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WASH Implementation in Some Public Schools in Yaounde, Cameroon

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Abstract:

Despite the positive impacts associated to the effective access to water, sanitation and hygiene in schools, most schools in Cameroon, are not adequately equipped and the government have since 2012, joined the WASH (Water, Sanitation and Hygiene) initiative. We conducted a study in 33 public schools in Yaounde, aiming to have an overview of the level of implementation of the WASH initiative. The methodology was based on the administration of questionnaires and direct observations.

Our results show that many schools are embellished and well secured. The water available is provided by the conventional distribution network and improved latrines are constructed. Those aspects are in line with the WASH guidelines. However, the pupil / teacher (104), pupil / water point (500) and pupil / latrine (463) ratios are above the recommended standards. Water shortages, insufficient cleaning equipment, inappropriate handwashing facilities are contributing to the insalubrity of latrines and poor hygiene practices. Moreover, teachers have not been trained on WASH and don't have related teaching materials.

It finally appears from our study that despite government investment, the WASH initiatives are not well implemented in the targeted schools. Its efficient management requires an operational partnership between Ministries, civil society and private sector.

Keywords: Cameroon, Hygiene, public schools, Sanitation, Water, Yaounde.

1. Introduction

Access to safe drinking water, sanitation and hygiene in schools improves health (Weaver et al. 2016), school attendance (Garn et al. 2013), and learning performance (Deroo et al. 2015). However, despite the positive impacts of these amenities, most schools, particularly in developing countries, are not adequately equipped. To reverse this trend, the international community has launched the Global Call to Action for WASH (Water, Sanitation and Hygiene) in Schools. Decision-makers are called to increase investments, plan and act in cooperation, so that all children go to a school with child-friendly water, sanitation and hygiene facilities (UNICEF 2012).

Cameroon is among countries that have recognized water and sanitation as a human right in their constitution. Based on the benefits of WASH in Schools and the need for improved facilities and hygiene practices, the government has joined the WASH initiative in 2012, with the conviction that schools with inadequate water supply, sanitation and hygiene conditions are high-risk environments for pupils. According to WASH initiative, each school should have an improved drinking water supply, separate latrines for girls and boys, handwashing facilities in front of each latrine block and class, and a hygiene kit composed of sanitation equipment and cleaning products (UNICEF 2012). Many schools have seen improvements in their environments through the construction of water supply and sanitation facilities and the promotion of hygiene practices. After several years of investment, no documentation is available to evaluate the effectiveness and efficiency of the WASH implementation in the Cameroonian context. In order to fill this gap, we have conducted a study whose objective is to have an overview of the level of implementation of the WASH initiative in some public schools in the city of Yaoundé. The study is ending with relevant recommendations to decision-makers and stakeholders to address the weaknesses observed.

2. Methods

2.1. Study Area

A cross sectional study was performed between April 2015 and February 2016 in 33 schools located in the 7 sub-divisions of Yaoundé(3°52'N; 11°31'E), the political capital of Cameroon and the second largest city of the country. With a population of about 2.5millions, Yaoundé is a very diverse city with people coming from different areas of the country and abroad. The climate is tropical with 2 rainy seasons (March to June, September to November) and 2 dry seasons (December to February, July to August). The annual averages of temperature and annual rainfall are respectively 23.7 °C and 1643 mm (Climate 2017).

2.2. Data Collection

Schools (primary and secondary) have been selected with an aim to fulfill a representative quality per sub-division (Figure 1). Criteria such as accessibility, number of pupils and the availability of the staff management have facilitated our choice. Preliminary meetings have been organized with the management team of the selected schools, in order to present the objectives of the study, to discuss the methodology and to develop a planning for data collection.

Two different tools were used in each school:

- a survey based on the administration of questionnaires, which gives information's concerning the characteristics of each schools, the type of water supply, sanitation and hygiene facilities;
- direct observations to assess the conformity of the information received.

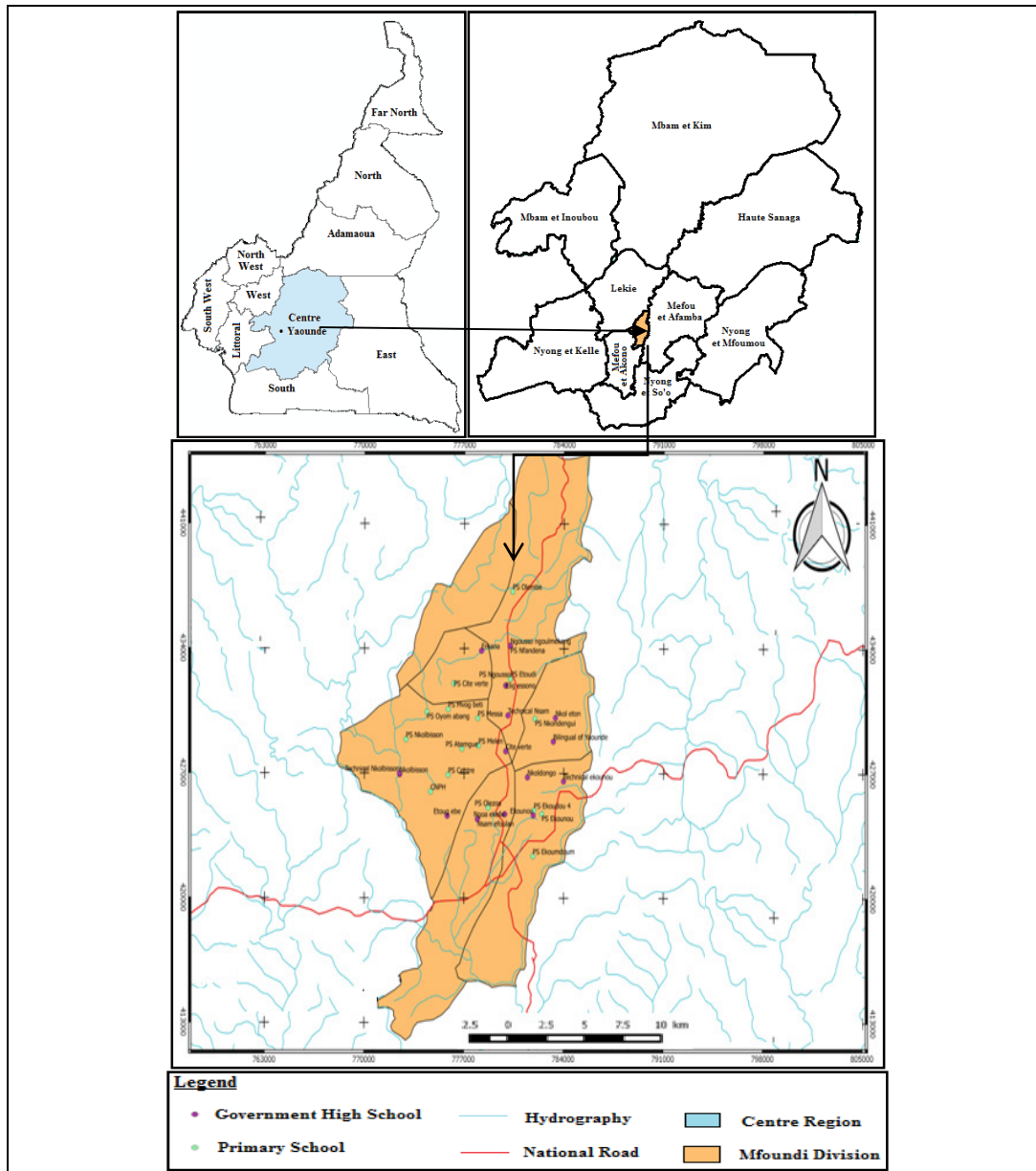


Figure 1: Map showing the selected schools

2.3. Survey

The beginning of the survey was subject to research authorizations, signed by the regional and departmental Delegates of the Ministries in charge of primary and secondary education. Questionnaires were administered to school principals (33), teachers (157), pupils (426) and cleaning workers (17). A total of 633 people were interviewed in the targeted schools.

2.4. Direct Observations

Water supply, sanitation facilities and hygiene promotion activities were reviewed in comparison with the information given on the questionnaires.

2.5. Results Analysis

Data collected from the survey was manually scanned, coded, processed and analysed with statistical analysis software Epi-info 3.5. Graphs were realized through Microsoft Office Excel 2010.

3. Results

3.1. Schools Characteristics

It appears from our results that 96% of schools are fenced. They therefore offer secure spaces to their pupils, 80% have embellished compounds with flowers and decoration trees, 52% have homogeneous playgrounds, essential amenities for the integral development of pupils. The average pupil / classroom ratio is 104, which does not meet international recommended standard of UIS (2010), less than 50 pupils / class. 70% of our targeted schools do not have cleaning workers.

3.2. Drinking Water Supply

The 33 schools have at least one source of drinking water, tap water or drilling water, with a high predominance of tap water as shown below.

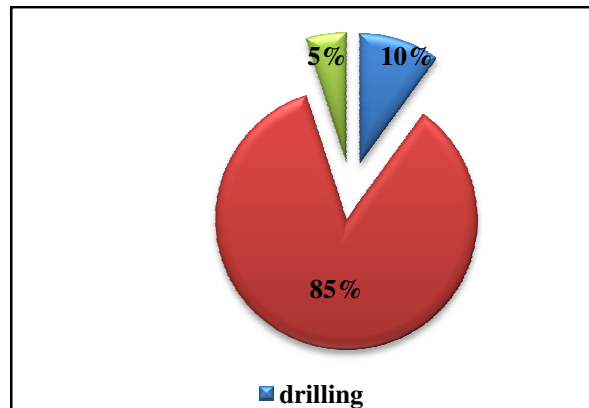


Figure 2: Distribution of water supply infrastructure

The average pupil / water point ratio is 917, does not meet the UNICEF (2012) standard which is 500 pupils per water point. Only 37% of schools are meeting the recommended standard and furthermore, only 20% of schools respect the recommended distance between the water point and the classroom, which should be of 15 m (WHO, 2010).

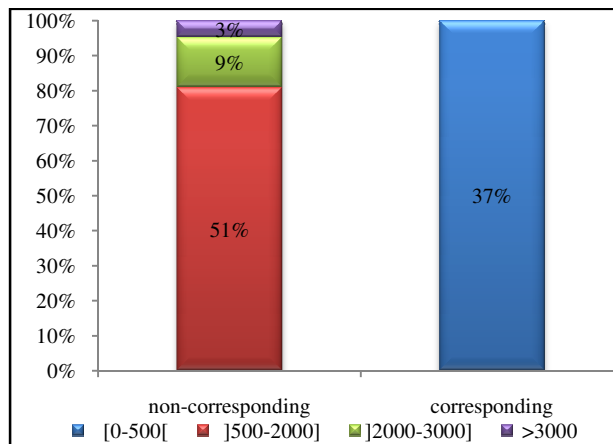


Figure 3: Ratio pupils/water

3.3. Sanitation

3.3.1. Cleanliness of the School Compound

The level of cleanliness refers to the presence of waste on the playground, and to the general appearance of the schools. Only 15% of schools appear to be well maintained (Figure 4). Due to the absence of cleaning staff in the majority of schools, this task is devoted to pupils who perform it as punishments or during the manual work sessions.

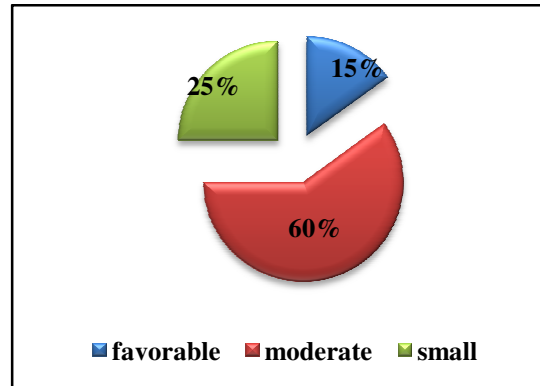


Figure 4: Levels of schools' cleanliness

3.3.2. Latrines

All the targeted schools have well-constructed latrines. Three types were identified: VIP (Ventilated Improved Latrine), Pit and Improved Latrines according to the proportions shown below (Figure 5).

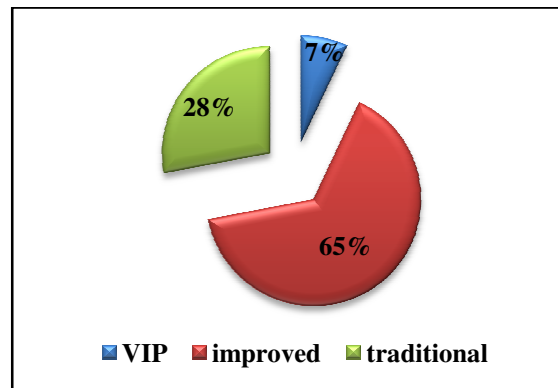


Figure 5: Types of latrines

The latrines are accessible to the majority of pupils, excepted those with disabilities. No ramp or device facilitating their access has been put in place. According to the positions of latrines, they are closed to the classrooms in some schools. In that case, the WASH recommendations are not met and they can produce nauseating odors. The average pupil / latrine ratio is 463. This does not meet the UNICEF recommendation which is 50 pupils per latrine (Figure 6). 51% of schools have separate girls/boys' latrines, 52% have latrines that preserve the privacy of pupils, and the most common means of closure is a wooden door with a locking device. We have noted in some cases that latrine doors have been vandalized or the locking devices are nonfunctional. Due to water shortages, insufficient cleaning staff, lack of maintenance equipment (disinfectant and detergents, mops, buckets, squeegees, shovels, hoes, brushes and brooms), latrines are actually unhealthy spaces and the open defecation practice is increasing among pupils.

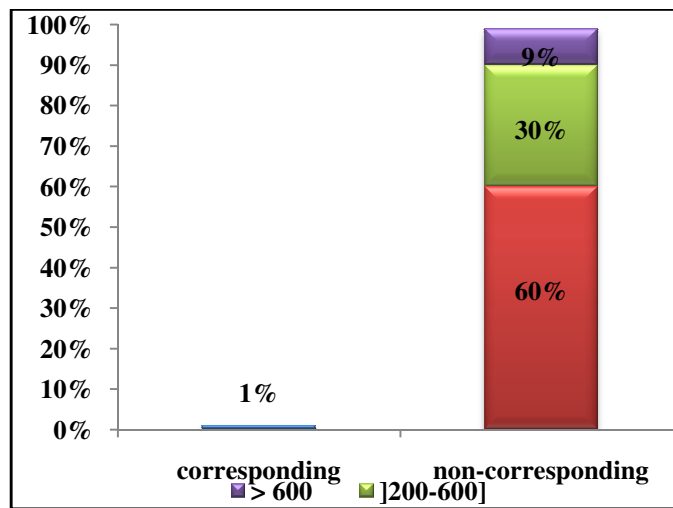


Figure 6: Pupils / latrine ratio interval.

3.4. Hygiene Education

3.4.1. Handwashing

50% of schools are lacking handwashing facilities. In 43% of them, they handwashing facilities are functional, while in 7% they are not functional due to poor maintenance and vandalization (Figure 7). Three types of devices have been identified: washbasins with tap; single taps and buckets.

Hand washing devices when they exist are easily reachable. We however noted that disinfectant products (soap, bleach) were found in none of our targeted schools. In addition, regular shutdowns of water make maintenance difficult, and according to that, the use of handwashing facilities is not widespread.

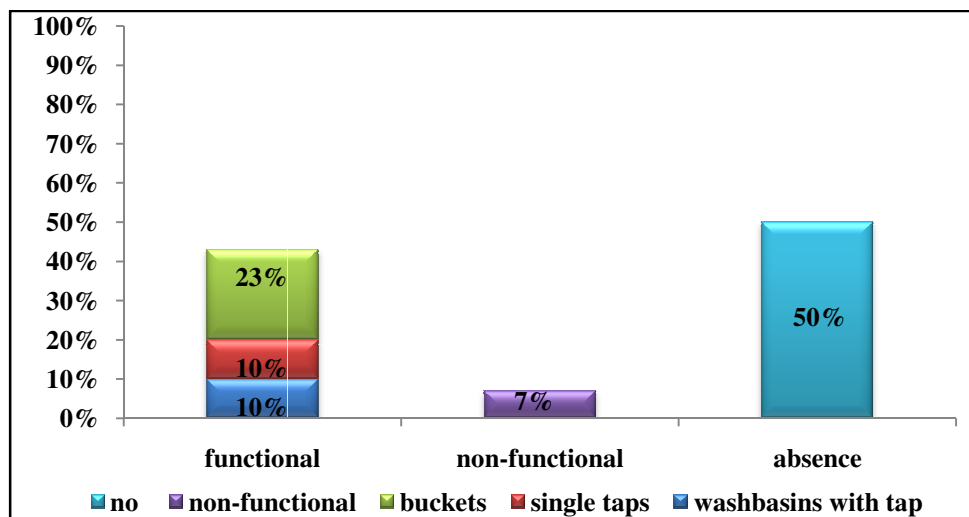


Figure 7: Type of hand washing devices and their degree of functionality.

3.4.2. Hygiene Teaching

Courses related to hygiene are programmed in many of our targeted schools, most often in a theoretical form (80%). In 68% of them, teaching sessions exclusively devoted to the promotion of hygiene do not exist. Generally, the notions related to hygiene are given during science lessons. A closer look of these lessons shows that they are not specific to the WASH concept, due to the fact that no teacher has been trained and none of them has WASH teaching materials.

3.4.3. Hygiene Awareness Campaign

Planned awareness campaigns are not organized in those schools. Posters referring to hygiene practices are present in 30% of schools. However, they are not glued in the appropriate spaces, particularly near latrines, where they can incite to handwashing but are rather in the classrooms or in the playgrounds.

4. Discussion

The Sustainable Development Objective (SDG) 6, envisages by 2030, access to adequate and equitable water, sanitation and hygiene services for all. The inadequacy of these services in the school environment, will hamper the achievement of this goal, as so far many

schools in developing countries do not have them, and the consequences for educational performance are established (Joshi et al. 2013; Dreibelbis et al. 2014).

We carried a study with an aim to evaluate the implementation of the WASH initiative in 33 public schools in the city of Yaounde. The WASH program in schools contributes to healthier school environment, and better healthier children in school. The results obtained from our investigations, indicate that most schools are secure spaces, embellished with ornamental plants, results in line with the WASH guidelines in schools. Those schools are thus contributing to the harmonious educational development of learners.

However, the average pupil / classroom ratio is not in line with the recommended standard, and has a direct effect on the pupil / teacher ratio. The classrooms are therefore overcrowded, difficult for teachers to manage them efficiently, by devoting sufficient time to each student. This situation is a brake to the improvement of quality education, and can contribute to the reduction of school performance as observed in public schools. Many studies (Mbise 2013; Manirou 2015; LohEpri 2016) conducted worldwide indicate that, classes with more than 70 pupils have a negative effect on pupils learning.

Schools are mostly, supplied with water coming from the conventional distribution network and improved latrines are present in all our targeted schools. The available water complies with the drinking water standards required by the Cameroonian legislation for potable water. Improved latrines have the advantage of reducing nuisances such as odors and proliferation of flies. These two aspects are in line with the WASH guidelines. However, the pupil / water point (500) and pupil / latrine (463) ratios are above the recommended standards. The irregularity of water supply, as a result of regular shutdowns, increases the development by school community of alternatives such as water treatment and storage which have impacts on the time allocated to teaching: (Tamas et al. 2011; Jordanova et al. 2015).

The absence of maintenance and cleaning equipment, contribute to the insalubrity of the latrines, which consequently become areas where pupils can easily contact pathogenic germs, and various infectious diseases. While the girls / boys separation aspect of latrines is respected, the security and privacy especially for girls are not ensured. Due to unhealthy latrines, students are practicing open defecation to meet their needs, as demonstrated by similar studies (Jasper et al. 2012; Dreibelbis et al. 2013).

50% of schools do not have handwashing device in front of each classroom, and in front of each latrine as recommended by WHO (2010) and UNICEF (2012). When existing, 7% are not functional. The consequences of such a situation is poor practice of handwashing as demonstrated by Caruso et al. (2014) in Kenya, Besha and al. (2016) in Ethiopia. In these two studies, handwashing is practiced by 25.7% and 22.3% of pupils, respectively.

Hygiene education aims at changing pupils' behaviour toward good or safe practices. Course hours exclusively devoted to hygiene education according to WASH do not exist, teachers have not been trained on WASH and don't have related didactic tools. This implies that school children in of the studied schools may have little or no knowledge of hygiene practices. Same results were obtained by Egbinola et al. (2015), Manirou (2016) in studies conducted in Niger and Nigeria.

5. Conclusion

Safe drinking water, adequate sanitation facilities and Hygiene education are essential for a healthy learning environment. The Cameroon government, supported by his partners have financed the construction WASH infrastructures in our targeted schools. Despite those investments, it appears from our results that there is a poor standard of water availability, sanitation facilities and hygiene education within our study area. Several reasons can be raised: the absence of a legislative framework, the inadequacy of investments in relation to the WASH recommendations, the poor maintenance of infrastructures, as a consequence of insufficient financial resources and weak institutional support. This situation has a real impact on school performance and could be at the root of the low success rates in Cameroon's public schools. The sustainable management of the WASH program requires that ministries of education, but also health, public works, finance, be mobilized and increase their commitment through public private partnership for a better implementation of the WASH concept.

6. References

- i. Besha, B., Guche, H., Chare, D., Amare, A., Kassahun, A., Kebede, E., Workineh, Y., Yeheyis, T., Shegaze, M., Alemayehu A., Yesuf A. (2016). Assessment of Hand Washing Practice and it's Associated Factors among First Cycle Primary School Children in Arba Minch Town, Ethiopia (2015). *Epidemiology (Sunnyvale)*, 6 (3), 10p. DOI:10.4172/2161-1165.1000247.
- ii. Caruso, B, A., Freeman M, C., Garn, J,V., Dreibelbis, R., Saboori, S., Muga, R., Rheingans, R. (2014). Assessing the impact of a school-based latrine cleaning and handwashing program on pupil absence in Nyanza Province, Kenya: a cluster-randomized trial. *Tropical Medicine and International Health*, 19 (10), 1185–1197. DOI: 10.1111/tmi.12360
- iii. Climate: Cameroon. <http://en.climate-data.org/country/142/#example0>. (Accessed 02 February 2017).
- iv. Deroo, L., Walter, E., Graham, J. (2015). Monitoring and evaluation of WASH in schools programs: lessons from implementing organizations. *Journal of Water Sanitation and Hygiene for Development*, 5(3), 512-520. DOI:10.2166/washdev.2015.026
- v. Dreibelbis, R., Greene, L., E, Freeman, M, C., Saboori, S., Chase, R, Rheingans, R.(2013). Water, sanitation, and primary school attendance: a multi-level assessment of determinants of household-reported absence in Kenya. *International Journal of Educational Development*. Volume 33 (5), 457–465. DOI.org/10.1016/j.ijedudev.2012.07.002
- vi. Dreibelbis, R., Freeman M, C., Greene, L, E., Saboori, S., Rheingans, R. (2014). The Impact of School Water, Sanitation, and Hygiene Interventions on the Health of Younger Siblings of Pupils: A Cluster-Randomized Trial in Kenya. *American Journal of Public Health*, 104 (1), 91-97. DOI: 10.2105/AJPH.2013.301412

- vii. Egbinola, C, N., Amanambu, A, C.,(2015). Water supply, sanitation and hygiene education in secondary schools in Ibadan, Nigeria. *Bulletin of Geography. Socio-economic Series*, 29, 31–46. DOI:<http://dx.doi.org/10.1515/bog-2015-0023>
- viii. Loh, Epri, M. (2016).A case study on the impact of large classes on student learning. *Contemporary PNG Studies. DWU Research Journal*, 24, 95-109.
- ix. Garn, J, V., Greene, L, E., Dreibelbis, R., Saboori, S., Rheingans R, D., Freeman, M, C. (2013). A cluster-randomized trial assessing the impact of school water, sanitation, and hygiene improvements on pupil enrollment and gender parity in enrollment. *Journal of Water Sanitation and Hygiene for Development*, 3(4), 15p. DOI:10.2166/washdev.2013.217
- x. Jasper, C., Le, T-T., Bartram, J. (2012). Water and Sanitation in Schools: A systematic Review of the Health and Educational Outcomes. *International Journal of Environmental Research and Public Health*,9(8), 2772-2787. DOI:10.3390/ijerph9082772
- xi. Jordanova, T., Cronk, R., Obando, W., Medina, O, Z., Kinoshita, R., Bartram, J. (2015). Water, Sanitation, and Hygiene in Schools in Low Socio-Economic Regions in Nicaragua: A Cross-Sectional Survey. *International Journal of Environmental Research and Public Health*, 12(6): 6197–6217. DOI: 10.3390/ijerph120606197
- xii. Joshi,A., Amadi, C. (2013). Impact of Water, Sanitation, and Hygiene Interventions on Improving Health Outcomes among School Children. In: *Journal of Environmental and Public Health*, Article ID 984626: 10 pages, <http://dx.doi.org/10.1155/2013/984626>.
- xiii. Manirou, M, I. (2016).Diagnostic study of the conditions of access to water, hygiene and sanitation in the public primary schools of the municipal district V of the city of Niamey, Niger. Master, 2IE, Ouagadougou, Burkina Faso.
- xiv. Mbise, B, G. (2013).Effects of overcrowded classrooms in academic performance in secondary school. BSC, Sokoine University of Agriculture, Dar es Salam, Tanzania.
- xv. Tamas, A., Mosler, H, J. (2011). Why Do People Stop Treating Contaminated Drinking Water With Solar Water Disinfection (SODIS)? *Health education & behavior*, 38(4), 357-366. DOI: 10.1177/1090198110374702.
- xvi. UIS (UNESCO Institute for Statistics). (2010).Educational and teaching resources in sub-Saharan Africa: Analysis of regional data collected by UIS in 2011 on education. UNESCO, Paris, France.
- xvii. UNICEF (United Nations Children’s Fund). (2012)Water, Sanitation and Hygiene (WASH) in Schools. UNICEF, New York, USA.
- xviii. Weaver, E, R, N., Agius, P, A., Veale, H., Dorning, K., Hlang, T, T., Aung, P, P., Fowkes, F, J, I., Hellard, M, E. (2016). Water, Sanitation, and Hygiene Facilities and Hygiene Practices Associated with Diarrhea and Vomiting in Monastic Schools, Myanmar. *The American Journal of Tropical Medicine and Hygiene*, 95(2), 278–287. DOI:10.4269/ajtmh.15-0290.
- xix. WHO (World Health Organization). (2010). Water, sanitation and hygiene standards for schools in low-cost settings. WHO, Switzerland. http://www.who.int/water_sanitation_health/publications/wash_standards_school.pdf.