

management process (Cerruti *et al.*, 2008).

Despite the continuous and conscious efforts made by the government, it has not yet succeeded in implementing effective sustainability safeguards (Cerutti *et al.*, 2008) and more so, active participation of especially the poor and marginalized (usually women) in forest management activities is still to be realized (Djeumo, 2001). There is a growing concern on the participation of women in forest management. In development programs, participation is considered as the inclusion of the voiceless and marginal members of the community. Through this, women voices are heard by making their preferences known; they take part in the enforcement of these preferences which brings a sense of being part of the process. In all, participation is a way of shifting the axis of power to enable new actors gain greater influence in development outcomes. The participation discourse is beyond mere beneficiary participation to citizenship, agency, and governance (Gaventa, 2004 and Nussbaum, 2001). In this framework therefore, it is necessary to examine if issues of equity and inclusion are being realized by women, who are traditionally marginalized and overlooked in the seemingly participatory process (Guijit *et al.*, 1998; Mayoux, 1995). Participation in forest management enables the marginal or under privileged members of the community to voice their preferences, to make decisions and take active part in management issues. While the forest plays a major role in providing better livelihoods of the rural people, women act as a connection between forest wealth and livelihood strategies of rural households.

In Cameroon, gender discrimination and imbalance is very clear especially in the government sector, women are very few at top echelon of administration. However, of late the Cameroon government seems to divert from the ideology of women discrimination in the public service sector by reluctantly increasing their number. Most community-based conservation programs around the globe have been implemented with and without women's participation (Agarwal, 2000). Hence, for community-based resource management to succeed, active participation of women is necessary (Agrawal *et al.*, 2005).

MATERIALS AND METHODS

Description of the study area

Buea municipality is situated between longitude 9° 16' E and latitude 4° 9' N (Fitton *et al* 1983). The municipality is bounded to the north by tropical forest on the slope of mount Cameroon (4100m above sea level). The mountain range extends to the beautiful sandy beaches of Atlantic Ocean. The town also shares boundary with other major towns like the Limbe to the southwest, Tiko to the southeast, Muyuka to the east and Idenau to the west. With an equatorial climate, temperatures are moderate with a slight seasonal variation in the dry and wet season. Buea has a moderate economy with agricultural, administrative, business, tourism and the financial sector taking the central stage of the town. The area is composed of undulating high and low lands with many rocks and gravels due to volcanic eruptions. The soil type consists of basalts and is as a result of the first volcanic activity in this mountain area, which occurred in the cretaceous system. These soils have been weathered and partly covered by more recent deposits, thus the soils are black and in these areas are well drained due to the generally hilly nature of the terrain and the fact that they are free-draining (Melle *et al* 2016).

The population is estimated at about 300,000 people of whom two-thirds live in urban and semi-urban areas, while the rest in villages. The settlement pattern forms a closed ring around the foot of the mountain with no permanent settlements on altitudes above 1500m. The indigenous people in the area are Bakweri, Bomboko, Balondo and Bakolle (Ekane, 2000). In all the villages, the population is expanding from both natural increase and immigration. These people are predominantly farmers, hunters, fishermen and traders (Ekane, 2000).

The region is also very diverse in fauna with over 370 species recorded. The sub-montane and montane habitats are part of the Cameroon Mountain Endemic Bird Area (EBA). So far, 210 species of birds have been recorded out of which 8 are threatened and 2 strictly endemic Mt. Cameroon Francolin (*Francolinus camerunensis*) and the Mt. Cameroon Speirops (*Speirops melanocephalus*). Large mammals include the Forest Elephant (*Laxodonta africana*). A total of 70 species of butterfly (3 endemic) has already been recorded (Tanyi, 1998).

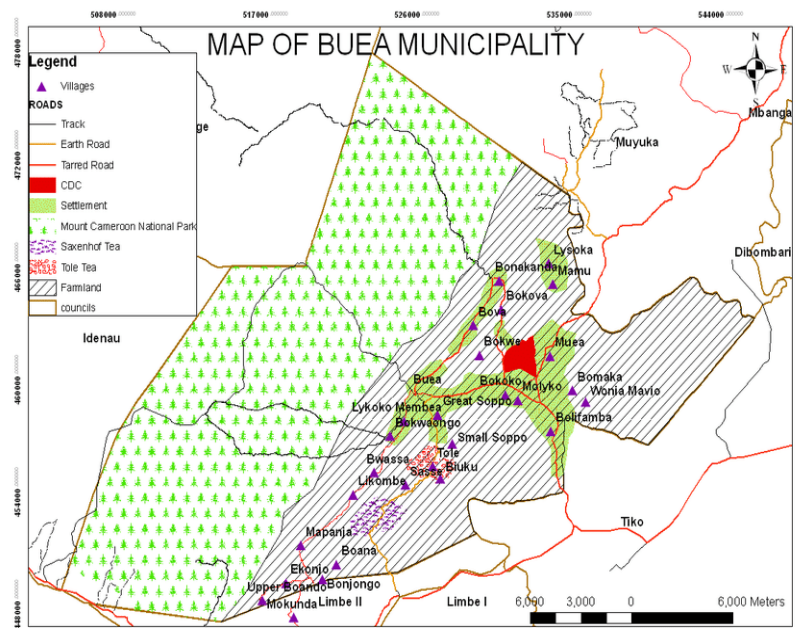


Fig.1: The map of Buea Municipality (Source: Melle et al, 2016)

Data collection and analysis

The research data collection for this study was done on two phases. The first phase involved the search for primary data used for the write-up; secondly the secondary data collection was launched just after the primary data was collected. The administration of two hundred and fifty questionnaires was done to a randomly selected population of women involved in the rainforest management sector. Before questionnaires were administered to these women a research acknowledgement letter written by the University of Buea authority was handed to them. All the questionnaires handed to the respondents were returned barely a few days later. The quantitative demographic variables like educational level and age category were used along with qualitative variables like women's contribution to the management of rainforest, the rainforest management reasons and the women's challenges in the rainforest management sector. The research data was analyzed by using SPSS version 20, specifically the Chi-square and correlation tools were used to examine associations between the variables.

RESULTS

The women's education has shown a positive correlation on the challenges faced by the women in rainforest management ($R^2 = 0.674$, $P < 0.05$) fig. 2. The educational ability of an average Cameroonian woman helps her know and identify many problems in the entire society. In Cameroon, women have been more concerned with household management than the men who are always absent at home. Some women in managerial positions, especially in the rainforest management service sector have been credited most often for their expertise ability in the management. Both the government and private sectors in rainforest management have witnessed a very serious contribution of women despite the demanding strenuous physical challenges faced in the forest. Also, the study has shown a significant association between profession and women's contribution to the management of rainforest ($X^2 = 36.893$ $df=6$, $P < 0.05$) fig.3. The ancient women were deprived from education by the tradition at the time, for this reason they were disabled in competing with men in the job market. The decision taken by most parents at that time was based on keeping a woman only in the kitchen where she was only trained to remain humble to the husband. But today, most women have become very civilized because of academic education, and are known to perform better in certain offices than their male colleagues.

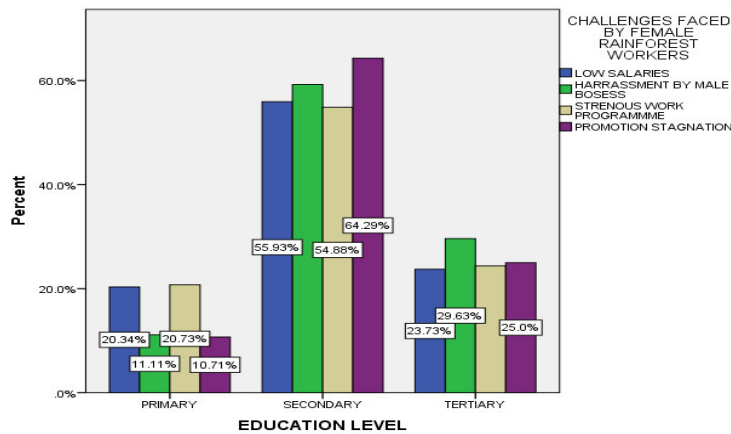


Fig. 2: Education level and the challenges of female rainforest workers

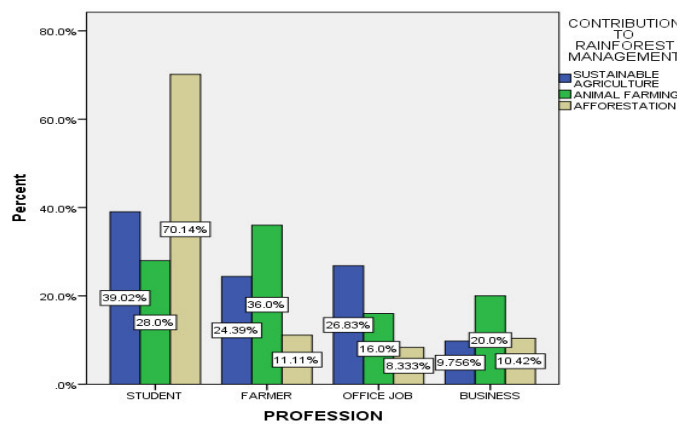


Fig.3: Profession and the women contribution to rainforest management

Moreover, the women’s educational level has shown a significant relationship on their contribution in the management of rainforest ($X^2 = 10.964$ $df=4$, $P<0.05$) fig. 4. Education has played a great role in the civilization of mankind, especially in women’s society, defeating marginalization and helping them to enjoy gender equality which they have long been deprived of. This fight for gender equality is gradually bringing a social transformation on the women to the extent their professional contributions in most domains like the rainforest conservation has gained a significant achievement. Age category has shown a significant link on the women’s reasons for the management of the rainforest ($X^2 = 22.952$ $df=4$, $P<0.05$) fig.5. Rainforest has suffered destruction mainly because of crop-farming implications. Thus, its recovery measures and implementation should involve everybody. Secondly, the education of the women on the rainforest conservation has made them to gain employment in the forestry management sector in Cameroon. Though, forest conservation jobs might be strenuous for most women in Cameroon, nonetheless, the job scarcity in the country has left them with no choice than working in any sector to end a living. Moreover, women of all age categories today seem to have taken much interest in the conservation of rainforest because of the alarming global warming crises and the scarcity of domestic fuel-wood.

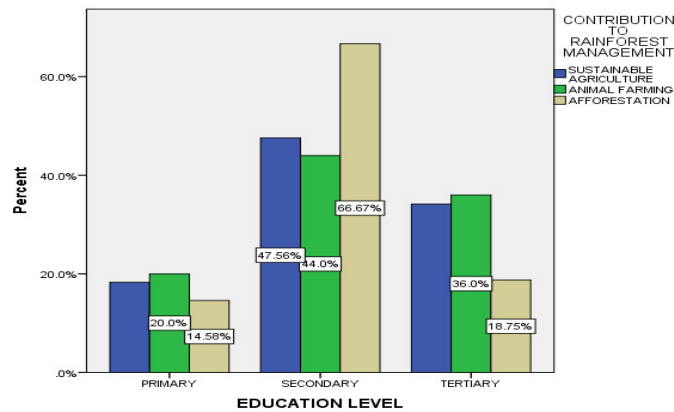


Fig.4: Education level and the contribution of women in rainforest management

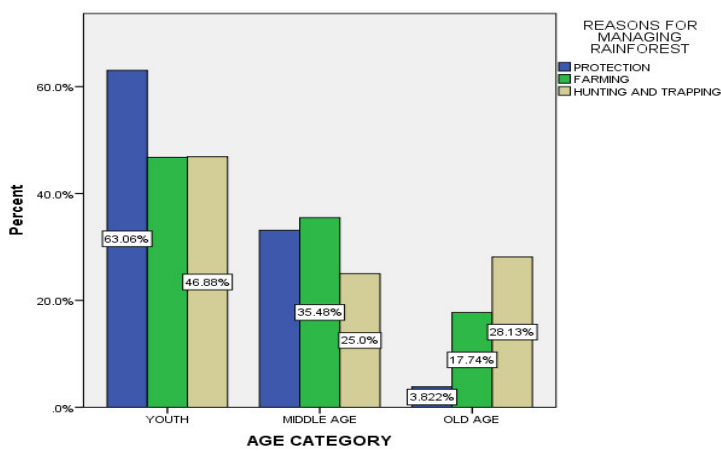


Fig. 5: Age category and women’s reasons for the rainforest management

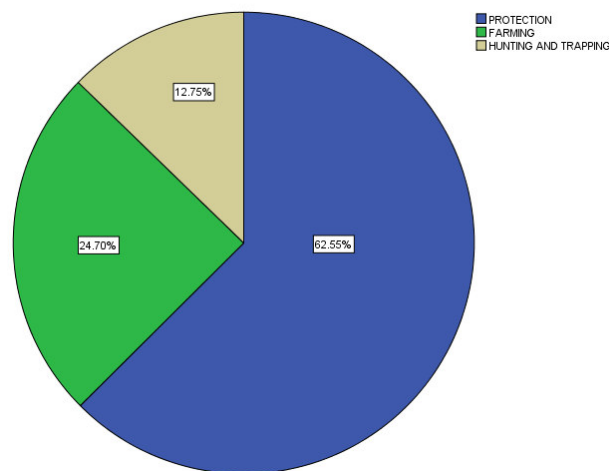


Fig.6: Reasons for rainforest management

This study has shown that the main reason women manage the rainforest in Buea municipality is for protection 62.55% (fig. 6). The general public education on the importance of rainforest management seems to produce substantial results at the level of the women. Women must have understood about the significant problems planet earth is facing now with warming caused by the loss of rainforest and if everybody does not contribute for its restoration the situation would definitely worsen. Hunting recorded the least respondent score of 12.75%, confirming the success of the wildlife management authorities in discouraging the hunting of wildlife through their regular controls and checks to enhance the rainforest protection.

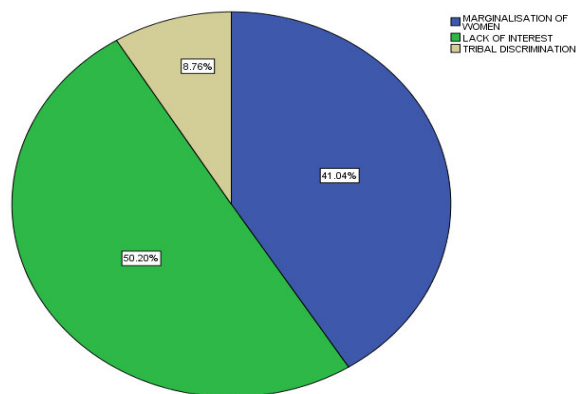


Fig. 7: Reasons for not participating in rainforest work-shop

A respondent score of 50.20% is recorded on women’s lack of interest in rainforest management participation (fig.7). The encouragement of women to develop more interest in the rainforest conservation is needed, though they attend seminars and work-shops, if well encouraged, their attendance would increase, hence the policy implementation of the outcome of these work-shops would be obvious. Sometimes, work-shop participation ends with financial stipends to the participants, for this reason most organizers prefer to invite only their close friends and male collaborators. In addition, 41.04% is recorded on women marginalization, as one of the major reasons for not attending work-shops. Most work-shop organizers in this domain do not give consideration to gender balance on the invitation program and some rather prefer to invite only the males. It is likely that some male organizers lack confidence in the female performance, the reason for which women are not considered as priority for work-shop-invitation. Tribal sentiment recorded 8.76% in the survey; this might mean that the long standing tradition of tribal discrimination in Cameroon on the employment and resource sharing scale might no longer be considered as a threat to the society.

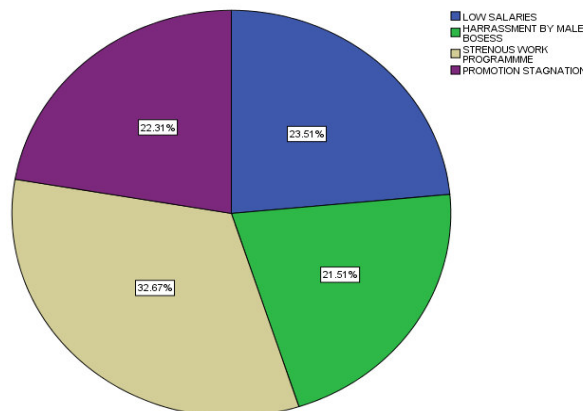


Fig.8: Challenges faced by female rainforest employees

Moreover, a respondent score of 32.67% is recorded on the strenuous rainforest conservation work-program (fig.8). One of the main reasons for which most people hate rainforest management jobs is on its strenuous forest field-work programs. Most conservation research work in the bush covers weeks and months for workers to return to their city-base. During periods like these workers are cut off from their families, the main reason which most women hate the jobs. For a married woman to stay outside her home leaving the little children to be taken care of by a house help or an extended family member is never easy. Sometimes, making a call while in the forest to have an idea on how the children are doing at home is difficult due to telephone net-work problems. The study also recorded a score of 22.31% on promotion stagnation in the women career especially when they are having problems with their immediate office-boss, a male colleague, supposed to recommend them for career advancement. In addition, a respondent score of 21.51% is recorded on sexual harassment by their immediate male bosses in the office. Problems from this angle are known to be key to female marginalization in Cameroon and other parts of the world. Most women are very serviceable in offices to their colleagues and bosses, the reason for which in Cameroon majority of the office secretaries are women; however, their humble and good services rendered are sometimes misjudged, abused, and disregarded by sexually harassing them. In some cases the employment scarcity situation would sometimes force them to comply, especially in the private sector where the company boss may have enough power to fire a worker considered to be insubordinate.

DISCUSSION

Women are a major social group in a community; hence their activities or relationship with the environment cannot be ignored. Women, however, according to many writers are not a single homogenous group and neither are they static. Thus, the necessity to address the relationship of different groups of women in that community is important. Factors such as class, ethnicity, age, country etc are determinants as within a village; women of different classes may play different roles and thus view management in different ways (Hermens *et al.*, 1998). Power relations between both sexes are necessary for sustainable management to occur. The Gender, Environment and Development (GED) approach is more focused on the social construction of gender bringing out the specific roles, responsibilities and expectations to men and women. Access to and control over natural resources indicates the gender position in forest management.

The rainforest is considered as the wealth of the earth and for it to be properly managed for the good of all, sustainable forest management is imperative. The forest constitutes about 40% of the world's economy especially in the agricultural and forestry sector and about 70% of the rural poor live within and around the rain forest (World Bank, 2004). About 60 million indigenous people almost wholly are dependent on the rainforest and its products, 350 million on forest for large scale or high degree subsistence and income and about 1.2 billion on agro-forestry farming (World Bank, 2004; Secretariat of the Convention of Biological Diversity, 2009). The rainforests play a key role in the economy of many countries (MEA, 2005; World Bank, 2003). The rainforests provide food, oxygen, shelter, recreation and commercial products to inhabitants, hence the basis for long-term forest health and stability. The concept seeks to bring a balance between the people's high demand for rainforest products and benefits and the preservation of forest health and diversity. With this therefore, its sustenance is important both for the present and the future generations.

In the past, many governments and institutions have practiced a form of management where large areas or portions of the rainforest were gazetted for protection and conservation. They built on interventionist notion that effective conservation is through heavy influence by the state (Agrawal and Gibson, 1999). The idea of protected areas and parks initially neglected the involvement of local people in the management process. Some areas were strictly set aside for protection and considered as "no-go areas" (Dudley, 2008). This approach resulted to forceful evacuation of local communities living within the gazetted area but according to Colchester (1997), this has proven to be ineffective. This has been exhibited in the research area Korup national park, with the relocation of Ikondo-Kondo village, one of the six villages found within the protected area (Eyong and Gerke, 2007). Out of the six villages found in the Korup National Park planned for relocation by WWF as a management strategy, only Ikondo-Kondo was relocated in 2003.

The use of forest resources in the area is forbidden and different areas are allocated to the locals for agriculture and other activities. This has led to poverty and inadequate forest resources resulting to conflicts between the locals, management institutions and governments. It has also increased the level of illegal practices in the forest. The management method of closing up the forest from its people does not improve the standards of living or economic opportunities of the local people especially the rural poor. A new approach which will seek not only to cater for the habitat but also for the inhabitants in a long term is necessary.

In Africa in particular, illegal use of forest is widespread and this is because allocation of alternative forest areas to the communities are usually insufficient and poor, hence cannot meet their needs. Results obtained during preliminary research indicate that the exclusion of local people from particular areas of the forest has altered their social structures. Also, this management practice undermines the traditional system of management as customary ownership and control of the forest is ignored. The differences in objectives between stakeholders have resulted to inequalities and conflicts between ethnic groups, local people, conservation institutions and the government. Hence for success to be achieved, an integrated approach is needed.

CONCLUSION

This research exploration has shown that the effective involvement of women in the rainforest management programs would rather enhance the conservation its wildlife and floral resources. By implementing effectively the conservation programs to reduce deforestation and degradation, the world's carbon emissions can be substantially reduced and the total global carbon stores increased. Furthermore, increasing forest quality and quantity will provide more natural resources for local communities, increase and improve wildlife habitat, and possibly add to local economies through the sale of sustainably harvested resources. Tropical forests contain more than 50% of the world's species and are vital for the health of the global environment. However, many tropical countries lack the capacity to manage forest resources. Empowering women especially in the local communities to manage natural resources, as opposed to state management, is often used in these countries to compensate for this reduced capacity. By creating conservation programs aimed at increasing the health and total area of tropical forests, we can potentially improve the local economies and the health of other species and help mitigate climate change. Community-based conservation (CBC) is a people-centered approach to conservation that links development and conservation goals. Many CBC programs have been implemented in areas where

national governments have legally empowered local communities to manage and conserve their natural resources due to the expense or lack of management capacity by the local government. By incorporating women in the sustainable management and conservation of the natural resources on which they rely, illegal deforestation and other degrading practices have been shown to decrease. This relationship between biodiversity of the area and the livelihood of the local communities should provide an incentive for conservation, and many forest CBC programs have been shown to reduce deforestation rates compared to government managed areas.

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