

Appendices

Appendix 1: Questionnaires



QUESTIONNAIRE

Dear respondent, I am AYEAH GIDEON GOBTI, a master's student at the **Faculty of Tropical Agrisciences, Czech University of Life Sciences Prague**, researching the topic: **Influencing Factors for Households' Decision on the Adoption and Use of Biogas Technology: The Case of Bamenda, Northwest Region of Cameroon.**

Please kindly fill out this questionnaire for me to complete the analysis part of my research project to fulfil the requirement to obtain a master's degree in agrisciences. Be rest assured that your responses will be kept confidential and used solely for research purposes.

SECTION I: SOCIO-DEMOGRAPHIC INFORMATION

Instructions: Mark an (X) on the box **OR** fill in the blank spaces with the information required.

1) **What is your gender?**

A. Male B. Female

2) **What is your age?**

A. Under 18 years old B. 18-24 years old C. 25-34 years old D. 35-44 years
E. 45-54 years old F. 55-64 years old G. 65 years or older

3a) What is your highest level of education completed?

- A. No formal education B. Primary education C. Secondary education
D. Graduate education E. Postgraduate

4a) What is your primary profession/occupation?

- A) Farming B. Teaching C. Trading D. Nurse E. Doctor F. Driving
G. Unemployed H. No profession I. Other _____

5) What is your household size?

- A. < 3 B. 3-4 C. 4-5 D. 5-6 E. >6

6) What is your monthly salary income?

- A) < 40,000 FCA B. 40,000- 90,000 FCFA C. 90,000 – 140,000 FCFA
E. 140,000-190,000 FCFA D. 190,000- 240,000 FCF E. 240, 000-
2900,000
FCFA F. >290,000 FCFA

7a) Do you have access to credit/loans? Yes No

- b) If yes, from which sources do you get these credit/loans? A. Banks B. Microfinance
C. Njangi groups D. Family/friends E. Others _____**

8a) Do you own land? Yes No

- b) What area of land(s) do you own? A. <500 m² B. 500-1000 m² C. 1000 - 1500m² D. 1500-2000 m² E. >2000 m² F. _____**

- c) What amount of land do you cultivate? A. 0-500 m² B. 500-1000 m² C. 1000-1500 m² D. 1500-2000 m² E. >2000 m² F. _____**

- 9) Do you keep livestock? A. Yes B. No. If yes, specify livestock and _____ number.**

10). What is your main source of energy?

- A. Fuelwood
- B. Hydroelectricity
- C. Solar energy
- D. LPG
- E. Biogas
- F. Others _____

SECTION II: Knowledge and Awareness of Biogas

Instruction: Mark an (X) on the most suitable option(s) according to you. This means that in some questions you may tick more than one option.

11a) Have you ever heard of biogas technology before? A) Yes B) No

b) If yes, where did you learn about biogas technology?

- A. Friends or family
- B. TV or radio
- C. Social media
- D. Newspaper or magazine
- E. Extension officer
- F. Other _____

12) What do you know about biogas technology?

- A. It is a renewable energy source.
- B. It is produced from organic waste.
- C. It can be used for cooking and lighting.
- D. It is environmentally friendly.
- E. Other _____

13a). Have you ever used biogas technology before? A. Yes B. No

b). If yes, how satisfied were you with the technology?

- A. Very satisfied
- B. Satisfied
- C. Neutral
- D. Dissatisfied
- E. Very dissatisfied

14a) Are you still using biogas? A. Yes B. No

b) If not, why did you stop using it?

- A. Shortage of labour
- B. Lack of raw materials
- C. Failure of plant due to lack of technical know-how
- D. Bad odour
- E. Others

c) Do you intend to use biogas in the future? A. Yes B. No Why? _____

III: Factors Influencing Adoption and Use of Biogas

15a). What factors would influence your decision to adopt biogas technology?

- A. Cost
- B. Availability of raw materials
- C. Technical know-how
- D. Perception of biogas technology
- E. Other (please specify)

b). If cost is a factor, what would be an affordable price for a biogas system?

- A. 200,000 FCFA
- B. 200,000 – 400,000 FCFA
- C. 400,000 - 600,000 FCFA
- D. 600,000 – 800, 000 FCFA
- E. > 800,000 FCFA

16) What are the barriers to using biogas technology?

- A. Lack of technical knowledge

- B. High cost**
- C. Lack of availability of raw materials**
- D. Maintenance issues**
- E. others**

Section IV: Other Factors (Perception)

17) How do you perceive biogas technology?

18) What are the advantages of using biogas technology?

19) What are the disadvantages of using biogas technology?

20). How do you think biogas technology compares to other sources of energy such as electricity, LPG, or firewood?

Thank you for taking the time to complete this questionnaire. Your responses will be kept confidential and used solely for research purposes.

Appendix 2: Characteristics of respondents

Table 1: Characteristics of respondents

Characteristics	Category	Frequency (n)	Percentage (%)
Age group (years)	<18	3	2.3
	18 – 27	32	24.8
	28 – 37	33	25.6
	38 – 47	26	20.2
	48 – 57	21	16.3
	58 – 67	7	5.4
	>68	7	5.4
Gender	Male	63	48.8
	Female	66	51.2
Education	No formal education	8	6.2
	Primary	24	18.6
	Secondary	32	24.8
	Graduate	33	25.8
	Post-graduate	32	25.6
Monthly household income (FCFA)	<40,000	39	30.2
	40,000 – 90,000	31	24
	90,000 – 140,000	17	13.2
	140,000 – 190,000	19	14.7
	190,000 – 240,000	12	9.3
	240,000 – 290,000	5	3.9
	>290,000	6	4.7
Household size (persons)	1	1	0.8
	2	14	10.7
	3	6	4.7
	4	18	14.0
	5	27	20.9
	6	37	28.7
	7	21	16.3

	8	4	3.3
	9	1	0.8
Loan access	No	54	41.9
	Yes	75	58.1
Land ownership	No	48	37.2
	Yes	81	62.8
Main occupation	Non-farmer	100	77.5
	Farmer	29	22.5
Farm size (hectares)	0.0	50	38.8
	0.01	1	0.8
	0.05	29	22.5
	0.1	21	16.3
	0.15	6	4.7
	0.2	8	6.2
	0.5	9	7.0
	1.0	3	2.3
	2.0	2	1.6
Number of Livestock (cows)	no cow	107	82.9
	1 cow	17	13.2
	2 cows	1	0.8
	4 cows	1	0.8
	5 cows	1	0.8
	7 cows	1	0.8
	9 cows	1	0.8
Capital investment cost	low	21	16.3
	high	108	83.7
Awareness about biogas	0 not aware	16	12.4
	1 aware	113	87.6
Availability of extension services	not available	112	86.8
	available	17	13.2
Perception (benefits)	cost beneficial	113	87.6
	reduces pollution	7	5.4
	neutral	9	7.0

Appendix 3: Photographs from the field



Figure 1: Data collection from biogas users (a, & b), and biogas users (c, & d).



Figure 2: Construction of a 30 m³ biogas in the mile 4 Nkwen slaughterhouse to be used mainly for cooking.



Figure 3: Biogas plants: a) from a non-farmer using human waste, and b) farmer using animal waste and farm waste.



Figure 4: Biogas cookers in study area

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