Data Article

Dataset on cocoa production and climate change adaptation strategies in Ahafo Ano North District, Ghana

Abayomi Samuel Oyekale

Department of Agricultural Economics and Extension, North-West University, Mafikeng Campus, Mmabatho, 2735, South Africa

Abstract

Sustainable cocoa production is susceptible to changes in some climatic parameters. This survey was carried out to understand the perceptions of cocoa farmers on climate change, its impacts on cocoa production and their adaptation methods. Stratified sampling method was used to select the farmers and data were collected with structured questionnaires. Stratification of the district was done based on existing seven administrative divisional offices which comprise of six area councils and one town council. Cocoa farmers were sampled within each stratum with sample size proportional to estimated number of farmers. During the survey, 378 cocoa farmers were interviewed from Abu-Bone (60), Anyinasuso (65), Biakoye (42), Kwasu-Abu (89), Subriso (35), Suponso (20) and Tepa (67). The dataset had been shared with this article and it is valuable for understanding the perceptions of cocoa farmers on climate change, cocoa production efficiency and determinants of climate change adaptation choices.

© 2020 The Author. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).
1. Data

The data file that is submitted with this paper comprise of information from 378 cocoa farmers. These farmers were interviewed from the six area councils and one town council of the Ahafo Ano North District of Ghana. The major objective of the survey was to understand the perceived impacts of climate change on cocoa production and the methods being used by the farmers to adapt. The issue of climate change is very relevant to cocoa agriculture given the sensitivity of many pests and diseases pathogens that affect cocoa production to changes in some climatic parameters [1-4]. This dataset therefore offers some vital information to policy makers and stakeholders in the cocoa value chains on the pattern of changes already perceived by the farmers and their evaluation of current impacts on cocoa production.

The questionnaire which had been submitted as supplementary file sought information on cocoa farmers’ demographic information, input usage for cocoa production, perceived forms of climate change, impact of climate change on cocoa production and their adaptation methods. Table 1 shows the distribution of the respondents based on some selected demographic characteristics. The data show that average age of sampled cocoa farmers was 51.73 years. Average household size was 8.35 and average number of adult household members was 5.11. Average farming experience was 23.47 years while average cocoa farming experience was 18.80 years. The data presented as Fig. 1 show the distribution of the farmers based on perceived forms of climate change. The data show that majority of the farmers perceived extremely high temperature, too much rainfall, delay in rainfall commencement and stormy rainfall. The data in Fig. 2 show that among the perceived forms of climate change, extremely high temperature, stormy rainfall and delay in rainfall commencement were noted by the highest majority of the farmers to have very important influence on cocoa production.

2. Experimental design, materials and methods

The data were collected in June 2015 from cocoa farmers in Ahafo Ano North District. This district is among the top cocoa growers the Ashanti region of Ghana. The survey was coordinated by the extension officers in the District who organized the enumerators’ trainings and facilitate contacts with the cocoa farmers. Preceding the survey was a training section to familiarize the enumerators with...
some terminologies in the questionnaire with a view to have a common understanding in guiding the farmers to answering some of the questions. The questionnaire comprises of three sections. Section one probed into the demographic characteristics of the farmers. Section two was on farm inputs being used for cocoa production and section three was on vulnerability to climate change and adaptation methods. The questionnaire was pretested with selected cocoa farmers before commencement of the survey. The sampling procedure utilized the existing administrative divisions of the distinct. The stratified random sampling method was used with each area/town council forming a stratum. Therefore, there were seven strata from where cocoa farmers were randomly sampled with sample size being proportional to size. A total of 378 cocoa farmers were successfully interviewed within the five

### Table 1

Selected demographic characteristics of cocoa farmers.

| Socioeconomic factor       | Average | Standard deviation |
|----------------------------|---------|--------------------|
| Age                       | 51.73   | 12.69              |
| Household size            | 8.35    | 4.73               |
| Adult members (≥15 years) | 5.11    | 3.29               |
| Children less than 5 years| 2.80    | 2.82               |
| Cocoa farming experience  | 18.80   | 12.73              |
| General farming experience| 23.47   | 13.09              |

Fig. 1. Frequency distribution data on perceived forms of climate change by cocoa farmers.

Fig. 2. Frequency distribution data on the form of climate change that affects cocoa production.
days of the survey from Abu-Bone (60), Anyinasuso (65), Biakoye (42), Kwasu-Abu (89), Subriso (35), Suponso (20) and Tepa (67).

Acknowledgements

The assistances that were received from the extension agents are gratefully acknowledged.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dib.2020.105275.

References

[1] F.N.Y. Codjoe, C.K. Ocansey, D.O. Boateng, J. Ofori, Climate change awareness and coping strategies of cocoa farmers in rural Ghana Francis Nana Yaw, J. Biol. Agric. Healthc. 3 (11) (2013) 19–29.
[2] R. Asare, V. Afari-Sefa, S. Muilerman, Access to improved hybrid seeds in Ghana: implications for establishment and rehabilitation of cocoa farms, Exp. Agric. 54 (2) (2016) 273–285, https://doi.org/10.1017/S0014479716000247.
[3] Sustainable Cocoa Production Program (SCPP) Team, Collateral in Cocoa Farmer Financing, 2016. Available online: https://www.swisscontact.org/fileadmin/user_upload/COUNTRIES/Indonesia/Documents/Publications/Collateral_in_Cocoa_Farmer_Financing_ENG_preview.pdf. (Accessed 27 June 2018).
[4] Sustainable Tree Crops Program (STCP), Overview of the Cocoa Sector in Ghana: Findings from the Ghanaian STCP Baseline Survey Conducted in 2001. Ibadan, Nigeria, International Institute of Tropical Agriculture (IITA), 2003.