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Original Research Article

Managing environmental destruction/degradation using traditional, cultural and spiritual strategies: The tale of the Dagaaba and Birifor

Abstract

The environmental laws ~~seem seems~~ not to be effective in protecting the environment. The article looked at alternative ways of protecting the environment from ~~stressors and disturbances~~ destructions/degradation. This article used ~~personal~~ It utilized ~~personal~~ observation, narration, ~~and~~ primary data from the role traditional/cultural traps ~~play are playing~~ in environmental conservation in the Dagaaba and Birifor communities. ~~Findings revealed individuals with The paper identified that the~~ Dagaaba and Birifor ~~background people~~ have a rich indigenous cultural systems which ~~facilitate help in~~ environmental conservation ~~of different and protection of the~~ ecosystems. ~~This paper concludes The paper concluded~~ that ~~the~~ environmental taboos (i.e., ~~cultural norms, values and traditions~~) and, the fear of the wrath of ~~the~~ gods (i.e., beliefs and ~~spiritualism~~) have ~~enhanced the conservation of some portions of the land for the people of helped the~~ Dagaaba and Birifor ~~to conserve some portions of their land from destruction~~. However, ~~this approach e method~~ is not effective in minimizing bushfires, ~~considering as the~~ fire ~~shas the~~ propensity to escalate ~~and extend~~ from one community to ~~the~~ other. The traditional/cultural/spiritual ~~strategies traps~~ can be adopted to minimize illegal mining which is ~~currently~~ destroying the forest reserves, land, air ~~and,~~ water bodies, ~~among and the~~

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Comment [K1]: Title: -Why traps, instead of approaches or strategies? I humbly suggest the authors consider substituting traps with any of the suggested synonyms.

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25 | ~~ecosystem~~ other ecosystems in Ghana. These ~~strategies~~ traditional/cultural/spiritual traps are
26 | effective in managing environmental ~~degradation~~ destruction.

27 | **Key Words:** Spiritual, Traps, Dagaaba, Birifor, Anthropogenic, Phenomenological, Ethno-
28 | methodological

30 | **Introduction**

31 | Environmental degradation is seen as the deterioration of the environment through depletion of
32 | resources which includes all the biotic and abiotic element such as air, water, soil, plants,
33 | animals, and all other living and non-living elements of ~~the~~ planet earth, that form our
34 | surroundings (Maurya et al. (2020). Kaledzi, (2021) opined that the forest areas have shrunk five
35 | times in 100 years. Anthropogenic activities like illegal artisanal and small-scale mining,
36 | inappropriate agricultural practices, urbanization and industrialization are destroying water
37 | bodies, aquatic lives and the air we breathe (Bawakyillenuo, 2020). ~~The~~. The destruction of the
38 | environment has led to extinction of some species of living elements. These have equally led to
39 | land degradation, pollution of the natural air/ water/land, global warming and deforestation. The
40 | air, water and plastic pollution affect health and hygiene; illegal mining, improper solid waste
41 | disposal, and contaminated sites release hazardous chemicals; land degradation, deforestation
42 | heavily impact livelihoods and limit growth and development (Srivastava & Pawlowska,
43 | 2020). These equally have the propensity to cause prolonged drought, water shortage and
44 | inadequate plants and animals in the ecosystem if not managed well. As warned, the natural
45 | resources underpinning the success of Ghana must be protected, sustained and managed for the
46 | future (Srivastava & Pawlowska, 2020).

Comment [K2]: Introduction:

-The introduction or background could be enriched by referring to some theories and drivers introduced in this current study (Sarfo et al. 2022) to the current literature, especially in the context of Ghana:

-Sarfo, I., Shuoben, B., Beibei, L. *et al.* (2022). Spatiotemporal development of land use systems, influences and climate variability in Southwestern Ghana (1970–2020). *Environ Dev Sustain* **24**, 9851–9883 (2022). <https://doi.org/10.1007/s10668-021-01848-5>

Or

-Sarfo, I., Shuoben, B., Otchwemah, H.B. *et al.* Validating local drivers influencing land use cover change in Southwestern Ghana: a mixed-method approach. *Environ Earth Sci* **81**, 367 (2022). <https://doi.org/10.1007/s12665-022-10481-y>

47 Most rural people in Ghana depends on agriculture for survival. The Environmental Protection
48 Agency (EPA) (2002) has indicated that the agricultural sector have employed about 70% of the
49 rural labour force, contributes 45% of the GDP, accounts for over 55% of the foreign exchange
50 earnings and is responsible for meeting over 90% of the food needs of the country. Poor land
51 management leads to land degradation (Srivastava & Pawlowska, 2020); polluted air and
52 water affects human and animal health (Bawakyillenuo, 2020) and felling of trees and bushfires
53 destroys the forest and grassland thereby reducing transpiration, precipitation and rainfall (Plaut,
54 et al, 2013). Therefore, the rural people whose livelihood depends on agriculture suffer when the
55 environment and the ecosystem are not well protected and therefore, allowed to be destroyed
56 or degraded.

57 | Today, Mmost governments ~~in the world~~ have initiated several policies and legislative
58 instruments to protect the environment. However, ineffective implementation coupled with lack
59 of political will, have left the land, air, water resources, plants and other natural resources in an
60 increasingly alarming state (Bawakyillenuo, 2020). According to Mbiti (1969) cited in Saani,
61 (2016), “the African is notoriously religious”. For most African communities all aspects of
62 nature, plants and wildlife and water bodies are under the mystical tutelage of ancestral spirits
63 and guardian animals. People are therefore mandated to use natural resources sustainably on
64 behalf of these spirits. The application of environmental taboos are intended for the ethical use of
65 the environment. These taboos help keep people away from further depleting the environment.
66 The Dagaaba and Birifor people have a rich indigenous knowledge system which help in
67 environmental conservation.

68 The Dagaaba and Birifor located in the Upper West Region of Ghana and the southern part of
69 | Burkina Faso believed the gods reward and punishes. These rewards include protection

70 | [eschew](#) from sicknesses, inexhaustible material gains, ability to conquer enemies, [eteand so on](#).
71 | The punishment from the gods, ancestral spirits are characterized with an incurable sickness and
72 | death. The symbol of any traditional/cultural/spiritual element placed on a land, trees, living or
73 | non-living object in the environment has a positive or negative connotation to a Dagaab or Birifor.
74 | Therefore, these people collectively adopted traditional/cultural/spiritual/traps to protect and
75 | sustain the environment. As Srivastava and Pawlowska, (2020) suggested, it is better to act now
76 | to protect the ecosystem and the impact of ~~the~~ environmental degradation on
77 | vulnerable [groupspeople](#), especially in the Ghana. It is also key to understand the importance of
78 | well-informed community norms that seek natural justice, transparency and discipline.
79 | Therefore, the Dagaaba and Birifor belief in: taboos, totems, sacred groves, deities (rain god,
80 | hunch back, water god, earth god) and curses. These beliefs and deities are employed to
81 | complement the environmental policies to protect the environment.

82 | If the exotic methods are failing, resort to the traditional methods to combat environmental
83 | degradation. In the Dagaaba and Birfor cultural setting, certain natural features like trees, rivers,
84 | mountains and animals are considered sacred and should be conserved. The 'Benge' grove/forest
85 | in Wogu located in upper west region has been dedicated to the gods of the land and no body
86 | enters there to cut any wood or hunt without performing certain rituals or sacrifices. Therefore,
87 | the living and non-living elements are protected. The 'Wetuo' land located around the northern
88 | part of Nadowli along the N1 road on Nadowli-Babile road is a land which forbid hoe, axe and
89 | other metallic objects. Therefore, the land, trees and other shrubs are protected and therefore are
90 | in their natural state. The Dahiile mountain located between Hamile and Fielmuo in the upper
91 | west, Ghana is forbidden for people to farm or hunt around. The curses surrounding the
92 | mountain protect all the living and non-living species on the mountain. The Ombowira is

93 amountain in Nadowli-Kaleo District which have a gorge located at the eastern part of the
94 mountainwith water which contain fish that are forbidden to be harvested without any ritual. The
95 python, crocodile, hedgehog, aligator, etc are animals the Dagaaba and Birifor believed they
96 played roles in the lives lifes of their forefathers. These animals are highly revered and protected
97 from any danger. A dagao/Birifor who sees a jackalberry stick with three white stocks/broom
98 sticks, three white stones with feathersfixed on a land dare not fetch sand, farm, fell a tree, or kill
99 any animal on that land. This means there is a curse on the land and anybody who violates the
100 curse suffers punishment, including death. Tress with traps such as black marks, thunder mark
101 (serpentine flat rod), dry okro, gourd, moulded clay and many more are avoided for fear of
102 thunder striking, epilepsy, barrenness, hunch back and many more. A dead fowl floating in a
103 river is an indication that the river has been cursed and anybody who unlawfully enters the water
104 for fishing/mining is bound not to survive. All these seek to sustain and protect the biotic and
105 abiotic elements in the environment.

106 Methodology

107 This is a phenomenological and, ethno-methodological studies y which transcends the
108 importance of beliefs, primacy and objectivity of consciousness with regards to the surrounding.
109 Our knowledge in beliefs and everyday world inheres in social order as the world is socially
110 ordered (Cohen, Manion and Morrison, 2007). Therefore, phenomenological and,
111 ethnomethodologicaly studies delve into the ideals of y concerned with the world of everyday
112 life and how people make sense of their everyday world. According to Burrell and Morgan
113 (1979) cited in (Cohen, Manion and Morrison, (2007), phenomenological and,
114 ethnomethodological studies indicates the relationship between actions and statements in social
115 context producing them and the way the meanings are interpreted. Therefore,

Comment [K3]: Lines 81-104:

-It is important for the authors to highlight research progress (i.e., what is known and what's unknown but important to be studied that is driving the current research objective or aim) clearly from a global perspective, which will then be narrowed down to the study area. This could make readers appreciate the difference or consistency in results, especially in the discussion section when authors compare results to existing literature. Here, findings of other studies in different countries or regions with similar scope could be briefly integrated in the introduction.

-The main aim or specific objectives or perhaps, what this study sought to address or achieve must be clearly highlighted in the last paragraph of the introduction briefly/succinctly.

-The study's significance or contribution must also be stated or highlighted clearly in the last paragraph or last but one paragraph of the introductory section.

116 traditional/cultural/spiritual strategies traps are actions or statements related to social context that
117 are stated/shown explicitly. Violation of the invocations of these has severe a dared
118 consequences of which the perpetrators are afraid to pursue.

119 This article used personal observation, narration, primary data from the role traditional/cultural
120 traps are playing in environmental conservation in the Dagaaba and Birifor communities. Other
121 secondary information are sought from articles, papers and publications regarding environmental
122 degradation.

124 Results

125 **Cultural StrategiesTraps**

126 **Rain gods**

127 The sign of rain god invoked on a land, tree, mountain and other natural resources are shown with
128 either a serpentine flat rod, dry okro, three white stones, or jackal berry stick with white
129 stock/broom stick. All sacrifice to invoke or dispel the wrath of the rain god is on a local roof. It
130 is believed that violation of this god bring thunder which kills the offender.



131
132 Fig 1: The Rain god in Dapuori, Nadowli-Kaleo District in Upper West Region-Ghana

Comment [K4]: Methodology:

-Lines 106-121: Extra or additional details which are not so relevant to the study must be omitted or removed for brevity and conciseness.

Comment [K5]: -Lines 119-122: Authors need to justify briefly and exhaust these subjective approaches.

- Where and how was the primary data collected or generated?
- Was there a survey or interview?
- How many people were engaged?
- Who were the target population?
- How representative is the sample size or people engaged that can be used to draw general conclusions, as stipulated in this study?
- Were the data subjected to content analysis?
- What data analysis techniques were used? Authors stating narration is not enough. How were the primary data analyzed or processed?
- The study area or selected regions could be explained and backed by maps.
- Did authors consider ethics (i.e., sought for permission for instance) when visiting these sites to take pictures of some heritage or cultural sites?
- Any limitations or challenges encountered during the course of the study? Do these limitations or challenges affect the results in anyway?

More details are needed to substantiate or enhance the methodology section. Restructuring/re-organisation of the study area and methodology section is needed.

Comment [K6]: Results:

- Scientific papers are designed to culminate or have these sections: Abstract, Introduction, Materials and Methods or Methodology, Results, Discussion and Conclusion... followed by references, acknowledgements, conflict of interest, funding sources, appendix and so on.
- Authors failed to highlight clearly what the results of this study are. The results must be ordered or structured based on the study objectives. This is an original research article; hence, must be structured as such. Results section must be briefly introduced, followed by the results of the study clearly presented in an orderly manner.

Discussion:

- Here, the results presented in the previous section are explained or digested in 4-6 paragraphs.
- Comparison of the study results against existing literature or other studies are done in this section.
- What was observed at the sites based on the observation approach/technique, what does the author (s) make of the traditional/cultural strategies from a neutral perspective?
- How does these strategies influence sustainability of natural resources in the region or area, and in what way do they go a long way to augment socio-economic, political and environmental strategies?
- Do the study results agree, support or refute the results of other studies conducted elsewhere? If so, why the difference in results. If they agree w...

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133 **The Water gods**

134 Invocation of water gods is done publicly and the fowls thrown into the water. Anybody who
135 secretly goes into the water to fish or do mining must follow the due processes to perform
136 sacrifice to cleanse themselves or suffer death in water.



137
138 Fig 2: A pond with crocodiles located in Wa Kunbiehi upper west region, Ghana believed to
139 have spirits capable of rewarding and punishing [people](#) wrongdoers.

140 **Taboos/totem**

141 Every community in the dagaaba/Birifor land revered or adored a particular animal for playing
142 key role in the life of their for-fathers. These animals are not ill-treated; and for that matter they
143 can be seen roaming freely in the community, such as the red pidgin for the people of Nuorung,
144 Goli-Nuorung, crocodile for the people of Kumbiehi, python for the people of Nadowli and mud
145 fish for some people in Jirapa and their related clans.

146 **Discussion**

147

148 **Conclusion**

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Comment [K7]: Conclusion:
-The concluding section must briefly restate the main aim of the study and summarize the key findings either in bulletin or in a paragraph.
-The summarized findings should then be followed by the significance of the study, gaps and study limitations that could potentially drive or propel future studies briefly.
-Authors should kindly note that aspects of less relevance must be removed except those that were discovered or are linked to the current study must be included.

149 There are still virgin lands in the Dagaaba and Birifor setting that are yet to be exploited. The
150 environmental taboos and the fear of the wrath of gods have necessitated the ethical use of the
151 environment. The traditional/cultural/spiritual traps are effective in managing environmental
152 destruction. However, the method is not effective in minimizing bushfires as the fire has the
153 propensity to escalate from one community to other. The traditional/cultural/spiritual traps can
154 be adopted to minimise illegal mining which is destroying the forest reserves, land, air, water
155 bodies and the ecosystem in Ghana. The Dagaaba and Birifor people have a rich indigenous
156 cultural system which if adopted wisely may help in environmental conservation and protection
157 of the ecosystem.

158 **References**

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176 2413-3086©Unisa Press

Comment [K8]: References:

-Authors should kindly revise and ensure that the correct format and order are adhered to.

Other comments:

-Major grammatical defects and syntax errors were identified through the manuscript. Moderate were revised or corrected. I humbly suggest the authors revise the manuscript thoroughly before re-submission. They can seek the assistance of someone with command over English to improve the proficiency level of the paper.

177 Srivastava, S. & Pawlowska, E. A (2020). Ghana: Balancing economic growth and depletion of
178 resources. Published on Africa can end poverty. Retrieved from [Http:
179 blogs.worldbank.org/african/ghana](http://blogs.worldbank.org/african/ghana)

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182

UNDER PEER REVIEW

Results:

-Scientific papers are designed to culminate or have these sections: Abstract, Introduction, Materials and Methods or Methodology, Results, Discussion and Conclusion...followed by references, acknowledgements, conflict of interest, funding sources, appendix and so on.

-Authors failed to highlight clearly what the results of this study are. The results must be ordered or structured based on the study objectives. This is an original research article; hence, must be structured as such. Results section must be briefly introduced, followed by the results of the study clearly presented in an orderly manner.

Discussion:

-Here, the results presented in the previous section are explained or digested in 4-6 paragraphs.

-Comparison of the study results against existing literature or other studies are done in this section.

-What was observed at the sites based on the observation approach/technique, what does the author (s) make of the traditional/cultural strategies from a neutral perspective?

-How does these strategies influence sustainability of natural resources in the region or area, and in what way do they go a long way to augment socio-economic, political and environmental strategies?

-Do the study results agree, support or refute the results of other studies conducted elsewhere? If so, why the difference in results. If they agree with other studies, they must be stated and backed by those references accordingly.

-What is the way forward? Does the people uphold these values and wish to sustain it or westernization is changing trends that could make the people lose these cultural or environmental strategies used in conserving natural resources?

-What are the drivers driving change in the area or negatively/positively influencing these cultural/spiritual strategies? Each paragraph in the discussion section must be tailored to discuss an objective or key parameter.

***What is currently presented here currently as results are clearly empty or not enough of studies of this nature.