

Socio-Economic Impact of Shea Butter Production on the Living Conditions of Producers in the Regions of Poro and Tchologo (Northern Côte d'Ivoire)

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How to cite this paper: Dagnogo, F., Fofana, L., Konaté, D., Ousmane, T., & Coulibaly, S. S. (2021). Socio-Economic Impact of Shea Butter Production on the Living Conditions of Producers in the Regions of Poro and Tchologo (Northern Côte d'Ivoire). *Open Journal of Social Sciences*, 9, 149-158. <https://doi.org/10.4236/jss.2021.911012>

Received: October 3, 2021

Accepted: November 21, 2021

Published: November 24, 2021

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Abstract

This study aims to investigate the socio-economic effects of shea butter production on producers' life in the regions of Poro and Tchologo, the largest production areas, in northern Côte d'Ivoire. Thanks to a survey carried out on 1200 producers, results showed that 90% of producers are women. The activity of shea butter production is a factor of social cohesion through the formation of several working groups. Producers earned between \$82.55 and \$86.14 per campaign when retailers earned between \$89.73 and \$116.64 and the wholesalers between \$1794.52 and \$1973.98. Pickers (24.16%) and producers (88.16%) had health problem when retailers and wholesalers are spared health problems. The state of Côte d'Ivoire had to reorganize the shea sector and involve women at all levels of the chain. It must set the price of the kg of shea butter at the start of each campaign compared to other industrial crops.

Keywords

Shea Butter, Socio-Economic Impact, Region of Poro, Region of Tchologo, Northern Côte d'Ivoire

1. Introduction

Côte d'Ivoire is a country whose economy is mainly based on the rural sector. In addition to agricultural production, forestry production, in particular non-timber forest products, also plays an important role in the survival of rural populations and in the country's economy (FAO, 2017). Among these non-timber forest

products, one of the most important is shea. Indeed, with an annual production of 250,000 tons of almonds, Côte d'Ivoire is the fifth largest producer of shea in the world after Nigeria, Mali, Burkina Faso and Ghana (Saussey, 2011).

Shea (*Vitellaria paradoxa*) is a tree of the Sapotaceae family which grows exclusively in Africa, particularly in wooded savannas of the Sahelian regions (Sannou et al., 2004). In Côte d'Ivoire, the natural distribution areas of shea extend over the northern and central part. The agrarian landscape in the Sudanese savannas is dominated by shea parks (Diarrassouba, 2008). Shea is full of enormous potential because of its tasty and nutritious fruits, medical products, wood, caterpillars rich in protein, fatty products, etc. Among these enormous potentials, the most important is the fat known as "shea butter".

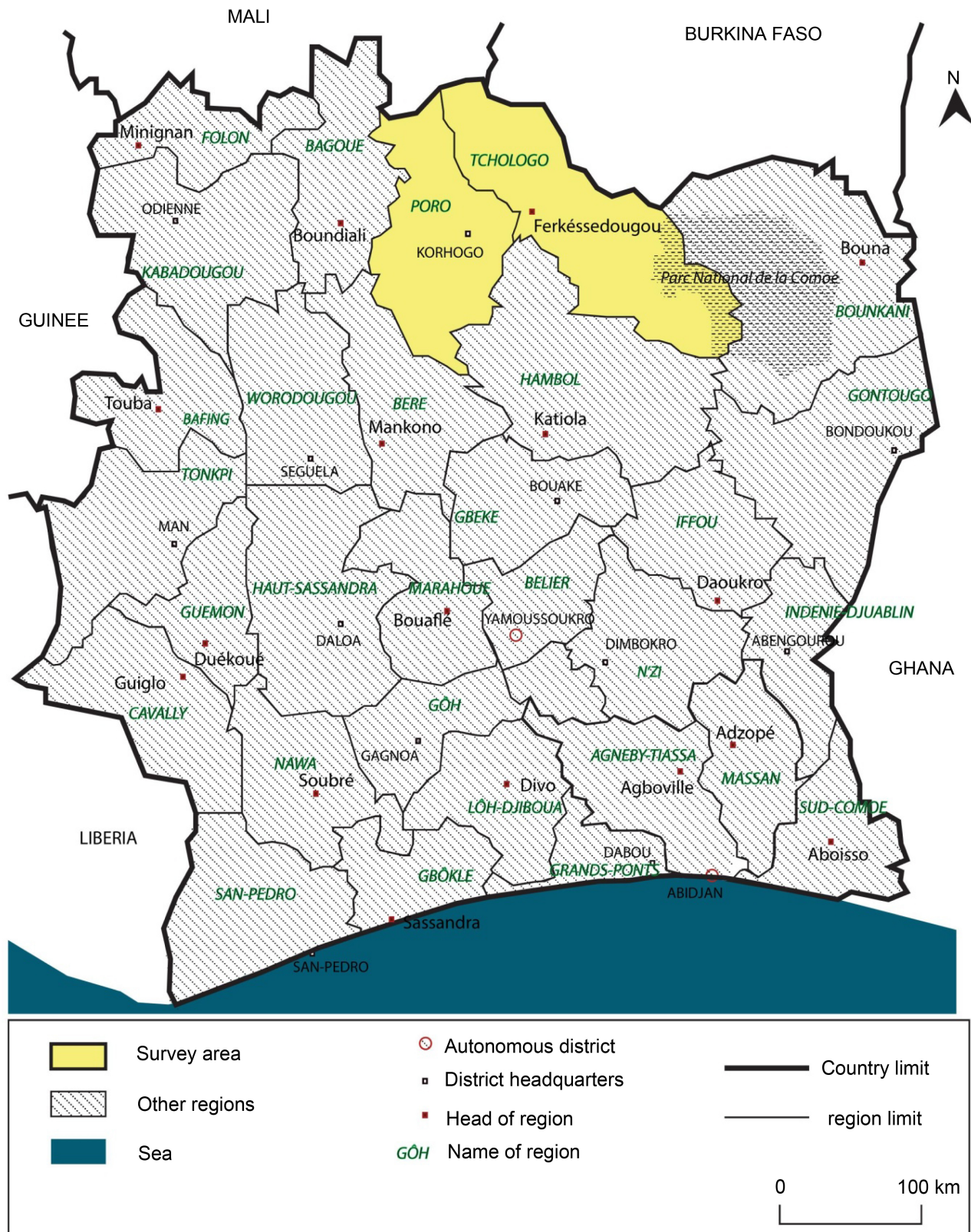
Shea butter is highly prized for its therapeutic and cosmetic virtues and for its nutritional potential. Industrially, shea butter is used in biscuits, pastry making and chocolate making as a substitute for cocoa butter (Pages, 2009). In Europe, the annual consumption of shea butter generally fluctuates between 40,000 tons and 60,000 tons mainly used (95%) by the chocolate industry. The quantities exported to Japan, United States or Switzerland are mainly intended for cosmetic or pharmacological use (Badini et al., 2011). Given these multiple uses, shea butter is a product that is both in demand nationally and internationally.

In northern Côte d'Ivoire, shea is the fourth largest source of currency, after cotton, cattle breeding, and cashew nuts and 90% of its production is ensured by women who are illiterate (Saussey, 2011). The fruits are collected in June and September and freed from their pulp by cleaning operations by women. The nuts are shelled, and the almonds crushed, roasted and churned to obtain a paste that submerged in boiling water gives shea butter. In Côte d'Ivoire, shea butter is traditionally produced and that can negatively influence the earnings and health of producers. It is therefore timely to conduct an investigation in order to assess the effect of the production of shea butter on the living conditions and health of producers. This study aims to assess beneficial and harmful effects of shea butter production on the living conditions of shea butter producers in northern Côte d'Ivoire. In this study, we assume that the production of shea butter improves the living conditions of producers in Côte d'Ivoire.

2. Methodology

2.1. Study Site

This study was conducted in the districts of Tchologo and Poro (northern Côte d'Ivoire) which are the most producing areas of shea butter (Figure 1). The district of Tchologo lies between latitudes 9°35 and 9°00 North and longitudes 5°11 and 5°00 West. It covers a total area of 17,728 km² and is populated by 251,400 inhabitants RGPH (2014). The Niarafolos and Dioulas are the dominant ethnic groups in the territory which is also home to several non-native ivoirien populations as well as foreigners of African origin in particular, Malians and Burkinabés. Relatively to the district of Poro, it is situated between latitudes 9°27 and



Source: Centre National de Télédétection et d'Information Géographique (CNTIG), 2012

Author: DAGNOGO

Figure 1. Map showing the regions of the study.

9°41 North and longitudes 5°38 and 5°19 West and covers a surface of 13,400 km². The total population is about 763,852 inhabitants [RGPH \(2014\)](#) and mostly constituted of Senoufos the dominant ethnic group. In these regions, the principal activities of the population are agriculture and cattle breeding.

2.2. Data Collection

This study was conducted using a questionnaire survey with the shea butter producers. The questions in the questionnaire were drawn up in such a way as to obtain the maximum information on the gender of the producers, the average earnings of the producers, the effect of the production of shea butter on the health of the producers, the difficulties encountered by the different actors in order to make some recommendations both to the authorities and to the producers. Before the start, all the producers were reassured that their responses will be handled with confidentiality and will only be used for academic purposes. They were also requested to answer the questionnaire as honestly as possible. The questions in the questionnaire were designed in French but during the interviews, they were translated into the major local languages that are Senoufo, Niarafolo and Malinké by the research team members. In fact, most of producers have low education levels and express their views better when they speak in their own language. In each region, 600 producers were interviewed making a total of 1200 producers in this study. These numbers of producers were sampled to get a representative population that can give the general views of the target population ([Kothari, 2004](#)).

2.3. Data Analysis

The study employed descriptive statistical methods in order to analyze the data collected. There was cross-checking of the questionnaires to ensure that the questions were answered properly. The data were first divided into themes and subthemes before being analyzed. Frequencies and percentages were used in the analysis and presented in a tabular form to enhance proper interpretation of the data.

3. Results and Discussion

The results from this questionnaire have allowed us to obtain a number of essential information to improve shea butter production in Côte d'Ivoire. According to [Mugenda and Mugenda \(2003\)](#), a questionnaire is a list of standard questions prepared to fit a certain inquiry. A questionnaire survey permits to measure what a person knows and the type of information he/she has, the values and beliefs of the person and the attitudes towards what the questionnaire is about ([Tuckman, 2000](#); [Van Niekerk, 2002](#)). The success of this study in getting much information could be linked to the use of personal interviews that enable the interviewer to observe behavior that the questionnaire is not designed to detect. According to [Van Niekerk \(2002\)](#) when conducting a questionnaire survey, it is

better to use an administered questionnaire for better results.

3.1. Characteristics of Shea Butter Producers in Production Areas

Table 1 encapsulates the characteristics on shea butter producers in the regions of Poro and Tchologo, the biggest areas of shea butter production in Côte d'Ivoire. The 1200 people questioned in this study answered the questionnaire, i.e., 100% in each region. This was possible thanks to the efficiency of the students and the administrative authorities who also helped in collection of the questionnaires. According to Frankel and Wallen (2004), a response rate of above 95% of the respondent can adequately represent the study sample and offer adequate information for the study analysis and thus conclusion and recommendations.

It is observed that in each region, both genders (female and male) participate in the collection of shea nuts. All the men questioned collect the nuts but don't participate to processing and marketing of shea butter. In contrast, 74.74% of women contribute to the collection activity, 54.67% to the processing and 23.8% to marketing in the region of Tchologo. As for the region of Poro, 88.62% of women producers collect shea nuts, when 56.11% participate in processing and 20.3% in marketing. The low presence rate of men could be linked to the fact that shea butter production activities are considered as female activities because they are tedious and take sufficient time. In fact, shea butter is considered as an unprofitable activity compared to other agricultural activity in northern Côte d'Ivoire. In the different areas of shea trees, people collect nuts during the dry season that they sell to the women producers. That activity of collection included men and women.

3.2. Social Effects of Shea Butter Production on Producers

The influence of shea butter activities on social life of producers since the collection to the marketing is illustrated on **Figure 2**. It appeared that there are 55 groups of women collecting shea nuts in the region of Tchologo and 61 in the region of Poro. The number of groups at the processing stage was 33 and 46 in the regions of Tchologo and Poro respectively. Relatively to marketing, 26 groups exist in the region of Tchologo and 37 in the region of Poro. The increase

Table 1. Characteristics of shea butter producers.

Region	Gender	Frequency	Marriage status (%)	Activities		
				Collection	Processing	Marketing
Tchologo	Female	574	100	74.74%	54.67%	3.8%
	Male	26	100	100%	0%	0%
Poro	Female	582	100	88.62%	56.11%	20.37%
	Male	18	100	100%	0%	0%
Total	-	1200	-	-	-	-

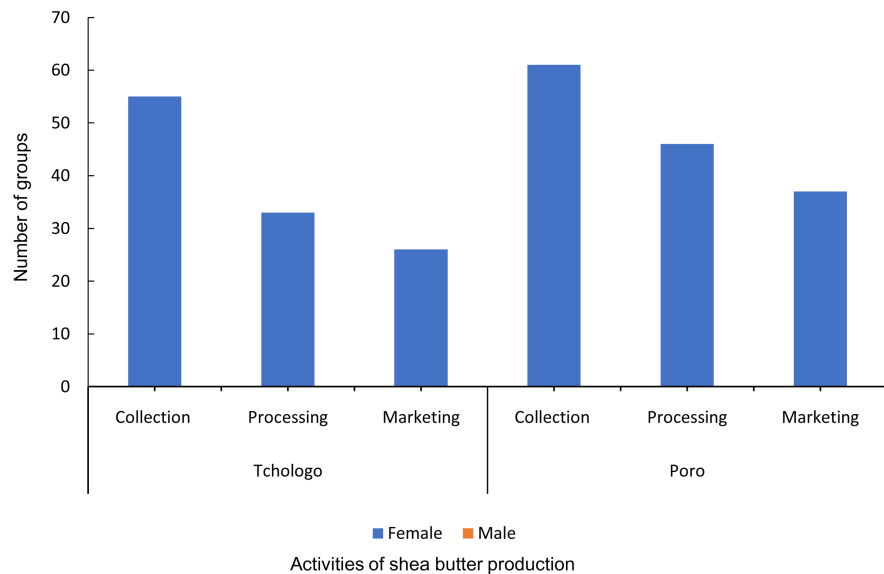


Figure 2. Effect of shea butter production on social life of producers.

in the number of groups during the collection in both regions could be explained by the fact that collection occurred during the dry season when field works are less. Thus, many women participate in it in rural areas because it's easier and less risky than the other activities. Processing is generally a work destined to a category age of women because it is done in several stages and requires patience. Marketing of shea butter is done in cities when collection and processing occurred on the outskirts of cities. Most of women producers can't transport their final product to cities because of the transportation cost and the long distance. Consequently, the activity of marketing is designed to townspeople who have financial means to support the transportation. However, the production of shea butter promotes social cohesion in the rural area, through the associations set up for the production of butter. According to [Ouédraogo \(2002\)](#), the period of shea butter production is a moment of exchange and sharing, which creates socio-economic links in the direction of development. This activity makes it possible to maintain social relations in the villages by the symbolic donation of butter to friends and relatives. [Pages \(2009\)](#) states that "Shea butter has always played and still plays an important role in the life of African villages where it is traditionally used as a source of vegetable oil in food but also in cosmetics, for manufacturing cream, soap". Shea butter is very useful for the villagers. It helps them with food because access to modern oils is not easy for some because of the poverty that rages in West African villages.

3.3. Economic Effects of Shea Butter Production on Producers

The mean gain per person per campaign in the chain of production of shea butter in the regions of Tchologo and Poro is illustrated in [Table 2](#). The different participants in the chain of shea production are the pickers, the original sellers, the retailers and the whole sellers. Our investigation showed that the pickers,

Table 2. Mean gain of the different participants of shea production in the regions of Tchologo and Poro.

Regions	Activities	Mean gain/person/campaign (FCFA)
Tchologo	Pickers	\$82.55
	Processors	\$89.73
	Retailers	\$89.73
	wholesalers	\$1794.52
Poro	Pickers	\$86.14
	Processors	\$89.73
	Retailers	\$116.64
	wholesalers	\$1973.98

who provide the raw materials, earned \$82.55 per campaign in the region of Tchologo and \$86.14 in the region of Poro. The retailers gained \$89.73 in the region of Tchologo and \$116.64 in the region of Poro. Relatively to the wholesalers, they earned about \$1794.52 in the region of Tchologo and \$1973.98 in the region of Poro. The difference in prices between both regions could be linked to their geographical situation. Korhogo is the capital of the Poro and the north and is easier to access to the economic capital and that might influence positively the gain obtained from the activities of the chain of production. In contrast, the region of Tchologo is closer to Burkina Faso which is a big country of production of shea butter. In addition, the roads in the region of Tchologo are not in good conditions compared to those in the region of Poro. Similarly, [Diarrassouba \(2008\)](#) found that the mean gain/producer/campaign in the district of Korhogo differed in function of the activity. During the international workshop in Dakar (Senegal) on the processing, valuation and trade of shea in Africa, [Diarrassouba et al. \(2005\)](#) reported that the socioeconomic incidence of shea in the habits of rural populations in the regions where its presence is important, no longer needs to be demonstrated. Even if the annual gain of a shea producer is difficult to quantify, women in these regions recognize that the trade in shea butter and shea nuts is their primary source of cash income. Moreover, it appears that in the two largest production areas of shea butter in Côte d'Ivoire, the gain of rural populations (pickers and original sellers) is very low compared to that of retailers and wholesalers. This could constitute a reason of discouragement of the latter and would negatively influence the national production of shea butter.

3.4. Influence of Shea Butter Production on Producer's Health

The effect of the activities of shea butter production stakeholders is shown in [Table 3](#). The investigation revealed that in the region of Tchologo, 76.84% of pickers were in good health and 24.16% had hip problem. Relatively to processors,

Table 3. Effect of shea butter production on health of stakeholders.

Region	Activities	Health status	
		Good health	Health problem
Tchologo	Pickers	76.84%	24.16%
	Processors	11.84%	88.16%
	Retailers	99%	1%
	wholesalers	100%	0%
Poro	Pickers	73.51%	26.49%
	Processors	9.43%	90.57%
	Retailers	96.79%	3.21%
	wholesalers	99.87%	0.13%

88.16% got health problem particularly hands shaking and 11.84% of them were in good health. Only 1% of retailers had health problem when 99% were in good health. All the wholesalers were in good health.

In the region of Poro, 73.51% of pickers felt good and 26.49% got health problem. About 91% of processors were not in good health and only 9.43% were in good health. Concerning retailers, 96.79% were in good health and 3.21% in bad health. Almost all the wholesalers got any problem with their health. The health problems noticed with pickers could be explained by the distance they walk to seek shea nuts during the collection period. In fact, collectors walk long distance in the bush per day to have sufficient shea nuts. In addition, they walk on their return way with the luggage on head and baby on their back home. This physical activity during all the period of collection might cause them health problem. In addition, their gain is too weak and does not permit them to go to hospital. Also, the processing of shea butter is generally traditional and is a hard labor. Women use their hand to turn the shea butter during the processing and that could be at the origin of their health problem particularly hand shaking after more than 10 years of experience. Contrary to pickers and processors, retailers and wholesalers provide less effort to acquire their goods. As a result, they have fewer disease symptoms.

4. Recommendations

In view of the results of our survey, the State of Côte d'Ivoire must be more involved in the organization of the shea sector. The state must set the price of the raw material on the basis of industrial crops (cocoa, coffee, cotton, oil palm, rubber, etc.). This will encourage the populations particularly the pickers and producers, to consider shea butter production as lucrative. The Ministry of Agriculture needs to help shea butter producers by allocating them credits. Producers need to be organized into cooperatives so that the production can be pooled and sold easily. When organized, a lot of persons will be interested in shea butter production, and it will not be considered as a non-lucrative activity.

Producers should be encouraged to open a solidarity fund to help each other. The state of Côte d'Ivoire must help producers to have health insurance because the results of the study showed that producers generally face a health problem. Working equipment is also a factor of efficiency. Thus, the state of Côte d'Ivoire must make suitable equipment available to shea butter producers in the various regions. It must organize training sessions to train women to the proper use of the equipment. Technicians who are proficient in the use of the equipment should visit producer groups frequently to be sure that the equipment is being used properly. The state must publicize the activity of manufacturing shea butter, the benefits of shea and the benefits that a producer can derive from it. This will give more confidence to shea producers and allow them to no longer see the activity as secondary. The government, through the agricultural ministry, must strengthen the capacities of women producers by facilitating their access to credit. It should allow women producers to be present at all levels of the shea chain. In the districts of Poro and Tchologo, more than 85% of the rural populations are illiterate (Dagnogo et al., 2018). There is an urgent need to raise the level of literacy of the rural populations, particularly women, to reap the benefits that education has on agricultural productivity. The channel through which this can be done is adult literacy classes. Adult literacy classes are a great channel that can be exploited because enhanced literacy gives producers confidence in decision making and enables them to read instructions, gives a better understanding of issues they can be confronted to. The Non-formal section of the Educational Directorate can train basic schoolteachers and other literates in the communities to hold the classes and teach the illiterates so that more producers will learn basic literacy and numeracy to enhance their income. The state of Côte d'Ivoire would benefit from reorganizing the shea butter sector since it permits to the government to save more than \$1,794,523 per year. The State of Côte d'Ivoire must ensure that the roads leading to the shea butter production areas are frequently leveled and that bridges are built over the waterways to allow women to easily bring their production to central markets.

5. Conclusion

It can be concluded that in the regions of Poro and Tchologo, shea butter is mostly produced by women. Unfortunately, their gain is insignificant compared to that of retailers and wholesalers. Most of the women involved in the production of shea butter have health problems. To this end, the state of Côte d'Ivoire must get involved in reorganizing the shea sector by fixing the price per kg of shea as industrial crops each year at the start of the season.

Acknowledgements

Authors are grateful to the administrative authorities for their help that reassured the producers during our questionnaire. We also thank the traditional leaders of the different regions for their collaboration.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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