**Appendices**

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**Appendix 1: Table – Farmers’ Agreement on statements on Climate Change**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Agree**  | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** |
| Climate change is a serious issue affecting agriculture | **168 (85.3%)** | **18 (9.1%)** | **9 (4.6%)** | **1 (0.5%)** | **1 (0.5%)** |
| Changes in precipitation patterns affects maize production | **144 (73.1%)** | **36 (8.3%)** | **1 (0.5%)** | **16 (8.1%)** | **----** |
| Erosions occur more frequently | **92 (46.7%)** | **75 (38.1%)** | **15 (7.6%)** | **15 (7.6%)** | **----** |
| Droughts occur more frequently | **52 (26.4%)** | **108 (54.8%)** | **35 (17.8%)** | **1 (0.5%)** | **1 (0.5%)** |
| Climate change is disrupting my livelihood as a farmer | **14 (7.1 %)** | **135 (68.5%)** | **10 (5.1%)** | **33 (16.8%)** | **5 (2.5%)** |
| The use of chemicals contributes to climate change | **71 (36%)** | **90 (45.7%)** | **27 (13.7%)** | **8 (4.1%)** | **1 (0.3%)** |
| The use of Adaptation Strategies will improve productivity/profitability | **128 (65%)** | **49 (24.9%)** | **4 (2%)** | **16 (8.1%)** | **----** |
| The effects of climate change can be reduced and possibly reversed | **86 (43.7%)** | **75 (38.1%)** | **20 (10.2%)** | **16 (8.1%)** | **----** |

**Appendix 2: Table – Farmers’ Agreement on the Constraints to the Adoption of Adaptation Strategies**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Constraints |  |  |  |  |  |
| **Strongly Agree** | **Agree** | **Indifferent**  | **Disagree**  | **Strongly Disagree** |
| Inadequate and limited access to credit | **145 (75.9%)** | **4 (2.1%)** | **----** | **----** | **42 (22%)** |
| Low literacy | **26 (13.5%)** | **58 (30.2%)** | **39 (20.3%)** | **26 (13.5%)** | **43 (22.4%)** |
| High cost of labour | **46 (24.1%)** | **97 (50.8%)** | **1 (0.5%)** | **4 (2.1%)** | **43 (22.5%)** |
| High cost of input/inaccessible input | **83 (43.5%)** | **89 (46.6%)** | **2 (1%)** | **14 (7.3%)** | **3 (1.6%)** |
| Poor access to meteorological information | **50 (26%)** | **101 (52.6%)** | **33 (17.2%)** | **8 (4.2%)** | **----** |
| Land tenure | **48 (25%)** | **77 (40.1%)** | **50 (26%)** | **16 (8.3%)** | **1 (0.5%)** |
| Inadequate knowledge of climate change | **70 (36.5%)** | **58 (30.2%)** | **29 (15.1%)** | **4 (2.1%)** | **31 (16.1%)** |
| Poor extension services | **25 (13%)** | **55 (28.6%)** | **15 (7.8%)** | **11 (5.7%)** | **86 (44.8%)** |
| Lack of government services | **110 (57.3%)** | **63 (32.8%)** | **4 (2.1%)** | **1 (0.5%)** | **14 (7.3%)** |

**Appendix 3: Table – Distribution of Source of Credit**

|  |  |
| --- | --- |
| **Sources of Credit** | **Percentage (%)** |
| Friends/Family | 17.6% |
| Farmers’ groups/associations | 7.4% |
| Farmers’ Cooperatives | 44.1% |
| Bank of Agriculture | 1.5% |
| Commercial Banks | 26.5% |
| Others | 2.9% |

**Appendix 4: Table – Distribution of Farmers’ Labour Source**

|  |  |  |  |
| --- | --- | --- | --- |
| Labour Source | Mean | Minimum | Maximum |
| Family labour -male | 2.7551 | 0 | 11 |
| Family labour - female | 1.6684 | 0 | 5 |
| Family labour- Total | 4.4031 | 0 | 11 |
| Hired labour - male | 4.7107 | 0 | 10 |
| Hired labour - female | 2.9692 | 0 | 8 |
| Hired labour - total | 7.6684 | 0 | 14 |

**Appendix 5: Questionnaire for the study**

**ADAPTATION STRATEGIES ON CLIMATE CHANGE AMONG MAIZE FARMING HOUSEHOLDS IN OYO STATE, NIGERIA.**

1. **SOCIO-ECONOMIC CHARACTERISTICS**
2. What is your gender? A. Male B. Female
3. What is your marital status? A. Single B. Married C. Divorced D. Widowed
4. What is your religion? A. Christianity B. Islam
5. How old are you? A. ≤30 B. 31 – 40 C. 41 – 50 D. 51 -60 E. > 60
6. Are you the Household Head? A. Yes B. No
7. What is your highest level of education? A. Primary School B. Secondary School C. DIPLOMA/NCE D. B.Sc E. Post Graduate
8. What is your household size?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Children (>15 years)
 | 1. Adults (16-59 years)
 | 1. Elderly (60+ years)
 | 1. **TOTAL**
 |

1. What is your farm size (in hectares)? ……………………
2. How much is your monthly income (in Naira)? A. < 20,000 B. 21,000 – 40,000 C. 41, 000 – 60,000 D. 61,000 – 80,000 E. 81, 000 – 100,000 F. > 100, 000
3. Does your household have any off-farm employment? A. Yes B. No
4. If yes, to the above question; what is the household’s off-farm employment (in Naira)? A. < 20,000 B. 21,000 – 40,000 C. 41, 000 – 60,000 D. 61,000 – 80,000 E. 81, 000 – 100,000 F. > 100, 000
5. How many years of farming experience do you have (in years)? ……………………………..
6. Is your farm land … A. Owned B. Leased C. Communal D. Inherited E. Gifted
7. Do you operate under contract farming? A. Yes B. No
8. Are you a member of a cooperative? A. Yes B. No
9. Are you a member of a farmers’ association? A. Yes B. No
10. Do you have access to credit or loans A. Yes B. No
11. If ***Yes***, which of these are your source(s) of credit or loans? A. Friends/Family B. Farmers’ groups/associations C. Farmers’ cooperative D. Bank of Agriculture E. Commercial Banks
12. Do you use family labor A. Yes B. No
13. Do you use hired labor A. Yes B. No
14. Please indicate the number of people you have working on your farm

|  |  |  |  |
| --- | --- | --- | --- |
|  | Number of Male Workers | Number of Female workers | **TOTAL** |
| Family Labour |  |  |  |
| Hired Labour |  |  |  |

1. Do you currently cultivate another type of crop A. Yes B. No
2. If ***Yes***, what other crop(s) do you cultivate? ……………………………………………………….
3. Do you rear animals? A. Yes B. No
4. If ***Yes,*** what type? A. Poultry B. Pigs C. Goats D. Sheep E. Cattle F. Snails G. Others (please specify) ……………………………………….
5. **PERCEPTION OF CLIMATE CHANGE AND LEVEL OF AWARENESS ON ADAPTATION STRATEGIES**
6. Have you heard of the term ***‘Climate Change’*** A. Yes B. No
7. If ***Yes***, how often do you hear this topic A. Rarely B. Sometimes C. Frequently
8. Are you concerned about your future as a maize farmer because of the effects of climate change? A. Not Concerned B. Somewhat Concerned C. Highly Concerned
9. How serious are the effects of climate change on your farm?

|  |
| --- |
| Please indicate the seriousness of these effects |
|  No Impact - 0 1 2 3 4 - Very Serious Impact |
|  | 0 | 1 | 2 | 3 |  4 |
| Reduced Productivity |  |  |  |  |  |
| Increased Temperature |  |  |  |  |  |
| Changes in precipitation patterns |  |  |  |  |  |
| Changes in extreme weather events (such as droughts and erosions) |  |  |  |  |  |
| Reduced water availability |  |  |  |  |  |
| Shorter Vegetation period |  |  |  |  |  |
| Changes in planting dates |  |  |  |  |  |
| Changes in harvesting dates |  |  |  |  |  |

1. What is your perception of rainfall (over the last 10 years)? A. Unpredictable B. No Change C. Decreased D. Increased
2. What is your perception of temperature (over the last 10 years)? A. Unpredictable B. No Change C. Decreased D. Increased
3. Are you aware of Adaptation strategies for the effects of climate change? A. Yes B. No
4. Do you currently adopt Adaptation strategies? A. Yes B. No
5. If ***Yes***, Which of these Adaptation strategies are you aware of and adopt? *Please tick the correct boxes*

|  |  |  |
| --- | --- | --- |
| **PRACTICES** | **AWARE** | **ADOPTED** |
| **Conservation tillage/minimal tillage** |  |  |
| **Contour planting/farming** |  |  |
| **Mixed cropping/ Inter-cropping** |  |  |
| **Cover crops/mulching** |  |  |
| **Crop rotation** |  |  |
| **Organic fertilizers** |  |  |
| **Water conservation/harvesting** |  |  |
| **Irrigation**  |  |  |
| **Biological control (such as the use of natural insect repellants)** |  |  |
| **Cultivation of new and improved cultivars** |  |  |
| **Cultivation of new/different crops** |  |  |
| **Agroforestry** |  |  |

8b. If you use/adopt irrigation practices, please state the type of irrigation you use? A. Surface Irrigation B. Sub-Surface Irrigation C. Sprinkler Irrigation D. Drip Irrigation E. Others (please specify) ………………………………………….

1. Please state to what extent you agree to the following statements?

|  |
| --- |
| Please indicate your views on these statements |
|  | Strongly Agree  | Agree | Neutral | Disagree | Strongly Disagree |
| Climate change is a serious issue affecting agriculture |  |  |  |  |  |
| Changes in precipitation patterns affects maize production |  |  |  |  |  |
| Erosions occur more frequently |  |  |  |  |  |
| Droughts occur more frequently |  |  |  |  |  |
| Climate change is disrupting my livelihood as a farmer |  |  |  |  |  |
| The use of chemicals contributes to climate change |  |  |  |  |  |
| The use of Adaptation Strategies will improve productivity/profitability |  |  |  |  |  |
| The effects of climate change can be reduced and possibly reversed |  |  |  |  |  |

1. Which of these are your information sources about the Adaptation Strategies and how important are they for you? *Please tick the correct boxes*

|  |  |  |
| --- | --- | --- |
|  | Adaptation StrategyInformation | Not Important at all Very Important 0 1 2 3 4  |
|  | 0 | 1 | 2 | 3 | 4 |
| Extension officers/workers |  |  |  |  |  |  |
| Agricultural programs/workshops |  |  |  |  |  |  |
| Government agencies/Research Institutes |  |  |  |  |  |  |
| Farmers’ associations |  |  |  |  |  |  |
| Mass media |  |  |  |  |  |  |
| Friends and family |  |  |  |  |  |  |
| Ministry of Environment |  |  |  |  |  |  |
| Others (please specify) |  |

1. **FACTORS INFLUENCING THE NON-ADOPTION OF ADAPTATION STRATEGIES FOR CLIMATE CHANGE**
2. Please indicate to what extent you agree or disagree of these constraints on the non-adoption of Sustainable Agricultural Practices?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Constraints |  |  |  |  |  |
| Strongly Agree | Agree | Indifferent  | Disagree  | Strongly Disagree |
| Inadequate and limited access to credit |  |  |  |  |  |
| Low literacy |  |  |  |  |  |
| High cost of labour |  |  |  |  |  |
| High cost of input/inaccessible input |  |  |  |  |  |
| Poor access to meteorological information |  |  |  |  |  |
| Land tenure |  |  |  |  |  |
| Inadequate knowledge of climate change |  |  |  |  |  |
| Poor extension services |  |  |  |  |  |

1. What are the reasons why you do not adopt or practice adaptation strategies on your farm?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PRACTICES** | **Not Profitable/ Economical** |  | **Not Sustainable** |  | **Too Technical** |  | **Not Enough Information** |  | **No Money for Investment** |
| **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** |
| **Conservation tillage/minimal tillage** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Contour planting/farming** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Mixed cropping/ Inter-cropping** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cover crops/mulching** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Crop rotation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Organic fertilizers** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Water conservation/harvesting** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Irrigation**  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Biological control (such as the use of natural insect repellants)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cultivation of new and improved cultivars** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cultivation of new/different crops** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Agroforestry** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Others, please specify……………………………………………………………………………………………………

1. What factors would positively influence your decision to adopt sustainable agricultural practices in the future?

|  |  |
| --- | --- |
| **PRACTICES** |  **Factors that would positively influence future adoption** **Strongly Disagree - 1 2 3 4 5 - Strongly Agree** |
| **Access to credit** |  | **Better information on weather parameters** |  | **Access to tools and resources** |  | **Government Support**  |
| **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** |
| **Conservation tillage/minimal tillage** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Contour planting/farming** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Mixed cropping/ Inter-cropping** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cover crops/mulching** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Crop rotation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Organic fertilizers** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Water conservation/harvesting** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Irrigation**  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Biological control (such as the use of natural insect repellants)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cultivation of new and improved cultivars** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Cultivation of new/different crops** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Agroforestry** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Others (*please specify) ………………………………………………………………………………………………………………………………………………………………………*

1. Please list (if any) other factors that would positively influence your decision to adopt Sustainable Agricultural Practices in the future? ……………………………………………………………………………………………..