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# Solving the Quandary of Environmental Education Problems to Improve Sustainable Environmental Practice in Zimbabwe Using Concise Principles of Pedagogy and Andragogy: A Promise of Living the Future



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## Abstract

Environmental education for the 21<sup>st</sup> century should adapt to the current need of society and the current technological landscape. Biodiversity may be at risk of extinction without environmental education understanding and appreciation. Experiential learning may be at the forefront in goals of pedagogy and andragogy. The paper looks at total immersion techniques and how to deliver them in environmental education since they are key to imparting sound environmental practice and sustainability. Sound environmental practice may be instrumental in saving the biophysical environment from swinging into irreversible damage and collapse. The toolkit in Environmental education should be constantly rejigged for optimum performance and impact. The task is to proffer responsible Environmental education action plans to all age groups with specific targets to interests of different age groups. Highest level of conservation and Environmental Education should be targeted to farm dwellers with low scores and training. Environmental education impact may be measurable using metrics with the adoption of environmental improvement index. Data gaps may be plugged by collating Environmental education metrics in near fields' real time of internet. Environmental education may be an opportunity to the world to maintain fitness by actively engaging all senses through walking, running, jumping, gliding, flying, watching, swimming, sailing, diving, digging, riding and tracking.

**Keywords:** Environmental Education; Children; Adult Education; Zimbabwe; Experiential Learning; Sustainability

## Introduction

Where do we get it all wrong with Environmental Education and awareness (hereafter, EE)? Lack of adaptive curricular design, inadequate immersion techniques, loss of quality playtime in wild nature and poor formal self-discovery skills may be partly to blame. Challenges for EE issues are at the forefront of developmental issues and ideas in the 21<sup>st</sup> Century [1-3]. Not much is known about deployment of EE in Zimbabwe. EE is often left to the backstage of other disciplines in the classroom. The rapidly changing demographics require a dedicated toolbox to every segment of the human population. The geography of the child and surrounds needs exploration and tapping into useful skills. EE, a vital component of efforts to solve environmental problems, must stay relevant to the needs and interests of the community and yet constantly adapt to the rapidly changing social and technological landscape [4]. Foremost are green issues and climate change, pollution and biodiversity depletion issues.

Concerned citizens try to grasp how human activities are harming the environment and develop solutions to mitigate these

effects; consequently, the need for EE education and increased environmental awareness is now more necessary than ever [5]. EE needs to be implemented continuously to meet the demographic pattern requirement of a rapidly changing population. To illustrate the organic connection EE with demographics of society aspects of pedagogy and andragogy may be inherently linked in a recipe for evolution and revolution of knowledge and skills development. Pedagogy refers to leading children in learning [6]. Pedagogy is the discipline that deals with the theory and practice of teaching and how these influence student teaching [7]. Pedagogy informs teacher actions, judgments, and teaching strategies by taking into consideration theories of learning, understandings of students and their needs, and the backgrounds and interests of individual students. Pedagogy also includes how the teacher interacts with students and the social and intellectual workers [8]. Learners in all age groups need to engage all six senses seeing, smelling, hearing, feeling and touching, and for the sixth sense reasoning.

On the other hand Andragogy is the theory and practice of education [9]. It arose from the practice of pedagogy to address

the specific needs in the education of adults as opposed to the education of children. Andragogy refers to a theory of adult learning that details some of the ways in which adults learn differently from children. Self-direction in learning appeared as another model to help distinguish adult learners from children. Adults may be empowered through participation at a variety of forums. Fast forward, Pedagogy is the discipline that deals with the theory and practice of teaching and how these influence student learning. Pedagogy includes how the teacher interacts with students and the social and intellect. The idea is to dissect environmental issues as proffered by Policy, Trends and thorny and current problems. Importantly, Pedagogy informs teacher actions, judgments, and teaching strategies by taking into consideration theories of learning, understandings of students and their needs, and the backgrounds and interests of individual students.

Questioning is a technique which is at the heart of teaching and learning; a key tool that is often used to create dialogue with students. Question needs to be able to establish some key information. Coaching in curriculum establishes strengths and weaknesses in learners of all age groups. Quizzes rely on closed questions because the answer has to be judged right or wrong. Closed questions are good for testing students' recall of key facts. When you ask questions in the classroom, you are modelling a process that students can and establish link. For example, do you want students to master *core* concepts? It may be that questioning and quiz establish direction of learning in a curriculum and discussions to facilitate learning. In focused groups in natural resource management questions and quiz and demonstration facilitate solutions to burning issues in the commons and managed landscapes. EE in wildlife conservation, a vital component of efforts to solve environmental problems, must stay relevant to the needs and interests of the community and yet constantly adapt to changing social and technological landscape

[10]. The issues and challenges regarding the implementation of EE policy as experienced by educators and teachers are identified through participatory discussions with stakeholders. There is growing recognition of the significance of learning within debates about sustainable development [11].

Educators should aim at taking students for field-trips to increase students' knowledge about environmental issues such as visiting disposal landfills, recycling centres, zoos, and environmental museums. The goal and purpose for most EE evaluation is to make judgments. Tasar suggest that EE should include Policy, Trends and Problems. The Future of Informal Conservation Learning Symposium," hot topics for discussion groups included "transforming zoo visitors into conservation advocates" and "building a conservation movement through visitor engagement" [12]. Conservation advocates appreciate and care for their environment. EE may be an opportunity to the world to maintain fitness by actively engaging all senses through walking, running, jumping, gliding, hiking, flying, driving, watching, sailing, fishing, diving, swimming and riding.

The EE in Zimbabwe should be carried to;

- The A1 and A2 farming local communities
- CAMPFIRE areas farming local communities
- Communal areas farming local communities
- Conservancies farming local communities

Where A1: Resettled farmers in style that lacks ownership to land title.

Where A2: Large scale farmers with title deeds.

Where Conservancies: Farming local communities with appropriate authority to land use.

**Table 1:** Formal education with conservation practice and adherence to Conservation.

Value	Communal Lands	A1 Farms	Conservancies	A2 Farms
Priorities	Low	Low	High	High
Planning	Low	Low	High	High
Implementation	Low	Low	High	High
Evaluation	Low	Low	High	High
Understanding	Low	Low	High	High
Perceptions	Low	Low	High	High
Conceptualization	Low	Low	High	High
Appreciation	Low	Low	High	High
Absorption	Low	Low	High	High
Maturity	High	High	High	High

Where Communal lands: resource poor small-scale farmers with no title deeds to land ownership lack appropriate authority to land use. Communal lands are governed by the Chiefs Act in allocation of resources. Not much benefit flows reach grassroots or

local communities. Table 1 shows formal education with varying levels of conservation practice and adherence to conservation measures in the various land categories. The mathematical machinery of fitting farmers into farming models follows

determination of agricultural systems of production, tenure, bequithment of farming inputs and desired level of farming output as set by Ministry of Lands, Agricultural Resettlement and Mechanisation. Table 2 shows conservation aptitudes by farmers in various land categories. Tables 1 & 2 show that highest level of conservation and EE should be targeted to farm dwellers with low scores and training. Biodiversity loss is proceeding at an unrelenting rate and there is a growing recognition that global efforts are simply not stemming the illegal killing and trading of threatened and highly valued species such as the elephant, rhinos, cheetah, leopard, pangolins and vultures. There are many reasons for this but perhaps the most important is the growing gap between the sophistication of those involved in the illegal capture and trade of wildlife, and the number, skill levels and motivation of the personnel committed to enforcing anti-poaching laws. To mitigate hunting pressure, many bushcamps have sprouted in wild and urban environments taunting environmental awareness for all. Summer vacations are utilised at the bushcamps for preschool

to primary school aged children. In addition, lectures addressing different biodiversity topics are conducted and walks in the natural environment are encouraged. Most bushcamps provide for lower grades to senior grades students with a life-changing, three-day ecology, and fishing and walking trail experience. The curricula follows that developed by environmental societies (e.g. Wildlife Society, Zambezi Society, Lowveld Natural History Society), botanical gardens and schools exploration programmes. The idea has been to have knock on effects materials using engaging, hands-on activities. The Rukomichi bushcamp in the Zambezi Valley and the Victoria Falls Natural History Course provides adults with stimulating lectures and field trips given by the experts. The plan has been to achieve holistic environmental learning and stewardship. *EE* may create opportunity to maintain fitness by actively engaging all six senses through walking, running, jumping, gliding, hiking, flying, driving, watching, sailing, fishing, diving, swimming and riding.

**Table 2:** Table showing conservation aptitude by farmers in various land categories.

Value	Communal Lands	A1 Farms	Conservancies	A2 Farms
Priorities	low	Low	High	High
Planning	low	Low	High	High
Implementation	low	Low	High	High
Evaluation	low	Low	High	High
Understanding	low	Low	High	High
Perceptions	low	Low	High	High
Conceptualization	low	Low	High	High
Appreciation	low	Low	High	High
Absorption	low	Low	High	High
Maturity	High	High	High	High

Children and adults need to connect with nature for their health. Many children spend time in towns on high streets and backstreet cinemas, video gaming shops and others surfing the internet of things. The sense of attachment with the natural environment has been diminished and lost. There is need to identify who we really are and the need to determine desirable level of quality of life. The Fukuoka EE centre on Kyushu Island in Japan crafted an interactive, immersive and experiential learning centre for its visitors. The audience visiting the centre is left in awe and enlightened at the end of the visit. The Fukuoka EE educational centre houses augmented reality multimedia environment crafted on the geography, hazards, sustainable living styles and citizen sensitivity to anything unsafe (courtesy JAICA study visit). Augmented digital reality built platform has the capability to offer all ages a menu of choices experiential learning material and play modes. It is the organic connection between humans and their biophysical environment in virtual interactive learning platforms.

The El Niño and La Niño oscillation systems due to global warming, ocean acidification, and locally generated floods and

droughts and severe heat waves, and air pollution are just a few of the issues that should concern all of local communities. Now, more than ever, EE should be a critical part of every child's education to survive the odds. Adults also need to be made aware of these issues and appropriate courses of action taken. Bacon and Ziepniewski suggest EE based on developed wild nature immersion courses. EE is designed to help bridge this gap and Bacon and Ziepniewski have plotted the pathway that should be adapted. Ewanrigg Botanical Garden provided an amazing platform to immerse oneself in Natural History with other like-minded people. It provided opportunities to experience arrangement of plants in nature along some controlling factors. It also provided opportunity to experience all the five senses that is smell, hear, touch, feel and taste and perhaps sixth sense reason, like why they may occur in some places and not in others. The fact that plants can have many uses such as industry, health, food, and fresh air, fragrances, furniture, construction materials and ecosystem health was awesome. As Bacon and Ziepniewski highlighted in a similar observation, it was one of those special moments in life from which you take away lasting, powerful messages that infuse

your subconscious and affect everything you do and the decisions you make. One of overwhelming passions these days is to ensure young can benefit from similar experiences, which in turn will help conserve and protect environment. Ewanrigg and Victoria Falls National Park did that for me! In a mission of environmental fulfilment Bacon and Ziepniewski (2017) provided a classical case. The idea has been to plan for total immersion with kids at Chirinda Rain Forest, Vumba Botanical garden, Zimbabwe Ruins, Mana Pools, and Victoria Falls among wilderness experiences and heritage sites. The students may be required to construct datasheets for collecting a variety of animals (insects, birds, beetles, worms) for schools learning expeditions.

Education at times contains variations (sociolinguistic or Labovian variation) and these variables must also be accounted for; in endeavour to give a perspective of a proper model of a statistical learning framework which explores variations that contribute to learnability, hence environmental education helps address these issues where by it does not only provide an aesthetic environment in which students (both children and adults) live in but also creates an educational environment that offers the opportunity to encourage social interaction, as well as promote teamwork and collaboration despite the learning variables (Table 3).

**Table 3:** An example of a dichotomous Key used in plants identification at Ewanrigg gardens.

Collector: ..... No: ..... Date: .....

Provisional Name: .....

Region:	Grid:		Alt:		ft/m				
GPS	S		E						
Locality									
Biome	Forest	Fynbos	Grassland	Nama Karoo	Savanna	Succulent Karoo	Thicket		
Vegetation type									
Habitat	mountain peak	mountain slope	hilltop	hill slope	ridge	cliff face	ravine/kloof/gorge		
	talus/scree	plateau	valley	floodplain	waterfall	river/stream bank	river/stream		
	dry streambed	donga/gulley/ditch	pan	depression	marsh	swamp	wetland		
	seepage	dune (desert)	dune (coastal)	estuary	littoral	lagoon	sea		
	lake	dam	pond	plain	other:				
Substrate	soil	stony soil	rocky soil	gravel	bare rock	in water	termite mound		
	bark	leaf	leaf litter	roots	other:				
Moisture regime	well-drained	seasonally waterlogged		free standing water		tidal	mist/fog		
	moist/damp	permanently waterlogged		running water		other:			
Soil type	gravel	sand	loam	black turf	humus	clay	salt/brack	baserock	
Lithology	sandstone	shale	granite	quartzite	calcrete	dolomite	dolerite		
Exposure	shade	partial shade		full sun		Slope	none	gentle	
Aspect	N	S	W	E	NE	NW	SE	SW	
	abandoned land		cultivated land		pasture		recently burned	garden	roadside
Biotic effect	plantation		grazed		disturbed		none seen	other:	
Life form	tree	shrub	dwarf shrub	herb	graminoid	geophyte	epiphyte		
	climber	parasite	succulent	hydrophyte	bryophyte	lichen	scrambler		
	saprophyte	lithophyte	other:						

Plant features (underground parts, bark, leaves, flowers, fruit, seeds, aroma)

Flowers: present	absent	Fruit: present	absent	Plant height:	m
Notes (local abundance, phenology, pollinators, herbivory, economic & ethnobotanical factors, voucher specimen)					

Voucher: photo	ecology	cytology	anatomy	seed	spirit
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Plant name: .....

Genspec: ..... / ..... Det: ..... Date: ..... No. of labels: .....



A simple dichotomous key can enhance capacity of learnability, as a tool, it requires team work thereby creates an educational environment as well as improve social interactions despite the Labovian or interlocutors' variables. It is a tool that can bridge the gap between adult education and children education. Classroom instruction linked to the curricula is still needed, but it has been learnt that altering modes of instruction can make a big difference in its effectiveness. Bushcamp educators have witnessed how using charismatic animals such as cheetah, lion, leopard, pangolins and owls to demonstrate topics such as adaptations, deforestation or pollution effects can help children care and make the topic come to life. However, adults need to be empowered through adult education and participation as well. It would be folly to concentrate on Ewanrigg, Zimbabwe Ruins and Victoria Falls children's education only; there must be deliberate efforts to reach out to the adults in the community. The Victoria Falls Natural History Course may be outstanding but should be changed from a week to several days. The course features evening lectures by local gurus or experts with week-end field trips. The lecturers discuss Victoria Falls wildlife, geology, soils, vegetation, biodiversity, water pollution, the impact of man and natural disasters on the land, and more.

Teachers of biology, geology, and social sciences who complete course modules receive professional development certificates. At the end of the learning tours, reports on activities should be compiled into expedition booklets and given to museums and schools as memoirs available for other researches. Victoria Falls residents are also encouraged to participate in horse riding, bungee-jumping and crocodile feeding, and the citizen scientific programmes. These programmes train people to conduct surveys in ecology, restoration ecology, taxonomy, and zoology annually. Additionally, identifying species, illustrating food webs in various ecosystems and fish numbers also taking 'snapshots' of the health of the aquatic ecosystem. The outdoor programme actively engages the public in helping to collect useful scientific data for scientists, and it empowers them to feel that their efforts can help protect and preserve our aquatic ecosystems by being able to warn researchers of endangered species. Online learning may be enhanced by augmented reality media to capture interests of remote dwellers.

Simulated games should solve environmental problems, must stay relevant to the needs and interests of the community and yet constantly adapt to the rapidly changing social and technological landscape. Role of bird flyways in conservation of migratory species (CMS) e.g. many long-distance African-Eurasian migrant land birds, fish, shark, whales, dolphins and migratory birds e.g. stork, swallows among others through hazardous terrain dominated by windmills, commercial farms and airfields. Role playing of evasion of biohazards. The focal species are those which are principally ecologically dependent on terrestrial habitats and for which the entire population or significant proportions of the population, cyclically and predictably cross one or more national jurisdictional boundaries.

The task should be to provide vehicle for exchange of information on migrant landbirds and their biology. In regions with significant biohazards wildlife road viaducts, wildlife overpasses viaducts or wildlife underpasses viaducts may be considered for the safety of wildlife species. Connectivity in areas with significant biohazards may be important for small and larger species such as bats, migratory birds, antelopes, elephant, zebra, lion, cheetah, leopard and elephant among others. Students may identify suitable wildlife corridors associated with roads, construction sites, mining projects, hydropower projects and farming activities. Wildlife corridors constituting biohazards in nature conservation have been presented by Quintero. Projects involving mining, roads, hydroelectric and dams invoke environmental management standards, Life Cycle Analysis (LCA) and understanding of biohazards and their avoidance in nature. The solutions to development pressures must be customized for each region thereby invoking stakeholder awareness and EE.

From a variety of angles learners attack development and environmental questions. Open-span bridges and bridge extensions are the form of smart infrastructure recommended for mitigating road impacts to leopard, lion, and cheetah and should also work for other species, including prey and other large mammals such as elephants. Impacts from mining can result from any activity that involves land clearance (e.g. access road construction, exploration drilling, overburden stripping or tailings impoundment construction) or direct discharges to water bodies (e.g. riverine tailings disposal, tailings impoundment releases, or unintended acid rock drainage), land (e.g. overburden dumping) and air (e.g. dust or smelter emissions). In addition, to huge social impacts, large dams directly impact rivers in a variety of physical and biological ways. The most significant is the alteration of a river's flow, which affects downstream ecosystems and the landscape through which the river flows. Riverbeds downstream of dams are typically eroded by several meters within the decade of first closing a dam; the damage can extend for tens or even hundreds of kilometres below a dam. During the flooding phase large tracts of forest are impacted directly and major cheetah habitats could be lost irreversibly. It is essential that the practical realities are factored into the design of mitigation hierarchy measures, into the allocation of responsibilities for implementing these measures and into construction supervision to ensure that adequate protection is afforded to vulnerable species and affected stakeholders. Mining is almost everywhere in Zimbabwe and EE ensures it takes place with minimal environmental damage and alterations.

Without EE the Minamata disease caused by indiscriminate Mercury waste dumping at Minamata Bay in Japan could repeat itself. In the period of rapid economic growth after World War II, environmental policies were downplayed by the government and industrial corporations; as a result, environmental pollution was widespread in the 1950s and 1960s (Japan country profile in Google, 2018) [2]. Responding to rising concern about the problem, the government introduced several environmental protection laws in 1970 ((Japan country profile in Google, 2018)

[2]. There are many other learning curves from neglect of EE to stakeholders especially regarding chemical industries, biohazard transportation, nuclear facilities, and mining and construction companies around the world. The duty of care and precautionary principles are paramount in development projects and EE.

Social dilemmas occur when incentives for individuals are misaligned with group interests. According to the 'tragedy of the commons', these misalignments can lead to overexploitation and collapse of public resources. The resulting behaviours can be analysed with the tools of game theory. Here, To-Ma-To Haka repertoire fulfils the gap in protection of natural resources. Gareth Hardin in the "Tragedy of the Commons" contextualised "that which is common to all is prone to abuse" given their open access nature, wildlife resources are bound to suffer over-exploitation. The underlying reason of the tragedy is best summed up in the conservative dictum "everybody's good is nobody's property". To avoid the "tragedy of the commons" improvements in EE group directed learning toolkits and information from new technologies are enlisted. HAKA a child brain of New Zealand most successful All Blacks Rugby team has potential to reverse the losses in rhino, elephant, tiger and lion among a few species. The To- Ma- To- HAKA is a pre-cursor to successful game development in Rugby that raises the bar in emotions, captivating zeal, personal and team ego in sport development to stratospheric levels in competitive sport. HAKA invokes a high degree of patriotism and discipline in law enforcement and should be a game changer in the protection of all things. What alternative paradigms are available to comprehensively protect wildlife? The HAKA embellishes wildlife policing. The HAKA postures reciprocal interest, martial warning signals and simplicity across wide sections of stakeholders. The HAKA lesson invokes interest and strengthens the view that soft approaches in nature protection are still limitless and inexhaustible.

Indicative evidence of philosophy of learning dwells on three pillars of knowledge in environmental science models:

- a) Bio centrism considers greater rights to the components of the environment;
- b) Anthro centrist considers greater rights extended to human beings than the biophysical environment;
- c) Eco centrism considers greater rights to the biophysical environment.

Outdoor learning-self-discoveries focus on:

Businesses operating in protected areas and immediate outside environs (e.g. small-scale miners)

What are they expected to know?

- a) The rules and regulations
- b) The environmental hazards
- c) The importance of biodiversity as a renewable resource
- d) Issues related to climate change

Areas important in future learning models may be summarised as:

- a) E learning
- b) Classroom indoctrination
- c) Self-discovery
- d) Group learning
- e) Peer learning
- f) Activity learning
- g) Problem solving

There is need to increase students' knowledge about environmental issues such as visiting green businesses and industries, recycling centres, zoos, wildlife orphanages, and environmental museums and participating in solving burning and current environmental problems. The goal and purpose for most EE evaluation is to make judgments on current hot topics such as CITES debates on 3 appendices about uplistings and downlistings. Debates on suitable wildlife corridors in built up areas such as Kariba town and Victoria Falls town at edges of protected areas.

Debates on methods of greater funding for nature conservation should not be left to the domain of experts only. For decades, biodiversity conservation has relied on 'conventional' sources of funding, largely governments, NGOs and private philanthropy. But reversing biodiversity loss cannot be done by governments and NGOs alone, it is clear there is need to broaden the base of support. Who should pay for conservation? The Challenges Facing EE in Transboundary Conservation areas may be eclipsed by administrative nodes sharing experiences in EE. Disjunction of learning experiences may delay speed of implementing desirable goals. Complexity management may be an issue in EE due to layers of overarching issues in land management. Like in the GLTFCA Transfrontier Projects such as GLTFCA cover the following:

- a) Conservation of wildlife in general and particular
- b) Laws governing the Parks and Wildlife (Parks Act & Regulations)
- c) Benefit sharing
- d) Human wildlife conflicts
- e) Possible wildlife related projects e.g. fish farming, crocodile farming, ostrich farming
- f) Formulation of wildlife related clubs
- g) Formation of conservation committees
- h) Wildlife related competitions and quiz

## Objectives of EE Units

- a. To increase public awareness and support on wildlife conservation efforts and the environment in general for socio-economic development and ecological integrity.

- b. To provide technical advice and assistance to maintain biodiversity and sound wildlife management and conservation practices.
- c. To generate scientific information for decision making, monitoring and evaluation.
- d. To promote sustainable utilization of wildlife and forest product by stakeholders
- e. To provide momentum to the planning, development and implementation of extension and interpretation programmes.
- f. To promote and increase the level of interpretation, liaison and community participation in wildlife conservation programmes/projects.
- g. To motivate staff to achieve targeted goals through capacity building.

The monitoring of the successes/failures of EE need to be recorded by keeping records of scores. This aspect has been neglected in the past and it makes it difficult to measure impact of EE. Ideally the following metrics are required: Records and metrics help to strengthen belief systems, value judgements and abilities to combat threats. EE helps track environmental performances improvement index.

## EE Metrics

- a) Frame scorecards
- b) Frame test results
- c) Frame quiz scores
- d) Number of frame green champions
- e) Frame inspection rankings of performance scores
- f) Number of legal transgressions
- g) Number of arrests
- h) Reports
- i) Self-reports
- j) Number of warnings served
- k) Number of seizures
- l) Number of suspensions
- m) Number of annual events e.g. shows
- n) Incomes

## EE Cycle Performances

- a) Continuous improvements
- b) Frame business charters
- c) Frame mission statements
- d) Frame reports

## EE Fares

- a) Teams
- b) Clubs
- c) Promotions
- d) Art exhibitions
- e) Poetry competitions
- f) Music and dance grand slams

## Transfrontier Conservation Areas (TFCA's)

Transfrontier Conservation Areas (TFCAs) such as the Gaza Limpopo TFCA and KAZA TFCA: Kavango, Zambwzi, Angola, Namibia, Zambia, Botswana and Zambia seek to guarantee a secure stable rural lifestyle through achievements in EE. The key task of the EE Unit is to propagate the ecosystem benefits of TFCAs to the local communities and give direction to its implementation. Local communities are very much interested in ecosystem benefit flows here and now to reap economic opportunities presented by ecotourism, bio stocks and bio trade in the TFCAs as a means of survival, resilience and response against El Nino and La Nina shocks. Sustainable livelihoods are best spearheaded by EE and its compass to override climatic perturbations.

## Final Word

In the foregoing, EE should develop concepts, protocols, models, international scholarship, wildlife research and environmental awareness approaches. The first essential, toolkit to protecting the environment is EE and others follow as accompaniments such as mitigations to industrial use and resilience to ecosystems. Human wildlife conflict is a major and escalating challenge in most areas adjacent to protected areas and requires well-reasoned mitigations. Lessons in environmental management should be drawn from monitoring regular reports, annual reports, audits, field visits, discussion dialogue reports, and annual stakeholder review.

## Conclusion

Human well-being is tied to ecosystem health and environmental health. Individuals may come to recognise the benefits of conservation and preservation and become strong advocates and activists of sustainable development. Global citizens with sound environmental consciousness and environmental responsibility have a responsibility for environmental health for the fragile environment. Highest level of conservation and EE should be targeted to farm dwellers with low scores and training. The role and responsibility of EE may be limitless and profound in environmental protection. Data gaps may be plugged by collating Environmental education metrics in near fields' real time of internet. EE may be an opportunity to the world to maintain fitness by actively engaging all the six senses through walking, running, jumping, gliding, hiking, digging, tracking, trapping flying, driving, watching, sailing, fishing, diving, swimming and riding.



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