia/Bawiabia   | 4                         | 4  | 7  | 0  | 0  | 0  | 15    | 10 |
| 5   | CAA          | Nogsenia/Bagwebia   | 5                         | 4  | 6  | 7  | 0  | 0  | 22    | 6  |
| 6   | CAP          | Nogsenia/Apiabia    | 5                         | 5  | 2  | 2  | 1  | 0  | 15    | 4  |
| 7   | CAU          | Nogsenia/Apiabia    | 3                         | 2  | 1  | 2  | 0  | 0  | 8     | 11 |
| 8   | CAL          | Namolo Pongo        | 1                         | 7  | 3  | 2  | 1  | 1  | 15    | 5  |



|              |     |                      |           |           |           |           |          |          |            |           |
|--------------|-----|----------------------|-----------|-----------|-----------|-----------|----------|----------|------------|-----------|
| 9            | CAD | Nogsenia/Niabawiabia | 7         | 6         | 5         | 1         | 0        | 0        | 19         | 6         |
| 10           | CAI | Nogsenia/Balobia     | 7         | 5         | 4         | 2         | 1        | 1        | 20         | 3         |
| 11           | CAN | Namolo Pongo         | 8         | 0         | 4         | 4         | 0        | 1        | 17         | 6         |
| 12           | CAG | Namolo Zono          | 1         | 4         | 3         | 1         | 3        | 0        | 12         | 8         |
| <b>Total</b> |     |                      | <b>61</b> | <b>45</b> | <b>41</b> | <b>24</b> | <b>7</b> | <b>5</b> | <b>183</b> | <b>80</b> |

## LPG Distribution



Figure 4: LPG Distribution to participants in Bolobia primary

ORGIIS after the auctioning for some few households across the clusters continued with the distribution alongside the auctioning process. We received 194 cylinders, 116 two (2)-burner stoves and 82 one burner stoves from the Navrongo Health Research Centre for distribution to package winners.

For the distribution, 173 cylinders, 101 two-burner stoves and 63 one-burner stoves were distributed to beneficiary households under the project.

The table below provides further details for the stoves received, distributions and the balance for each category including stoves and cylinders that have been retrieved from beneficiaries.

Table 4 List of LPG stoves received and distributed

| s/n | Description/item                             | Received | Distributed | Remaining |
|-----|--|----------|-------------|-----------|
| 1.  | Total number of cylinders received from NHRC | 194      | 173         | 21        |
| 2.  | Total number of cylinders remaining          |          |             | 11        |
| 3.  | Total number of cylinders with Bakas Gas     |          |             | 10        |
| 4.  | Total number of 2burner stoves received      | 116      | 101         | 15        |
| 5.  | Total number of 1burner stoves received      | 82       | 63          | 19        |
| 6.  | Total number of cylinders retrieved          |          |             | 1         |
| 7.  | Total number of 2burner stoves retrieved     |          |             | 0         |
| 8.  | Total number of 1burner stoves retrieved     |          |             | 1         |

## LPG and Bio Payments

The table below detailed the amount of payments that were expected after the stove offers and the actual payments that was received by ORGIIS at the end of the project. The variance as captured in the data is attributable to a number of issues including offers that were not redeemed, stoves that were retrieved and auctioned to other beneficiaries.



### Bio Payments

From the data in the table below, total expected payments for the bio stoves amounted to GH¢ 44,100.00 as against actual payment received as GH¢ 30,375.00, which shows a variance of GH¢ 13,670.00. The variance is attributed to household's inability to make full payments; some did not collect their stoves after assessing the financial conditions and 32 ACE and 20 Jumbo stoves were retrieved from some households because they either made part payment or none at all.

### LPG Payments

With reference to the same table below, the expected payment for LPG stoves and accessories amounted to GH¢ 24,950 as against actual payment of GH¢ 22,670, which also shows some variance of GH¢ 2, 280. The reasons accounting for the difference were that, households that failed to collect their packages summed up to GH¢ 1,750, those that were declared bad debt summed GH¢ 230 because those have been transferred or changed location, and stoves that were retrieved amounted to GH¢ 300. This brings the total to GH¢ 2280. See appendix C.

*Table 5 Bio Stoves payment data*

| S/N                      | Zones                      | Expected (Gh¢)      | Actuals (Gh¢)       | Variance (Gh¢)      |
|--------------------------|----------------------------|---------------------|---------------------|---------------------|
| <b>Bio</b>               |                            |                     |                     |                     |
| 1                        | North                      | 4,400.00            | 3,980.00            | 420.00              |
| 2                        | South                      | 16,740.00           | 11,740.00           | 5,000.00            |
| 3                        | West                       | 13,920.00           | 8,950.00            | 4,970.00            |
| 4                        | East                       | 9,000.00            | 5,720.00            | 3,280.00            |
|                          | Resold/Used stoves         |                     |                     |                     |
|                          | <b>Sub-Total</b>           | <b>44,100.00</b>    | <b>30,375.00</b>    | <b>13,670.00</b>    |
| <b>LPG Payments</b>      |                            |                     |                     |                     |
|                          | Navrongo (central Cluster) | 24,950.00           | 22,670.00           | 2,280.00            |
|                          | <b>Sub-total</b>           | <b>24,950.00</b>    | <b>22,670.00</b>    | <b>2,280.00</b>     |
| <b>Total LPG and BIO</b> |                            | <b>Gh¢69,050.00</b> | <b>Gh¢53,045.00</b> | <b>Gh¢16,005.00</b> |

### Proposed Sharing Plan for LPG and Bio

| Item                  | Amount              | ORGIIS GHANA     | NHRC             | Joy Family      | Bakas GAS       |
|-----------------------|---------------------|------------------|------------------|-----------------|-----------------|
| LPG disbursement plan | <b>Gh¢30,375.00</b> | 30%<br>9,112.50  | 40%<br>12,150.00 | 15%<br>4,556.25 | 15%<br>4,556.25 |
| Bio Disbursement plan | <b>Gh¢22,670.00</b> | 50%<br>11,335.00 | 50%<br>11,335.00 | 0               | 0               |

|               |                     |                     |                 |                    |                    |
|---------------|---------------------|---------------------|-----------------|--------------------|--------------------|
| <b>Totals</b> | <b>Gh¢69,050.00</b> | <b>Gh¢20,447.50</b> | <b>Gh¢23485</b> | <b>Gh¢4,556.25</b> | <b>Gh¢4,556.25</b> |
|---------------|---------------------|---------------------|-----------------|--------------------|--------------------|

### Challenges

- Delays in the release of funds by the Navrongo Health Research Centre which we believe was not good for a healthy partnership.
- Navrongo Health Research Centre still owes ORGIIS Ghana some monies, which there is no clear, or defined terms for payments after ORGIIS fulfilled its part of the contract.
- Different prices for the same stove created serious problems in the communities that had high prices. This eventually affected payments/ recoveries, as they felt shortchanged.
- Some households/beneficiaries were difficult to reach during the raining season due to inaccessible routes
- Majority of the beneficiaries did not have phones nor reliable contacts to reach them on hence every communication was physical which involved many movements.
- A good number of the study participants were farmers, traders or informal employees therefore getting them was very difficult
- The auctioning process took a bit of time and households who did not get to win a package regarded the process as a waste of their time.
- Concerning retrieval of stoves, households that did not have the primary respondent or financial head around at the time of visit meant that the stoves could not be retrieved. This slowed down the retrieval of the stoves from households who could not pay.

### Lessons Learned

- The unavailability of improved Cookstoves has a negative toll on awareness creation and promotion for the adoption of the stoves.
- A flexible payment scheme for a period of three months for improved cook stove marketing can help increase adoption in rural areas

### Recommendations

- ORGIIS recommend that any future collaboration of this nature should our transfer sent directly to us to avoid delays and improve transparency.
- We also recommend that any similar or such study in the future should target village Savings and loans Associations this will make it easy for recoveries.
- We also recommend that price segregation should not be applied in the future as it creates distortion's and breeds perception of unfair treatment of participants due to cross sharing of information by consumer or beneficiaries.
- We recommend continuous monitoring to households by ORGIIS and NHRC to address challenges that may arise because of the use of the stoves.

## Conclusion

The project has largely achieved success as the set out objectives were achieved during the implementation. The reports generated and published will contribute significantly to increasing knowledge in the improved Cookstoves sector as well as policy advocacy.

ORGIIS is also relying on the reports to undertake policy advocacy at the district level by encouraging them to mainstream issues of clean cooking into their medium term development plans.

Additional, based on the experiences from the implementation of the LPG component we are supporting the cylinder recirculation policy proposed by government with the aim of improving access to clean cooking solutions.

Generally, the project was successful and will help improve access to affordable, efficient and less hazardous cooking solutions.