ON THE JOB TRAINING OF PARK RANGERS: A MACHINERY FOR SUSTAINABLE ECO-TOURISM IN NIGERIA EMPIRICS OF CROSS RIVER NATIONAL PARK

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ABSTRACT

A park ranger is saddled with the responsibility of protecting and preserving protected parklands, so that in the process of time, the natural ecosystem is protected from natural disasters that occasionally threaten human existing. Therefore, the study aim is to evaluate on-the-job training of park rangers as a machinery for sustainable eco-tourism development in Cross River National Park. The geographic scope is the Oban Hill and Okwanwo Divisions of the Cross River National Park. Data for the study was sourced from both primary and secondary means, while interviews, questionnaire administration and Focus Group Division (FGD) were instrument for data collection. The study findings among others revealed that Park rangers were facing the following challenges; illegal poaching by the locals, land encroachment, poor funding, lack of adequate modern security equipment, low man power and inadequate on-the-job training of park rangers. It was therefore, recommended that alternative sources of livelihood should be provided for the support zone communities to discourage illegal poaching and farming activities within the park. The park management should partner with support zone communities in the protection and preservation of the parkland and ultimately periodic intensive on-the-job training of park rangers should be encouraged.

Keywords: On-the-job training, park rangers, eco-tourism, preservation, poaching

BACKGFOUND OF STUDY

A park ranger can be best defined as a professional whose work revolves around the conservation and use of state or national park resources. How this work is performed and the duties associated with this job, however, may be distinctly different depending on the job level and the state agency where the work is performed (parkrangersedu.com, 2018).The National Park Service (NPS) employs park rangers as either protection/law enforcement park rangers or cultural/interpretive park rangers, while state park agencies organize their park ranger force in any number of ways (parkrangersedu.com, 2018).

According to Wikipedia (2018) park ranger, park warden, or forest ranger is a person entrusted with protecting and preserving parklands national, state, provincial, or local parks. "Parks" may be broadly defined by some systems in this context, and include protected culturally or historically important built environments, and is not limited to the natural environment. Different countries use different names for the position. *Warden* is the favored term in Canada, Ireland, and the United Kingdom. Within the United States, the National Park Service refers to the position as a park ranger. The U.S. Forest Service refers to the position as a forest ranger. Other countries use the term *park warden* or *game warden* to describe this occupation. The profession includes a number of disciplines and specializations, and park rangers are often required to be proficient in more than one.

Also, a park ranger can also, be referred to as a man or woman, charged with the responsibility of protecting and preserving protected parklands, which in the long run protects the environment from natural disasters that occasionally threaten human existence. Thus a ranger works to protect lives (IRF, 2017).

Wildlife conservation efforts in the sub-Saharan Africa countries stemmed from the concern over the depletion and in some cases, near or complete extinction of some large game species in the region Moreover, illegal trade and trafficking in endangered fauna and flora species, fueled mostly by the growing demand for exotic plants and animals worldwide had also resulted in biodiversity depletion in the region (Eniang, 2001). As a conservation measure, protected areas with stringent laws were designed to prevent all exploitation of wildlife within the protected areas, and to restrict resources utilization were established. The Cross River National Park in Nigeria like any other protected area also witnessed strong resistance by host communities on the park policy of restricting their free access to the natural resources within the park environment . The consequences of these resistances have manifested in the form of conflicts between the park authorities and the indigenous peoples of the support zone communities. The rich diverse ecosystems of the park contain wood, honey, beeswax, building poles, fodder resources, fruits and medicinal plants. Economically, disadvantaged rural communities also depend on wildlife-based products such as bushmeat, fur, skin, claws, horns and teeth as sources of income and/or protein. However, the park management has found it increasingly difficult to meet the economic and developmental needs of their host communities to ensure the conservation of the park's natural resources. Hence, this paper looks at the role of park ranger on sustainable tourism development.

Objective of study

i. To examine the importance of on-the-job training of park rangers towards sustainable ecotourism development of CRNP.

ii. To recommendation options for improving the functions of park rangers.

Study area description

Location and size

The Oban Hills division covers an area of about 2800 sq km land mass on a latitude of 5°25′0″N and longitude of 8°35′0″E. The division which is contiguous to Korup National Park in the republic of Cameroun is on a strongly undulating terrain with elevation range of 100-1000 metres above sea level. The rainy periods ranged from the month of March to the month of November with an annual rainfall exceeding 3500mm. The north axis empties into Cross River tributaries, while the southern axis flows into Calabar, Kwa and Korup rivers. Similarly, the location of Okwangwo is on the coordinate of latitude 6°17′00″N and longitude of 9°14′00″E. It consists previously the following (Boshi, Okwangwo and Boshi Extension Forest Reserves). It occupies an area estimated to 920 km^2 on an elevation range of 150 to 1700m ASL. It is dispersed from Oban division down to the southern end of an estimated distance of 50 km. Furthermore, Obudu Plateau lies on the south-west axis and heading towards Afi River Forest Reserve in the east and the reserves are separated by Mbe Mountains Community Forest (National Park Service Information Booklet, 2005).

Historical background

In 1965 the park was proposed but no serious planning was done until 1988 when the World Wide Fund for Nature based in the UK got involved in the establishing the park in two divisions of the State which was separated by farmlands and the Cross River valley with a

budget of $49.9 million. The plan captured the villagers who were employed for regular check of the isolated areas to aid development.

The federal Government of Nigeria through decree 36 of 1991 created the Cross River National Park (CRNP) with the Cross River gorilla chosen as the theme animal. The park was established from the erstwhile Oban group of forest and that of the Boshi/Okwangwo. Both divisions covers an estimated area of 4000 km^2 of predominately primary moist tropical rainforests in the North and Central parts with also mangrove swamps along the coastal zones. These are parts of the Guinea-Congolian region of Africa which is characterized by closed canopy and scattered trees with height reaching 40-50 metres.

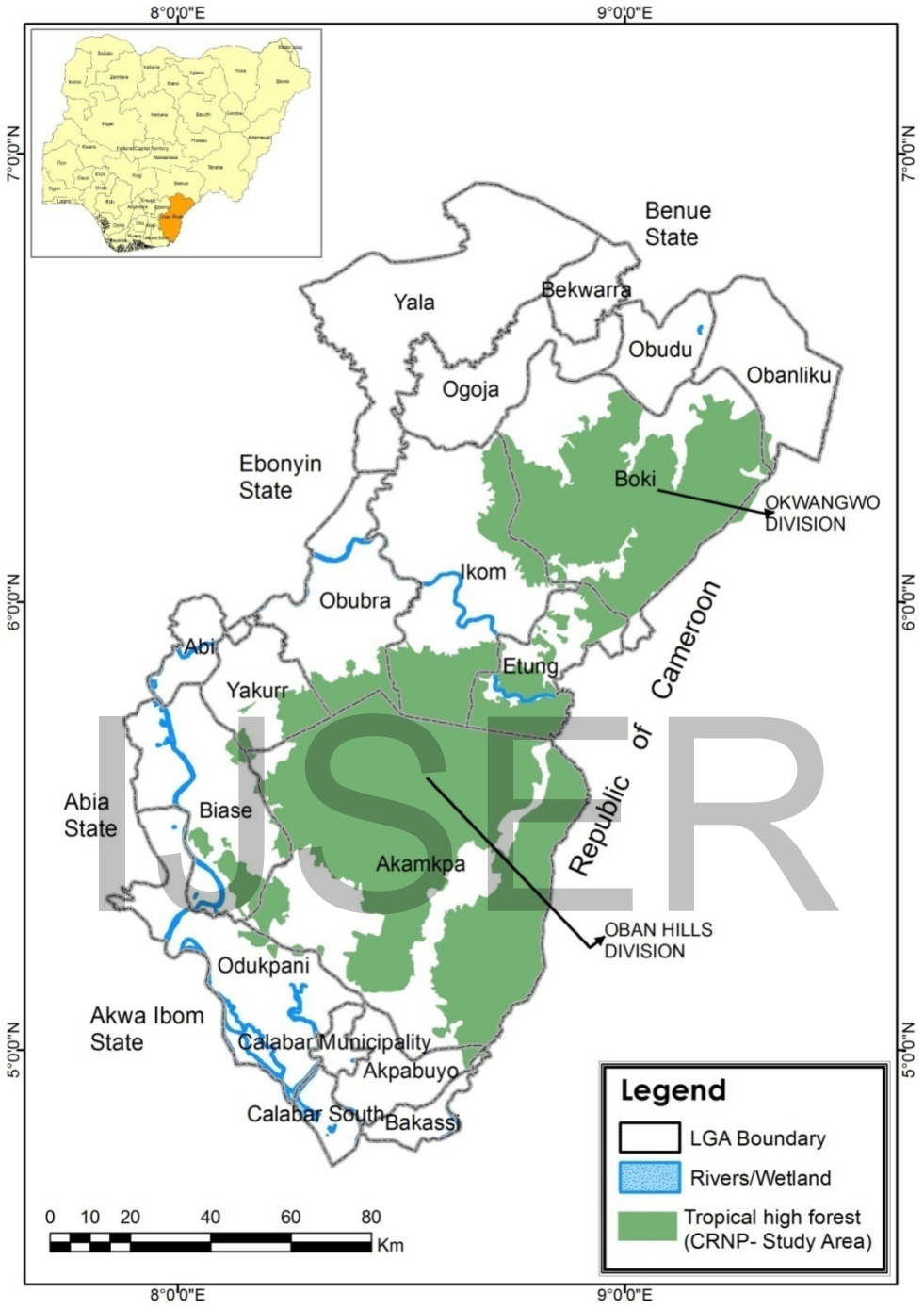


FIGURE 1: Study area map (Inset: Nigeria, showing Cross River State)
Source: Office of the Surveyor General, Cross River (2018), Modified by author (2019)

Biodiversity

According to National Park Service Booklet Information published in 2005, "the division is mostly covered with lowland rainforest characterized by dominant tree species such as *Musanga cecropioides, umbrella tree, Irvingiagabonensis* bush mango *Berliniaconfusa*,, *Coulaedulis, Hannoaklaineana*, *Klainedoxa gabonensis* and African mahogany". The total of 1,568 different plant species was identified, of which 77 are endemic to Nigeria; 1,303 flowering plants, 141 lichens and 56 moss species''. And also about 950 species of butterfly were identified in the Oban divisions. Similarly, 350 birds, 75 mammals, 42 different snake species and 400 chimpanzees. Although no survey has been undertaken and most of the plants and animals are endangered species. ''In Okwangwo division, Approximately(1,545) species representing 98 plant families, 280 species of birds and others have been recorded, including the vulnerable grey-necked rock fowl, which breeds in the Mbe Mountains while the golden greenbul, rare in Nigeria as they near the threatened area". The park is homes of 78 % of primates which consists about 200 chimpanzees and gorillas and are settled in the semi-deciduous, montane and derived savannah environments also with 30-40 persons (National Park Service Booklet Information, 2005).

Drainage

Okwangwo has a lot of water bodies key among them are river Oyi, Bemi and Okorm. Similarly, streams like, Magbe, Matche, Asache, Anyukwo, Afundu I Afilndu II, Miluenye and Manyu are tributaries of Oyi river which then empties into Cross River. ''Bemiriver drains the southwestern extremities of the park and flows south along its western boundary to join Okorm river. Mbep, Nsar and Nkonge are the major streams that take their sources from Mbe mountains

South-West of the park area and empty into Okon River which Crosses into the Cameroon. The Afi riverb drains the Kanyang area from west to south-west near the Park boundary. On the other hand, southern parts of the park (the Oban division axis) are drained by the Calabar, Kwa and Korup Rivers''.

Relief and geology

Obot (1996) stated that ''the park relief is generally rolling with mountainous elevation ranged from 1180-1820 m in Oban Division and Okwangwo Divison respectively. Particularly at the Okwangwo axis, the terrain is rugged with various discontinued and connected ridge systems, isolated peaks and rock crops". The elevation of the area ranged from 150-1750 m between Anape and Ranch villages

Forest Resource Solutions Ltd, (2006) classified the soils of Cross River State into five different class; (a) the convex, not deep (<100 cm) gravely soils characterized by yellowish and red matrix colour on the Oban and Obudu Hills; (b) the soils (100-200 cm) deep characterized by hematite and fertile;(c) the basement complex derived soils characterized by dark clayey colour; (d) alluvium deposits with coarsed sand texture (e) mangrove soils characterized by hydromorphic reaction are often flooded during the raining period. The alluvium deposits are characterized by high sand fractions exceeding 70 % with low silt and clay fractions. The coarsed nature of the soils yields low nutrient reserve in the soil solum base on leaching and gully susceptibility of the soils while the soils occurring in the forested areas are characterized by low pH, moderate to coarsed texture coming from the high sand content and low exchangeable bases and continuous crop production, the nutrient conservation practices includes application of organic fertilizer which is a vital aspect of maintaining soil nutrient conditions.

Socio-economic activities

The CRNP has two divisions; the Oban Hills and Okwangwo division. The location of both divisions is in a forested area of Cross River State. Therefore, the major socio-economic activity within the vicinity of the park includes farming, hunting, fishing, and trading. In Akamkpa Local Government Area which houses the Oban division of the park, the community engages in both commercial and subsistence system of agriculture. It is known facts that they have the largest palm plantation, and apart from other food and cash crop, they are also bless with abundant lime stone which UNICEM and Lafarge quarry. Varieties of bush meat sold along the park road also shows abundant of fauna found in the area and it defines their hunting occupation. In Okwangwo division, the predominant activity is also agriculture, through cassava, cashew, yam, cocoa are cultivated in large scale.

Literature review

The National Park plays a significant role in protecting, preserving and conserve the wildlife within the ecosystem, mostly the endangered species. Therefore, to effectively protect the charismatic flora and fauna of divers species, the park rangers are thus hired and trained basically to carry out that function. In a study, Meduna, Ogunjimmi, and Onadeko (2009) investigated the prevalence of conservation and management problems affecting biodiversity and their implications on ecotourism activities in Kainji Lake National Park, New Bussa, Niger State, Nigeria. Data were collected from villagers in support zone communities and protection staff of the park with questionnaires. The study revealed that Livestock grazing and poaching are the major problems affecting biodiversity in the park. In addition, insufficient funding and poor salary for protection staff are the major management problems affecting conservation of biodiversity. Implications of these on ecotourism activities of the park are low level of tourist inflow and revenue generated by the parks as well as low benefit accruable to the local economy and the economy of the country as a whole. It was suggested that to reduce the spate of illegal activities, conservation awareness aimed at changing local people's attitude, the provision of essential infrastructural facilities and improvement in peoples' living conditions should be embarked upon by the management of the park and government

Also, Poaching is not a new problem in Africa. Its dramatic acceleration since the late 2000s, however, has significantly altered its implications. By some estimates, the number of African elephants killed annually since 2007 has more than doubled to over 30,000.1 The trend crossed a chilling threshold in 2010 as the rate of killings surpassed that at which elephants breed, indicating that significant net population declines have begun. Rhino poaching has also skyrocketed. Illegal killings in southern Africa from 2000 to 2007 were rare, frequently fewer than 10 a year. An explosion in poaching rates commenced in 2008. By 2013, 1,004 rhinos were poached in South Africa alone.

Lastly, Thomsen, Garcia, Parker, Godbold and Solan (2017) consensus has been reached that global biodiversity loss impairs ecosystem functioning and the sustainability of services beneficial to humanity. However, the ecosystem consequences of extinction in natural communities are moderated by compensatory species dynamics, yet these processes are rarely accounted for in impact assessments and seldom considered in conservation programmes. Here, we use marine invertebrate communities to parameterise numerical models of sediment bioturbation – a key mediator of biogeochemical cycling – to determine whether post-extinction compensatory mechanisms alter biodiversity-ecosystem function relations following non-random extinctions. We find that compensatory dynamics lead to trajectories of sediment mixing that diverge from those without compensation, and that the form, magnitude and variance of each probabilistic distribution is highly influenced by the type of compensation and the functional composition of surviving species. Our findings indicate that the generalized biodiversity-function relation curve, as derived from multiple empirical investigations of random species loss, is unlikely to yield representative predictions for ecosystem properties in natural systems because the influence of post-extinction community dynamics are under-represented. Recognition of this problem is fundamental to management and conservation efforts, and will be necessary to ensure future plans and adaptation strategies minimize the adverse impacts of the biodiversity crisis.

Materials and methods

The methodology adopted for this study involved the collection, collation and analysis of data from both primary and secondary sources, with a view to evaluate the impact of on-the-job training towards the sustainable development of ecotourism in the CRNP. Structured questionnaire was used to extract information on the training given to park rangers during their discharge of duties. While interview, was conducted with senior staffs and the conservator of the park to determine the impact of on-the-job training of park rangers towards the protection of the ecosystem. Results from the study analysis are herewith presented in charts, maps and tables.

Result and discussion

Role of Park Ranger on Sustainable Eco Tourism

The duties of the modern park ranger are as varied and diverse as the parks where they serve and in recent years have become more highly specialized. Regardless of the regular duties of any one discipline, the goal of all rangers remains to protect the park resources for future generations and to protect park visitors. This goal is accomplished by the professionalism and sometimes overlapping of the different divisions. Park rangers helps in:

- **Law enforcement**

Law enforcement rangers have police powers and enforce national laws as well as park regulations. In some developing countries, the park rangers patrolling natural preserves may be heavily armed and function as paramilitary organizations against organized poachers or even guerrillas. In many other developing countries however, park rangers have law enforcement authority and do carry firearms as they seek to achieve respect for nature by building good relationships with local communities and the visiting public. In units of the U.S. National Park System, law enforcement Rangers are the primary police agency; their services may be augmented by the US Park Police, particularly in the Washington, DC and San Francisco metropolitan areas. The U.S. National Park Service also has a section of "Special Agents" who conduct more complex criminal investigations. According to U.S. Department of Justice statistics, National Park Service Law Enforcement Rangers suffer the highest number of felonious assaults, and the highest number of homicides of all federal law enforcement officers. The City of New York has a uniformed division of Park Rangers called the New York City Parks Enforcement Patrol who are responsible for patrolling the city parks, pools and beaches.

- **Interpretation and education**

Park Rangers provide a wide range of informational services to visitors. Some Rangers provide practical information—such as driving directions, train timetables, weather forecasts, trip-planning resources, and beyond. Rangers may provide *interpretive programs* to visitors intended to foster stewardship of the resources by the visitor as a method of resource protection. Interpretation in this sense includes (but is not limited to): guided tours about the park's history, ecology or both; slideshows, talks, demonstrations; informal contacts, and historical re-enactments. Rangers may also engage in leading more formalized curriculum-based educational programs, meant to support and complement instruction received by visiting students in traditional academic settings and often designed to help educators meet specific national and/or

local standards of instruction. All uniformed rangers, regardless of their primary duties, are often expected to be experts on the resources in their care, whether they are natural or cultural.

- **Emergency response**

Rangers are often trained in wilderness first aid and participate in search and rescue to locate lost persons in the wilderness. Many national parks require law enforcement rangers to maintain certification as Emergency Medical Responders, Emergency Medical Technicians, or Paramedics. Depending on the needs of the park where assigned, rangers may participate in high-angle rescue, swift-water rescue, may be certified scuba divers, and can become specially trained as helicopter pilots or crew members.

- **Firefighting**

Rangers are often the first to spot forest fires and are often trained to engage in wild land firefighting and in some cases structural fire fighting. Rangers also enforce laws and regulations regarding campfires and other fires on park lands. In the face of a fire outside their control, rangers will call for help and evacuate persons from the area pending the arrival of additional firefighters.

Dispatcher

Some rangers work as park protection dispatchers, answering emergency calls and dispatching law enforcement rangers, park fire fighters or Park EMS crews by radio to emergency calls for service. Park Dispatchers provide pre-arrival instructions to callers to help them stay alive until responding units arrive. Dispatchers coordinate multi-agency responses to emergencies within the park boundaries and utilize computer systems to check for criminal histories of subjects stopped by park law enforcement rangers. Park Dispatchers typically perform other duties such as taking lost-and-found reports, monitoring CCTV surveillance cameras and fire alarms. Dispatchers are assigned to the Park Protection Division.

- **Scientists and scholars:**

Rangers are responsible for protecting the natural resources or cultural sites for which they work. This includes obtaining and preserving knowledge about the area. As such, many different types of historians and scientists are employed as rangers. Some scientific positions often filled by rangers include archaeologist, many different types of biologist, ecologist, fire scientist, geologist, hydrologist, paleontologist, soil scientist, volcanologist, etc. Rangers in these positions are expected to study, monitor, and inform others (in the form of published, peer-reviewed scientific papers as well as internally) about their findings. These people add to the knowledge dispersed in interpretive and educational programs, and provide information needed by managers and others to more effectively protect the resource.

Figure 1: Law Enforcement

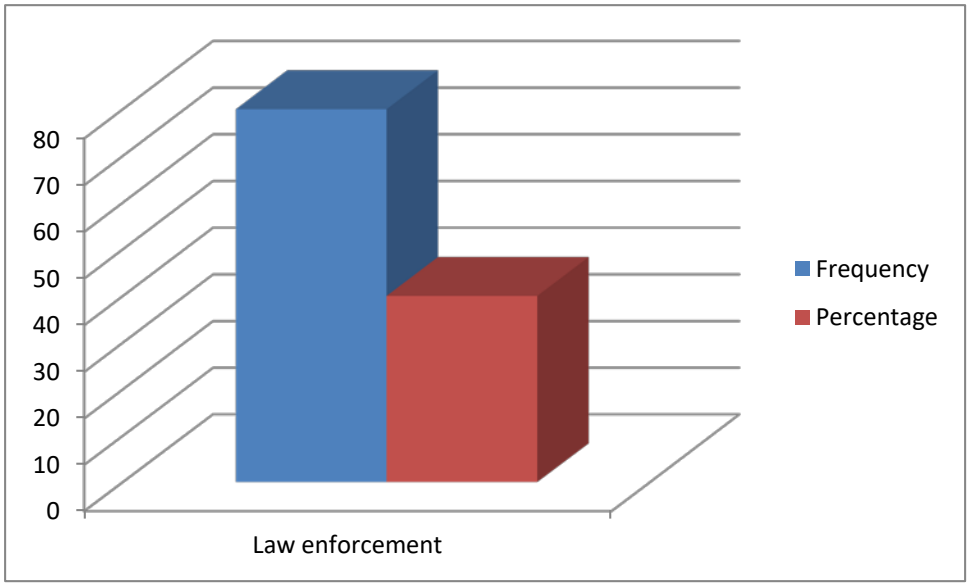


Figure 2: Interpretation and Education

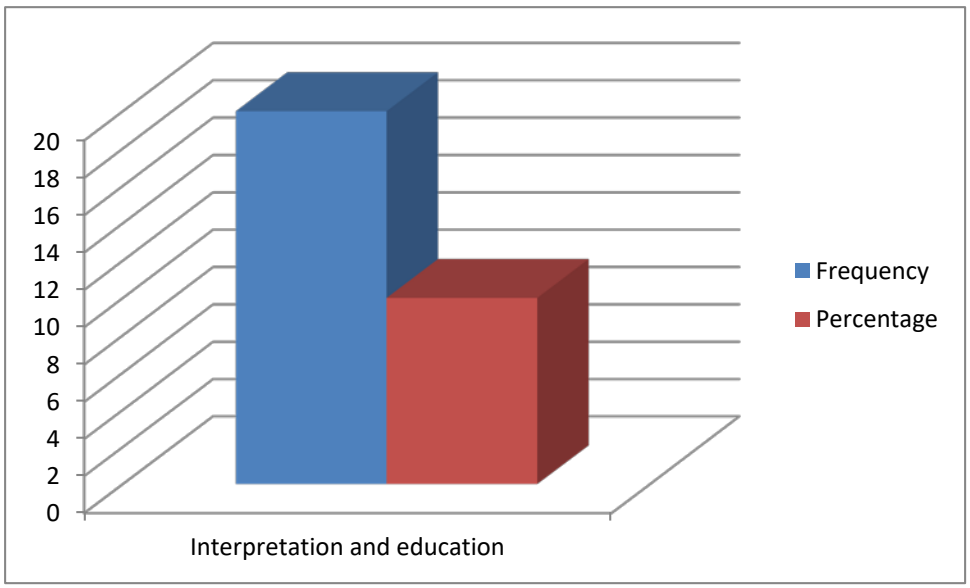


Figure 3: Emergency response

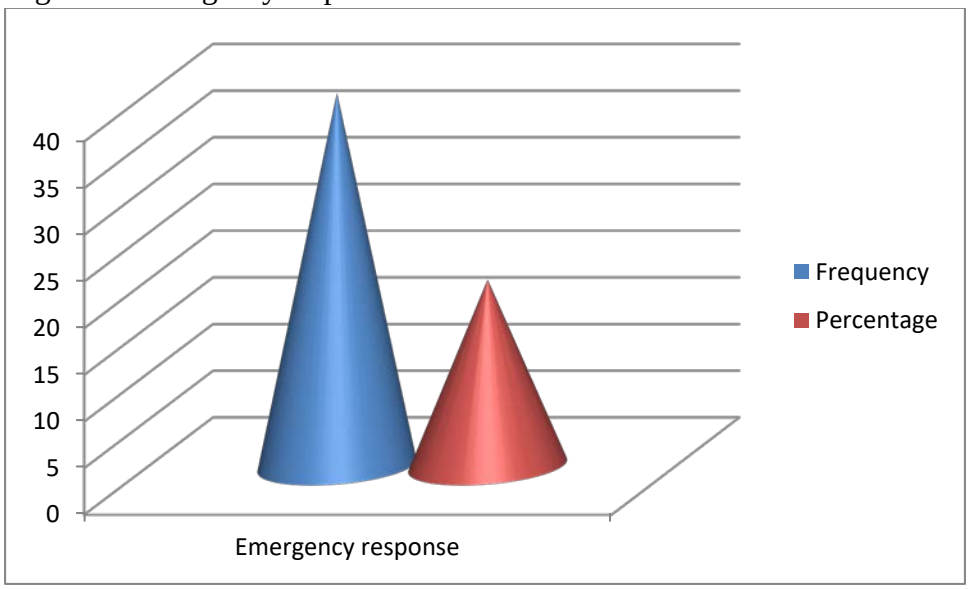


Figure 4:Fire fighting

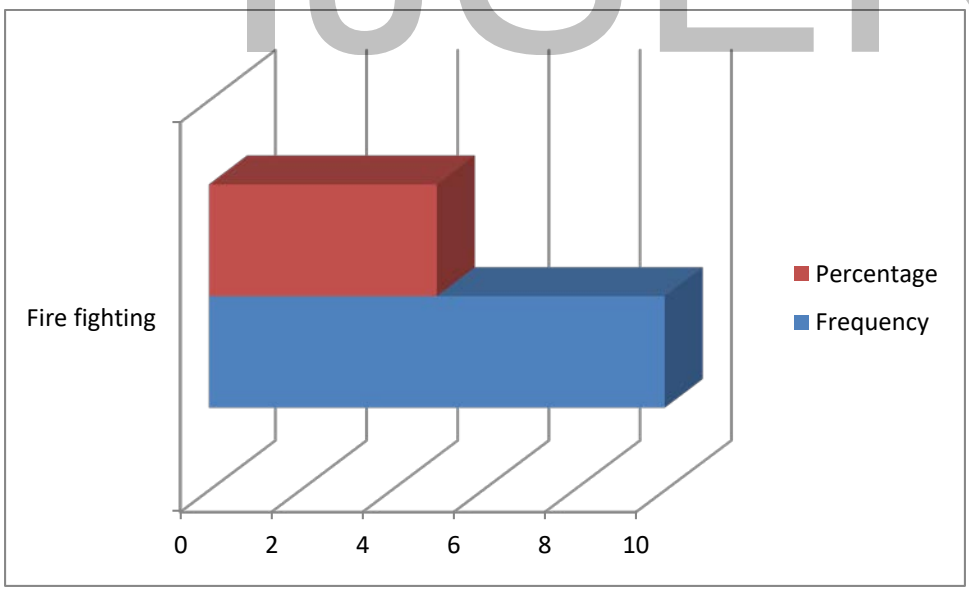


Figure 5: Dispatcher

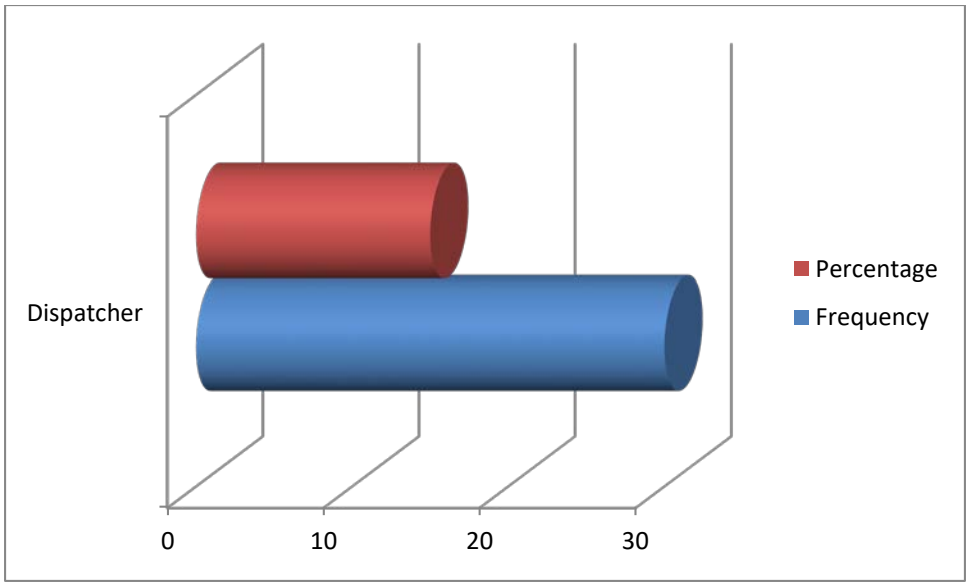
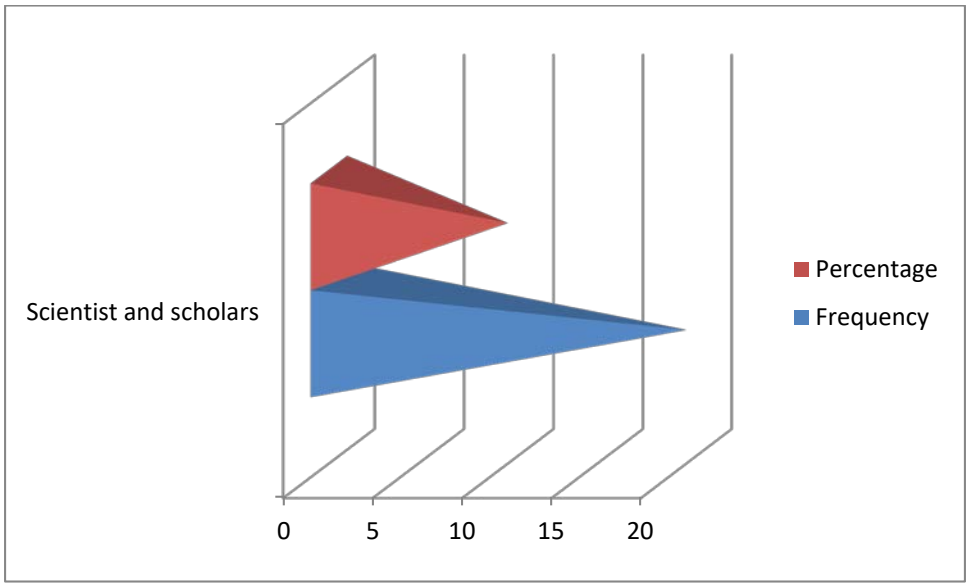


Figure 6: Scientist and Scholars



Challenges faced by park rangers

Park rangers are confronted with the following challenges as shown in Table 1 below. SA represent strongly agreed, A Agreed, SD strongly disagreed and D disagreed.

Challenges faced by Park Rangers	S/A	A	S/D	D
Illegal poaching by locals	20	6	1	1
Land encroachment	18	6	2	-
Poor funding	14	4	-	-
Lack of modern security equipments	36	2	-	-
Low manpower	11	2	2	1
Lack of cooperation from support zone communities	3	4	3	2
Inadequate on-the-job training of park rangers	54	6	2	62

Information derived from Table 1 shows the challenges faced by Park Rangers in the Cross River National Park. As indicated further in the table, illegal poaching by locals was represented by Strongly Agreed, which was the view of 20 respondents, whereas 6 respondents agreed to it. Poor funding was also represented by Strongly Agreed, which was the view of 18 respondents, whereas 6 respondents agreed to it. As indicated further in the table shows that Poor funding is one of the challenges faced by Park Rangers in the Cross River National Park as this was the view of 14 respondents, whereas 36 of the sampled population complained of Lack of modern security equipment as against 11 of the sampled population, which also complained of Low manpower. Further analysis from the table indicates that 3 respondents attested to Lack of cooperation from support zone communities, whereas 54 of the sampled population complained of Inadequate on-the-job training of Park Rangers. It is deduced that Lack of modern security equipment was a major challenge faced in the Cross River National Park.

Conclusion and Recommendations

- The anti poaching role of park rangers in the protection of the CRNP cannot be overemphasized. On-the-job training arms the park rangers with the required knowledge and skills to carry out their duties effectively for the overall protection of the park. Despite the level of on-the-job training received by park rangers, the security challenges in the park includes but not limited to periodic conflict between rangers and poachers, grazers, also farmers encroaching on the park, resulting in the extinction of several flora and fauna of diverse species. The role of park rangers influenced the establishment of International Ranger Federation and the World Rangers Day which is on the 31st day of July every year. In carrying out this study it was discovered that park rangers are given on-the-job training to equip them in the following ways; Law enforcement, Interpretation and education, Interpretation and education, Dispatcher and Scientists and scholars. This is reflected the Fig. 1,2,3,4,5 and 6 and Table 1 and 2. It could therefore, be deduced that on-the-job training has enhanced the protection and preservation of flora and fauna species and the parklands in generality.

Nevertheless, park rangers are faced with diverse challenges which hinders the operationalization of their roles in protecting the park.

RECOMMEDATIONS

From the study findings as shown in table xx the park rangers encounters the following challenges: Illegal poaching by locals, land encroachment, poor funding, lack of modern equipments, low manpower, lack of cooperation from support zone communities and inadequate on the job training of park rangers. It is against this background that the following recommendations are put forward:

i. Alternative source of livelihood should be provided for the support zone community as a measure to discourage illegal poaching activities and faming within the Cross River National Park

ii. The support zone community should be encouraged to minimize the activities that will lead to land degradation, deforestation and depletion of the ecosystem biodiversity.

iii. Government should provide funding for the provision of modern equipments for the effective on the job training park rangers.

iv. Support zone communities should partner with the park management in conserving and protecting the park facilities.

v. Periodic on the job training of park rangers should ne encouraged.

vi.

REFERENCES

Andrew-Essien E., and Bisong F., (2009), Conflicts, conservation and natural resource use in protected area systems: An analysis of recurrent issues, European Journal of Scientific Research, 25(1): 118-129

Andrew-Essien E., and Bisong F., (2012), Conflicts as indices to evaluating the effectiveness of natural resources conservation in the Cross River National Park, Nigeria, Global Journal of Human Social Science, 12(6): Version 1.0

Ashley C., (2000), Applying livelihood approaches to natural resource management initiatives: Experiences in Namibia and Kenya, ODI Working Paper No.134

Ibor O.I., (2003), Participatory approach to foest management in Cross River States of Nigeria: challenges and prospects, In: Akindele S.O., and Popoola L. (eds.), Community forestry and stakeholders' participation in sustainable development, Proceedings of the 29th annual conference of forestry association of Nigeria, Calaber, Cross River State, pp. 232-238

Imeh N.J., and Adebobola H., (2005), "The effects of poverty in the conservation of biodiversity: the Nigerian experience" Science in Africa, on-line magazine

IUCN, (1994), Protected area management in tropical countries, IUCN, Rome, pp.189

Jacob D.E., (2008), Buffer zone management in Cross River National Park – Oban Division, unpublished undergraduate's project, department of Forestry and wildlife, University of Uyo, Uyo, pp.47-49

Jacob D.E., and Ogogo A.U., (2011), Community participation in protected area management: A case study of Cross River National Park, In: Popoola L., Ogunsanwo K., and Idumah F. (eds), Forestry in the context of the millennium development goals,proceeding of the 34th Annual Conference of the Forestry Association of Nigeria held in Osogbo, Osun State, Nigeria, 1: 412-415

Jacob D.E., Udoakpan U.I., and Nelson I.U., (2013), Issues in conflict resolution in Cross River National Park, Southeastern Nigeria, 1st International Conference on Environmental Crisis and its Solution, Scientific and Research Branch, Khouzeslan, Islamic Azad University, Kish Island, Iran, 13th-14th February, pp.76-82

Ogogo A.U., Nchor A.A., and Jacob D.E., (2010), Challenges of buffer zone management in Cross River National Park, Southeastern Nigeria, Journal of Research in Forestry, Wildlife and Environment,2(2): 156-163

Asibey E.A.O., and Child G., (1990), Wildlife management for rural development in sub-Saharan Africa, Unasylva, 41: 10

Asibey E.A.O., and Child G., (1991), Wildlife management for rural development in sub-Saharan Africa, Nature et Faune, 7:36-47

Eniang E.A., (2001), Effect of habitat fragmentation on the Cross River Gorilla (*Gorrilla gorilla dehli*): Recommendations for conservation,unpublished report submitted to the Cross River National Park, Akamkpa, Nigeria, pp. 30

Wikipedia (2018) "Park ranger" retrieved from https ://en .wiki pedia .org/ wiki/ Park_ranger