eSTEeM Final Project Report

OpenWASH

(formerly 'Exploring global potential for WASH distance education and training')

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For OpenWASH resources: http://www.open.edu/openlearnworks/OpenWASH

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Executive Summary

The original aim of this project when it started in 2011 was to explore the potential for WASH distance education and training in a global market. WASH stands for water, sanitation and hygiene. At that time the final objective was to prepare a bid for funding. This objective was achieved in 2014 but was so successful that the project rapidly moved on, way beyond its original aim, to the production and delivery of a comprehensive set of learning resources for the WASH sector.

After the development phase, in the summer of 2014, funding of more than US$600,000 was obtained in partnership arrangements with World Vision Ethiopia and UNICEF, funded from UK Aid. The project had evolved into a plan for the production of five Modules and a Trainers' Handbook for use in Ethiopia. Key principles of the project were that we would work with in-country authors to produce resources that used Open University distance learning pedagogical techniques and would be available as open educational resources (OERs). The teaching would take an interdisciplinary approach that recognised the complex interconnections of the WASH system and the need for both 'hard' and 'soft' skills and knowledge.

The OpenWASH modules were written by a team of 15 Ethiopian WASH expert authors working with a group of OU academics from MCT and Science faculties, with essential project management and administrative support from the OU International Development Office, and module production by LTS Corporate. After an intensive period of work involving many colleagues, the production phase was successfully completed in early 2016 when the modules were approved by Ethiopian Federal Ministry officials.

The OpenWASH Modules and Trainers' Handbook are now available in pdf and Word for print in English and are being translated into four Ethiopian regional languages. They are also available online as OERs. The modules will be piloted in eight Ethiopian colleges where they are being used for curriculum support for face-to-face teaching.

The project was inspired initially by a combination of personal experience from making a series of videos for the undergraduate module U116 *Environment: journeys through a changing world* and from participating in the HEAT (Health Education and Training) programme in Ethiopia. OpenWASH was therefore informed by and is informing OU teaching as it now brings added value to the rewrite of U116, currently in progress, and demonstrates the beneficial links between OU teaching and applied development work.

As well as the tangible output of the Modules and Handbook, the project also led to successful in-country capacity building that will contribute to sustainable improvement in learning delivery. The experiences of the Ethiopian authors were assessed in a short survey. This revealed overwhelmingly positive responses and demonstrated the emergent secondary benefits that can result from a collaborative international teaching project of this type.

The planned next phase is to extend the benefits of OpenWASH to a wider audience in other countries. As OERs, the OpenWASH modules can be used and adapted for WASH projects around the world, supporting the United Nations' Sustainable Development Goal to achieve safe drinking water and adequate and equitable sanitation and hygiene for all by 2030.

The OpenWASH resources are available here: http://www.open.edu/openlearnworks/OpenWASH.

Introduction

The OpenWASH project has produced learning resources that are freely available (open) for capacity building in the global water, sanitation and hygiene (WASH) sector.

Globally, more than 600 million people do not have access to safe drinking water and 2.4 billion lack adequate sanitation (UNICEF/WHO, 2015[1]). There have been significant improvements in these figures in recent years but there are still huge challenges ahead. The United Nations' Sustainable Development Goal 6 is to 'ensure availability and sustainable management of water and sanitation for all by 2030' (UN, 2015[2]). Achieving this goal will not only need new infrastructure and hardware but also requires major investment in human resources. The success of new WASH projects and installations is highly dependent on the knowledge and skills of the people who are planning, managing and maintaining them. OpenWASH was designed to help meet the need for skilled workers by providing targeted learning to develop the expertise of WASH practitioners and improve the effectiveness and sustainability of WASH projects, and thereby support the global goal of water and sanitation for all.

The idea for OpenWASH arose from two significant teaching experiences: one for an undergraduate OU module and the other for the HEAT (Health Education and Training) programme in Ethiopia. Most of this report consists of a chronological record of events through the evolution of OpenWASH from that initial idea to successful delivery of a comprehensive set of learning resources. These resources consist of five 200-page Modules and a Trainers' Handbook that are currently being used in Ethiopia and may also be adapted for use in other countries. The report also covers other ancillary outcomes and benefits. Although not a typical eSTEeM project, the initial impetus from eSTEeM was a vital part of the development of OpenWASH.

Aims and scope of the project

The original aim (2011) was to explore the possibility of developing an international curriculum for the water, sanitation and hygiene (WASH) sector based on the OU's distance learning pedagogical approach. The secondary aim was to investigate the potential benefits and disadvantages of working with external partner organisations. The objectives were:

1   Identification of potential markets for WASH distance learning (DL).
2   Develop a model for potential collaboration with partner organisations to develop overseas markets in this or other areas.
3   Specification of DL materials to meet the needs of the identified market(s).
4   Bid for funding to develop WASH distance learning materials.

At the outset, as the final objective indicates, the project only aimed to get as far as bidding for funding. However, in 2014 the project moved into an entirely new phase beyond the original goals when we entered into a partnership agreement with World Vision Ethiopia (WVE) and UNICEF. Our

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[1] UNICEF/WHO (2015) *Progress on Sanitation and Drinking Water – 2015 update and MDG Assessment,* http://www.wssinfo.org/fileadmin/user_upload/resources/JMP-Update-report-2015_English.pdf

[2] United Nations (2015) *Sustainable Development Goals,* https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

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role was 'to deliver capacity building resources to enhance understanding of WASH provision in Ethiopia' with funding of US$ 639,119.

Activities and events

The key stages are presented chronologically in the table below and followed by additional commentary and explanation in the form of numbered notes, identified in the final column. Even with the additional comments, it should be noted this report can only provide a superficial description of the project as a whole. Note also it is written from my perspective as Academic Director and focuses principally on module development rather than the complex and extensive detail of the political, financial and organisational negotiations.

Date	Activity/event	see note below
Phase 1		
Dec 2010	Initial idea that WASH learning resources using OU distance learning methods could meet a real and significant need for capacity building in developing countries, seeded by personal experience from an earlier filming trip for U116 and the HEAT programme in Ethiopia	1
Aug 2011	eSTEeM project proposal accepted	
2011/12	• Development of project plan in collaboration with Richard Carter, WaterAid. • Draft course outline prepared consisting of 12 modules, with structure modelled on HEAT modules	2
Sep 2011	Scoping study for market research	
Jan 2012	Scoping study report. Findings were (a) there was no equivalent course available that filled the same training niche and (b) WASH experts agreed there was a need to increase capacity in the WASH sector	
Aug 2012	Concept Paper completed, which set out the OpenWASH proposal including outline details of 12 modules	3
2012/13	Development of a consortium of partner organisations to support the OpenWASH proposal	4
Mar 2013	OpenWASH adopted by OU International Development Office (IDO)	5
Apr 2013	OpenWASH Partners' Group meeting	6
2013	Actively seeking funding to produce 12 modules for global use	7
Phase 2		
Nov 2013	Ethiopian government announce One WASH National Programme	8
Feb 2014	• Scoping Visit to Ethiopia at UNICEF's invitation to present OpenWASH plan to key stakeholders including potential partner NGOs. • Pre-Teaming Agreement signed with World Vision Ethiopia (WVE).	9
Apr-Jun	Revised and developed OpenWASH plans, and prepared funding bid, in response to UNICEF requirements	10
Aug 2014	UNICEF signed Programme Cooperation Agreement (PCA) with WVE leading to signing of Sub-Grant Agreement between WVE and the OU to produce five OpenWASH Modules and a Trainers' Handbook	
Sep 2014	First meeting of OU core team	11
Sep /Oct	Inception Visits to Addis Ababa and regional centres	12
Oct 2014	Appointed 15 Ethiopian authors	13

Nov 2014	• Federal Ministry approval of module subjects and scope. • Writers' Workshop 1 in Addis Ababa.	14
Dec 2014	Module outlines approved by UNICEF and sent to critical reviewers for comment	15
Dec to Mar	More module writing, revising and developing.	16
mid Mar	• Module drafts run through Turnitin plagiarism detection software. • Sent to UNICEF to check progress.	
Mar 2015	Writers' Workshop 2 in Addis Ababa	17
Apr/May	More module writing, revising and developing	
May 2015	Module drafts sent to Critical Reviewers (1 per module)	18
May 2015	First LTS edit	19
May to Dec	Further revisions and asset list management	
July 2015	Review copies sent to Ethiopian Technical Task Force	20
Aug 2015	Feedback from Task Force received	
Oct 2015	Validation Workshop in Addis Ababa	21
Dec/Jan	Second LTS edit	22
Jan 2016	Completed modules (for print) delivered to UNICEF and WVE	
Mar 2016	Final and formal approval by Ethiopian Ministry of Water, Irrigation and Energy received via UNICEF	
Feb/Mar	Conversion, checking and reviewing online versions	23
Apr 2016	Modules go live on OpenLearn.	
Phase 3		
Jul 2016	'Training of Trainers' in Addis, 1 week training run by five of the OpenWASH Ethiopian author team	24
Sep 2016	Printing (in Ethiopia) of English versions of the modules	
Oct 2016	Tender for translation into 4 regional languages (Amharic, Tigrigna, Oromiffa and Somali) issued by WVE	
Oct 2016	Pilot use of modules in 8 colleges in 4 regions	
Sep/Oct	Author survey and report '*Learning from OpenWASH: experiences of the Ethiopian author team*' (see Appendix 2)	25
Oct 2016 to …?	Potential adaptation for other countries	26

Phase 1

1. The initial concept was to create training resources using OU distance learning methods that would contribute to meeting the capacity building needs of the WASH sector. This idea emerged from a fusion of two previous experiences. In 2008 I had visited Ethiopia to make films about water availability for U116 *Environment: journeys through a changing world* and had seen at first hand some of the enormous challenges of water and sanitation in developing countries. This was coupled with my experience of the Health Education and Training (HEAT) programme for the Ethiopian Federal Ministry of Health. I was a member of the team of OU academic staff who worked with Ethiopian expert authors during 2010/11 on this IDO project. We produced a set of modules for training 30,000 rural health workers as part of the Ethiopian government's major Health Extension Programme. My experience with HEAT opened my eyes to the potential benefits that could be achieved by applying OU teaching methods to meet the demands of capacity building at scale in developing countries.

2. The early stages of the project were developed in collaboration with Professor Richard Carter, Technical Director at WaterAid. Richard and WaterAid were very important partners at that time. As the only international NGO focusing exclusively on WASH, WaterAid is influential in the sector and, with Richard's support, we were able to connect with other key organisations and individuals.

During this phase the idea evolved into a proposal for a course consisting of 12 modules covering a broad range of WASH topics. The plan was to use and modify existing resources from a variety of sources and fill in gaps with newly written material as needed. The target audience was existing or potential WASH sector workers including in-country staff of WaterAid and other development NGOs, central and local government staff etc. With financial support from WaterAid and also from eSTEeM, a scoping study was undertaken by a consultant with two key objectives: (1) to review existing courses and learning materials to find out if there was a gap in the market and (2) to investigate the need for increased capacity in WASH and gauge whether the proposed course could help meet that need. Conclusions on both these points were positive and encouraging. This scoping study also contributed to meeting eSTEeM Objective 1 'Identification of potential markets for WASH distance learning'.

3. The OpenWASH Concept Paper explained the rationale and proposal to potential funders. It included brief outlines and learning outcomes for the 12 modules and summarised the key principles as follows:

> 'The OpenWASH project has been created to provide learning resources for the Water, Sanitation and Hygiene (WASH) sector throughout the world. The learning resources will:
> - take a broad, interdisciplinary approach that recognises the range of knowledge and skills required
> - be freely available as Open Educational Resources
> - provide appropriate learning challenges for aspiring WASH practitioners and professionals but not assume previous specialist knowledge and expertise
> - be flexibly designed for a variety of learning delivery methods
> - adopt a modular approach to maximise utility to a diverse potential audience.
>
> The materials will be developed by a consortium of institutions and organisations, informed by practical experiences and in collaboration with intended learners and other stakeholders.'

The modules were planned with a structure modelled on the HEAT programme. They would be divided into a number of study sessions of consistent length and structure with numbered headings and sub-headings, photos, graphs, diagrams and other figures, and with in-text questions and self-assessment questions.

4. The scoping study survey process had brought the project to the attention of many key stakeholder organisations including leading international NGOs and WASH-specialist universities. The next step was to build on these connections to develop a consortium of partners who would support, provide materials for, and ultimately use the planned course. The benefit of a larger group of partners was to broaden the resource base that could be drawn on and extend potential reach. Also, it was believed that evidence of widespread support from key players would improve the chances of getting funding; indeed we hoped that funding could come from one of the partners. Within this larger group, we identified a smaller core group of partners as more effective for the critical process of getting funding. The Core Group membership was the OU and representatives of WaterAid, UNICEF, and World Vision International.

5. Within the OU, the adoption of OpenWASH by the International Development Office (IDO) at this time provided vital project management and administrative support. Ellen Scott and Gail Vardy joined the team as Senior Project Manager and Project Coordinator respectively. Without this top quality support the project would have foundered and failed. OpenWASH has been and continues to be completely dependent on IDO staff and resources and would not exist without them.

6. A meeting of the full Partners Group was held in London on 23 April 2013, which I chaired with support from Ellen Scott. The meeting was attended in person or remotely by 19 people from 11 organisations in five countries over three continents. Organisations represented were:

- WaterAid
- UNICEF
- World Vision International
- Water and Sanitation for the Urban Poor
- Rural Water Supply Network/SKAT
- Water Supply and Sanitation Collaborative Council
- PLAN International
- IRC International Water and Sanitation Centre
- Water, Engineering and Development Centre (WEDC), Loughborough University
- Leeds University
- Pharo Foundation.

We discussed module content, target audience, possible contributions in materials and time from partners, and options for funding. The overall response from the partners was positive and encouraging but there was also some caution. For example, some partners, although personally supportive, found it difficult to get institutional endorsement from their organisations. (The experience of working with multiple partners contributed towards eSTEeM Objective 2 'Develop a model for working with partner organisations'. This is discussed further in the *External partnerships* section below.)

7. The project plan and module outlines received general endorsement from the partner organisations, thus contributing to Objective 3 'Specification of DL materials to meet the needs of the identified market(s)'. However, the project needed funding if it was to progress any further (Objective 4). The full costs for development and production of 12 new modules, including writing workshops, AV resources and all other requirements (e.g. OU overheads) were estimated at £2 million. We recognised that funding was going to be a challenge. Using connections through our network of international WASH partners we promoted OpenWASH to potential funders, including presentation at two key annual global WASH events for which IDO and MCT provided funding. These events were the WEDC Conference, held in Kenya in July 2013, and Stockholm Water Week in September. Unfortunately these efforts were not successful. This was the end of the first phase of the project.

Phase 2

8. OpenWASH took a different turn in late 2013 with the announcement of Ethiopia's One WASH National Programme (OWNP) (UNICEF, 2013[3]). This bold programme aimed to bring access to safe water and sanitation throughout Ethiopia and had a budget of US$ 2.41 billion over seven years. The programme document identified 'capacity gaps at all levels as one of the most pervasive threats' to its successful implementation. This presented a great opportunity for OpenWASH. It would mean modifying the proposal from a potentially global market to a single country but this focus overcame some of the complexity problems inherent in the initial proposal and had the added bonus that we had extensive experience and knowledge of Ethiopia.

9. Through introductions made via Richard Carter and Myles Wickstead (OU Visiting Professor in International Development and former British ambassador to Ethiopia), Ellen and I were invited by UNICEF Ethiopia to present the OpenWASH proposal to key stakeholders in Addis Ababa, again supported financially by IDO and MCT. UNICEF had responsibility for part of the OWNP funding (£22 million over five years) that originated from the UK's Department of International Development (DfID). This sum was allocated to several programme components including the development of capacity building resources to support WASH, especially in urban areas. The conditions for this component were that funding would be allocated to an Ethiopian NGO with support from an academic institution. While in Ethiopia, we presented our case to representatives of DfID, UNICEF, World Bank, Federal Ministry of Water, Irrigation and Energy, Federal Ministry of Health, and several NGOs including WaterAid and World Vision Ethiopia (WVE). It became apparent that WVE were the preferred partner.

10. After our visit, we signed a Pre-Teaming Agreement with WVE but this was followed by a period of uncertainty and some difficult negotiation. This ended when UNICEF proposed a non-competitive Programme Cooperation Agreement (PCA) with WVE and named the OU as a sub-partner. This led to the formal signing of a Sub-Grant Agreement (SGA) with WVE. The OU contribution was part of a much larger programme to improve urban water and sanitation provision in eight selected towns and surrounding villages in four regions of Ethiopia. This larger WVE programme, called 'Urban WASH', with its focus on only eight towns was relatively limited in scope compared to HEAT and other OU IDO programmes. 'Urban WASH' was itself part of a larger UNICEF programme and, once the modules were completed, there was potential for much wider application across the country.

The original OpenWASH proposal was modified during negotiations in accordance with the wider programme and the available budget. The key principles of OpenWASH, outlined in note 3 above, were retained but the scope was modified and it was agreed to produce five Modules and a Trainers' Handbook. The Modules would each consist of 15 study sessions of approximately 4000 words. The primary purpose was for curriculum support in Technical Vocational Education and Training Colleges (TVETCs) where the Modules would be used as the basis for face-to-face teaching. These colleges lacked the staff and resources to train the new cohort of WASH workers required to support implementation of the OWNP. The OpenWASH Modules, written using DL techniques, had the 'teacher in the text' and so could be used to help fill that capacity gap. The Trainers' Handbook set

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[3] UNICEF (2013) *Ethiopia launches ONE WASH National Programme (OWNP)* Available at
http://www.unicef.org/ethiopia/events_13460.htm

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out ways of using the modules in different teaching contexts such as in combination with practical training or work experience.

The SGA stated that the Modules would be produced for print in Ethiopia and also made available as OERs and would be translated into four Ethiopian languages corresponding to the four regions of the larger programme: Amhara, Oromia, Tigray and Somali. The budget for the OU's component was US$ 639,119 (£382,941) with a scheduled completion date of August 2015. The agreement also stated that, following delivery of the Modules, WVE would have responsibility for their pilot implementation in selected TVETCs in the four regions.

11. OpenWASH was now a reality. The next step was to confirm the OU project team. Fortunately, several colleagues had expressed interest and, when availability was taken into account, this settled to a core team of academics from MCT and Science Faculties (as they were then) with project management and support from IDO (see Appendix 1).

12. Ellen Scott and I visited Ethiopia in September 2014 and, at UNICEF's invitation, returned in October to gather more information, meet key stakeholders and visit three of the four regions that would be using the Modules in the pilot phase. We joined colleagues from WVE and UNICEF for meetings in Addis Ababa with Federal Ministries, NGOs and Oromia Regional officials and also visited Bahir Dar (Amhara) and Mekelle (Tigray) to meet Regional Bureau staff and visit TVET and Health Science colleges. The findings from these trips and recommendations for the next stages were summarised in our Inception Visits Report.

13. A critical goal for the opening weeks of the project was finding enough suitably qualified Ethiopian authors to work with us in developing the Modules. The author appointment process is outlined in the report '*Learning from OpenWASH: experiences of the Ethiopian author team'*, attached as Appendix 2. Fifteen authors were appointed and asked to choose the Modules they would like to work on.

14. In November 2014 we received news that the proposed module subjects and their scope had been approved by the Ministry of Water, Irrigation and Energy, the lead government ministry for Urban WASH. This was followed shortly afterwards by the first Writers' Workshop in Addis Ababa when we (OU core team) met the authors and the process of writing the five Modules could start in earnest. (The report in Appendix 2 briefly describes the writing workshops.) During the first workshop a great deal of ground was covered in a very short time. By the end of the first day we had confirmed the five Module titles and teams, each consisting of one OU academic and three Ethiopian authors. By the end of the second day, my notes at the time were 'I can't really believe it but we have 5 teams of 3 eager authors and already have 75 study sessions with titles, authors and some content. It's all going amazingly well.' This was a great start although progress after that did get a little slower. The final Module titles were:

- Ethiopia's One WASH National Programme
- WASH: Context and Environment
- Urban Water Supply
- Urban Sanitation and Solid Waste Management
- Urban WASH: Working with People.

15. After the first workshop, the Module outlines, consisting of titles for 15 study sessions each with learning outcomes and section headings, were sent to UNICEF for approval. This was the first formal

deliverable for the SGA. The outlines were also sent to four independent reviewers who provided feedback on the range and coverage of required topics.

16. Work on development of the Modules continued between the workshops. Each Module team established a schedule for individual authors as they wrote their allocated study sessions and sent them to their OU academic editor who commented and returned feedback to the authors.

Shortly before the second workshop the study session drafts were run through Turnitin to identify any plagiarised content. The results revealed some significant problems with percentage matches ranging from 1% to 87%. Two or three individual authors were particularly problematic. At the same time the drafts were sent to UNICEF colleagues who were asked to check the developing content and identify any gaps that should be filled.

17. The feedback from all these sources was brought together for the second workshop in March 2015. This was another intensive week for authors and academic editors as work continued on writing the Modules. Time was spent on resolving remaining problems, identifying ways to fill any gaps, cross-checking between Module teams for any overlap and repetition, and in individual and team discussions. For many authors, all of whom worked full-time, the workshop provided space for them to focus on their writing tasks. It was generally agreed that more time in the workshop setting was needed. Significant progress was made but there was a lot more to do.

18. By early May we had drafts of all study sessions although their quality varied considerably. Some study sessions were well developed and near completion; others had sections missing, were not coherent or otherwise needed a great deal of work. Despite this variable quality, the schedule was our master and, to keep on track, the drafts were sent to five independent Critical Reviewers, each with subject specialist knowledge of their respective Module (see Appendix 1). They were asked to highlight any errors, omissions and inconsistencies in a 'light touch' process. The variable standard of the study sessions at this time meant their task was more challenging and less light touch than had been intended but they all returned valuable feedback.

19. Work on the Modules continued. Additional academic editor time was agreed with both MCT and Science Faculties and paid for by the project budget. The academic editing needs and the demands of the schedule were such that friends and colleagues from outside the core team were also brought in to help. The team from LTS Corporate (see Appendix 1) were also very cooperative and tolerant of the delays. They worked extremely hard to adapt to the constantly changing schedule and were another vital part of the process.

A major task during this period was completion of the asset list for each study session. The lists included details of all figures and their sources, which were checked for copyright clearance. The 75 study sessions included a total of more than 700 figures and other assets each of which had to be detailed and checked. The process was further complicated by changes to structure and sequence of figures within the study sessions that was still ongoing as academic editing continued.

By this stage it was apparent that more time would be needed and an extension to the schedule was agreed. Ultimately this was further extended by delays in arrangements for the final approval process in Ethiopia caused by the general election in May 2015 and subsequent changes in ministerial staffing, among other uncertainties.

20. The next formal approval step was submission to a 'Technical Task Force', convened by UNICEF. This Task Force consisted of seven Ethiopian subject specialists drawn from the Ministry of Water,

Irrigation and Energy, Ministry of Health and Ministry of Urban Development, Housing and Construction. Before sending to the Task Force, the Modules had been through a first stage editing process by LTS so that they resembled the final printed version in style even though the content was not yet finalised. The Task Force sent their written comments in advance of our next visit. Ellen and I returned to Addis Ababa in October 2015 where we had a lengthy meeting with the Task Force and discussed and agreed our responses to their feedback.

21. The Task Force meeting was held the day before the 'Validation Workshop' which was a critical - but not quite final - step in the approval process. The Workshop was a one-day event where we presented the Modules and were interrogated by an audience of 24 key stakeholders including DfID, UNICEF and ministry officials. At the end of the Workshop the participants agreed that they were happy to validate the Modules. This was a significant milestone for the project.

22. Feedback from the Task Force and Validation Workshop was incorporated and the Modules and Trainers' Handbook were eventually completed. They then went through the full editing and checking process with LTS and were finally delivered to UNICEF and WVE in January 2016. There was one last step to go and on 21 March 2016 we were delighted to receive official approval from the Ministry of Water, Irrigation and Energy.

23. While waiting for final approval, the online versions were prepared and were published as OERs on OpenLearnWorks on 20 April 2016 (see http://www.open.edu/openlearnworks/OpenWASH). The associated publicity and announcement, orchestrated by IDO, brought congratulations from the Vice-Chancellor among many others both internally and externally.

This was the end of the production phase of the project.

Phase 3

24. Successful delivery of the Modules and Trainers' Handbook for print and online publication fulfilled the OU's responsibilities in the SGA. Pilot implementation, organised by WVE, was scheduled to start in autumn 2016. In preparation for this, a week-long Training of Trainers (ToT) Workshop was run by a group of five of the OpenWASH authors who had independently been awarded the training contract. The Workshop was attended by 22 staff members from eight TVET and Health Science Colleges. Although we were not involved we were pleased that the OpenWASH authors had delivered this training and are looking forward to receiving further information about how the modules are being used in the colleges.

25. The Ethiopian author team had been enthusiastic supporters of the project and in informal comments had told us of the benefits to them and their wish to see the Modules used effectively. A short survey was undertaken to gather their views and the report is included as Appendix 2.

26. At the time of writing, the project is potentially moving into yet another phase. We have received expressions of interest in adapting the modules from WaterAid country offices in Uganda, Mozambique and Cambodia as well as a separate enquiry from Angola and are having initial conversations to explore these possibilities. With pleasing symmetry, this exciting prospect takes the project back to its original aim of providing learning resources for the WASH sector throughout the world.

External partnerships

The secondary purpose of the original eSTEeM project, as outlined in Objective 2, was to develop a model for collaboration with partner organisations. With the success of the main project, this strand received less attention but some reflections are presented here as a set of generic questions to consider when developing relationships with potential partners. The questions are designed to be applicable to any situation involving external organisations. They could be considered as suggested 'pause for thought' steps in the process of establishing new relationships.

Is your potential partnership with the organisation or is it with people within the organisation? Discussions about partnerships usually originate with personal contacts but personal support does not necessarily mean institutional support. Any formal partnership agreement will need all the necessary approvals and endorsements on both sides. Even if this is simply a Memorandum of Understanding that has no financial commitment at all, it could still take a very long time to get the necessary authorisations from higher levels of the organisation. If there is any financial commitment, then the process is considerably longer and more complex. This obviously gets more and more complicated and time-consuming if two, three or more partner organisations are involved.

Is there an optimum number of partners? More partners may strengthen a proposal and bring greater credibility, may increase the range of resources potentially available, and could be more likely to appeal to funding organisations. However it will increase the complexity of all communications and negotiations so more is not necessarily better.

Does/do your partner organisation(s) share your priorities and commitment? Partners may offer support but may not devote the time, energy and resources to the project that you would like them to. For example, this can range from finding it difficult to fix a date when they are available for a meeting or not replying to emails, through to not doing what they agreed to do or not coming up with funds that you thought you could rely on (not putting their money where their mouth is).

Is the partner really interested in collaboration or just want to know what you're planning? Do you trust them? This is a cynical but necessary question. They may express interest in your plans because they are concerned about competition with their own, or want to see if there's something they could use for their own purposes.

Who will 'own' the project and control the flow of money? This is one of many critical questions concerned with project management. Others include: What are the communication lines for reporting and how does funding move between partners? Are all partners equal in the project structure? Is everyone clear about the relationships and how they will work in practice? How dependent are the working relationships on the same people staying in post for the duration of the project? (This is linked to the point above about who exactly is the relationship with – person or organisation.)

How will your project be branded? How will the logos of partner organisations be combined for the project? Do the people you are talking to have authorisation to use their company logo? Many organisations, including the OU, are extremely protective and controlling of the use of their logos. This may seem relatively trivial but can be very time consuming to resolve and again becomes more complicated with more partners.

Conclusion

The OpenWASH project has had a number of beneficial outputs. Principally we have successfully produced five substantial Modules, each approximately 200 pages long in their print versions, that will support existing and new curriculum development in TVETCs in Ethiopia. Although initially to be used in training colleges, the Modules have wider potential and could be used for in-service training of new employees and by more experienced practitioners seeking to improve knowledge and skills in specific areas. The resources are also available as OERs to be freely used and adapted by or for others to support the growing demand for WASH training in other developing countries.

The project has also enhanced the writing and teaching skills of the team of Ethiopian authors in ways that we hope will bring further benefits in future to their own teaching and, in due course, result in wider impact for OpenWASH.

Within the OU community, OpenWASH has raised the profile of international teaching projects and was featured in OU publications to donors and alumni. It was the cover story in Open Door, the OU donor magazine, in April 2015 (circulation 20,000) and appeared in Open Minds for alumni in August 2015 (150,000). News of the launch also reached more than 20,000 people via Facebook and Linkedin postings and the Vice-Chancellor tweeted about it.

There are also synergistic benefits between OpenWASH and undergraduate OU teaching. My initial experience of Ethiopia on a filming trip for U116 has now come full circle and we are currently working on the rewrite module. The knowledge and experience I gained from OpenWASH will now feed back into the module rewrite and bring enhancement and added veracity to the revised module.

The potential, currently being explored, to adapt the OpenWASH materials for other countries could support the growing need for WASH professionals throughout the world and multiply the social, health, economic and environmental benefits that lead on from sustainable and effective WASH interventions. This in turn will hopefully contribute to meeting the global goal of water and sanitation for all.

OpenWASH's success meant that it expanded in a way that overwhelmed and consumed the original eSTEeM project, with many consequences including the delay of this final report. The initial allocation of time that came from being an eSTEeM project was the pump-priming that enabled me to get the idea off the ground. OpenWASH would not have happened without that early impetus.

Appendix 1:

OpenWASH personnel

Name	Organisation/OU dept	Role in OpenWASH
OU core team		
Pam Furniss	MCT	Academic Director, Project Leader, Academic Editor, Module 1, Author, Trainers' Handbook
Ellen Scott	IDO	Senior Project Manager
Gail Vardy	IDO	Project Co-ordinator
Sarah Davies	Science	Academic Editor, Module 2
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Julie Hopkins	LTS	Editor
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Module 1: Ethiopia's One WASH National Programme

Module 2: WASH: Context and Environment

Module 3: Urban Water Supply

Module 4: Urban Sanitation and Solid waste Management

Module 5: Urban WASH: Working with People

Appendix 2:

Learning from OpenWASH: experiences of the Ethiopian author team

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October 2016

Introduction

It is an essential characteristic of the OU's international teaching programmes that learning materials are prepared with the full participation of in-country authors. This ensures relevance to the country context and gives value and credibility to the learning resources created.

The five OpenWASH modules were written by module teams each consisting of three Ethiopian authors and one member of OU academic staff. Capacity building among the Ethiopian team was not an explicit aim for the OpenWASH project but, from informal feedback comments, it was apparent that several of the authors felt they had gained from their experiences in terms of personal and professional development. This research aims to assess these emergent secondary benefits of OpenWASH, over and above the achievement of the project's primary aim of producing learning resources for the Ethiopian WASH sector. Evidence was collected by a short questionnaire sent to the fifteen authors in September 2016, approximately 16 months after their period of active engagement in the project.

This report starts by outlining the OpenWASH author appointment and module production processes, then describes the data collected from the authors and concludes with a brief summary of key findings and comment on possible future activity.

Author appointments

In October 2014, an invitation to join the OpenWASH author team was sent to various WASH professionals in Ethiopia who we knew from past contact and/or through our project partners in UNICEF and World Vision Ethiopia. These people were also asked to circulate the invitation to their networks of colleagues. 35 applications were received and 15 authors were selected based principally on their knowledge and experience of WASH in urban settings in Ethiopia and their competence in written English. We also wanted to appoint authors from a variety of professional backgrounds so there were a mix of skills and experience within the team. Regrettably only one of the 35 applicants was a woman and she did not have appropriate experience so all 15 appointed authors were men.

The authors by category of employment were:

University academics	6 (from 4 universities: 2 senior, 3 mid-career, 1 early career)
Other higher education	1 (Community outreach)
Federal Ministry	3 (2 Health; 1 Water)
Regional Bureau (Tigray)	1 (Health)
International NGO	1 (WaterAid)
Independent consultants	3 (working with two other WASH INGOs)

Three of the academics had previous experience as authors for the HEAT Programme.

Module production

All authors attended two week-long writing workshops held in Addis Ababa in November 2014 and March 2015. At other times they worked independently and communicated by email with the OU academic editor for their module.

The first workshop was an intensive introduction to the OpenWASH project for the authors where they learned about OU distance learning pedagogy and the approach to writing and teaching that was required. The workshop schedule included a mixture of presentations and activities exploring topics such as 'Who is the 'typical' OpenWASH student?', 'Writing style for OpenWASH modules', 'Finding and using resources' and 'Writing good SAQs and ITQs'. At the start of the workshop we finalised the membership of the five module teams based on previously expressed author preferences. By the end of the week, only five days later, the module teams had prepared detailed outlines of their modules. The module outlines consisted of the titles for 15 study sessions, each with a named author and with a set of learning outcomes and section headings for each session.

During the second workshop, the majority of the authors' time was spent on writing their allocated study sessions and in discussion with the OU academic editors. We had some refresher sessions based on the first workshop's presentations and also identified and resolved gaps and overlaps between modules and study sessions.

Author attendance at the two workshops was almost 100%. One author was not able to attend the second workshop because he had volunteered to join the Ethiopian national support team working in Sierra Leone during the Ebola outbreak.

The main period of activity on the project for the Ethiopian author team had ended by May 2015. They all successfully completed their writing tasks although some found the process and schedule to be challenging. In the following weeks and months, authors were occasionally consulted to resolve queries during the lengthy period of further revision, review, editing and approval. The modules were validated and finally published online as OERs on the OU's OpenLearn website in April 2016. The modules are scheduled to be piloted in eight TVET and Health Science Colleges in four regions as part of the original project implementation.

Author survey

In September 2016, all 15 authors were sent a brief questionnaire asking about their OpenWASH experience. The questionnaire consisted of 11 questions in two sections (see Appendix 2A). The timing of the survey, more than a year after the authors had completed their tasks, meant that sufficient time had passed to allow for reflection and for some potential consequences to be realised. The survey also provided an opportunity to ask the authors about possible use of the modules by themselves and others.

Responses were received from 13 of the 15 authors (87% response rate).

Results and Discussion

The responses to each of the five questions in Section 1 of the questionnaire were counted and are tabulated below.

		Agree strongly	Agree slightly	Neither agree or disagree	Disagree slightly	Disagree strongly
Q1.	I had limited previous experience of *teaching* before I was an OpenWASH author.	3	3		3	4
Q2.	I had little or no previous experience of *writing teaching material* before I was an OpenWASH author.	4	2		2	5
Q3.	My work as an OpenWASH author is a valuable addition to my curriculum vitae/resume.	12	1			
Q4.	I gained new skills from my experience as an OpenWASH author.	13				
Q5.	These new skills are useful for my normal work.	10	3			

The distribution of answers to questions 1 and 2 reflected the range of past experience and employment of the authors with approximately half having little or no previous experience of teaching or writing teaching materials. Several authors, not just the university academics, had some responsibility for teaching and training in current or past roles.

The answers to questions 3, 4 and 5 were remarkably consistent with all authors saying they had gained useful new skills from working on OpenWASH.

In Section 2, questions 6 to 8 were conditional on 'agree' answers to questions 3, 4 and 5 and intended to delve into the detail behind these responses. All respondents had given 'agree' answers and all also answered questions 6 to 8.

Question 6 asked authors why OpenWASH was a valuable addition to their CV. Five of the authors had benefitted directly because they had been contracted by World Vision as consultants to provide a week-long training of trainers (ToT) course about the OpenWASH modules in July 2016. Two authors cited other specific benefits. One said that his OpenWASH experience had helped his career in several ways since the end of the project including nomination and attendance at an international workshop in Project Management and Urban Sanitation Management in Dubai and participation in writing teaching materials for the Ethiopian Health Extension Programme. Another referred to an interview experience:

> 'During an interview for a new job, one of the interests of the interviewers was my experience with OpenWash module writing skill. That gave them confidence in hiring me as the new post will also involve producing training materials.'

The remainder all believed their OpenWASH experience will help them gain promotion, or get consultancy work or a new job although this had not yet happened. For example, one of the mid-career academics commented:

> 'In our University, one of the criteria for promotion is 'professional contribution' to communities/societies in order to help them to develop and live a better life. In this regard, my contribution as an author in OpenWASH will greatly help me to fulfil one of the criteria for promotion.'

Questions 7 and 8 were designed to elicit details of the authors' own assessment of the skills they had acquired. Most answers mentioned a number of different skills and several recurring themes emerged. The responses were classified by these themes into six main categories shown in the table below.

Type of skills/knowledge acquired	Number of respondents who identified these skills
General writing skills	4
Writing for teaching purposes	10
Plagiarism /referencing skills	7
Team work	4
Additional subject knowledge	2
Personal development	2

Taking these categories in turn, the authors who mentioned general writing skills referred specifically to improvements in English grammar and vocabulary, to realising the need for easily understandable language, and to awareness of their target audience. For example, one author said he had gained skills in:

> '… how to write (grammar, vocabulary etc.) short, clear and explanatory sentences having the intended users in mind. … This has remained in my mind in my writing exercises.'

One of the university academics reported:

> '… one of my duties is writing articles, cases, observations, etc. and publishing them in an internationally reputable journal. In this regard, my involvement in OpenWASH has benefitted me a lot in my day-to-day work.'

The type of skills that were mentioned most frequently (77% of respondents) were those related to writing materials intended for teaching or training such as lecture notes and other teaching resources. Authors identified particular skills such as understanding what the main elements of a training module should be, the importance of a logical structure, breaking a topic up into sub-topics, and the value of adopting a friendly tone for effective teaching. One author commented:

> '… this is my first curriculum design exposure in such a well-organized manner. During the OpenWASH curriculum design process I gained a lot of knowledge and skills from Open University UK trainers, editors and my author fellows especially in the areas of: understanding audiences who I am writing for, writing style for independent learners, finding and using resources and resource acknowledgement, writing good Introductions, Learning outcomes, Summary, Self-Assessment Questions and In-text Questions for study sessions.'

This author was one of seven who specifically made reference to newly-acquired knowledge of the need for correct citations, referencing and acknowledgments and the importance of avoiding plagiarism. Another said:

'One of my greatest experiences working with OpenWash colleagues was [learning] how to re-write important concepts without violating ethical standards (avoiding plagiarism). I am now working on my PhD and I am using the new skill when reviewing literature.'

Of the less frequently named skills, the benefits of team work in this context were identified by four authors including one who said he had gained 'a better insight into the preparation of structured writing and team work focused on the production of training materials.'

Two authors mentioned that the process of researching sources to use when writing their study sessions had given them new or deeper knowledge of specific subject areas and that this was valuable in other areas of their work. There were also a few comments about personal development not directly related to skills and knowledge. For example, one author emphasised that he had gained confidence in preparing documents of any type and another mentioned a positive impact on his attitude that resulted from the exposure to new knowledge.

Questions 9 and 10 asked authors about their own use of the modules and dissemination to others. In response to question 9, three of the university academics said they had or intended to use the modules within their own institutions. Answers suggested they would use the modules as resources for students or that selected parts could be integrated into undergraduate and postgraduate teaching. One other academic did not envisage using the modules in his university teaching but commented that OpenWASH could be used as a model for preparation of degree level modules.

Six other authors also indicated they intended to use the modules themselves or had already used them in training situations that included:

- for refresher training and seminars for health extension workers
- for training health workers at the community level (in collaboration with the Regional Water and Sewerage Authority and the Regional Health Bureau)
- for training WASH practitioners in a consultancy role.

Six of the authors had shared the OpenWASH resources with others including stakeholders at national and regional level and their own networks of WASH colleagues. Responses to question 10 revealed that the OpenWASH website link had been shared with:

- wider stakeholders in the sector (donors, Government ministries, INGOS, and research institutions…etc.)
- the national pre-service and in-service coordinators at the Federal Ministry of Health (FMoH), to forward to Health Science Colleges, teaching institutions, and in-service training centres to use [these] standardized modules as supplementary resources for teaching, learning processes and in-service refreshment training.
- to WASH and SBCC [Social and Behaviour Change Communication] professionals working in NGOs

and at regional level in Tigray, shared with:

- the WASH Technical Working Group with 15 members from different partners and NGOs
- two Health Science and TVET colleges in Mekelle and Axum, especially the Environmental Health instructors
- part of the resources (Sanitation Marketing and Solid Waste Management) translated into the local language (Tigrigna) and shared with the 18 urban and 8 peri-urban areas
- Mekelle City Greenery and Beautification Agency.

Question 11, the final question, asked authors for any other comments they might wish to make. Answers here revealed that the authors were particularly concerned to see the OpenWASH modules put to good use. They wanted to be kept informed about progress with the implementation in TVET Colleges that was part of the original project and were also very keen to see the existence of the modules publicised to the wider WASH community in Ethiopia. They apparently shared a sense of pride in the modules and wanted to see them used to support the efforts to improve WASH provision and services throughout the country. Individual comments included:

- 'it would [be] good if either OU/WVE/UNICEF or any one delegate can [be] champion of the initiative and further advocate and popularize the materials purposely in some key sector platforms and forums.'
- 'the government FMoH/ One WaSH Coordination office jointly with partners must take the lead for the next step to implement the resources uniformly throughout the region.'
- 'we have been told that the Government will be the ultimate user of these documents as there is a plan to train health cadres who will work on WASH at the lower level. Where is that plan? […] Unless otherwise, we have spent lots of time, energy, resource, etc on preparing these materials and it is the responsibility of all of us (including the Government, NGOs and other institutions) to properly use these documents.'

In other comments, one author remarked that a feedback system was needed. This concurs with comments elsewhere that there should be ongoing monitoring and evaluation of the effectiveness of the modules during and after their use in training programmes. The same author also observed that the modules would need 'revitalisation' after some time had passed.

Several authors also responded to question 11 with a summary of their positive experiences. One particularly encouraging answer was:

> 'The level of professionalism of the Open University colleagues was unparalleled and I have never seen such a commitment and high level of competency before. This was a great opportunity for me to learn how to approach writing modules or training materials in the future.'

Conclusion

This survey has shown that the experiences of the Ethiopian author team were overwhelming positive and they all felt they had gained beneficial new skills that would be carried forward into other work. The greatest influence of OpenWASH was likely to be felt in other teaching and training tasks that the authors would be involved with in future where they could apply their newly developed skills.

Several authors had already made considerable effort to 'spread the word' about the OpenWASH modules to others. They are well-placed to act as advocates for the OpenWASH resources to promote their use and extend their application within Ethiopia but there are only 15 of them. Authors are keen to play their part but they also identified a need for greater effort to be made to ensure the modules are used and for effective champions at national and regional levels who could help realise the full benefits of the OpenWASH project.

In addition to further promotional effort, recommended future activities include establishing an M&E process to assess the effectiveness of the OpenWASH resources and, further ahead, to revise

and update the modules to maintain their value as training materials for the WASH sector in Ethiopia.

Appendix 2A:

OpenWASH author questionnaire - blank

Please complete both sections of the questionnaire. Some of the questions in Section 2 ask for more details about your answers in Section 1.

Section 1

Please select one box for each of the following statements.

		Agree strongly	Agree slightly	Neither agree or disagree	Disagree slightly	Disagree strongly
Q1.	I had limited previous experience of *teaching* before I was an OpenWASH author.					
Q2.	I had little or no previous experience of *writing teaching material* before I was an OpenWASH author.					
Q3.	My work as an OpenWASH author is a valuable addition to my curriculum vitae/resume.					
Q4.	I gained new skills from my experience as an OpenWASH author.					
Q5.	These new skills are useful for my normal work.					

Section 2

Please type in your answers below each question.

Q6. If you have answered 'agree strongly' or 'agree slightly' to **Question 3**, please explain why OpenWASH is a valuable addition to your CV/resume, for example, has it helped you apply for promotion or get a new job.

Q7. If you have answered 'agree strongly' or 'agree slightly' to **Question 4**, please give details of the new skills you have gained.

Q8. If you have answered 'agree strongly' or 'agree slightly' to **Question 5**, please give one or more examples of how you have used or could use your new skills in your normal work.

Q9. Have you used or have plans to use the OpenWASH modules or Trainers' Handbook yourself for teaching in your organisation or elsewhere? If yes, please give details.

Q10. Have you shared the OpenWASH resources with anyone else who has used them either for teaching or practical implementation? If yes, please give details.

Q11. Do you have any other comments about your experience as an OpenWASH author?