

Access to Water, Sanitation and Hygiene, (WASH) Facilities in Selected Secondary Schools in Zinder, Republic of Niger: Status and Challenges.

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Abstract

Water, Hygiene and Sanitation (WASH) is key factor for quality learning. Taking into account the time spent in Schools, the healthiness of the Schools determines, in part, the Health and well-being of the Students. In Niger, unfortunately many Schools lacks and / or have insufficiency of WASH Facilities (Water Supply Infrastructure, Hand Washing Facilities and Gender Friendly Toilets), which makes these very important Environments for Students Mental development a high risk Environments for the Students as well Teachers. This work is aimed the establishment status and Gaps of WASH Services/Facilities provision in 40 Secondary Schools in Zinder. The study took inventory of WASH Services/Facilities, undertook physical observations/verification and conducted Interviews with School Officials. It was determined that, the 40 Schools surveyed has inadequate and low quality of WASH Facilities; with ratio of number of Students per Water Point and number of Students per Latrine far exceeding the International Standards (250 students per water point, one latrine for 25 Girls and one latrine for 50 Boys, as stated by WHO recommendations). This paper presents very urgency need/actions to plan for tailored Interventions to mobilise Technical and Financial Resources from key Partners for WASH Service/Facility provision in the 40 Secondary Schools surveyed and beyond to measure up to the International/SDGs Target as the case may be.

Keywords: WASH Facility, Secondary Schools, Gender Friendly, SDGs Education, Zinder.

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I. Introduction

The United Nations General Assembly recognized in 2010 equitable access to Water, Sanitation and Hygiene (WASH) as a human right, which motivated the Human Rights Council to reaffirm this decision the same year. The fundamental right to Water Sanitation and Hygiene is widely recognized by the Member States of the United Nations, on other International Platforms, the binding treaty instruments provide for the existence of the right to Water only through the protection of certain categories of the Population considered Vulnerable, such as Women, Children, and the disabled (Clemenceau, 2019).

The WASH Sector, which has long suffered from neglect in International Programs and Agendas, has gradually gained visibility thanks to many Years of effective advocacy such as the colossal work of the Water Supply and Sanitation Collaborative Council (WSSCC) which led the campaign for WASH inclusion in the Millennium Development Goals (MDGs) Targets in 2002 (WSSCC, 2016). Thus, despite the efforts made in the promotion of WASH by the International Community, many studies (Majra and Gur, 2010; Sinclair and Gerba, 2011; Pickering et al., 2012) have shown that the access to WASH Services/Facility is still limited.

The Joint Water Supply and Sanitation (JMP) monitoring program set up by WHO and UNICEF at the end of the International Drinking Water Supply and Sanitation Decade noted in a report published in June 2019, that globally, some 2.2 Billion People do not have Safely managed Drinking Water Services; 4.2 Billion lack Safely managed Sanitation Services and 3 Billion do not even have Basic Hand Washing Facilities (JMP, 2019).

The United Nations World Water Development Report titled “Leaving No One Behind” also highlighted with similar statistics the grim picture regarding the issue of WASH around the world (WWAP, 2019).

Among the Vulnerable Population are Children who lose their lives every day from Diarrheal Diseases and other Diseases transmitted by Water and / or by lack of Hygiene and Sanitation Facilities according to the Work of Freeman et al. (2014).

Children spend the majority of their days in School, which unfortunately too often becomes a high risk place due to unsanitary conditions. This is how the World Education Forum, held in Dakar, Senegal from April 26 to 28, 2000, under the aegis of UNESCO, commonly called the Dakar Framework for Action, highlighted the importance of WASH in achieving Education Goals. Fifteen years later, World Leaders made a commitment to achieve 17 Sustainable Development Goals (SDGs) by 2030. SDG 6, which deals specifically with Water and Sanitation, is an imperative for the achievement of other SDGs such as the Fight against Poverty, improvement of Health, Gender Equality, and Education. It is broken down into Targets and Indicators, some of which refer to WASH in School.

In Niger, access to Water and Sanitation is a right of the Population, but the satisfaction is a major concern. In Schools, access to drinking Water and Hand washing Facilities are not always available, making the situation in Nigerien Schools very worrying.

In the process of finding solutions to this thorny problem, several management formulas have been tested in Niger involving School Staff, Parents and Students in the Technical and Financial management of the Structures.

In the city of Zinder, the Department of Val-de-Marne (France), which has been operating since 2006, has set up a Project which has benefitted from a participatory approach by residents in different Areas, such as Health and Education, which made it possible to guarantee equitable access to Latrines in Schools and Public Places, with respect for Equality and Human dignity, according to the initiators of the Project. In light of the above, it is necessary to wonder what is the State of WASH in Secondary Schools in Zinder?

This work, which involved forty (40) Secondary Schools, aims to take stock of the WASH situation in Public and Private Schools which are under the control of the Regional Directorate of Secondary Education (DRES) within the four Municipal Districts of Zinder.

The goal being, on one hand, to contribute to better planning of interventions in the WASH in Schools Sector by providing qualitative data and, on the other hand, to use the indicators in measuring the impacts using the quantitative data from this study.

II. Materials and Methods

Study Area

Zinder, also known as Damagaram, is a Town in Southern Niger, the Capital of the Zinder Region. It is the second Largest City in the Country with Population as at the last census in 2012, of 321,809 Inhabitants. Administratively, Zinder is a City with five Districts in accordance with Ordinance No. 2010-56 of September 17, 2010 establishing the Urban Communities of Niamey, Maradi, Tahoua and Zinder as Municipalities with Individuals or Cities.

In terms of Education, the Zinder has several Education establishments from Pre-Schools to University. The Secondary Education establishments concerned by this Study are 55 according to the Regional Directorate of Secondary Education (in French DRES). The following are under the control of the DRES: General Education Colleges (CEG), Secondary Education Complexes (CES), General Education High Schools (Lycée) and Private School Complexes (CSP).

Methodology and Identification of Schools

Scope of the Survey

The survey on WASH in School conditions covers 40 Public and Private Secondary Schools in Districts 1, 2, 3 and 4 of Zinder. Those in District 5 were not taken into account by this study.

Survey Framework

The sampling frame is the complete and exhaustive list of Public and Private Secondary Schools in Zinder from the DRES. According to Official statistics for the academic year 2018 - 2019, the Communal Districts (1, 2, 3 and 4) of Zinder had a total of 55 Secondary Schools in the Urban Area (Public / Private).

Sample Size

The sample concerns 40 Secondary Schools with 30,223 Students, of which 15,720 (52%) girls and 14,503 (48%) boys. A total number of 40 School Managers were interviewed.

Observation and investigation Tools

To facilitate the work of the enumerators, a tool was to capture data on Physical Observations/Verification and administered Questionnaire.

In order to make it easier to process the responses, particular attention was directed into the wording of the questions, most of which are closed (response procedures are given in advance).

For the Physical Observations, the team undertook Physical Observations of all WASH-related Infrastructures in the Schools in accordance with the observation grid developed by UNICEF in 2012, and mainly focused on assessment of the current state of Facility (Toilets, Water Points for Drinking, Hand Washing Stations, and Bins) and the available of Hygiene Kit in the Schools.

The other aspect of the Observations made it possible to assess the behavior of the Students in matters of Hygiene and Sanitation. These are results indicators (or outputs), making it possible to monitor the attitudes and practices of students in terms of WASH. In order to better appreciate this indicator, we have chosen the Break Period. This approach has led to several results.

III. Results

Institutional Information

In terms of numbers, the Zinder 4 Municipal District (ACZ4) has the largest number with 16 Schools, but in terms of enrollment ACZ1 has the largest with 11,240 Students. Public and Private Schools are equal.

With regard to Governance, 31 Schools have a Management Committee (in French COGES) by which 100% of Public Schools. On another aspect, 70% of Secondary Schools in the City are fenced and only 22 among them are electrified with 40% and 70% respectively for Public and Private.

Potable Water Supply

Thirty-nine (39) Secondary Schools have a drinking Water Point with, Taps, Tanks and Cans / or Jars. The modes of drinking Water Supply in Schools are illustrated in **figure 1**.

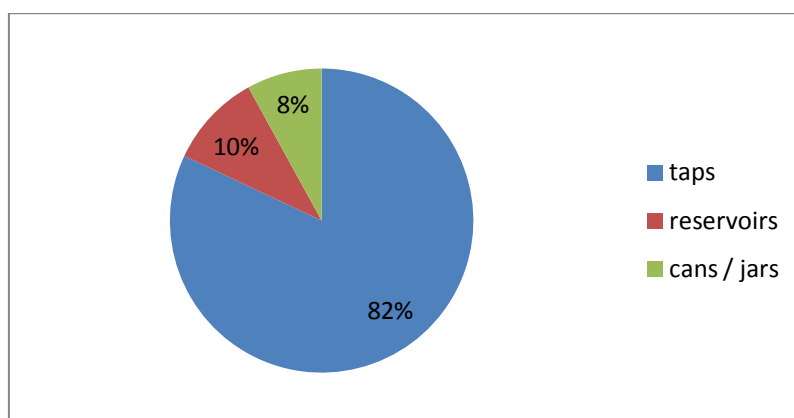


Figure 1: modes of drinking water supply

The figure above shows that almost all Schools have Taps for the Water Supply to the Students.

The diagnosis of the drinking Water Supply situation revealed the following:

- of the 32 Schools with Taps, 17 have only one, four of which have more than 1,000 students (*CES Karkada, CEG5, CES / FA / Zangou and CES F / A Charé Zamma*);
- the observations showed that the Water Points are unhealthy at the level of 30.77% of the Schools (with presence of stagnant water and / or garbage piles);
- approximately 65.6% of Schools using taps faces multiple problems such as a drop in pressure or even a total shutdown of the Water for several hours of the day.
- concerning cans and other tanks, 85.71% of Schools suffers from quality problems (odor / color).

Hygiene

Latrines and Use

Regarding the existence or not of latrines, two Schools (CEG 24 and CEG 25) do not have a Latrine. Taking into account the operational status of the latrines, we have identified that 6 existing latrines at the *CSP Fogasso II* are all non-functional. So overall, 7.5% of Secondary Schools do not have latrines compared to 92.5% (ie 37 Schools) which do. The latrines observed are gender segregated in 86.48% of the Schools. Schools such as the *Lycée Amadou Kourandaga (LAKD)* which is also the oldest high school in the region with more than 1000 Students do not have gender segregated latrines.

It was also observed that, only 6 Schools out of 37 (i.e. 16.21%) have accessible latrines for Students with disabilities. In addition, the good use of latrine as observed (the absence of excreta on the slabs i.e. excreta outside the pit) is only in 24.32% of the sample (all are private Schools).

The emptying of latrines is carried out only at the level of 40.54% of Schools. Emptying Latrines essential in keeping the latrines operational, however, lack of doing so in some School for long time has make doing so impractical and the latrine nonfunctional. The number of students using a latrine by sex (ratios) and by type of school is shown in **Figures 2 and 3**.

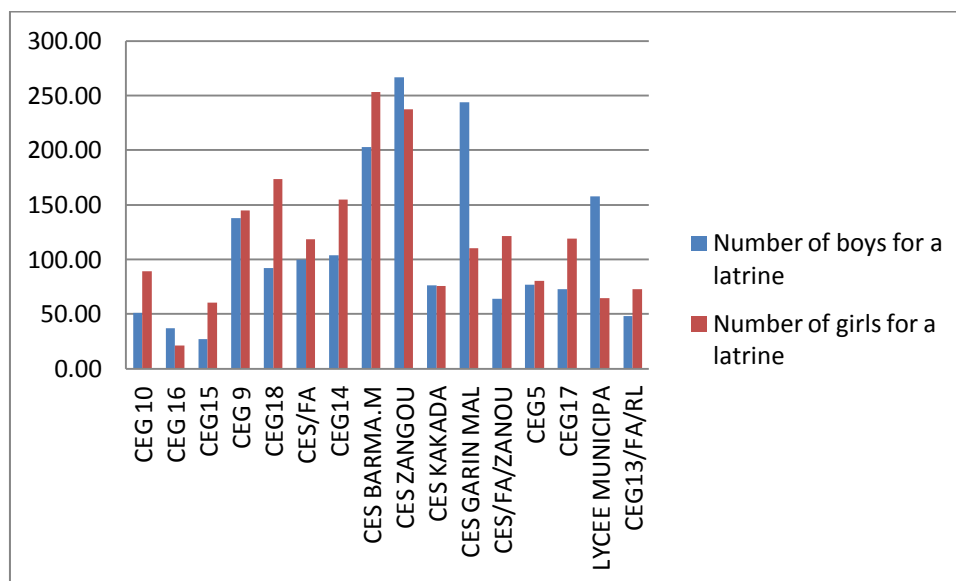


Figure 2: ratios of number of students (boys and girls) per latrine in public schools

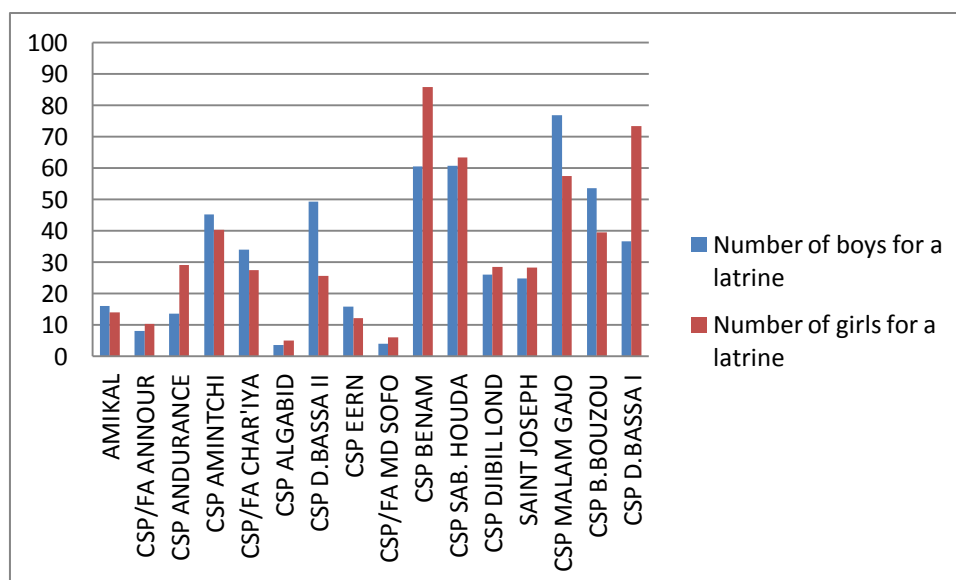


Figure 3: ratios of number of students (boys and girls) per latrine in private schools

The results show that, the ratio (number of Students per Latrine) is very disparate according to Sex and type of School. It thus emerges that on average, one latrine for 110 Students for Boys in Public School vs 33 in Private Schools. For Girls' it is 119 and 35 Students per Latrine respectively in Public and Private Schools on average.

The highest are recorded at *CES Zangou* and *CES Barma Moustapha* respectively for Boys and Girls with ratios more than 2 times higher than the average values

Hand Washing Devices

In terms of Hygiene, it is imperative to Wash Hands after using the latrine. According to the Survey Conducted, only 15 Schools have Hand Washing Stations (kettles, buckets). However, it Lacks accompany soap and / or ash. We also found that, the Hand Washing Stations are often far from the latrines, which is contrary to Good Hygiene Practices (GHP).

Maintenance of Latrines and other Premises

Schools only have Brooms and Brushes with few having cleaning products (soaps and disinfectants). The maintenance of Latrines and other premises done by Laborers / Guards (56.77%), by Health Clubs (Comprising of Students and other School Stakeholders) (16.21%) and by Students (13.51%). It was also observed that, 13.51% of Schools do not carry out any cleaning activity due to a lack of dedicated Staff (or Volunteers).

22% of Schools have a daily Latrine cleaning Programme, with Private Schools standing out with 37% daily cleaning against 6% in the Public Schools. 100% of Schools that "rarely" clean toilets are Public Schools, the most populous of which: *CES Zangou* (3,500 Students), *CES Franco Arabe* (1,447 Students), *CES Barma Moustapha* (2,686 Students) and *LAKD* (1,850 Students). Evidence of Open Defecation (OD) was observed in 49% of Schools with at least one operational Latrine.

100% of Head of the Schools claimed to be conducted periodic Hygiene Promotion Session in the Schools (Hand Washing, Food Hygiene, and Sanitation). Additionally, 77.5% and 82.5% of Schools have documentation of expenditure on Drinking Water and Hygiene / sanitation, respectively.

45% of Schools claimed to have a Sanitation Management Committee (SMC). But maintenance of good sanitary condition around the WASH Facilities and the whole School is by the Students, at 89% against 61% for the COGES.

75% of Schools have kept and maintained Visitors Register, indicating a visit by Authorities (Town Hall, Environmental Department, Urban Health and Sustainable Development, Health Department, etc.) and / or their Partners and NGOs at least once in a month.

Waste Management

The Waste Management diagnosis reveals that 72.5% of Schools have no garbage bins/incinerators within their premises and 87.5% have no bins in the Classrooms. The absence of Bins resulted in the presence of illegal dumps sites in the Schoolyard. This is the case in 27.5% of the Secondary Schools surveyed. 30% of Schools are not fenced, which constitutes vulnerability in terms of Health and even safety of Teachers and Students.

The problem of Hygiene and Sanitation which arises intensely in the Urban Area has effects on Schools. Thus, 22.5% of Schools suffers from the presence of landfills and / or sewage in their immediate surroundings. The gravity of the situation meant that among others, *CES Garin Malam*, *CES Zangou*, *CES Karkada* and the *CEG5* were the subject of several Radio and Television Programmes and Bulletins on the dangers associated with the predicament on the Schools, Students, Teachers, host community and the Environment at large.

Classrooms are generally clean on a daily basis in 40% of the Schools surveyed. 45% for Private Schools against 35% in Public Schools. With regard to general sanitation, one in ten Schools responded that, they have never conducted general Environmental Sanitation activity (5% Public and Private). For those who do it daily, they represent only 20%, and with a strong disparity between Private (30%) and Public (10%) Schools. This activity is provided by Students in 95% and 30% of public and private schools respectively.

To find out the main concerns of school directors, they were asked to rank in order of importance (1st, 2nd, 3rd and 4th) the problems related to drinking water, hygiene, solid waste and noise. The result is shown in the figure below (**Figure 4**).

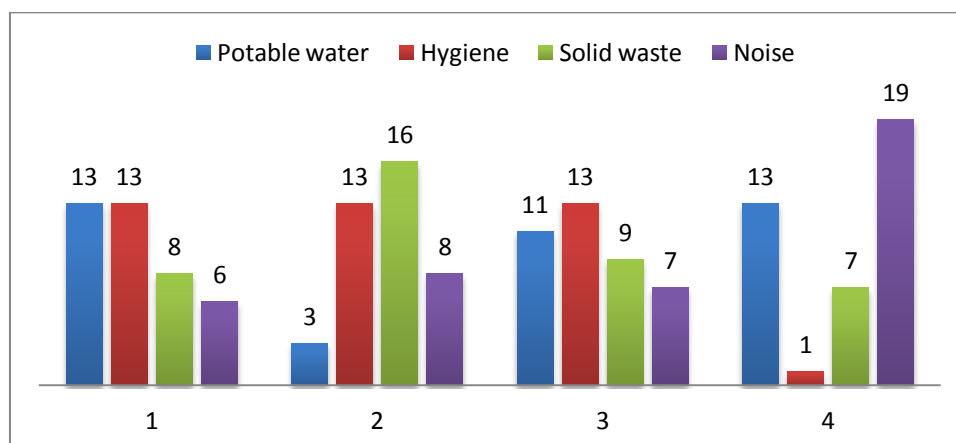


Figure 4: Order of concerns of schools

The ranking of the Schools problems in the surveyed Schools, ranked Potable Water, 1st, 2nd, 3rd and 4th concern respectively for 13, 3, 11 and 13 Schools. These indicate that Water is presented a main concern at 40% and 25% respectively in Public and Private Schools.

Hygiene is ranked at 45% and 20% respectively in Public and Private Schools. Solid Waste and Noise seem less of a concern than the previous ones. Solid Waste was ranked at 15% of in Public Schools and 25% Private Schools. As for Noise, it is almost absent among the concerns at the level of public Schools. It is considered to be the main concern in Private Schools at 30%.

In order to rank the concerns in order of importance for all 40 Schools, the priority scores were weighted respectively by 4, 3, 2, 1. Thus, the more worrying an aspect is for a School, the more we give it a coefficient which takes its weight into account. The weighted results gave the scores of the concerns in **Table 1** in the following order: Hygiene, Solid waste, Drinking Water and finally the Noise issue.

Table n ° 1: concern scores

Aspects	Order of Priority				Total
	1	2	3	4	
Potable water	13	3	11	13	96
Hygiene	13	13	13	1	118
Solid waste	8	16	9	7	105
Noise	6	8	7	19	81

The combination by order of priority (Hygiene-Solid Waste-Water-Noise) represents 12.5% of Schools against only 2.5% for the order (Hygiene-Water-solid Waste-Noise).

IV. Discussions

WHO and UNICEF, whom have consistently invested Human and Financial Resources in Study and Intervention in WASH and particularly in WASH in Schools, have defined indicators to assess the level of WASH in Schools. In the context of this Study, the analysis is essentially based on the benchmarks of these two globally recognized Institutions, and Leaders in WASH Programming.

With regards to Drinking Water UNICEF (2010) has defined three criteria: Quality, Quantity and Number of Students per Water point. For the quality, it is necessary to meet WHO standards of Physical, Chemical and Microbiological Parameters of the Water on one hand and on the other hand, there must be an absence of taste, odor or colour likely to have effect on the consumption of the Water.

97.5% of the schools surveyed have a modern water point, which is very high and far exceeds the world average (69%) observed by a study commissioned in 2016 by WHO and UNICEF as part of the Joint Monitoring Program (JMP, 2018).

Nevertheless, on the Physicochemical, Microbiological and Organoleptic Parameters, the survey determines that Schools with Water Storage Facilities such Reservoirs and other Containers are confronted with problems of Taste, Odor or Colour, therefore of questionable quality, that may not be safe for Human consumption. These situations are justified by a number of reasons including the non-maintenance of the tanks which are often rusty, the non-regular renewal of the water, its exposure to multiple sources of contamination due to the lack of closure and the unhealthy surroundings water points.

Drop in pressure or even the complete shutdown of the supply of Water to Schools is a very recurring problem. According to the work of Ibrahim et al (2016), the difficulties of access to drinking water in the city of Zinder are the combination of several factors including the problems of availability and accessibility to the resource; but also climatic and hydrogeological constraints.

WHO Standard is set at 250 Students for a tap. The Survey found an average ration of 332 Students / tap. This rate, higher than the WHO Standard, is better compared to the national average (934 Students / Tap) according to a study by the Nigerien Ministry in charge of Secondary Education in 2017 (MES, 2017) and the number of Students per Water point advanced in the work carried out by Dieudonne in 2016, in High Schools of Yaoundé in Cameroon (1480 Student/Tap).

The number of Students per Latrine does not comply with WHO recommendations for one Latrine for 25 Girls and one Latrine for 50 Boys. In the Schools that were the subject of this Work, the number of users per Latrine is estimated at 94 Students. By making a comparative analysis, this ratio is ten times lower than the National average which amounts to 854 Students per Latrine according to the Ministerial study cited above and almost four times lower than the rate advanced by UNICEF (328 students for a Latrine) according to the results of a survey conducted in 2016 in Primary Schools in Ndjamena (UNICEF, 2016).

These relatively better results can be explained by the size of the sample and the geographical position of Schools (Urban Area) where investments are greater than in Rural or Peri-Urban Areas.

The pressure (Over-Use) on Latrines especially in Public Schools and the lack of cleaning, and proper maintenance justifies the practice of Open Defecation around Toilets, behind Classrooms and within the School Premises.

WHO Standard (2010) recommends that Solid Waste in Schools be collected daily and disposed of safely. Almost all the Schools surveyed have neither an infirmary nor a laboratory, which means that they only produce ordinary waste. The absence of Garbage Bins within School Perimeters and in Classrooms is a situation that does not promote better collection of Garbage that is scattered throughout the School and even beyond. Likewise, the absence of a Fence means that the School is transformed into a place of Garbage dump or defecation by Local Population, especially if there is no School Guard.

The use of Water plastic bags (commonly called pure water) as Toilet tissue for lack of Hygiene kit, thus constituting a potential source of unsanitary conditions in Schools.

Finally, the absence and / or weakness of intervention by other School Stakeholders in Solid Waste Management is an important factor that explains the increasingly alarming poor Sanitary Condition in Schools in Niger in general, the problem of solid waste is the second concern of the Schools surveyed after that of Hygiene, with unfortunate consequences on the Environment, the School and Host Community. A similar observation was made by Godson et al in 2011 for Secondary Schools in Ibadan South West Nigeria, a finding that the authors qualified as a "scenario of harmful effects for the Environmental Health of the Community and which could compromise the quality of the School Environment".

V. Conclusion

This study constitutes an inventory of the conditions of Water Supply, Sanitation and Hygiene in 40 Schools of the Regional Directorate of Secondary Education in Zinder. Notwithstanding, the very small size of the sample, the analysis of the results shows that in Zinder, WASH is Schools needs urgent and Emergency Interventions. This urgency brings us to paraphrase Florence (2004) who asked himself the question of knowing "How to provide Health Education at School when the most elementary rules of Hygiene are not respected there.", the Students having to put up with deplorable sanitary facilities? "

Our results corroborate the results of several studies on the alarming situation of the issue of Hygiene and Sanitation in Nigerien Schools and in several other Countries in sub-Saharan Africa.

In terms of perspective, reflection must focus on the dynamics to be put in place to change the WASH situation in Schools in Niger.

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