

## Work Integrated Learning: Final Project Report

Baseline study on environmental awareness of junior primary school learners in the Kavango East, Kavango West and Zambezi Regions, Namibia.



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## **Abstract**

Education for sustainable development (ESD) is one of the most efficient methods of implementing sustainable development principles, as it enables all people to constructively and creatively address current and future international developmental challenges. It is therefore important to implement this principle in early education to set a foundation right from the beginning. Such as ways in which sustainable development can be achieved begins with raising environmental awareness. Thus, this study aimed at evaluating the level of environmental awareness of junior primary school learners in the Kavango East, Kavango West and Zambezi Regions. The study focused on the learners' awareness level, knowledge, attitude, skills and to see if there is an influence from the *Its Time to Grow* Environmental learning pack. A total of 19 schools were visited. The data was collected using a multimethodology approach, which included the use of more than one data gathering technique which were focus group approach and group interviews. The data gathered was then entered into an excel spread sheet and coded using the SPSS. The data was further analysed using the Chi square test to find out whether or not there is an association between teachers training and the learners level of environmental awareness .As the result show a high number of learners being aware to those that are unaware this can therefore for be concluded that the learners are environmentally aware and they have been equipped with the knowledge to understand their surroundings. Hence show a positive attitude towards the environment.

## **1. Introduction**

In 1987, the World Commission on Environment and Development (WCED) defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their needs” (1987, p.87). Unlike the idea of human development as mainly about economic growth that disregards or reduces social and environmental sizes - sustainability is a holistic concept that considers social, economic, political, and natural dimensions. In particular, sustainability recognizes that there are ecological boundaries to growth and that these have been overreached (Nasibulina, 2017)). While no one knows what living sustainably might look like, it is clearly recognized that it is everyone’s business and that education has an important role in its achievement. According to (Nasibulina, 2017), education for sustainable development (ESD) is one of the most efficient methods of implementing sustainable development principles. ESD is about enabling all people to constructively and creatively address current and future international challenges and thereby create more sustainable and resilient societies. The method is not constrained by way of age; youth and adults alike can participate, and it must be mainstreamed in all levels of and education (Araja & Aizsila, 2010).

ESD has its origins in environmental education (EE). The 1977 Tbilisi Declaration measured the first real expression of the key role of EE with its call for environmentally-educated teachers to be the ‘priority of priorities’ (United Nations Educational Scientific and Cultural Organization, UNESCO, 1990). Since then, practitioners have worked to recognize what EE is, and how it can be effective in moving societies to more environmentally-focused habits of living. Although similar to ESD, Environmental Education tend to create an environmental caution world where humans develop decision making and problem-solving skills. This allows them to take actions and grow to be responsible citizens, (Araja & Aizsila, 2010). The natural environment supports all biotic and abiotic factors on Earth. Humans have the ability to manipulate all biotic organisms and their functions in the environment. However, by changing the natural surroundings, they are the ones who are immediately affected. Most environmental challenges are in general triggered by the lack of education, awareness or training that is why there are issues such as waste and water scarcity because of excessive demand and misuse( Endjala, 2019). Therefore, education which is one of the most important drivers can be a response to most environmental challenges.

## **2. Literature review**

Early childhood education for sustainability (ECEfS) is a combination of education for sustainability and early childhood education (ECE), a unique field that is now rapidly developing (Davis, 2010). Additionally, educational sectors, for example primary and secondary schools, have a much longer history of engagement and research in EE/ESD development. According to (Davis, 2010), “an international movement in (ECEfS) has begun with leadership provided by the international early childhood professional association, the World Organization for Early Childhood Education (OMEP), and reinforced with the release of the 2008 Guttenberg Recommendations on Education for Sustainable Development”. This document states that “early childhood is a natural starting point for ESD in order to promote educational access for all people within a process of lifelong development” (p. 36).

According to (Otto & Pensini, 2017), in the setting of higher education, over 100 universities have signed international declarations and have dedicated to implant sustainability within their operations, outreach, education and research”. However, despite the declaration of good intentions and policy developments at the national, regional and international level, little has been accomplished in terms of embedding ESD holistically into the curriculum. To date, a number of studies have focused on the perceptions and views of university students in relative to sustainable development knowledge, skills and competencies; however, few studies have focused on learners-teachers’ perceptions of ESD. It is imperative that ECE is recognized as the starting point for lifelong learning within education for sustainability. There are still a large proportion of children who do not have access to ECE. As ECE offers such a valuable starting point for ECEfS, it is therefore of the highest importance that access to all ECE services are permitted for all children (Bailey & Marsden, 2017).

### 3. It's Time to Grow Project History

The Namib Desert Environmental Education Trust (NaDEET) is a vibrant non-profit organization whose mission is to protect the Namibian natural environment by educating citizens to practice a sustainable lifestyle. Established in 2003, NaDEET believes in increasing an ecologically friendly attitude and practical skills in Namibian people and educators in order to encourage involvement in environmental protection (Endjala, 2019). One of NaDEET's projects is the Environmental Literacy. This project is aimed at promoting and encouraging environmental learning and literacy. This is executed through the production of a variety of environmental learning materials such as; *It's Time to* series and the *Bush Telegraph* among others. One of the booklets under the *It's Time to* series is *–It's Time to Grow*, an environmental learning pack written for children in early childhood learning or just entering primary school level. This was aimed at teaching them about the environment at a very young age (Endjala, 2019).

In the first phase of the project in 2017, sixty teachers nationwide participated in the training workshop, during this time they managed to translate the book in to three languages which were oshindonga, Otjiherero and Khoekhoegowab. In 2019, the learning pack was further translated into two local languages (Rukwangali and Silozi) in the second phase, this was done through multi-day workshops where participants were introduced to the practical application of sustainability at NaDEET Centre. They covered topics such as waste management, water saving methods and sustainable energy. The learning pack helps young children to gain knowledge about numbers, shapes and colours in the lower fundamental curriculum with environmental matters. *It's Time to Grow* helps reach this goal using mother tongues (Endjala, 2019). The environmental learning pack comes with games and puzzles which the young children can do while learning at the same time. The use of home languages has previously been advocated in highly multilingual UK classrooms (Hens et al, 2010). However, drawing on the home languages and cultural insight of children who use English as an Additional Language (EAL) may also have important social and academic benefits in contexts where monolingualism is the norm (Berninger, Abbott, Nagy & Carlisle, 2010). The Environmental learning pack comprises four booklets covering themes of *Water, Sun, animal & Plants and Recycling* to ensure that teachers and learners incorporate these themes in teaching and learning, thus enabling learners to practice sustainability at a young age

Although the first phase of the project translation was seen as a success, there was no monitoring and evaluation in place to evaluate the implementation of learning pack and what influence it had on the learners. Therefore, in the second phase of translations in 2020, a monitoring and evaluation plan was put in place to evaluate the impact of *Its Time to Grow* Rukwangali and Silozi. About 29 schools whose teachers participated in the training and received the learning materials but only fifteen schools were surveyed. A total of 10 schools whose teachers did not participate in the training but have received the learning pack only 4 were surveyed and used as a control group. This research focused on establishing a baseline to evaluate the general level of environmental awareness of junior primary school learners in Northeast Regions and the impact that the teachers' training made in EE/ESD.

#### **4.1 Significance of the study**

The study aimed at evaluating the level of environmental awareness of junior primary school learners in the North-eastern Regions and the impact of the teachers' training. This will allow NaDEET to make informed decisions as to whether there is a need for a teachers' training in EE/ESD before the distribution of learning packs to schools or not. This study will provide information that will help to assess if the teachers that participated in the training are able to apply the knowledge they have acquired, in their teaching. Additionally, results from this study will provide a better understanding of the learners' level of environmental awareness, regardless if their teachers had training or not.

### **4. Aim and Objectives**

#### **5.1 Aim**

The project aimed to evaluate the level of environmental awareness in junior primary school learners in the Kavango East, Kavango West and Zambezi Regions.

#### **5.2 Objectives**

In order to achieve the above aim, the following objectives were formulated:

- To assess the level of environmental awareness and knowledge of learners in junior primary.
- To compare the practical implementation in environmental awareness activities between EE/ESD trained teachers and untrained teachers learners.

- To determine the variation in the level of environmental awareness among rural and urban learners, and
- To determine what influence (if any) NaDEET's *It's Time To Grow* Environmental Learning Pack has on lower primary school learners.

Research Question: Does the EE/ESD teacher training at NaDEET Centre improve the level of environmental awareness of junior primary school learners?

### **5.3 Hypothesis**

H<sub>0</sub>: EE/ESD teachers' training has no influence on the level of environmental awareness of junior primary school learners.

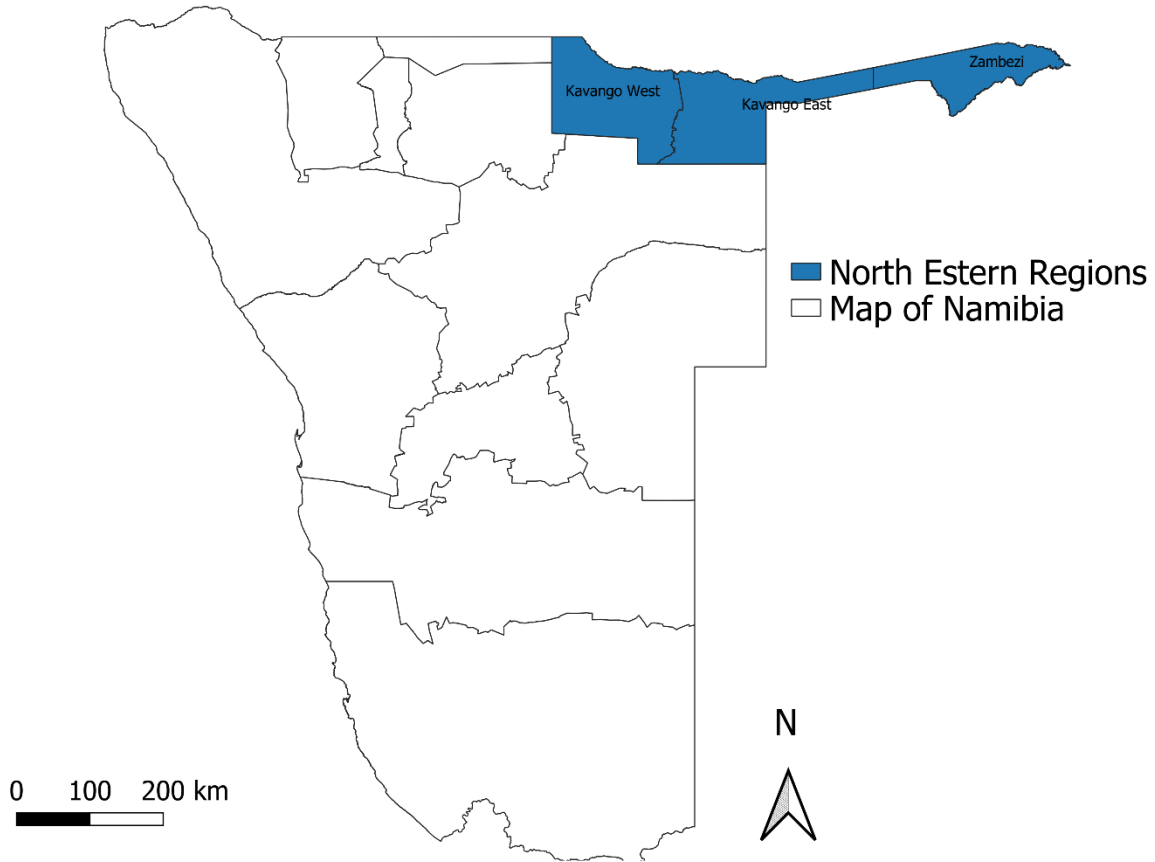
H<sub>A</sub>: EE/ESD teachers' training has an influence on the level of environmental awareness of junior primary school learners.

## **5. Study Site**

NaDEET Centre on NamibRand Nature Reserve was the initial site where the learning pack translations were conducted in 2019. The *It's Time to Grow* Environmental learning pack has since been developed, printed and distributed to participating teachers in the project, as well as 10 additional schools whose teachers did not participate in the training, to serve as a control group. The participating teachers were from the Kavango East, Kavango West, Zambezi and Erongo Regions.

The research was carried out in the Kavango West, Kavango East and Zambezi Regions. Initially a total of 29 schools participated, however only fifteen were visited and are part of the study, 7 from both Kavango West and East and 8 from Zambezi. Furthermore, Of the 10 control group schools, only 4 were visited in the study. Of which one from Kavango east and one Kavango west and 2 from Zambezi. Only a total of 19 schools in total could be visited due to time constraints and distance between schools.





*Figure 1: Map of the study area*

## **6. Methods and Materials**

### **7.1 Methods**

The data was collected using multimethodology; a focus group and group interviews approach with the learners. A focus group is a data gathering technique used to collect mainly qualitative data. Qualitative data is a scientific method of observation to gather non-numerical data (Parshal, 2000). During a focus group, the participants took control of the discussion process, Therefore, moving the conversation to topics that are of relevance on the other hand group interview is a screening process where the interviewer tents to multiple candidates at the same time this was also used. Burnard et al., (2008) the group interviews tend to show candidates to choose to stand out from each other, furthermore. How well candidates function in a group of people they do not know and to observe if candidates show team work attributes that the interviewer needs Parshal et al, (2000) .

These methods were appropriate for this specific study because, studies have shown that when working with children, it is better to work in a group rather than one on one with them, so they feel comfortable making it easier for them to express themselves Burnard, Gill & Stewart, (2008). This method is used because it can draw upon respondents' attitudes, feelings, beliefs, experiences and reactions in a way where other methods are not applicable. The learners were selected in two phases, a pre-selection and a post-selection. During the pre-selection, the teacher had to select a group of 20 learners of which ten are boys and ten are girls. From the group of 20 learners, the researcher made a final selection by randomly selecting only 12 learners (post-selection) to avoid bias. At some schools, the researcher had to randomly select learners from the classroom as the teachers have not selected the learners themselves as requested. This allowed a certain level of random sampling as the teacher might have selected only the best performing learners. Random sampling is a method of choosing individuals giving each one equal chance to be selected (Parshal et al., 2000). . A comfortable place was organized (Even under a tree) and the group of learners were interviewed as a group, in their indigenous language, as this is their medium of instruction. In both Kavango East and Kavango West there was no translator used as the researcher speaks Rukwangali. In the Zambezi Region for Silozi a translator was used.

During the interviews, the learners were seated in a way that they can see each other and were able to discuss. The boys on one side and girls on another side, so it's easier to see who is responding to a particular question. The questionnaire had close-ended questions where the learners had options to choose, and open ended questions where the learners had to discuss with one another. For the close-ended questions, each learner had an option to choose while for the open ended questions the responses were representing the group as a whole. Meaning one individual respond represented the whole group.

Detailed notes were taken, at the same time; a tape recorder was used to record every interview so as not to miss any vital feedback from participants. Furthermore, as there was not always enough time to take notes during the interviews, this helps the researcher go back to the recordings if anything was missed.

In the Kavango Regions (Rukwangali), nine schools were visited whereas 10 schools were visited in the Zambezi Region (Silozi). Of the 19 schools are control groups. The control groups are used

because these are the untrained schools. So in order to compare trained to untrained the study looked at both trained and untrained.

## **7.2 Materials**

- A tape recorder
- GPS (a mobile phone was used to locate the schools, using Google map)
- A translator (for Silozi)
- *It's Time to Grow* Environmental learning pack (books) in the different languages (Rukwangali and Silozi)
- Camera

## **Data Analysis**

The data obtained was coded and analysed using the inductive approach which involved analysing data with little or no predetermined theory, structure or framework and uses the actual data itself to derive the structure of analysis. This approach is comprehensive and therefore time-consuming and is most suitable where little or nothing is known about the study phenomenon. The method of analysis described in this report is that of thematic content analysis which involves analysing transcripts, identifying themes within those data and gathering together examples of those themes from the text (Burnard, Gill & Stewart, 2008).

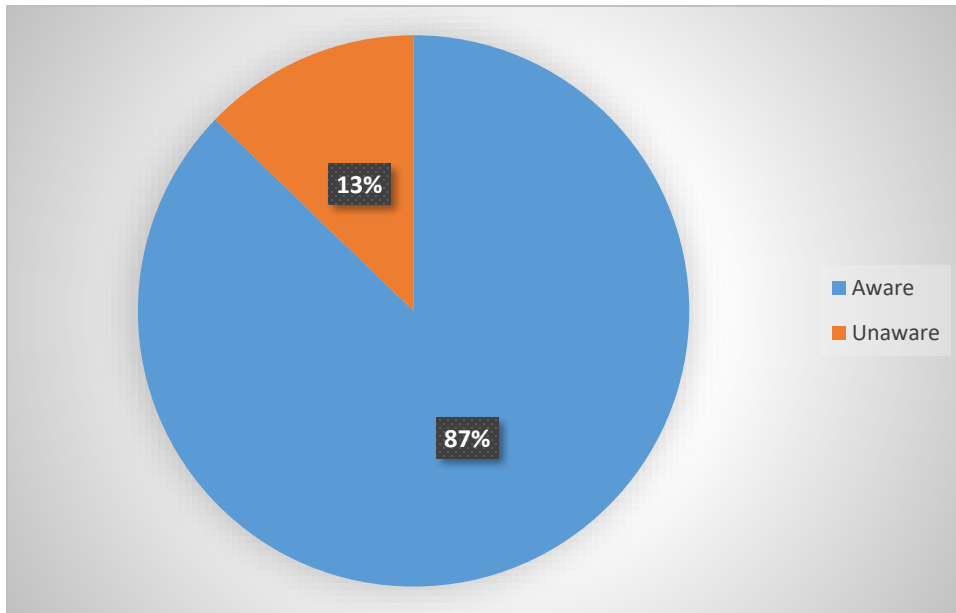
The data obtained was recorded into a Microsoft Excel spreadsheet, and divided into different themes: awareness, knowledge, skills, attitude and *Its Time to Grow* as in accordance with the questionnaire. The data was further analysed using the Chi square test to find out whether or not there is an association between teachers training and the learners level of environmental awareness. The data is presented in statistical graphs (Bar graphs and Pie charts).

## **7. Results**

7.1 To assess the level of environmental awareness and knowledge of learners in junior primary, the learners were assessed on awareness, knowledge, skills and attitude towards the environment.

## Awareness

Figure 2: shows the proportion in terms of the learners being environmentally aware or unaware of the importance of flora. The figure shows that a total of 87% are aware while 13% are unaware.



*Figure 2: Awareness on flora, 219*

Figure 3: Shows the proportion in terms of awareness regarding hygienic. As shown by the Figure 97% of the learners are aware and 3% are unaware.

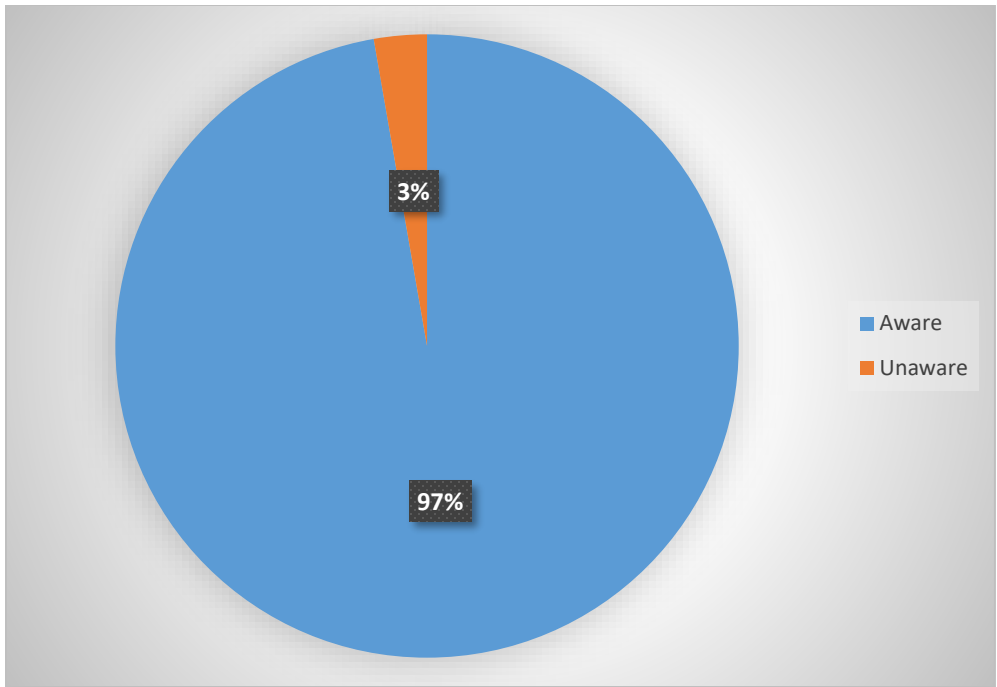


Figure 3: Awareness on hygiene, 219

Figure 4: Show the proportion in terms of awareness regarding water wasting, As the figure shows a total of 76% of the learners are aware while 24% are unaware regarding water wasting.

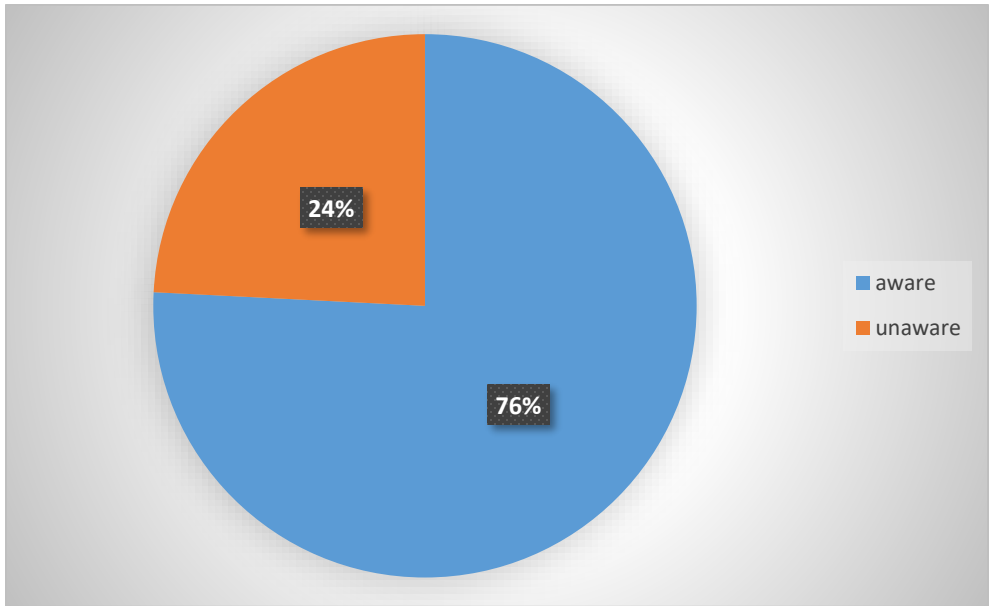
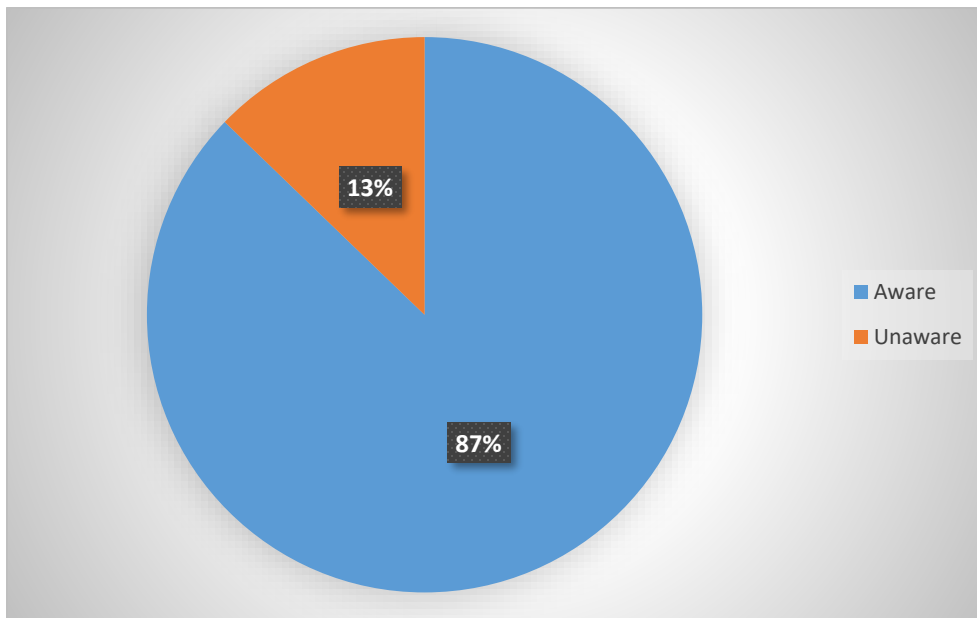


Figure 4: awareness regarding water wasting, n 219

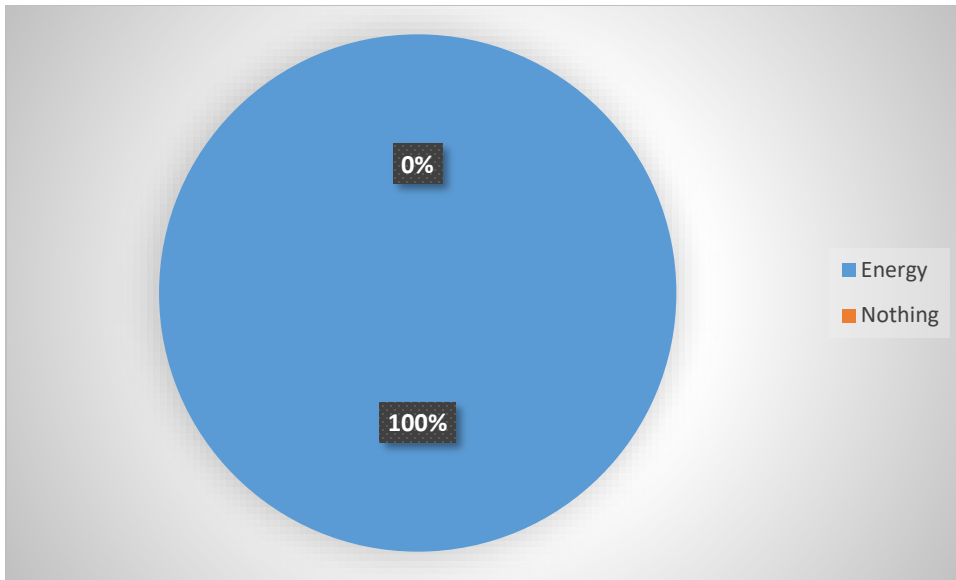
## Knowledge

Figure 5: Shows the proportion of the learners in terms of their knowledge regarding water wasting and the figure show that 87% of the learners are aware while 13% are unaware.



*Figure 5: Knowledge regarding water wasting, n 219*

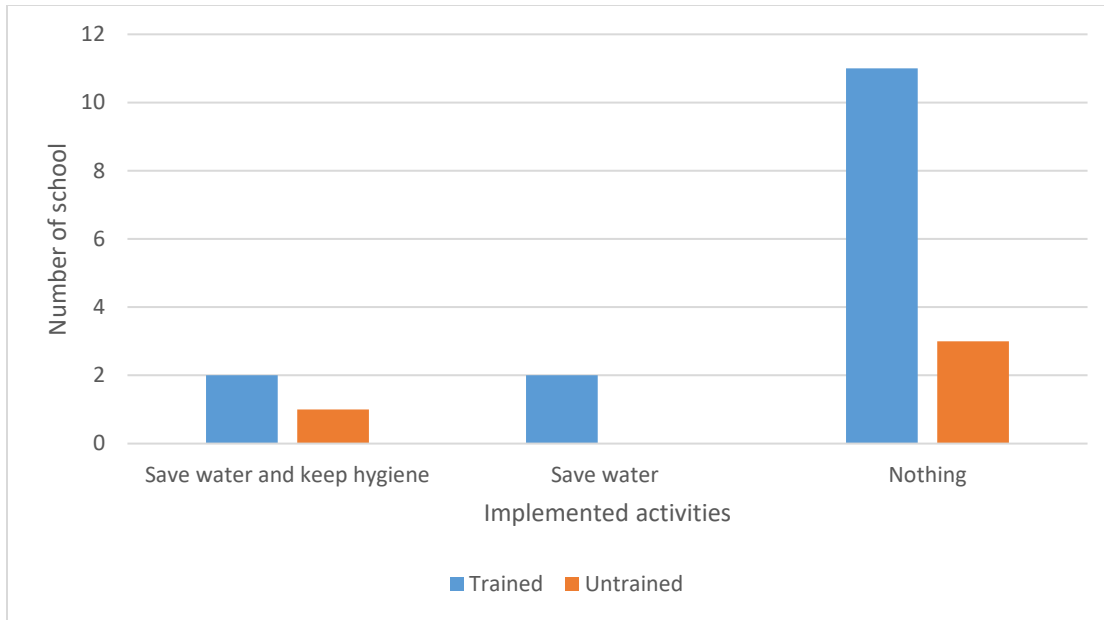
Figure 6: show the learner's knowledge in regards to energy, a question was asked "what do we get from the sun?'. A total of 100% respond ended energy while 0% of them said nothing.



*Figure 6: Knowledge on energy, n 219*

7.2 To compare the practical implementation in environmental awareness activities between EE/ESD trained teachers and untrained teachers learners

Figure 7: shows what schools use to mitigate water wasting and keep hygiene between trained and untrained teachers learners and the figure show that most schools do nothing to mitigate water and hygienic. And only few schools have implemented some activities.

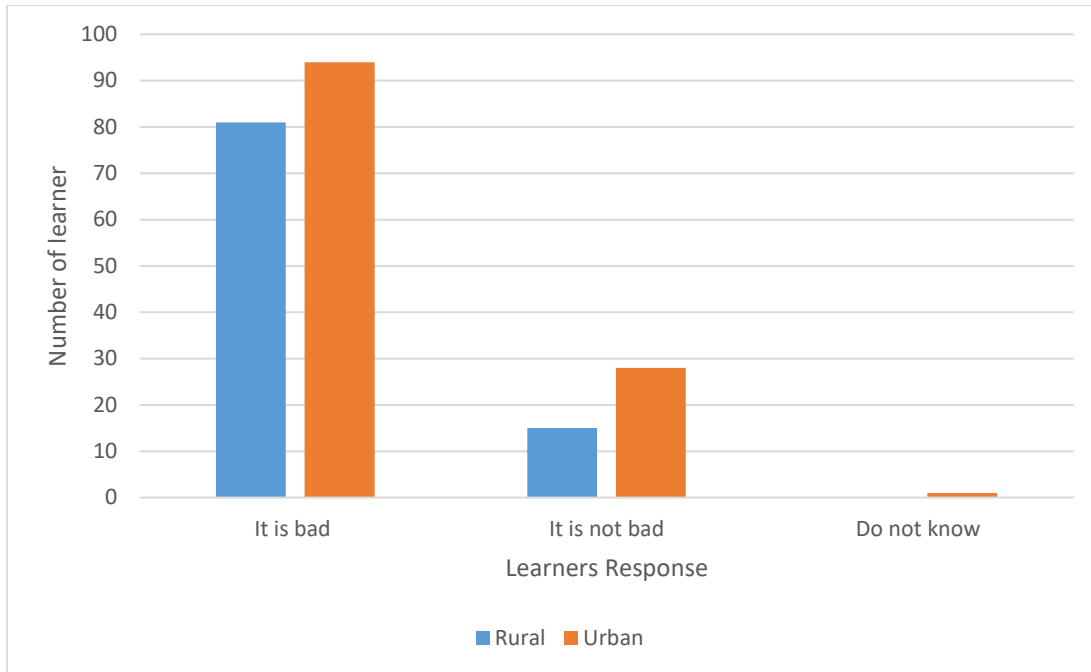


*Figure 7: What schools have implemented to mitigate water wasting and keep hygiene, n 19*

**7.3** To determine the variation in the level of environmental awareness among rural and urban learners

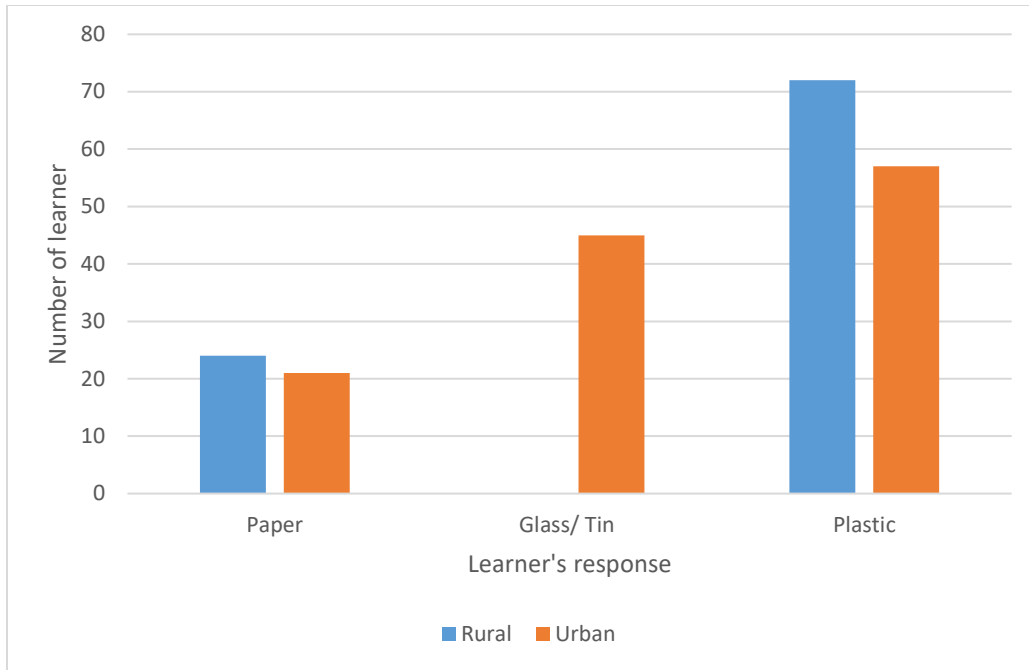
Figure 8: shows the difference between rural and urban learners in terms of their awareness on flora. The figure shows that most rural and urban learners are aware that using fire wood is bad for the environment.as the figure shows a high number of learners responded it is bad when asked if using firewood was bad for the environment.





*Figure 8: Awareness on flora (Do you think using firewood is bad for the environment?), n 219.*

Figure 9: shows what rural and urban learners reuse at home and school , the figure shows that a high number of rural learners using plastic compared to urban learners and more urban learners use glass/tin while none of the rural learners use glass and tins. And there's a high number of rural learners who use paper compared to urban learners.



*Figure 9: What learners Reuse at home and School, n 219.*

7.4 To determine what influence (if any) NaDEET's *It's Time To Grow* Environmental Learning Pack has on lower primary school learners.

Figure 10: shows the book usage of by the learners, the figure shows that about 68% of the schools have not used the books and only 32% have used the books.

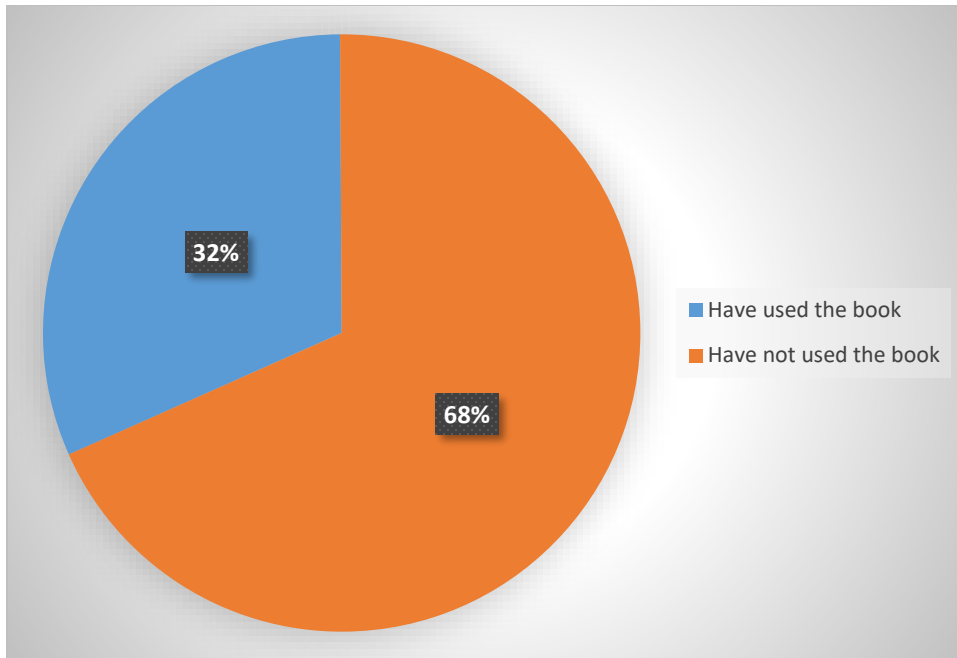


Figure 10: Book usage, n 19.

### Chi-Square Tests

|                                 | Value               | df | Asymp. Sig.<br>(2-sided) |
|---------------------------------|---------------------|----|--------------------------|
| Pearson Chi-Square              | 93.288 <sup>a</sup> | 9  | .000                     |
| Likelihood Ratio                | 98.202              | 9  | .000                     |
| Linear-by-Linear<br>Association | 17.343              | 1  | .000                     |
| N of Valid Cases                | 219                 |    |                          |

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is 1.26.

The Chi-square tests shows a statistically significant association between ESD trained teachers learners. On the various strategies they use to mitigate water wastage at their school. (Chi square)

$\chi^2(9) = 93.288a$ ,  $p < 0.05$ . Therefore. The null hypothesis is rejected as the the Sig is less than the Alpha 0.05.

## **8. Discussion**

**8.1 To assess the level of environmental awareness and knowledge of learners in junior primary, the learners were assessed on awareness, knowledge, skills and attitude towards the environment.**

### **Awareness**

This study contributes to understanding the role of environmental education in promoting an ecological lifestyle. As many organization in Namibia are engaging on the promotion of environmental knowledge about flora, fauna, and the ecosystem, through real contact with nature. As shown by Figure 2 the awareness of the learners on the importance of flora. t The figure 2 shows the proportion of aware and unaware learners that 87% of the learners are aware while only 13% are unaware. These result shows that the learners are environmental aware regarding the importance of flora. This indicates that teachers and parents who play a role in this young individuals lives have equipped them with the necessary information to help them understand their surrounding environment and the importance of plants as primary producers to living organisms.

The health of the children matters as they are prone to different infections and they need to be kept well informed on the importance of being hygienic in order to mitigate the contraction of disease. Figure 3 shows the proportion in terms of awareness regarding hygiene. As shown by the figure 97% of the learners are aware and 3% unaware this indicates that most learners are aware of bacterial infections and they know what the effect to their health. The result shows that this learners are environmental aware in regards to their personal hygiene. As most learners responded washing their hands after using the bathroom.

As Namibia is a semi- arid country one needs to understand the importance of water for our life's not just humans but every living organism found on earth Bagnold, (2005). The study focus to see what learners use to mitigate water wastage while at school. Figure 4 shows the proportion in terms of awareness regarding water wasting. As shown by the figure a total of 76% of the learners are aware and 24% are unaware regarding water wastage and the learners are affected by their circumstances. When asked what learners use for drinking water at school 76% of the learners responded using a container while a 24% responded using their hands as shown by the figure. E.g. Learners in rural schools drink with their hands as they do not have water bottles or cups at school. Therefore the results shows that the learners are environmental aware regarding water wastage as the figures show a high number of learners being aware then those that are unaware.

## **Knowledge**

Children are the most vulnerable to the impacts of unsustainable living with specific harms arising because of their physical and thinking weaknesses. However, children do not have to be victims in the face of these challenges. Education, including early childhood education, has an important role to in building flexibility and capabilities in children that equip them as active and informed citizens now and in the future and who are capable of contributing to healthy and sustainable ways of living Davis, (2010). The study contributes to this similar study by indicating what learners know in terms of water usage. Figure 5 shows the proportion of the learners in terms of their knowledge regarding water wasting and the figure shows that 87% of the learners are aware while 13% are unaware when asked what learners used when cleaning their teeth 87% use a cup while 13% use the sink out of a total sample of 219 learner's. The result shows that the learners are environmental aware regarding water wasting. But some of the learners are driven by their circumstances which enables them to perform environmental friendly activities therefore benefiting the environment at large .e.g. bucket showers as they do not have well developed homes and using a cup to clean their teeth as they do not have sinks in their homes.

Figure 6 shows the knowledge of the learners in regards to energy. A question was asked "what do we get from the sun?". As shown by the figure 100% of the learner's responded energy while 0% of them said nothing. This shows that the learners have the knowledge on the importance of

the sun as a source of energy. A grade 3 learner from Ncumcara primary school said” Sometimes plants need sunlight for them to grow’. This shows that this learners are aware.

## **8.2 To compare the practical implementation in environmental awareness activities between EE/ESD trained teachers and untrained teachers learners**

The article views the contemporary state of education for sustainable development (ESD). In author’s opinion the ESD is one of the most efficient methods of implementation of sustainable development principles by forming new thinking and behaviour as indicated by the result, Figure 7 indicate what schools use to mitigate water wasting and keep hygiene between trained and untrained teachers learners and the figure shows that majority of the schools do not have implemented activities to mitigate water wastage at their schools. Of the fifteen trained schools only 4 schools have implemented some activities while the 4 untrained schools only one school has implemented an activity. In a ratio proportion it indicates that the trained and untrained have a ratio 26%trained: 25%untrained. These shows that most teachers are just acquiring the knowledge and skills from the training but they are failing to apply the acquired knowledge and skills. The teachers are not sharing the information they acquire from the training with other teachers. Based on observation the some of the trained teachers still practice unhygienic activities, Such as using bowl with water for learners to wash their hands this putting learners at high risk of water borne diseases e.g. bilharzia.

## **8.3To determine the variation in the level of environmental awareness among rural and urban learners**

Figure 8shows the difference between rural and urban learners in terms of their awareness on flora. The figure shows that most rural and urban learners are aware that using firewood is bad for the environment. As shown by the figure most of the learners responded it is bad, when asked if using firewood was bad for the environment. The results shows that the learners are aware but their circumstances makes them perform in a particular manner. As the need to thrive. The result shows that more urban learners responded It is bad, this is because the urban learners are equipped with

technology (e.g. Stoves and Ovens) so they do not require firewood as those in rural areas. As the rural learners know that they need it to thrive although some know that it's bad for the environment. And the urban learners are exposed to different events such as Television and people. These increasing their knowledge and understating of their surrounding environment. In comparison with learners in the rural areas who are exposed to limited activities and their minds become limited as well and only tend to focus on the present situations. e.g. learners in rural areas tend to use water in a wise manner as they have to walk over distances to collect water while learners in urban areas are more likely to waste is always available when needed.

Figure 9 shows what rural and urban school learners reuse at home and school, the figure shows that a high number of rural learners reuse plastic more than urban learners. This is due to their circumstances, as they use plastic bags to carry in their book and plastic bottles for water and traditional drinks (oshikundu) and most learners in rural areas have no school bags only plastic bags that learners are using. While none of the rural learners reuse glass bottles as they are taken and sold by their parents or guardians at shabeen and supermarkets.

#### **8.4 To determine what influence (if any) NaDEET's *It's Time To Grow Environmental Learning Pack* has on lower primary school learners**

NaDEET as an organization one of its project is Environmental literacy project which focus on sustainable living publications for all ages and in multiple languages. The study contributes to the book usage by learners as indicated by Figure 10 the book usage by the learners, that of the 19 schools visited 68% have not used the books and only 32% of the schools have used the books. These tend to show that there is no influence that can be derived from the books as the learners have not used them and where the books were used the learners do not understand the books and it can be understood that the teachers only gave the learners the books when they had of the visit of monitoring and evaluations of the Environmental learning pack. . In a discussion with the teachers regarding the book usage the teachers said that the materials arrived late at the schools as the learners were completing their syllabus in September/October 2019, Some untrained teachers do not understand or know how to use the materials as a teaching tool, and Some trained teachers said that the themes covered by the books are not yet covered in the curriculum .Lastly ,some schools have a high number of learners and the pack cannot accommodate these learners.as it only contains fifty sets of each theme of the books.

The Chi-square tests shows a statically significant association between ESD trained teachers learners. On the various strategies they use to mitigate water wastage at their school. (Chi square)  $\chi^2(9) = 93.288a$ ,  $p < 0.05$ . Therefore. The null hypothesis is rejected as the the Sig is less than the Alpha 0.05. Therefore, the result indicate that teachers training has an influence on the level of environmental awareness of the junior primary learners. And the research question is answered saying yes teachers training equips teachers with knowledge that they share with their learners which increases the learner's knowledge on environmental concepts.

## **9. Conclusions and Recommendations**

As the earth is faced with many environmental issues that are threatening our way of living, Namibia grew with establishing programmes, projects and organisations to extend environmental literacy to the citizens of Namibia. Whereby, NaDEET focus mainly on creating Awareness mainly at National and international level. The study shows in terms of Awareness and knowledge the result shows that most of the learners are aware as indicated by the high number or proportion compared to unaware learners. And there is a high number of learners who show a clear understanding of the environmental concept. In regards to activities implemented between trained and untrained only a few have implemented some activities. This representing a ratio of 26%:25% which is  $\frac{4}{15}$  and  $\frac{1}{4}$ . Interm of rural vs. urban learners, the urban learners tend to be more aware then the rural learners as shown by the results. The book usage as indicated by the result the books have only been used by 6 schools of the nineteen schools visited and no influence can be derived which can indicate that the learners have acquired the knowledge or information from the books. AS whether the learners have used the books or not were still able to respond to the questioned asked. Therefore, the learners are environmental aware.

Therefore the researcher recommends the following

- Schools to encourage parents to share their environmental knowledge to their kids at home.
- Schools can also change physical education into environmental education. Whereby, learners get taught out door.
- Learners can use old tin cans as cups for drinking water at school or at home.



- The regional office should organize workshops with the ESD trained teachers to share the knowledge acquired with other teachers in their region.
- NaDEET should keep in contact with schools to ensure that schools have received materials .e.g. the materials can be distributed with a form that schools have to sign when they receive the learning materials. Whether, soft or hard copies.

## **10. Limitations**

- Could not visit all schools due to time constraints
- Some learners could not speak loud enough
- Some learners were too shy to express themselves
- Some learners depended on others(Copied others)

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## 11. Appendices

### 11.1 Appendix 1 Table of schools visited

*Table 1 List of schools visited*

| <b>Region</b> | <b>Name of school</b>                   | <b>Participant/control group</b> |
|---------------|-----------------------------------------|----------------------------------|
| Kavango West  | Mbeyo Combine School                    | Control                          |
| Kavango West  | Kankudi Primary School                  | Participant                      |
| Kavango West  | Ncumcara Primary School                 | Participant                      |
| Kavango East  | Adreas Haingura Kandjimi Primary school | Participant                      |
| Kavango East  | Kaisosi Combine School                  | Participant                      |
| Kavango East  | Kehemu Combine School                   | Participant                      |
| Kavango East  | Rundu Junior Primary School             | Participant                      |
| Kavango East  | Sauyemwa Combine School                 | Participant                      |
| Kavango East  | Friendly Primary School                 | Control                          |
| Zambezi       | Ingenda Primary school                  | Participant                      |
| Zambezi       | Kaliyangile Combine School              | Participant                      |
| Zambezi       | Katima Combine School                   | Participant                      |

|         |                                 |             |
|---------|---------------------------------|-------------|
| Zambezi | Gweze Primary School            | Participant |
| Zambezi | Mavuluma Primary School         | Participant |
| Zambezi | Tobias Hainyeko Primary School  | Participant |
| Zambezi | Bukalo Primary school           | Participant |
| Zambezi | Liswani combine school          | Participant |
| Zambezi | Brenden Simbwaye Primary School | Control     |
| Zambezi | Isize Combine school            | Control     |

## 11.2 Appendix 2 Interview Questioner

### *Interview Questioner*

|                                                      |                                                                                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Region: _____ Name of School: _____ Grade: _____     |                                                                                                                                           |
| Number of learners: _____ Males: _____ Female: _____ |                                                                                                                                           |
| <input type="checkbox"/> Urban                       | <input type="checkbox"/> Rural                                                                                                            |
| <input type="checkbox"/> Participant                 | <input type="checkbox"/> Control Group                                                                                                    |
| <b>Section 1: Awareness</b>                          |                                                                                                                                           |
| 1. Why are plants important?                         | <ul style="list-style-type: none"> <li>a) decoration</li> <li>b) air</li> <li>c) food</li> <li>d) firewood</li> <li>e) shelter</li> </ul> |

|                                                                        |                                                                                              |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|                                                                        | f) I don't know                                                                              |
| 2. How much water do you think Namibia has?                            | a) A lot<br>b) Enough<br>c) Too little<br>d) I don't know                                    |
| 3. Why are wild animals important?                                     | a. For food<br>b. They are nice to look at<br>c. To balance the ecosystem<br>d. I don't know |
| 4. Do you think it is ok to burn plastic?                              | a. Yes<br>b. No<br>c. I don't know                                                           |
| 5. Do you think using firewood for cooking is bad for the environment? | a. Yes<br>b. No<br>c. I don't know                                                           |
| 6. What do you do after using the bathroom?                            | a) Run to class<br>b) Wash my hands with soap<br>c) I don't know                             |
| 7. What do you do with plastic bags from the store?                    | a) I throw it on the ground<br>b) I re-use it to carry something<br>c) I don't know          |

## Section 2: Knowledge

1. What can you do with leaking pipes in order to save water?

2. How can you keep your community clean from litter?

3. Name three different types of waste:

4. Name an animal and where it lives.

5. Name one thing that the sun does for humans

### Section 3 Skills

1. Name something you can re-use at home or at school?

|                                                                     |                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Which of the following activities do you take part in at school? | <ul style="list-style-type: none"> <li>a) Gardening</li> <li>b) Cleaning the school yard</li> <li>c) Reusing materials/ recycling</li> <li>d) Making posters about the environment</li> <li>e) other</li> </ul> |
| 3. What do you use for drinking water at school?                    | <ul style="list-style-type: none"> <li>a) Hands</li> <li>b) Cup</li> <li>c) Bottle</li> </ul>                                                                                                                   |
| 4. What do you do when brushing your teeth?                         | <ul style="list-style-type: none"> <li>a) Leave the tap running</li> <li>b) Using a cup</li> </ul>                                                                                                              |
| 5. Did your teacher teach you how to save water?                    | <ul style="list-style-type: none"> <li>a) Yes</li> <li>b) No</li> <li>c) I don't know</li> </ul>                                                                                                                |

#### Section 4: Attitude

|                                                                            |                                                                                                                                                                                   |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. What do you do when there are papers on the floor in the classroom?     | <ul style="list-style-type: none"> <li>a) Walk passed it</li> <li>b) Wait for the person that dropped it to pick it up</li> <li>c) Pick it up</li> <li>d) Tell someone</li> </ul> |
| 2. Would you pick up litter that is not yours?                             | <ul style="list-style-type: none"> <li>a) Not at all</li> <li>b) Sometimes</li> <li>c) Always</li> <li>d) If asked</li> </ul>                                                     |
| 3. What will you do if you see someone throwing papers or plastics around? | <ul style="list-style-type: none"> <li>a) Leave them / ignore it</li> <li>b) Tell him/ her to pick it up</li> <li>c) Pick it up myself</li> </ul>                                 |
| 4. Who should take care of the environment?                                | <ul style="list-style-type: none"> <li>a) The president</li> <li>b) The teacher</li> <li>c) Everyone</li> </ul>                                                                   |

- d) The Parents
- e) It does not need taking care of

**Section 5: *It's Time to Grow***

1. Have you used the *Its Time to Grow* books?

- Yes  No

1.1 If yes, which ones?

- a) Sun
- b) Water
- c) Plants and animals
- d) Recycling

2. Did use them with your teacher?

- Yes  No

2.1 If no, who did you use it with?

3. Which book did you like the most?

- a) Sun
- b) Water
- c) Plants and animals
- d) Recycling

4. What do you enjoy doing in the books?

- a) Stories
- b) Matching
- c) Tracing
- d) Games
- e) Counting numbers
- f) Arts & Craft
- g) Coloring in



5. What have you learned from books?

6. Did you play the memory card game?

6.1 Did you like it?

7. Do you have anything else you want to say about the books?

### 11.3 Appendix 3. The Consent Form



#### Consent Form

#### NaDEET Monitoring & Evaluation of the Lower primary Teachers and learners for ESD in Mother Tongue

NaDEET is conducting a monitoring and evaluation of the project titled “Lower primary Teachers for ESD in Mother Tongue”. Teachers and learners in lower primary will be participating in the surveys. Participants are expected to be open and honest in answering the questions to ensure reliability of the results of the project. The identity of the participant will be kept confidential and will not be revealed at any point during data analysis or reporting.

Therefore, I give permission for my learners (and teacher(s) to participate in this monitoring and evaluation.

Name of Principal (or Teacher):

Date:

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Signature:

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