Education Sector Support Programme in Nigeria (ESSPIN)

Assignment Report

Review of ESSPIN Water and Sanitation provisions under the ESSPIN Project

Report Number: ESSPIN 333

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Abstract

1. The Consultant made a short visit to Ilorin, to comment on the design and construction of new school latrines. He found they were well designed, constructed and fit for purpose. A number of recommendations were made to improve latrine design but they should not be introduced until after post commissioning evaluation. A number of cross cutting issues were identified and it was recommended they should be considered at programmatic level.

Executive Summary

2. The Consultant visited Ilorin, Kwara State between the 26th and 28th July 2011 to evaluate the design and construction of new water supply and sanitation facilities for primary schools.

3. Information was collected from 3 visits to primary schools, review of design drawings, discussions with Mr Coppinger and his staff, and a meeting with Kwara RUWASA senior staff.

4. He found that the schools were being constructed to a high standard, on time and to budget. They were also of an appropriate design and fit for the purpose intended. Less data was collected on the water supply intervention but that too appeared to be appropriate to the Programme's needs and of good quality and design.

5. Suggestions were made as to how the latrines could be improved but it was recommended that changes should not be made until after some of the existing latrines have been commissioned and their use evaluated.

6. A number of cross cutting issues also became apparent during the visit, particularly related to school and child security, universal access, sustainability and the relationship between Programme outputs and its purpose.

Introduction

7. ESSPIN is a 6 year Programme funded by DFID to have a sustainable impact on the way in which the government in Nigeria delivers education services. It is directed at enabling institutions to bring about systematic change in the education system, leveraging Nigerian resources in support of State and Federal Education Sector Plans and building capacity for sustainability.

8. One element of this Programme is the improvement in water supply and sanitation facilities in primary schools, as these are seen as essential to the health and education of children, especially girls.

Purpose of the Consultancy

9. The purpose of the assignment was to undertake a review of the water and sanitation provisions that are being implemented under the infrastructure section of the Programme. In particular to review the designs of the VIP latrines and the associated urinals and hand washing facilities currently under construction with specific consideration for their:

   (i) appropriateness;
   (ii) cost effectiveness;
   (iii) durability; and
   (iv) general suitability for the Nigerian environment.

10. The comments of the Consultant will be taken into account during future stages of the Programme. A copy of the Consultant's ToR is attached as Annex 1

Methodology and Main Activities

11. Data for this report was gathered during a visit to Ilorin between the 26th and 28th July 2011. Most of the information gathered was gained from three sources:

   (v) Detailed discussions with key staff, particularly Mr D Coppinger and Eng Simion Oladukun;
   (vi) A review of the detailed design drawings prepared for the latrines; and
   (vii) Visits to three primary schools where new toilets have been constructed to examine the completed structures and hold discussions with contractors, teaching staff and other Programme partners.

12. A visit was also made to the Ilorin State RUWASA office to discuss their possible involvement in sanitation provision. A visit itinerary is given in Annex 3 and list of key persons met in Annex 4.

Findings

Sanitation

13. The latrines inspected were of an excellent standard of design and construction. They were appropriately designed to meet the needs of school children and staff in primary schools in Nigeria and of rugged construction. With proper operation and maintenance there is no reason why they should not have a long useful life.

14. Cost effectiveness was not explored as time did not permit sufficient data to be collected to make a assessment.

15. The latrines were also welcomed by the teachers in the schools, although they were yet to be commissioned and opened for use.

16. The Consultant has made a number of suggestions to improve the design and construction of the latrines and these are listed in Annex 2. The list was drawn up in collaboration with Mr Coppinger and he has verbally accepted them as being acceptable. It is recommended that alterations are not made until after some latrines have been commissioned and evaluated whilst in use. It is possible that further design changes will come to light when day to day use is observed.

Water supply

17. Each school visited had a handpump that was functioning. Water quality appeared to be acceptable and above ground design and construction was good although access for people with mobility difficulties could be improved.

18. It was noted that at one of the schools (Baptist LGEA) insufficient attention had been paid to wastewater drainage. Waste water drainage is different at each borehole, depending on geological, geographical conditions, number of users etc. Standard drawings and construction contracts must allow for disposal systems to be adapted to meet individual needs.

19. The Programme has made arrangements with Kwara State RUWASA to ensure all handpumps are checked every three months and repaired where necessary. This should ensure continuity of supply. During the life of the Programme. This issue of longer term sustainability is discussed later.

Cross cutting issues

Security

20. School security is a major consideration when investing in infrastructure. Poor security encourages vandalism which, in turn, leads to facilities falling into disuse. This is of particular importance in urban schools where the general public live in close proximity to schools. Vandalism of the new latrines is already evidence in some of the schools visited, even before they are opened. Since schools do not have a large maintenance budget, once the facilities are broken there will be no way for them to be repaired. In the end, the only satisfactory way of securing the investment may be through the construction of a secure boundary fence. Whilst this is expensive, it is a common request from head teachers around the world and in the end, makes good economic sense.

21. Security is also important when considering the siting of latrines. Young children, especially girls, are known to be unwilling to use facilities that they consider unsafe. Correct siting of the latrines so that they provide the users with privacy but also ensure their security is a key consideration. Siting latrine blocks so that girls are separated from boys, are in sight of classrooms and with entrances facing the school buildings are standard measures for improving security.

Access

22. The design and construction of the latrines (to a lesser extent the handpumps) has gone a long way to make them accessible to children and teachers with a physical disability. Philosophically this is very important as schools should be seen as welcoming to all children in society, not just those who are fit and able. Unfortunately getting to the latrines is less easy. The schools (including the latrines) visited would be impossible to access for people with a disability because of the condition of the access routes and the impossibility of getting into or out of the class rooms. If the Programme is serious about promoting access to schools for all, it will have to make a significant investment in infrastructure.

Sustainability

23. There is plenty of evidence to show that individual communities cannot operate and maintain their own water supply facilities alone. All communities require some form of on-going subsidy, be it financial, managerial or technical to support them through difficult situations. Also, there is no reason to believe that the same situation does not exist for communal latrines. The question is, how is that subsidy going to be delivered once the ESSPIN Programme is finished?

24. Of particular importance to latrines is the day to day cleaning and carrying out of routine operations and repairs. Once toilets become damaged or dirty, children will quickly stop using them. School management must have procedures in place to tackle these issues but it is unlikely they will be effective if not supported externally. The same is true for

handpumps. They are mechanical devices and will all need repair from time to time. Good management is necessary to ensure that funds are available to pay for spare parts and mechanics when they are needed.

25. The Consultant assumes that the Programme is considering the sustainability of other elements of its interventions, perhaps the long term operation and maintenance of the water supply and sanitation facilities should be incorporated into this element.

26. Another key element of sustainability is the issue of ownership. In the end, the person/organisation who owns a structure is/are responsible for its upkeep. So who legally owns the school infrastructure? The Consultant was unable to get a clear answer to this question during the visit but it is an important issue. If schools are to be responsible for operation and maintenance then they must either be the legal owner or be supported by the owner.

27. Unfortunately the implications of this are fraught with difficulties!

Output to purpose

28. According to the Consultant's ToR the purpose of the Programme is:
to have a sustainable impact on the way in which the government in Nigeria delivers education services. It is directed at enabling institutions to bring about systematic change in the education system, leveraging Nigerian resources in support of State and Federal Education Sector Plans and building capacity for sustainability.
In other words, it's about strengthening the state to deliver good education.

29. If that is the case then how is the current sanitation component strengthening the State? For very practical reasons there is little or no involvement of State Actors in the delivery of sanitation facilities, despite there being an element of competence to do so. RUWASA, through its long time partner UNICEF, has developed expertise in sanitation promotion and delivery which could be included within the Programme. However, this would require additional resources as the current engineering team is already fully extended by the construction process and would not be able to take on the development of a new institutional collaboration.

30. At the very least, the Consultant recommends that the Programme develops better ties with UNICEF WASH Sector. They have had a long relationship with the Government of Nigeria and are a respected partner in water supply and sanitation service delivery. Obtaining UNICEF's formal approval for the designs being promoted by the Programme would enhance the possibility of them being taken up by the Government after the Programme has finished.

Conclusions

31. The findings and conclusions in this report are based on a two and a half day visit to one state (Kwara) in Nigeria. They must therefore be read with that in mind. It is quite possible that other elements of the Programme are addressing the issues raised, in which case the Consultant apologises for the inaccuracies.

32. The water supply and sanitation components of the Programme are being very well run. They are producing good quality, robust and appropriate facilities that have the potential to provide many years of useful service. Minor changes are recommended to the design and construction but that is to be expected with a new prototype. Water supply and sanitation facilities always evolve as more experience and local knowledge is gathered during the Programme life. However, it is recommended that no design changes are implemented until the existing design has been evaluated during use as this may identify other changes that are needed.

33. The consultants main concerns relate to cross cutting issues that are largely out of the hands of the construction team. Issues such as security, accessibility and sustainability cut across many areas of the Programme and should be addressed holistically.

34. The final issue is that of the purpose of the intervention. Currently the delivery of infrastructure is driven by issues of quantity, time, cost and quality. So the question is asked, how does that contribute to the Programme's ultimate purpose?

Annex 1: Consultant's Terms of Reference

Terms of reference: **International Specialist Water and Sanitation Consultant, School Infrastructure for ESSPIN Project**

Title of the assignment: **Review of ESSPIN Water and Sanitation provisions under the ESSPIN Project**

Duration and dates of the assignment: Up to 5 days starting the week beginning 18th July 2011.

Background

Despite the possession of considerable oil wealth, a rising population, inefficient government investment in front line public services and years of neglect have left the Nigerian education system in a poor state. Education indicators are amongst the lowest in Sub-Saharan Africa, particularly for girls. Currently it is estimated that there are 7-9 million school aged children not attending school, a disproportionate percentage of whom are girls.

Since legislation was passed in 2004 establishing nine-year compulsory Universal Basic Education, the main sectoral focus of Federal and State governments has been an expansion of basic education to meet the Millennium Development Goals. There has been a significant increase in investment in the basic education sector through State governments and through Federal sources such as the Universal Basic Education Commission (UBEC). Access remains a problem, as do the low quality of education outcomes and the stark inequities in the system.

The Education Sector Support Programme in Nigeria (ESSPIN) is a six year DFID Programme of education development assistance and is a part of a suite of programmes aimed at improvements in governance and the delivery of basic services. ESSPIN's aim is to have a sustainable impact upon the way in which government in Nigeria delivers education services and is directed at enabling institutions to bring about systemic change in the education system, leveraging Nigerian resources in support of State and Federal Education Sector Plans and building capacity for sustainability. It is currently operating in six States (Kano, Kaduna, Kwara, Jigawa, Enugu and Lagos) and at the Federal level. ESSPIN builds upon previous technical assistance projects in education, in particular the Capacity for Universal Basic Education Project (CUBE). ESSPIN will run in parallel with World Bank credit-funded projects in four of the States (the State Education Sector Project (SESP) in Kano, Kaduna and Kwara and SESP II in Lagos).

Objectives of the assignment

The objective of the assignment is to undertake an on site review of the water and sanitation provisions that are being implemented under the infrastructure section of the Programme.

The Specialist International Water and Sanitation Consultant will join the international and national infrastructure consultants on a series of site visits in the State of Kano in Northern Nigeria to enable an assessment of the provisions being made under the Programme

The main objective of the assignment is to review the designs of the VIP latrines and the associated urinals and hand washing facilities that are being constructed. The factors to be considered are the appropriateness, cost effectiveness, durability and general suitability of the facilities to the Nigerian environment. The report of the Consultant will be taken into account for future stages of the Project and suggested improvements will be incorporated in the implementation.

Tasks

Specific tasks include the following activities

- A desk review of the design drawings
- A series of site visits in Kano State with the current ESSPIN infrastructure consultants to view and evaluate the water and sanitation facilities that have been constructed in the first Phase of the Programme
- Meetings with a cross section of the stakeholders
- Suggestions regarding the possible improvement in provision of the water and sanitation facilities
- An assessment in terms of value for money of the facilities being provided

Outputs

Specialist evaluation and possible enhancement of the water and sanitation facilities being provided under ESSPIN for the future Phases of the Programme

Institutional/administrative arrangements

At the end of each input a report will be submitted detailing the findings and recommendations of the Consultant

The Consultant will report to the Lead Specialist Education Quality and work together with the existing international and national ESSPIN infrastructure.

Annex 2: Recommended improvements to latrine design and construction.

The pit

35. Remove internal walls, except where they are necessary for supporting the side walls.

36. Leave all external walls un-plastered and make them porous for their whole depth except the top 0.5 metres. The simplest way is to leave the vertical joints in the blocks un-mortared every third course.

37. Where ground conditions make it difficult to dig deep pits, elevate the latrine but reduce the pit depth to 1 – 1.5 metres. The pit will need emptying more often but the cost each time will be less.

38. Provided shallow groundwater is not being used for drinking it's ok for the pit to enter the groundwater. Water in the pit will aid digestion and reduce the sludge build up rate.

Soak pit

39. In most cases a soak pit is not necessary, liquid wastes can be disposed of in the main pit.

40. If a soak pit must be installed, do not line the pit but fill it with large stones and cover the top. This will keep out surface water, silt and garbage. It is also less of a trip hazard for children.

Pit cover slabs and cubicle floor

41. The removable cover slabs at the rear of the building should be a tight fit on the pit to minimise the quantity of mortar needed to seal them. They should also be reduced in thickness and fitted with lifting handles to their aid removal.

42. The thickness of the cubicle floor slab can be reduced, probably to 150 mm. The floor surface should drain gently towards to squat hole such that excess water runs into the pit.

Squat holes

43. Squat holes should be centred in the cubicle except in oversized cubicles where they should be the same distance from the side wall as in a standard cubicle.

44. The size and positioning of the squat hole and associated foot rests should be different in cubicles for small children, large children and teachers.

45. The sides of the squat hole should be smooth and tapered so that the hole is smaller at the top than at the bottom.

46. Consideration should be given to installing pour flush pans in toilet blocks where only water is used for anal cleansing.

47. Consideration should be given to providing simple pedestal toilets for teachers, where they are appropriate.

Ventilation pipes

48. These are largely unnecessary and should be omitted. However a nominal vent pipe can be installed if it improves the users' confidence in the latrine.

Toilet door

49. Opening door width should be increased to a minimum of 800mm

50. The door height can be reduced provided it still gives privacy for the users (it may need to be higher in the teachers toilets than in the children's)

51. Make the door a looser fit in the frame so that it is easier to open and close and does not jamb. Also ensure it is easy to fully close so that it can be easily locked and unlocked by a small child.

52. Remove the slide bolt from the outside of the door to prevent children being locked in.

53. The door to the disabled toilet should open outwards.

Cubicle

54. Increase the minimum width of cubicles for staff to 1.0 metre. At least one of the female cubicles should be double width to provide space for changing clothes.

55. Staff cubicles to be fitted with one hand rail next to the toilet.

56. Reduce the height of the cubicles to a minimum. Children's blocks could be lower than those for teachers

57. Increase cross ventilation in the cubicle and make the space as light as possible whilst retaining privacy.

58. Reduce dividing wall thickness to a minimum.

Urinal

59. The surfaces of the urinal should be impervious. Suggest tiling the splash wall and foot rest areas and fitting half round plastic piping as urinal channels. Reduce the height of the foot rests so that only slightly higher than the urinal channel.

60. Increase the number of urinals in line with the number of cubicles. i.e. 4 cubicles – 2 urinals; 6 cubicles - 3 urinals; 8 cubicles – 4 urinals.

61. Observe boys urinary practices to see if stand up stalls are more appropriate.

Handwashing

62. Reduce the size of the water storage tank to around 50 litres

63. Use a simple plastic tap

64. Provide a smooth finish to the hand basin so easier to clean.

65. Consider multiple hand basins for larger numbers of cubicles.

Layout

66. Alter the latrine layout so that all of the facilities can be secured against theft and vandalism. Move urinals and handwashing facilities to opposite toilet cubicles and place a security gate at the entrance to the block.

67. The entrance ramp should be defined by its maximum slope rather than its maximum length.

Annex 3: List of persons met during the visit.

Name	Position
Mr Dick Coppinger	ESSPIN International Consultant
Mr Samion Bakinde	ESSPIN National Consultant
Eng. Bakinde	Private Sanitation Consultant Fatia
Eng Atinuku	SUBEB Sanitation rep
Eng. Adiola	Private Sanitation Consultant Fatia
Mr Mustafa Ayanwola	Contractor – De Victor
Mr Suleman Ibrahim	General manager Kwara State RUWASA
Mr Bula Yoila	Geologist consultant Darl Hab
Mr Suliman Said	Secretary to Kwara State RUWASA
Ms Emma Williams	Kwara State Team Leader ESSPIN
Mr Steve Bains	Technical team coordinator ESSPIN