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**NEPAD Monitoring and Evaluation for CEANWATCE, SANWATCE and WANWATCE networks**

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## EXECUTIVE SUMMARY

The overall objective of ACEWATER II is to support the development of the AU-NEPAD Network of Water Centres of Excellence (CoE) in Africa in the framework of Human Development. The project supports the implementation of the African Water Ministers' declaration urging the AUC and AU-NEPAD Water Centres of Excellence (CoEs) to develop a "Human Capacity Development Programme for junior professional and technician level capacity challenges in the water sector" at national level in the CoE countries.

As part of the implementation of the project the participating Centres of Excellence undertook a sector wide analysis of the needs within the participating countries with the objective of building national Human Capacity Development Frameworks. One of the project objectives was the development of pilot courses addressing the gaps within the sector addressing the results of the analysis. The design and implementation of the pilot courses was the central component of the Monitoring and Evaluation.

The ACEWATER II project has been implemented in three regions with Secretariats overseeing the participating Centres of Excellence. The three regions are SANWATCE (Southern Africa), WANWATCE (West Africa) and CEANWATCE (Central and East Africa). The three regions include 14 CoEs who participated in the development and implementation of the pilot courses. The declaration of the Covid-19 pandemic impacted severely the ability of the project to reach its objective. Mitigation steps were taken to ensure the successful delivery of the project including:

- The requirement of four pilot courses, two aimed at Higher Education and two at Technical and Vocational were reduced to one pilot course. The original number of mandatory courses per CoE country was no longer required.
- Conducting an E-Learning Preparedness Assessment for each CoE to assess their readiness and willingness to reorientate the implementation of the pilot courses/modules,
- Adaptions in the pedagogy of the courses/modules

The mitigation steps outlined above has resulted in 839 participants from the three regions attending pilot courses either through Face2Face, Blended or E-Learning formats. Junior and Senior Professionals accounted for 78% of all the participants with the 18 to 25 and 26 to 35 age groups the most participants. Of the reported participants, the gender breakdown was 61% male and 39% female. The majority of participants came from either a Government or Higher Education background, with Technical and Vocational or Private Institutions being less present.

Out of the total number of pilot course thematics implemented, the top four where:

1. Data and Modelling: 7 pilot courses/modules
2. Management and Administration: 5 pilot courses/modules
3. Water Supply: 5 pilot courses/modules
4. Groundwater: 5 pilot courses/modules

23% of the participants attended Groundwater thematic aligned pilot courses with 22% Data and Modelling, 17% Management and Administration and 15% Integrated Water Resources Management, respectively.

It can be concluded that the extension of the timeframe for implementation of the pilot courses as well as the reduction from four to one courses/module made a major contribution to the success for the project. As a result, 10 of the 14 CoE were able to implement a minimum of 1 pilot project. The flexibility and willingness of the different stakeholders including UNESCO, JRC, the Regional Secretariats and the CoEs have helped to mitigate the impact of the pandemic.

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## Anacronyms

AU-NEPAD	African Union
CoE	Centres of Excellence
CoEs	Centres of Excellences
HCD	Human Capacity Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
EU	European Union
JRC	Joint Research Centre
HE	Higher Education
TVET	Technical & Vocational Training
BSc	Batchelor of Science
CEANWATCE	Central and East African Network of Water Centres of Excellence
WANWATCE	West African Network of Water Centres of Excellence
SANWATCE	South African Network of Water Centres of Excellence
ICPAC	IGAD Climate Prediction and Application Cen
NWRI	National Water Resource Institute
KNUST	Kwame Nkrumah University of Science and Technology
UCAD	Université Cheikh Anta Diop
IWEGA	National University of Science and Technology
CSIR	Council for the Scientific and Industrial Research
UWC	University of Western Cape
DG-DEVCO	Directorate-General for International Cooperation and Development
M&E	Monitoring and Evaluation
EIWR	Ethiopia Institute of Water Resources
ToR	Terms of Reference
IWRM	Integrated Water Resources Management

I would like to acknowledge the support and assistance from UNESCO, JRC, CoE Secretariats and the individual Centres of Excellence who have worked hard to support the monitoring and evaluation component of the project. An additional acknowledgment should be provided for Nico Elema from Stellenbosch University who collaborated on the design of the M&E frame to ensure a synergy with the Impact study. Finally, a big thank you to Carinus De Cock a researcher from Stellenbosch University who covered for the gap in M&E support during the contract extensions and assisted in the analysis of the final results.

## INTRODUCTION

The overall objective of ACEWATER II<sup>1</sup> is to support the development of the AU-NEPAD Network of Water Centres of Excellence (CoE) in Africa in the framework of Human Development. The project supports the implementation of the African Water Ministers' declaration urging the AUC and AU-NEPAD Water Centres of Excellence (CoE) to develop a "Human Capacity Development Programme for junior professional and technician level capacity challenges in the water sector" at national level in the CoE countries. Under UNESCO's agreement with EU/JRC, UNESCO is implementing part of the activities through implementation partnership agreements with the AU-NEPAD CoE. These activities concern the establishment and implementation of the HCD Programme at national levels in all the eligible AU-NEPAD CoE countries participating in the ACEWATER II Project.

Under the overall authority of the Director of the UNESCO Liaison Office in Brussels and direct supervision of the Project Coordinator for the NEPAD project, and in coordination with UNESCO Headquarters (SC/HYD) responsible for the project, the monitoring and evaluation of the of the project "NEPAD African Network of Centre's of Excellence on Water Sciences and Technology (ACEWATER Phase II): Human Capacity Development (HCD) Component, is a core tool to report on the outputs of the project.

The HCD National Framework programmes, which have been prepared in close consultation with all key water related stakeholders in the participating countries, are implemented in the form of Pilot Trainings or Courses at Higher Education (HE) and Technical & Vocational Education and Training (TVET) levels. The AU-NEPAD Networks of Water CoEs involved include the following participating members:

### **Central and East African Water CoEs (CEANWATCE)**

- University of Khartoum, Sudan (CEANWATCE Secretariat)
- Makerere University, Uganda
- Ethiopia Institute of Water Resources, University of Addis Ababa, Ethiopia
- IGAD Climate Prediction and Application Centre (ICPAC), Head Office Nairobi, Kenya

### **West African Water CoEs (WANWATCE)**

- Université Cheikh Anta Diop (UCAD), Senegal
- Kwame Nkrumah University of Science and Technology (KNUST), Ghana
- University of Benin, Benin City, Nigeria
- NWRI, National Water Resource Institute, Kaduna, Nigeria

The responsibilities of the consultant now include the M&E reporting for the **Southern Africa CoEs (SANWATCE)** who are involved in the ACEWATER II project.

- Council for the Scientific and Industrial Research - South Africa
- University of the Western Cape - South Africa
- University of Botswana
- National University of Science and Technology (IWEKA) - Mozambique
- University of Malawi
- University of Zambia

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<sup>1</sup> NEPAD Monitoring and Evaluation for CEANWATCE and WANWATCE Inception Report Feb 2020

## BACKGROUND

The Monitoring and Evaluation component of the project is a reporting requirement of UNESCO to the individual Centres of Excellence. M&E is regarded as important to be able to provide a global overview of the input and outputs generated by the activities of each CoE and Region.

Consultations with the CoEs from CEANWATCE and WANWATCE made the design of the M&E framework an inclusive process. In relation to the ACEWATER II NEPAD HCD project, the M&E component was initiated relatively late within the implementation but will still help to analyse the overall outputs of the project.

The revised version of the Monitoring and Evaluation tool was updated after 3 working sessions with the UNESCO Project Coordinator for the NEPAD project and representatives of Stellenbosch University and the SANWATCE Secretariat. The revised M&E frame was presented to the UNESCO Project Coordinator through video conferencing and format validated.

The revised M&E frame was shared with all three regions. Training was provided to SANWATCE CoEs and a refresher offered to CEANWATCE and WANWATCE.

The validated M&E tool was shared by the UNESCO project coordinator with the CoE from WANWATCE, CEANWATCE and SANWATCE on the 19<sup>th</sup> of October with an initial deadline for reporting of the 27<sup>th</sup> October.

Prior to the reception of the M&E tools from the CoEs a discussion was held with the UNESCO project coordinator, representatives of Stellenbosch University and the SANWATCE secretariat to agree on the analysis parameters and how to present the report information. The following structure was agreed with the UNESCO project coordinator:

### M&E Analysis and Report Frame Working Document

#### 1. Main Frame

- Analysis per objective v column. Produced in a table format (no comparison between Fr/EN/Portuguese)
  - Combined Overview
  - Institutional- Comparative Analysis
  - Region Comparative Analysis
  - Comments overview if of interest

#### 2. Annex 1 Course / Module (commonalities and outliers)

- Course title list combined by institution (Thematic Priority Distribution)
- Analysis per column group
  - Combined Overview (what type of course identified for E-Learning)
  - Institution Comparative Analysis
  - Region Comparative Analysis
  - Cost analysis by thematic
- Comments overview if of interest

#### 3. Annex 2 Goods Services Supplies Costs (commonalities and outliers)

- Analysis per column group (commonalities and outliers)
  - Combined Overview
  - Institution Comparative Analysis
  - Region Comparative Analysis

- Global Cost per institution
    - Overview
    - Types of Costs
  - Comments overview if of interest
4. Annex 3 Human Resources (commonalities and outliers)
- Analysis per column group
    - Combined Overview
    - Institution Comparative Analysis
5. Region Comparative Analysis
- Global Cost per institution
    - Overview
    - Types of Costs
  - Comments overview if of interest

Several reminders were subsequently sent and a final deadline of the 13<sup>th</sup> November set for reception of the reporting. A draft Final report was submitted on the 15<sup>th</sup> of November but contained incomplete data. A subsequent reminder was sent out by the UNESCO project coordinator to the Secretariats for each region to follow up with the different CoE to ensure the M&E tool was completed and submitted. A final submission cut-off date of 30<sup>th</sup> November was put in place.

The compilation of the data was supported by Carinus De Kock from Stellenbosch University.



## GLOBAL OVERVIEW

### BASELINE ANALYSIS FINDINGS

The collection of M&E data took place during the period of October 25<sup>th</sup> to November 15<sup>th</sup> with some data finalised post this date. The M&E framework consisted of a main overview sheet accompanied by three thematic worksheets addressing the following:

1. Course and Module
2. Goods Supplies Services List and Costs
3. Human Resource Costs

A 4<sup>th</sup> reporting annex covering Mobility and Exchange activities was removed from the M&E Tool and reporting due to these activities not taking place as a result of the COVID-19 Pandemic.

#### Gaps in Data Collection

In the data that is provided in this and following sections there remain a small amount of data gaps which will require additional follow up to improve the analysis. The gaps in reporting for the CoEs are presented in Table 1. The gaps have not prevented the presentation or analysis if the reported data.

Table 1: Gaps in Reporting Data from the Centres of Excellence

CoE	Reporting Status	Main Frame Reporting	Age of Participants	Gender of Participants	Source of Participants	Qualifications of Participants
IWEGA	Outstanding	Data, Challenges highlight, Mitigation				
CSIR	Outstanding	Data, Current status, Challenges, Challenges highlight, Mitigation		For 2 participants	For all participants	For 5 participants - last course
UWC	Outstanding			For 2 participants	For all participants	For 5 participants - last course
ZAMBIA	Outstanding	Current status, Challenges, Challenges highlight, Mitigation				
BOTSWANA	Outstanding	Challenges highlight				
KNUST	Outstanding	Data (%)	28 participants			28 participants
NWRI	Outstanding	Data (%), Challenges highlight, Mitigation	11 participants	For one course	11 participants	11 participants
BENIN	Outstanding	Mitigation				
UCAD	Outstanding	Mitigation				9 participants (2de course)
EIWR	Outstanding	Mitigation				
ICPAC	Outstanding	Challenges highlight, Mitigation				

### MONITORING AND EVALUATION MAIN FRAME DATA

The Monitoring and Evaluation process was developed following a consultation process with the UNESCO Project Coordinators, Impact expert, a document review and presentation and feedback from CoEs in WANWATCE and CEANWATCE regions. The Monitoring and Evaluation tool was designed using a Main Frame which included one General and four Specific project objectives, Indicators per specific objective and activities aligned to each indicator.

The objectives were agreed in consultation with the UNESCO project coordinator and taken from the Note for Adjustment to European Union Delegation Agreement. The objectives were:

#### 1. Global Objective

Implement the Human Capacity Development Programme in up to four countries per region in collaboration with relevant institutions and fostering sustainable capacity development approach (per country) — each one of the activities will be implemented in each of the pilot countries.

## 2. Specific Objectives

Objective 1: Dissemination of the strategy to stakeholders, donors, and training institutions at national level.

Objective 2: The Pilot courses/modules and laboratories are supplied with the relevant Software, Tools and Consumables in a timely manner.

Objective 3: A strategy for Regional HR and student exchanges is implemented to improve regional networking.

Objective 4: A quality review of the implemented courses/modules is undertaken including student and course interlocutors' feedback with the results analysed and course adjustments implemented, where appropriate.

The user responses were guided using drop down boxes with set choices to select. These were:

- YES / NO
- Data parameters: 1,2,3,4,5,6,7 etc.
- Seven challenges where selection of one or more was possible:
  - Administrative
  - Contract
  - Financial
  - Human Resources
  - Force Majeure
  - Recruitment of Students
  - Other: Where 'Other' was chosen, additional clarification should have been provided in the 'Additional Comments Column
- Challenge Mitigation: User was requested to provide information on any mitigation steps taken

An Additional Comments box was also included to allow the user to explain any data choices which required explanation or clarification.

### [BASELINE DATA ANALYSISs](#)

The following tables and figures show the global results received from the CoEs of CEANWATCE, SANWATCE and WANWATCE. The **RED** boxes indicate where information was not complete at the time of reporting. The **GREY** boxes indicate reporting which did not require a response based upon previous choices. For example, where no challenges were recorded, no further reporting on these issues was necessary.

#### 1. Monitoring and Evaluation Main Frame Action Taken

The Main Frame for the collection of data, provides the response to the activities and indicators for each CoE relating to:

- The development and distribution of the Information package
- The development and implementation of the pilot courses and modules
- The purchasing of goods, services, and supplies
- A quality review of the implemented courses.

Table 2: Main Frame Reporting of action taken per CoE relative to the Objective, Activity, and Indicator

	ACTIVITIES	INDICATOR	DATA													
			ICPAC	IWEGA	UWC	CSIR	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR
OBJECTIVE 1	Prepare the National Framework into an information package for dissemination partners and stakeholders (pamphlet, report,PPT etc.)	An information package was developed	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Disseminate the strategy to national training institutions?	Nr of national training institutions receiving the information package	9	2	2		3	3	0	8	18	40	5	18	2	6
	Disseminate the strategy to other stakeholders?	Nr of other stakeholders receiving the information package	21		2		2	5	0	8	36	80	8	20	10	18
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for Higher Education training for Junior and Senior professionals	Nr of courses/modules developed	2	2	9	1	1	2	2	2	10	2	4	3	4	2
	Deliver at least 2 pilot courses/modules for junior and/or senior professionals	Nr of courses/modules implemented	0	1	3	1	0	2	0	1	6	0	3	2	1	0
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for vocational training for junior and senior technicians including education material	Nr of courses/modules developed	2	2	3	1	1	2	2	4	10	2	1	3	1	2
	Deliver at least 2 courses/modules for junior and/or senior technicians	Nr of courses/modules implemented	0	1	3	1	0	2	0	0	6	0	1	2	0	2
OBJECTIVE 2	Purchase and use of Software, Tools and Consumables for courses/modules and labs	% of items purchased and used	0%	100%	0%	100%	0%	100%	0%			0%	60%	100%	10%	50%
OBJECTIVE 4	Undertake a quality review of the course outcomes with Staff and Student participation	Has a quality review taken place for each course?	NO	YES	NO	YES	NO	NO	NO	YES	YES	NO	NO	YES	NO	YES
		Nr of Staff consulted in the review?	0	6	5	3	0	0	0	4	0	0	12	12	0	3
		Nr of students included in the review?	0	40	NO	NO	0	0	0	34	45	0	21	81	15	10

Table 2 indicates the results of the individual CoE and their responses per objective and the action taken as analysed below.

Objective 1: Indicator for the design and distribution of the information package for Stakeholders shows that all of the CoEs developed an information package but only 3 did not report on the completion of the dissemination. Botswana reported that the information package was shared with the Ministry of Land Management, Water and Sanitation Services for review, but no further steps were reported.

The Indicator for the development and implementation of 2 pilot courses or modules for Junior/Senior Professionals or Technicians showed that all CoEs were able to develop at least one pilot course. All CoEs except for:

- ICPAC
- University of Benin City
- Botswana
- Zambia

were able to implement at least 1 pilot course or module. The number of courses required to be implemented as part of the project was reduced from four to one as a result of the project adjustment caused by COVID-19 and recommended a move to provide learning either as a blended or E-Learning format. In some cases, more than the minimum number of courses were developed with University of

Western Cape and National Water Resource Institute developing 9 and 10 courses/modules, respectively.

Objective 2: referred to the purchase of materials such as Software, Tools and Consumables for the project. Two CoEs, KNUST and NRW did not report data for this action. Five of the CoEs including the four noted above who did not implement any courses and University of Western Cape reported no Goods, Supplies or Services purchased as part of the project. The remaining CoEs, reported between 10% and 100% of purchases completed.

Objective 3 referred to the activity of Mobility and Exchange which, due to the COVID-19 restrictions, were not able to take place. Hence this objective was removed from the reporting requirements.

Objective 4 represents the requirement to undertake a quality review of the courses/modules implemented. The four CoEs which did not implement any courses/modules were not able to therefore conduct any quality review. University of Western Cape did not complete a quality review of the CoEs did not undertake a quality review due to not implementing any courses/modules or the implementation being too close to the reporting timeframe, that a review was not possible to complete. Of the remaining CoEs, 3 completed quality reviews of all the implemented courses and the 4 managed a quality review of some of the courses/modules.

## 2. Monitoring and Evaluation Main Frame Status

Table 3: Main Frame Reporting of the status per CoE relative to the Objective, Activity and Indicator

	ACTIVITIES	INDICATOR	CURRENT STATUS													
			ICPAC	IWEGA	UWC	CSIR	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR
OBJECTIVE 1	Prepare the National Framework into an information package for dissemination partners and stakeholders (pamphlet, report, PPT etc.)	An information package was developed	COMPLETED	UNDERWAY	COMPLETED		UNDERWAY	UNDERWAY	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED
	Disseminate the strategy to national training institutions	Nr of national training institutions receiving the information package	UNDERWAY	UNDERWAY	COMPLETED			COMPLETED	UNDERWAY	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	UNDERWAY	COMPLETED
	Disseminate the strategy to other stakeholders?	Nr of other stakeholders receiving the information package	COMPLETED	COMPLETED	COMPLETED			COMPLETED	NOT STARTED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED		COMPLETED
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for Higher Education training for Junior and Senior professionals	Nr of courses/modules developed	COMPLETED	COMPLETED	COMPLETED	COMPLETED	UNDERWAY	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED	COMPLETED
	Deliver at least 2 pilot courses/modules for junior and/or senior professionals	Nr of courses/modules implemented	NOT STARTED	COMPLETED	COMPLETED	COMPLETED	NOT STARTED	COMPLETED	UNDERWAY	COMPLETED	COMPLETED	NOT STARTED	COMPLETED	COMPLETED	COMPLETED	NOT STARTED
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for vocational training for junior and senior technicians including education material	Nr of courses/modules developed	COMPLETED	COMPLETED	COMPLETED	COMPLETED	UNDERWAY	COMPLETED	COMPLETED	COMPLETED	COMPLETED	NOT STARTED	COMPLETED	COMPLETED	UNDERWAY	COMPLETED
	Deliver at least 2 courses/modules for junior and/or senior technicians	Nr of courses/modules implemented	NOT STARTED	COMPLETED	COMPLETED	COMPLETED	UNDERWAY	COMPLETED	UNDERWAY	NOT STARTED	COMPLETED	NOT STARTED	COMPLETED	COMPLETED	NOT STARTED	COMPLETED
OBJECTIVE 2	Purchase and use of Software, Tools and Consumables for courses/modules and labs	% of items purchased and used	NOT STARTED	COMPLETED	NOT STARTED	COMPLETED		COMPLETED	NOT STARTED	UNDERWAY	UNDERWAY	NOT STARTED	UNDERWAY	COMPLETED	UNDERWAY	COMPLETED
OBJECTIVE 4		Has a quality review taken place for each course?	NOT STARTED	COMPLETED	UNDERWAY	COMPLETED	NOT STARTED	NOT STARTED	UNDERWAY	NOT STARTED	COMPLETED	NOT STARTED	NOT STARTED	COMPLETED	NOT STARTED	COMPLETED
	Undertake a quality review of the course outcomes with Staff and Student participation	Nr of Staff consulted in the review?	NOT STARTED	COMPLETED	COMPLETED	COMPLETED	NOT STARTED	UNDERWAY	NOT STARTED	NOT STARTED	NOT STARTED	NOT STARTED	UNDERWAY	COMPLETED	UNDERWAY	COMPLETED
		Nr of students included in the review?	NOT STARTED	COMPLETED	NOT STARTED	COMPLETED	NOT STARTED	NOT STARTED	UNDERWAY	NOT STARTED	COMPLETED	NOT STARTED	NOT STARTED	COMPLETED	UNDERWAY	COMPLETED

Table 3 above shows the status of the action taken in relation to the activities and indicators. A traffic light system was used outlined by the three options below, to show the current status of the activity at the time of reporting:

- 0 = not started- no action taken
- 1 = underway- some action taken but not yet completed
- 2 = completed- no further action is required

### 3. Monitoring and Evaluation Main Frame Challenges

Table 4 below allows for challenges experienced by the CoEs to be identified, only two CoE, the University of Khartoum, Sudan and EIWR of Ethiopia, did not report any challenges, and this was due to their Pilot courses having been implemented in the latter part of 2019 and early 2020, before restrictions of movement due to COVID-19 were put in place.

Table 4: Main Frame Reporting per CoE of challenges reported for Activity and/or Indicator

	ACTIVITIES	INDICATOR	CHALLENGES Y/N													
			ICPAC	IWEGA	UWC	CSIR	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR
OBJECTIVE 1	Prepare the National Framework into an information package for dissemination partners and stakeholders (pamphlet, report,PPT etc.)	An information package was developed	NO	YES	NO		NO	YES	YES	NO	NO	YES	NO	NO	YES	NO
	Disseminate the strategy to national training institutions?	Nr of national training institutions receiving the information package	YES	YES	NO			YES	YES	NO	NO	YES	NO	NO	YES	NO
	Disseminate the strategy to other stakeholders?	Nr of other stakeholders receiving the information package	YES	YES	NO			YES	YES	NO	NO	YES	NO	NO	YES	NO
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for Higher Education training for Junior and Senior professionals	Nr of courses/modules developed	NO	YES	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO
	Deliver at least 2 pilot courses/modules for junior and/or senior professionals	Nr of courses/modules implemented	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES	YES	NO	YES	YES
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for vocational training for junior and senior technicians including education material	Nr of courses/modules developed	NO	YES	NO	YES	YES	NO	NO	YES	YES	YES	YES	NO	YES	NO
	Deliver at least 2 courses/modules for junior and/or senior technicians	Nr of courses/modules implemented	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES	YES	NO	YES	NO
OBJECTIVE 2	Purchase and use of Software, Tools and Consumables for courses/modules and labs	% of items purchased and used	NO	YES	NO	NO		YES	YES	YES	YES	YES	YES	NO	YES	YES
OBJECTIVE 4	Undertake a quality review of the course outcomes with Staff and Student participation	Has a quality review taken place for each course?	NO	YES	NO	YES		NO	NO	NO	NO	YES	YES	NO	YES	NO
		Nr of Staff consulted in the review?	NO	YES	NO	YES		NO	NO	NO	YES	YES	YES	NO	YES	NO
		Nr of students included in the review?	NO	YES	NO	YES		NO	NO	NO	NO	YES	YES	NO	YES	NO

Only IWEGA- Mozambique reported experiencing challenges for all the activities reported.

#### 4. Monitoring and Evaluation Main Frame Challenges Identified

In Table 5 below, the challenges faced during the implementation of the project in relation to the three objectives are reported. The areas in grey signify that no further data is required based on a previous answer to challenges.

Table 5: Main Frame Reporting per CoE of the identified challenges relative to the Activity and Indicator

	ACTIVITIES	INDICATOR	CHALLENGES HIGHLIGHT													
			ICPAC	IWEGA	UWC	CSIR	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR
OBJECTIVE 1	Prepare the National Framework into an information package for dissemination partners and stakeholders (pamphlet, report, PPT etc.)	An information package was developed		ADMINISTRATIVE				FINANCIAL, FORCE MAJEURE	ADMINISTRATIVE			FINANCIAL			FINANCIAL, CONTRACT	
	Disseminate the strategy to national training institutions receiving the information package	Nr of national training institutions receiving the information package	OTHER	ADMINISTRATIVE				FORCE MAJEURE	ADMINISTRATIVE			FINANCIAL, FORCE MAJEURE			ADMIN	
	Disseminate the strategy to other stakeholders?	Nr of other stakeholders receiving the information package	OTHER	OTHER				FORCE MAJEURE	ADMINISTRATIVE			FINANCIAL			ADMIN	
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for Higher Education training for Junior and Senior professionals	Nr of courses/modules developed		FINANCIAL		FINANCIAL	FORCE MAJEURE	FINANCIAL							CONTRACT	
	Deliver at least 2 pilot courses/modules for junior and/or senior professionals	Nr of courses/modules implemented	FORCE MAJEURE	FINANCIAL		FINANCIAL	FORCE MAJEURE		OTHER	FINANCIAL	FINANCIAL	FINANCIAL, FORCE MAJEURE	HUMAN RESOURCES		CONTRACT, HUMAN RESOURCES	CONTRACT
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for vocational training for junior and senior technicians including education material	Nr of courses/modules developed		FINANCIAL		FINANCIAL	FORCE MAJEURE			FINANCIAL	FORCE MAJEURE	FINANCIAL	HUMAN RESOURCES		n/a	
	Deliver at least 2 courses/modules for junior and/or senior technicians	Nr of courses/modules implemented	FORCE MAJEURE	FINANCIAL		FINANCIAL	FORCE MAJEURE		FORCE MAJEURE	FINANCIAL	OTHER	FINANCIAL, FORCE MAJEURE	HUMAN RESOURCES		CONTRACT, ADMINISTRATIVE	
OBJECTIVE 2	Purchase and use of Software, Tools and Consumables for courses/modules and labs	% of items purchased and used		FINANCIAL				Delays procurement and delivery	OTHER	FINANCIAL	FINANCIAL	FINANCIAL, FORCE MAJEURE	FINANCIAL		CONTRACT, ADMIN	CONTRACT
OBJECTIVE 4	Undertake a quality review of the course outcomes with Staff and Student participation	Has a quality review taken place for each course?		OTHER		CONTRACT				FORCE MAJEURE		FINANCIAL, FORCE MAJEURE	ADMINISTRATIVE		ADMIN	
		Nr of Staff consulted in the review?		ADMINISTRATIVE		CONTRACT				course facilitators and experts have reviewed the course,	OTHER	FINANCIAL, FORCE MAJEURE	ADMINISTRATIVE		ADMIN	
		Nr of students included in the review?		ADMINISTRATIVE		CONTRACT				participant did evaluation of the training (see results attached)		FINANCIAL, FORCE MAJEURE	FORCE MAJEURE		ADMIN	

In Table 5 above, Only Botswana, Makerere, IWEGA, Malawi and Benin City University as presented in table four experienced some form of challenge in the development of an information package even though all were able to develop the information package. Khartoum and EIWR did not report challenges for either the development and/or implementation of the courses/modules, the purchasing of the required software, tools and consumables or conducting the quality review of the courses/modules.

While the data is incomplete the frequency of the challenges reported were:

1. Financial was highlighted 29 times as a challenge, predominantly by the University of Benin who chose it as a challenge for all but two of the activities
2. Force Majeure was highlighted as a challenge 19 times
3. Administration was highlighted as a challenge 16 times, predominantly by Makerere
4. Contract issues were highlighted as a challenge a total of seven times by EIWR and Makerere

5. Human Resources challenges were mentioned four times
6. OTHER was chosen as a challenge by Botswana, IWEGA ICPAC and NWRI, but the nature of the challenge was not clarified.

Recruitment of Students was not chosen as a challenge by any of the CoEs.

## 5. Monitoring and Evaluation Main Frame Course or Module

Table 6 below provides information covering:

- The course/module titles developed by each CoE per region.
- The theme assigned to the course/module
- The start and finish date where a course were implemented
- The target group for the course/module
- The country location of the course/module
- The mode of teaching
- The E-learning platform used where applicable

Table 6: Course/Module Overview with Title, Date, Target Group, Location, Type of Teaching and Platform

		COURSE / MODULE TITLE	Theme/s	START	FINISH	TARGET GROUP	LOCATION	MODE OF TEACHING	E-LEARNING PLATFORM
				DD/MM/YYYY	DD/MM/YYYY				
SANNWATCE	IWEGA	MAINTENANCE OF NETWORKS AND LOSSES	Water Supply	07/10/2020	13/10/2020	Junior Technician	Mozambique	FACE 2 FACE	NOT APPLICABLE
		ENVIRONMENTAL IMPACT ASSESSMENT	Management and Administration	08/10/2020	14/10/2020	Junior Professional	Mozambique	FACE 2 FACE	NOT APPLICABLE
	CSIR	EW221, EWP701 and WAT738 - Application of Academic Knowledge on Water Resource Management (WRM) and Integrated Water Resource Management (IWRM) at the	IWRM	31/08/2020	04/09/2020	Junior Professional	South Africa	E-LEARNING	Google Meet
		EW221 Environmental Assessment & Management	Management and Administration	27/07/2020	04/09/2020	Junior Professional	South Africa	E-LEARNING	ZOOM
	UWC	EW221 Introduction to groundwater hydrology	Groundwater	27/07/2020	04/09/2020	Junior Professional	South Africa	E-LEARNING	ZOOM
		WAT738 Water Demand Management & Water Security	Water Supply	17/08/2020	25/09/2020	Junior Professional	South Africa	E-LEARNING	ZOOM
	ZAMBIA	Hydrogeology and Drilling Supervision training	Groundwater	NOT STARTED		Senior Technician	Zambia	BLENDED	ZOOM
		Groundwater and Integrated Water Resources Management in practice (module)	Groundwater	NOT STARTED		Junior Professional	Zambia		
	MALAWI	Hydrological Modelling & Water Quality Modelling	Data and Modelling	21/09/2020	10/02/2020	Junior Professional	Malawi	FACE 2 FACE	NOT APPLICABLE
		Water and Sanitation Systems	Sanitation	21/09/2020	10/02/2020	Junior Professional	Malawi	FACE 2 FACE	NOT APPLICABLE
	BOTSWANA	Principles of Hydrology for Technicians and Artisans	Water Quality	NOT STARTED		Junior Technician	Botswana	NOT APPLICABLE	
		Applied and Field Hydrology for Practitioners	Water Quality	NOT STARTED		Senior Technician	Botswana	NOT APPLICABLE	
		Advanced Hydrology (Young Professionals)	Water Quality	NOT STARTED		Junior Professional	Botswana	NOT APPLICABLE	
		Water Resources Management (Young Professionals)	IWRM	NOT STARTED		Senior Professionals	Botswana	NOT APPLICABLE	
WANNWATCE	KNUST	Sustainable Onsite-Sanitation And Faecal Sludge Management	Sanitation	31/08/2020	17/09/2020	Junior Professional	Ghana	E-LEARNING	ZOOM
		Short course on Water laboratory instrumentation	Water Quality	NOT STARTED		Senior Technician	Ghana	BLENDED	
		Short course on Water systems instrumentation	Water Supply	NOT STARTED		Junior Technician	Ghana	BLENDED	
		Short course on Waste resource recovery innovations and entrepreneurship	Sanitation	NOT STARTED		Senior Professionals	Ghana	BLENDED	
		Higher National Diploma in Water and Sanitation Engineering	Water Supply	NOT STARTED		Junior Technician	Ghana	BLENDED	
		Higher National Diploma in Instrumentation and Automation Engineering	Water Supply	NOT STARTED		Junior Technician	Ghana	BLENDED	
	NWRI	BOREHOLE SUPERVISION AND MANAGEMENT	Groundwater	08/12/2020	28/08/2020	Senior Professionals	Nigeria	E-LEARNING	ZOOM
		BOREHOLE DRILLING	Groundwater	09/10/2020	10/01/2020	Senior Professionals	Nigeria	BLENDED	ZOOM
		PLUMBING (HOUSEHOLD WATER MANAGER COURSE)	Water supply	NOT STARTED		Junior Technician	Nigeria	BLENDED	SKYPE
		INDUCTION COURSE FRESH ENGINEERS AND SCIENTIST IN THE WATER SECTOR	Water Supply	11/02/2020	22/12/2020	Senior Professionals	Nigeria	BLENDED	ZOOM
		BILLING AND REVENUE GENERATION MANAGEMENT	Management and Administration	21/09/2020	16/10/2020	Senior Professionals	Nigeria	BLENDED	SKYPE
		PLANT AND EQUIPMENT MAINTENANCE	Water Supply	21/09/2020	16/10/2020	Junior Professional	Nigeria	BLENDED	SKYPE
		WATER NETWORK MODELLING, NETWORK O&M, NON-REVENUE WATER MANAGEMENT	Data and Modelling	19/10/2020	13/11/2020	Senior Professionals	Nigeria	BLENDED	SKYPE
		WATER TREATMENT, PRODUCTION PROCESSES AND OPTIMIZATION, WTP OPERATION AND	Water quality	19/10/2020	13/11/2020	Senior Professionals	Nigeria	BLENDED	SKYPE
		WATER WELL DRILLING	Groundwater	NOT STARTED		Junior Technician	Nigeria	BLENDED	ZOOM
		WELDING AND RIG FABRICATION	Groundwater	NOT STARTED		Junior Technician	Nigeria	BLENDED	ZOOM
	BENIN	Water Supply and Environmental Engineering	Water Supply	NOT STARTED			Nigeria	NOT APPLICABLE	
		Remote Sensing and GIS	Data and Modelling	NOT STARTED			Nigeria	NOT APPLICABLE	
		Borehole Construction and Maintenance	Groundwater	NOT STARTED			Nigeria	NOT APPLICABLE	
		Operation and Maintenance of Water Distribution System	Water Supply	NOT STARTED			Nigeria	NOT APPLICABLE	
	UCAD	Project Management in the Water Sector	Management and Administration	14/09/2020	16/10/2020	Senior Professionals	Senegal	E-LEARNING	TEAMS
		GIS and Remote Sensing technologies applied to Water and Sanitation Management	Data and Modelling	15/10/2020	30/10/2020	Junior Professional	Senegal	BLENDED	TEAMS
		Hydrological Modelling using SWAT	Data and Modelling	12/10/2020	29/10/2020	Junior Technician	Senegal	BLENDED	TEAMS
		Introduction to UAV photogrammetry	Data and Modelling	14/10/2020	07/11/2020	Junior Professional	Senegal	BLENDED	TEAMS
CEANNWATCE	Khartoum	Data Acquisition in Water Resources Management	Data and Modelling	22/11/2019	2/1/2020	Junior Professional	Sudan	FACE 2 FACE	NOT APPLICABLE
		Water, Sanitation and Hygiene (WASH)	Sanitation	01/05/2020	16/1/2020	Junior Professional	Sudan	FACE 2 FACE	NOT APPLICABLE
		Data Acquisition in Surface and Ground Water	Data and Modelling	19/1/2020	30/01/2020	Senior Technician	Sudan	FACE 2 FACE	NOT APPLICABLE
		Water Quality Monitoring and Testing	Water Quality	16/02/2020	27/02/2020	Senior Technician	Sudan	FACE 2 FACE	NOT APPLICABLE
	Makerere	Water Diplomacy and Negotiation	Management and Administration	14/10/2020	21/10/2020	Senior Professionals	Uganda	BLENDED	ZOOM
	EIWR	Operational Hydrology: Flow and Sediment monitoring in streams	Data and Modelling	01/10/2020	13/01/2020	Senior Technician	Ethiopia	FACE 2 FACE	NOT APPLICABLE
		Irrigation Systems Diagnosis, On-farm Water Management, Operation and Maintenance	Water Supply	14/1/2020	18/01/2020	Senior Technician	Ethiopia	FACE 2 FACE	NOT APPLICABLE
		Surface Water Resources Assessment Using Advanced Modeling Techniques	Data and Modelling	NOT STARTED		Senior Technician	Ethiopia	BLENDED	ZOOM
		Water Productivity and Irrigation Systems Modelling	Water Supply	NOT STARTED		Senior Technician	Ethiopia	BLENDED	ZOOM
	ICPAC	Data Management (GIS and Remote Sensing )	Data and Modelling	NOT STARTED		Junior Professional	Kenya	FACE 2 FACE	NOT APPLICABLE
		Early Warning Systems (Climate variability & change )	Data and Modelling	NOT STARTED		Junior Professional	Kenya	E-LEARNING	

In Table 6 all CoE submitted course title information. The mode of teaching and E-Learning Platform identifies which format the course was provided, which included Face2Face, Blended or E-Learning. The latter two were added as a learning methodology following a reorientation of the ACEWATER II project as a result of the Covid-19 pandemic. The Blended approach incorporates more than one mode of teaching.

Table 6 shows the global overview of the courses/modules implemented as part of the ACEWATER II NEPAD HCD Project. Four CoEs from the three regions were not able to implement a pilot course/module:

1. WANTWATCE: Benin City University
2. CEANWATCE: ICPAC
3. SANWATCE: University of Zambia and University of Botswana

Of the remaining CoEs a total of 27 pilot projects were implemented addressing a wide variety of thematics which will be presented in the comparable analysis section of the report. The start and finish dates showed the status of the pilot training. The target group identifies which specific background the course/module was aimed too.

The majority of the course/modules implemented used either a Blended or E-learning approach. Only NRW from Nigeria required additional training for their staff to implement the courses which were predominantly implemented using a blended learning approach. The remaining CoEs indicated that additional staff training was required as part of the preparation phase for each course.

## 6. Thematics

The thematic<sup>2</sup> breakdown was developed by the UNESCO project coordinator and incorporated into the M&E tool. The seven thematics are:

1. Management and Administration
2. IWRM
3. Groundwater
4. Water Supply
5. Sanitation
6. Water Quality
7. Data Modelling

. Table 7: Course/Module Implemented by Thematic

IMPLEMENTED	IWEGA	CSIR	UWC	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	ICPAC	EIWR	TOTAL
Management and Administration	1	0	1	0	0	0	0	1	0	1	0	1	0	0	5
IWRM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Groundwater	0	0	1	0	2	0	0	2	0	0	0	0	0	0	5
Water Supply	1	0	1	0	0	0	0	2	0	0	0	0	0	1	5
Sanitation	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
Water Quality	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
Data and Modelling	0	0	0	0	0	0	0	1	0	3	2	0	0	1	7
TOTAL	2	1	3	0	2	0	1	7	0	4	4	1	0	2	27

The 27 different courses/modules implemented have been grouped by a thematic in Table 7 above. NRW implemented seven courses/modules which accounted for 26% of all implemented courses/modules. Both UCAD and Khartoum implemented four courses/modules, respectively.

<sup>2</sup> UNESCO coordination developed the thematic distribution of water sector priorities to be addressed by Pilot Courses



Figure 1: Course or Module Thematic Implementation

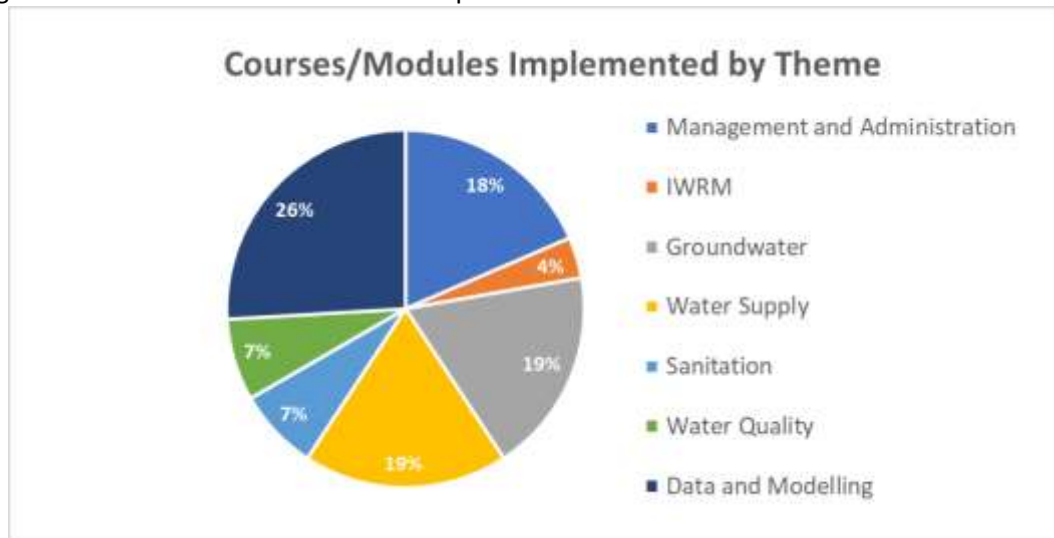


Figure 1 above portrays the 7 reported themes as a percentage. Data and Modelling accounted for 26% of all the courses/modules as shown in figure one below. This was followed by Water Supply and Groundwater thematics which accounted for 19% respectively. Management and Administration accounted for 18% while Water Quality 7%, Sanitation 7% and IWRM 4% respectively.

Table 8: Course/Module Developed by Thematic

DEVELOPED	IWEGA	CSIR	UWC	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	ICPAC	EIWR	TOTAL
Management and Administration	1	0	1	0	0	0	0	1	0	1	0	1	0	0	5
IWRM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
Groundwater	0	0	1	2	0	0	0	4	1	0	0	0	0	0	8
Water Supply	1	0	1	0	0	0	3	3	2	0	0	0	0	2	12
Sanitation	0	0	0	0	1	0	2	0	0	0	1	0	0	0	4
Water Quality	0	0	0	0	0	3	1	1	0	0	1	0	0	0	6
Data and Modelling	0	0	0	0	1	0	0	1	1	3	2	0	2	2	12
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>49</b>

In Table 8 above the total number of courses developed was 49 which highlights that 22 courses were designed but not implemented as part of the ACEWATER II HCD Pilot Project. NWRI developed 10 courses/modules followed by KNUST with six, then Malawi, Botswana, Benin City, Khartoum and EIWR with four apiece.

Figure 2: Course/Module Thematic Development

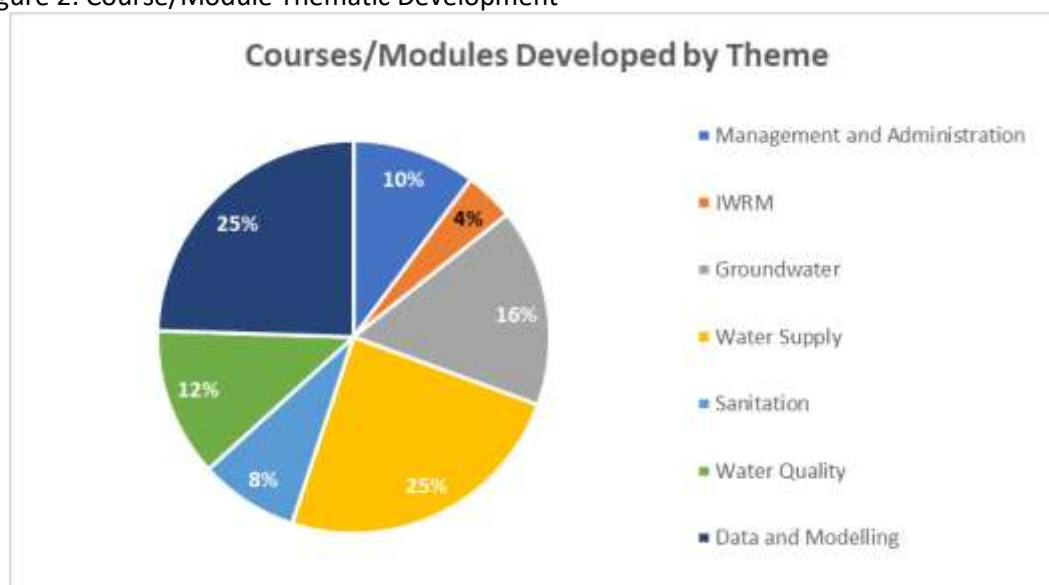


Figure 2 above shows the changes in the percentages of the thematics in comparison with the implemented courses in Figure 1, with Water Supply and Data Modelling both accounting for 25% of developed courses. These were followed by 16% for Groundwater, 12% Water Quality, 10% Management and Administration and 8% and 4% for Sanitation and IWRM, respectively.

Table 9: Course Participants Per Theme

COURSE THEME	COURSE PARTICIPANTS														TOTAL
	IWEGA	CSIR	UWC	ZAMBIA	MALAWI	BOTSWANA	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR	ICPAC	
Mgmt. & Admin	21	0	20	0	0	0	0	8	0	63	0	31	0	0	143
IWRM	0	124	0	0	0	0	0	0	0	0	0	0	0	0	124
Groundwater	0	0	99	0	0	0	0	97	0	0	0	0	0	0	196
Water Supply	20	0	5	0	0	0	0	21	0	0	0	0	12	0	58
Sanitation	0	0	0	0	10	0	62	0	0	0	30	0	0	0	102
Water Quality	0	0	0	0	0	0	0	5	0	0	26	0	0	0	31
Data & Modelling	0	0	0	0	6	0	0	6	0	97	64	0	12	0	185
TOTAL	41	124	124	0	16	0	62	137	0	160	120	31	24	0	839

Table 9 above shows the total number of participants in relation to the implemented courses/modules with 839 participants. UCAD accounted for 19% of all participants followed by NWRI with 16%, CSIR and UWC with 15%. Both these institutions collaborated on trainings and while independently implementing courses/modules, the same participants were attended both institutions courses/modules. Khartoum had 14% of the total number of participants followed by KNUST 7%, IWEGA 5%, Makerere 4%, EIWR 3% and Malawi with 2% respectively.

Figure 3: Percentage of Participant by Theme

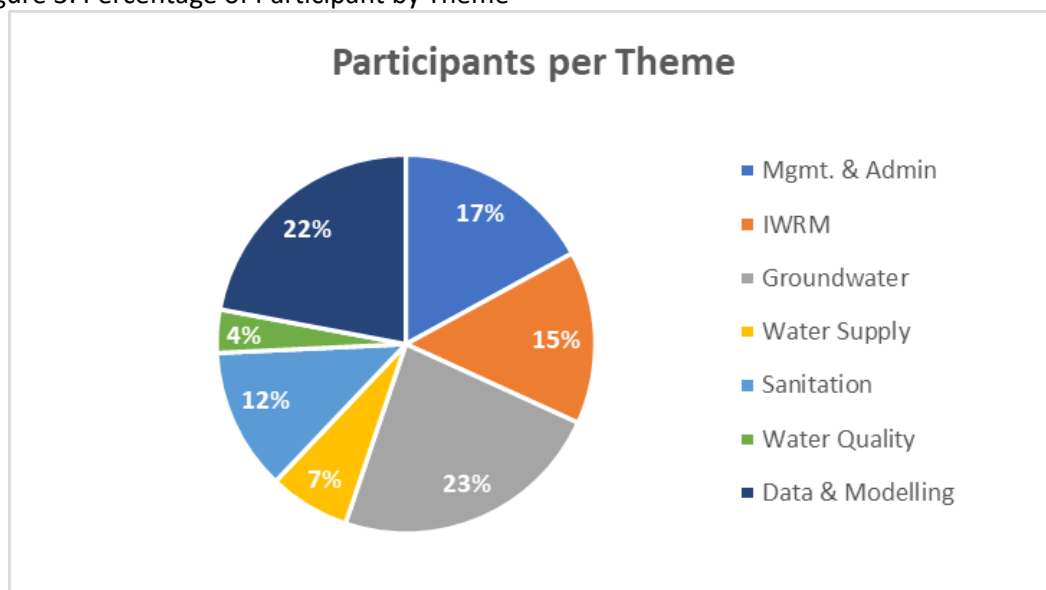


Figure 3 above shows the percentage of participants per theme rather than per institution. Different to the number of courses/modules per thematic, the most attended thematic was Groundwater with 23% of all participants. This was closely followed by Data and Modelling with 22%, then management and Administration 17%, IWRM 15%, then Sanitation, Water Supply and Water Quality with 12%, 7% and 4% respectively.

When comparing the percentage of courses implemented in Table 9 with the percentage of course participants in Figure 4 it is interesting to note that while only 4% of courses developed were for IWRM, 15% of participants took this thematic. Groundwater made up 16% of courses/modules but accounted for 23% of participants. What is interesting is that Water Supply was a popular thematic with 12 courses implemented (25%) but only 7% of the total participants took these courses/modules. Water Quality had a similar profile with 6 courses (12%) developed but accounted for only 4% of participants.

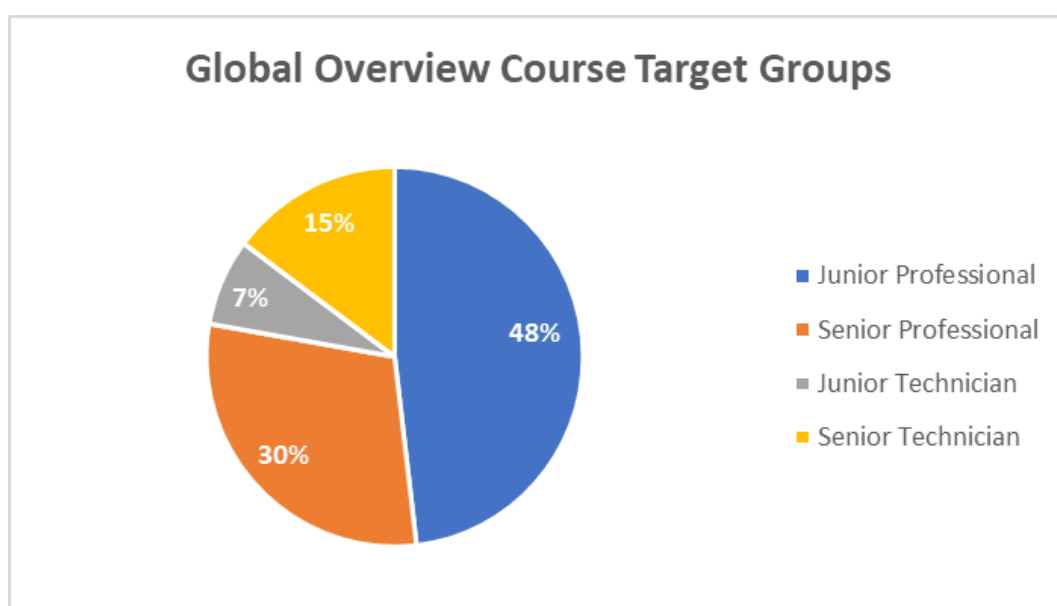
## 7. Target Groups

Table 10: Course/Module Target Group

Target Group	IWEGA	CSIR	UWC	ZAMBIA	BOTSWANA	MALAWI	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR	ICPAC	TOTAL
Junior Professional	1	1	3	0	0	2	1	1	0	2	2	0	0	0	13
Senior Professional	0	0	0	0	0	0	0	6	0	1	0	1	0	0	8
Junior Technician	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Senior Technician	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4
TOTAL	2	1	3	0	0	2	1	7	0	4	4	1	2	0	27

The ACEWATER II NEPAD HCD project targeted two groups for the pilot courses/modules, and these were split into Junior and Senior Professional and Technical Vocational trainees, respectively. Table 10 shows the target groups per CoE for implemented courses/modules.

Figure 4: Percentage of the Different Target Groups



While all target groups were included in at least one course/module provided, the majority of pilot courses were designed for the Junior or Senior Professional levels. As shown in figure 4 above, 48% of courses/modules were implemented for Junior professionals followed by 30% for Senior Professionals.

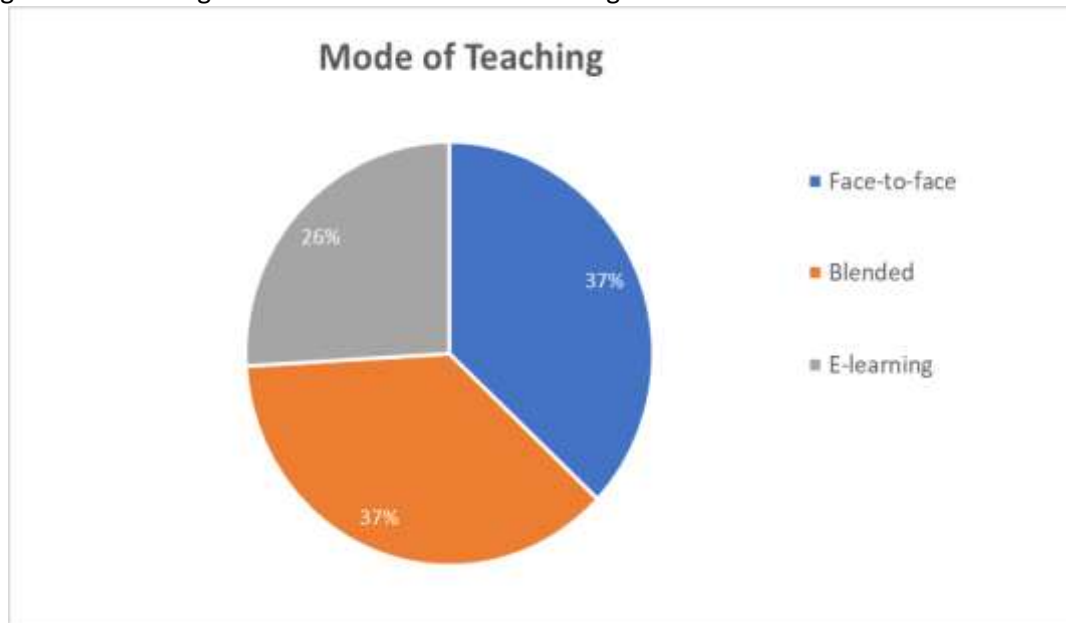
Table 11: Courses/Modules Developed but NOT Implemented per target Group

Target Group	ZAMBIA	BOTSWANA	KNUST	NWRI	BENIN	EIWR	ICPAC	TOTAL
Junior Professional	1	1	0	0	Not Available	0	2	4
Senior Professional	0	1	1	0		0	0	2
Junior Technician	0	1	3	3		0	0	7
Senior Technician	1	1	1	0		2	0	5
<b>TOTAL</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>18</b>

Table 11 above shows the course/modules developed per target group by 7 of the CoE who were not able to implement them. The Junior Technician (7 courses) and Senior Technician (5 courses) were the most affected groups.

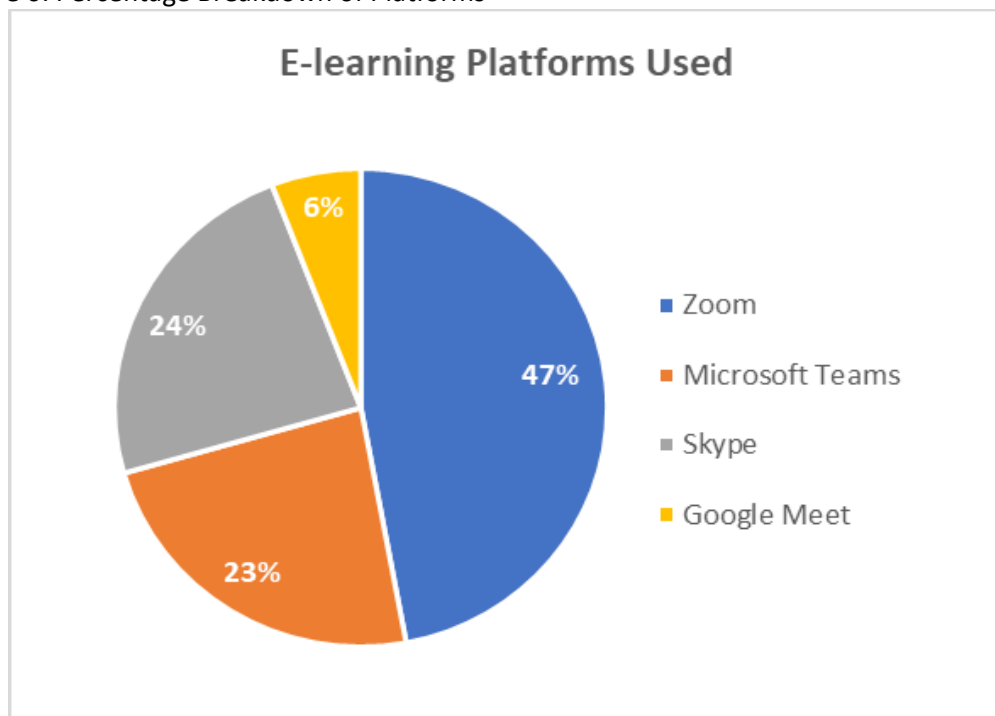
## 8. Mode of Teaching

Figure 5: Percentage Breakdown of Mode of Teaching



The mode of teaching was fairly evenly spread as shown in Figure 5 above, with the three options recording Face to Face 26%, Blended 37% and E-Learning 37% respectively. This was partly as a result of the constraints faced by the CoEs which forced them to adapt their teaching strategies and consider Blended and E-Learning as mode of teaching. The only Face2Face courses were undertaken by Khartoum University EIWR Addis Ababa University and IWEGA from Mozambique, prior to the Covid-19 restrictions. The flexibility of the CoE to adapt their strategies and undertake an assessment of the possibilities of providing Blended and E-Learning courses/modules has contributed to the success of the project.

Figure 6: Percentage Breakdown of Platforms



In Figure 6 the platforms used to provide the courses/modules were varied with Zoom accounting for 50% of all teaching. Skype and Microsoft Teams were the next choices with Google Meet being used by only one CoE. It does show that for both Blended and E-Learning content, the platforms can be both easily available and relatively inexpensive for the CoE to use and implement.

## 9. Participants' Gender

Table 12: Participants Gender per Target Group

TARGET GROUP	Sub-Total		TOTAL
	Male	Female	
Junior professional	239	249	488
Senior professional	129	52	181
Junior technician	33	17	50
Senior technician	39	33	72
<b>TOTAL</b>	<b>440</b>	<b>351</b>	<b>791</b>

In Table 12 above a total of 791 participants were reported as Male or Female which is 47 participants less than the total number of participants as reported in Table 9. NWRI of Nigeria were unable to collect the information from one of their courses/modules and CSIR/UWC who had the same participants missed 2 individuals from their figures.

Figure 7: Percentage of Participants by Gender

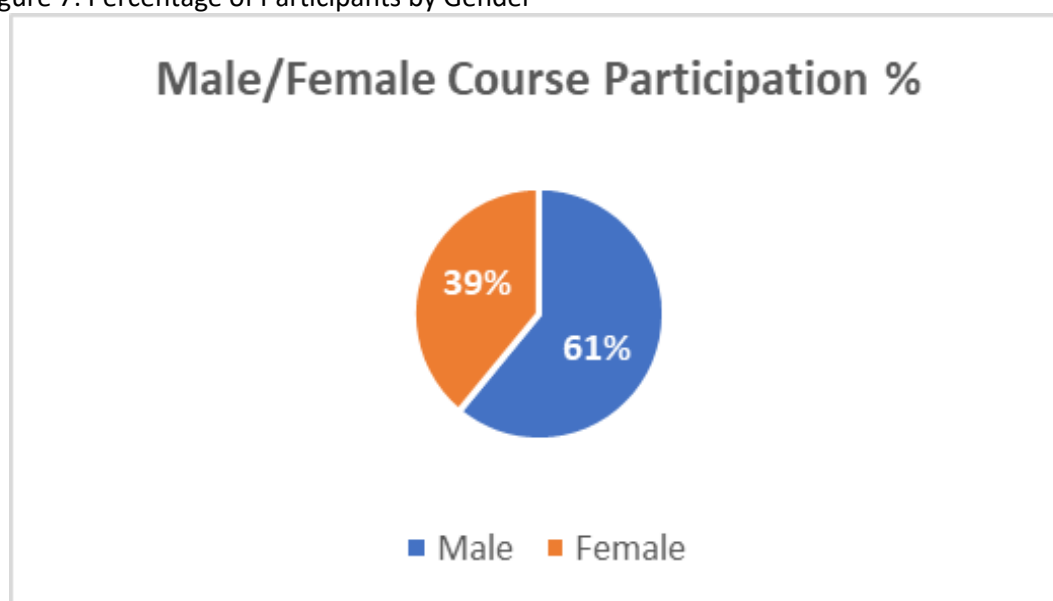


Figure 7 above shows that of the 791 reported participants by gender, 61% of participants were male while 39% were female. This was particularly influenced by three CoE from WANWATCE who reported a gender breakdown of participants: KNUST 76% male - 24% Female, NWRI 87% -13% and UCAD 67% - 33% respectively.

## 10. Age Groups

Four Age groups were identified using the following rational:

Age Groups in the Water Sector:

- 18 – 25 Students, undergraduate or graduate, or young professionals and technicians entering into the sector
- 26 – 35 post-graduate / researchers and junior sector professionals and technicians,
- 36 – 45 middle management, project coordination
- 46 – 60 senior management, program coordination

Table 13: Course/Module Age of Participants

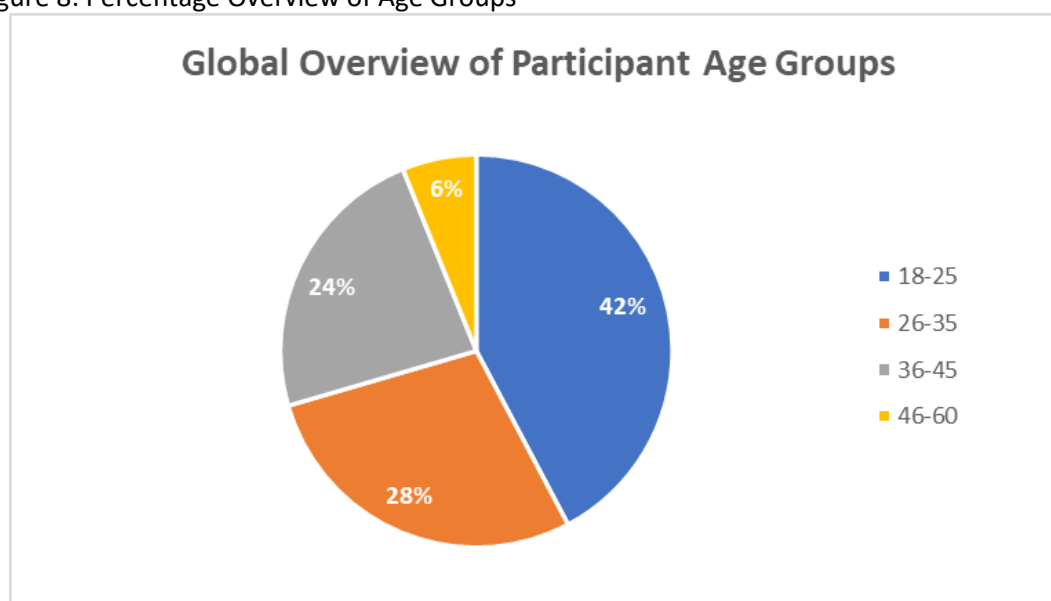
AGE GROUP	IWEGA	CSIR	UWC	ZAMBIA	BOTSWANA	MALAWI	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR	ICPAC	TOTAL
18-25	10	122	122	0	0	9	0	0	0	48	23	0	4	0	338
26-35	23	2	2	0	0	7	18	47	0	52	51	8	16	0	226
36-45	6	0	0	0	0	0	10	66	0	49	34	18	4	0	187
46-60	2	0	0	0	0	0	6	13	0	11	12	5	0	0	49
TOTAL	41	124	124	0	0	16	34	126	0	160	120	31	24	0	800

In Table 13 above the total number of participants reported amounted to 800 by age which is 39 less than the total number of participants. KNUST of Ghana missed 28 and NWRI of Nigeria 11 participants in their reporting.

The age group 18-25 as shown in table 13 recorded 338 (42% figure 8) of the 800 reported participants for the age bracket. Both 26 to 35 and 36 to 45 were similar with 226 (28%) and 187 (24%) respectively.

The age group 46 to 60 had the least participants with only 49 of the 800 reported participants. Four CoEs included in the table had zero participants. The participants for CSIR and UWC in South Africa were the same participants for more than one courses/modules presented by these CoEs. The participants from CSIR and UWC accounted for 244 of the 800 and all within the 18 to 25 age brackets.

Figure 8: Percentage Overview of Age Groups



## 11. Course/Module Qualification of Participants

Four Qualifications were defined as the backgrounds for participants.

Table 14: Course/Module Qualification of Participants

QUALIFICATION	IWEGA	CSIR	UWC	ZAMBIA	BOTSWANA	MALAWI	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR	ICPAC	TOTAL
High School	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Diploma	22	0	0	0	0	0	8	6	0	6	8	0	0	0	50
BSc. (incl. Honours)	15	119	119	0	0	16	14	120	0	32	53	17	20	0	525
Masters	4	0	0	0	0	0	10	0	0	113	59	14	4	0	204
TOTAL	41	119	119	0	0	16	34	126	0	151	120	31	24	0	781

In Table 14 above the Bachelor of Science qualification also includes participants with an Honours degree. 781 participants were recorded with a qualification, 58 less than the total number of participants.

Figure 9: Percentage of Participants with Qualification

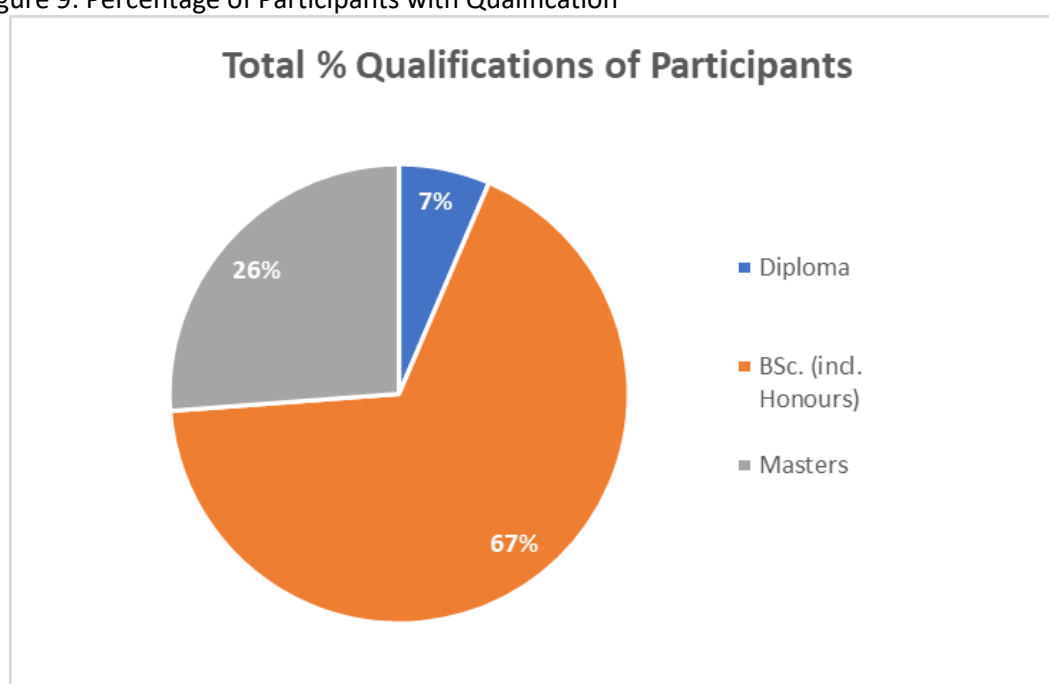


Figure 9 above presents the information from Table 14 as a percentage breakdown. The BSc including Honours degree accounted for 67% of the participants' qualifications, with CSIR, UWC, and NWRI responsible for the majority of these. CSIR and UWC had the same number of participants as outlined previously. Higher Education does not appear in Figure 10 as the number is too low to be of significance.

## 12. Source of Participants

The participants were grouped into four sources which were:

- Higher Education (HE)
- TVET (Technical and Vocational Educational Training)
- Private
- Government department

The private sector was defined as including small medium enterprises and artisanal businesses

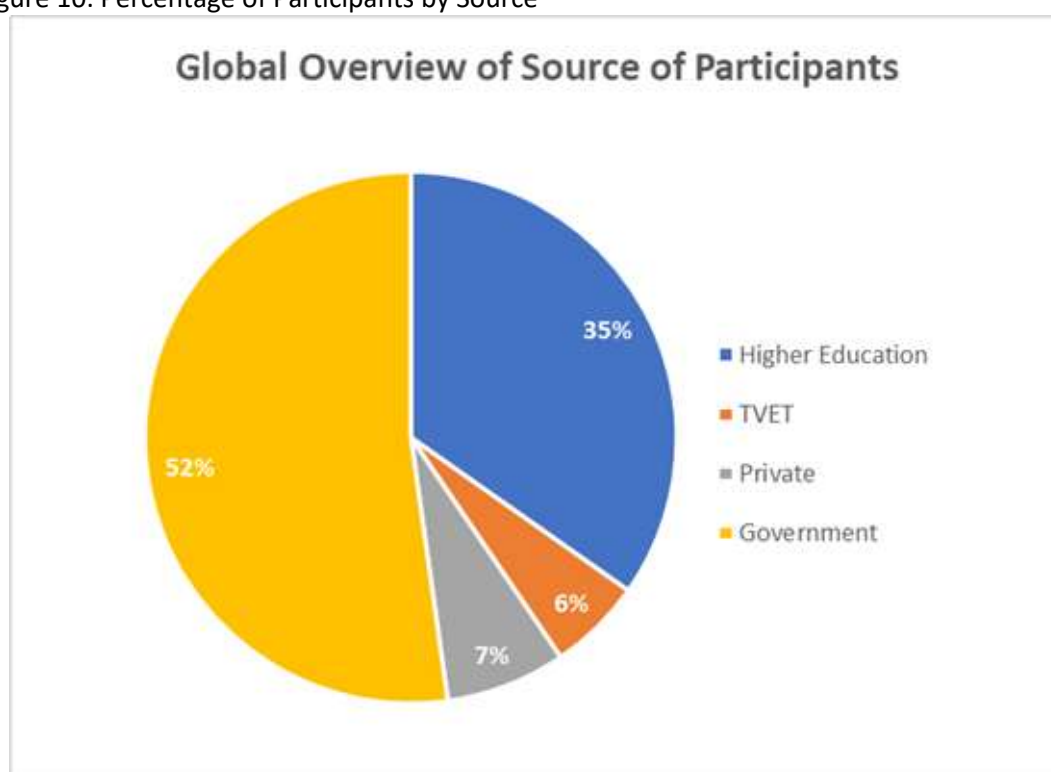


Table 15: Course/Module Source of Participants

SOURCE	IWEGA	CSIR	UWC	ZAMBIA	BOTSWANA	MALAWI	KNUST	NWRI	BENIN	UCAD	KHARTOUM	MAKERERE	EIWR	ICPAC	TOTAL
Higher Education	7	not available	not available	0	0	16	7	0	0	111	43	5	0	0	189
TVET	0			0	0	0	1	0	0	19	14	0	2	0	36
Private	13			0	0	0	6	0	0	8	19	0	0	0	46
Government	21			0	0	0	48	126	0	22	44	26	22	0	309
TOTAL	41	0	0	0	0	16	62	126	0	160	120	31	24	0	580

In Table 15 above only 580 participants were reported which is 259 less than the total number of total participants. CSIR and UWC account for 248 of the missing figures with the remaining 11 attributed to NWRI. All of the participants from NWRI came from a Government background whereas Khartoum, KNUST, UCAD had participants representing all the sources.

Figure 10: Percentage of Participants by Source



As can be seen in figure 10 the Government (52%) and Higher Education (35%) were well represented as a source of participants with both TVET (6%) and Private Sector (7%) being less present.

### 13. Financial Reporting

The reported costs of the courses/modules were split into two phases of activity: preparation and delivery.

Table 16: Course/Module Costs

		GOODS SUPPLIES SERVICES			HUMAN RESOURCES		
		Preparation	Delivery	TOTAL	Preparation	Delivery	TOTAL
SANWATCE	IWEGA	\$11.14	\$5,113.80	<b>\$5,113.80</b>	\$1,500.00	\$9,154.00	<b>\$10,654.00</b>
	CSIR	\$0.00	\$3,900.00	<b>\$3,900.00</b>	\$4,800.00	\$4,800.00	<b>\$9,600.00</b>
	UWC	\$0.00	\$0.00	<b>\$0.00</b>	\$9,661.15	\$12,079.55	<b>\$21,740.70</b>
	ZAMBIA	\$0.00	\$0.00	<b>\$0.00</b>	\$0.00	\$0.00	<b>\$0.00</b>
	BOTSWANA	\$0.00	\$0.00	<b>\$0.00</b>	\$10,000.00	\$0.00	<b>\$10,000.00</b>
	MALAWI	\$0.00	\$7,000.00	<b>\$7,000.00</b>	\$600.00	\$9,154.00	<b>\$16,754.00</b>
WANWATCE	KNUST	\$0.00	\$19,000.00	<b>\$19,000.00</b>	\$2,400.00	\$6,000.00	<b>\$11,700.00</b>
	NWRI	\$15,500.00	\$62,000.00	<b>\$43,200.00</b>	\$12,000.00	\$44,500.00	<b>\$56,500.00</b>
	BENIN	\$0.00	\$0.00	<b>\$0.00</b>	\$6,000.00	\$0.00	<b>\$6,000.00</b>
	UCAD	\$6,774.00	\$4,203.00	<b>\$10,977.00</b>	\$16,000.00	\$5,250.00	<b>\$11,250.00</b>
CEANWATCE	KHARTOUM	\$0.00	\$22,609.89	<b>\$22,609.89</b>	\$8,400.00	\$13,400.00	<b>\$21,800.00</b>
	MAKERERE	\$532.00	\$9,496.00	<b>\$12,639.00</b>	\$7,100.00	\$9,366.67	<b>\$16,466.67</b>
	EIWR	\$100.00	\$4,300.00	<b>\$4,400.00</b>	\$11,500.00	\$20,805.90	<b>\$32,305.90</b>
<b>TOTAL</b>		<b>\$22,917.14</b>	<b>\$137,622.69</b>	<b>\$128,839.69</b>	<b>\$89,961.15</b>	<b>\$134,510.12</b>	<b>\$224,771.26</b>

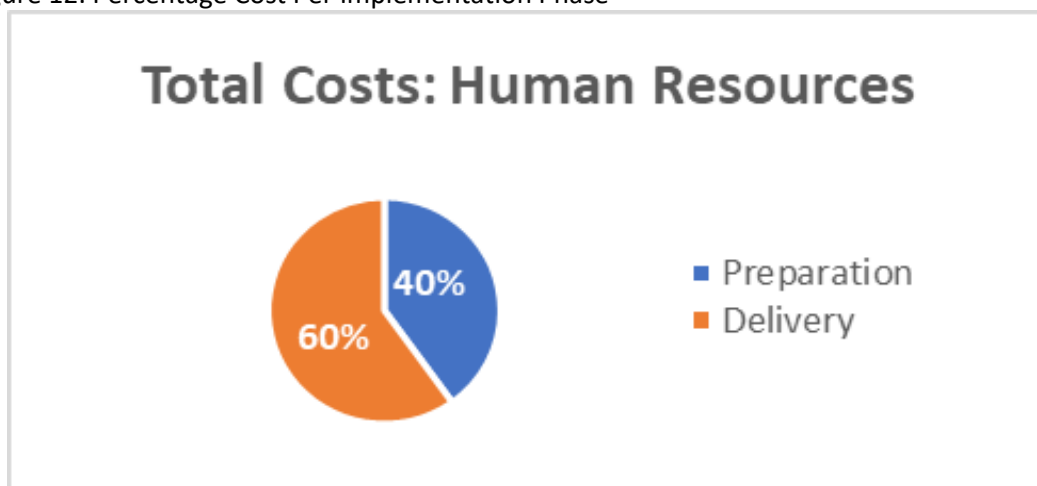
In Table 16 above Human Resources costs including preparation and delivery accounts for 56% of the overall costs. With regards the costs for goods, supplies and services for the preparation phase of the courses, the total amounts to only 6% of the overall costs whereas the preparation costs for HR which includes the development of the course/module content, amounted to 20% of the total costs.

Figure 11: Percentage Cost Per Implementation Phase



In Figure 11 above, 86% of the costs associated with Goods, Supplies and Services were attributed to the delivery of the courses/modules.

Figure 12: Percentage Cost Per Implementation Phase



In Figure 12 above the costs associated with human resources were divided as 60% for the delivery and 40% for the preparation of the courses/modules. .

## COMPARATIVE ANALYSIS

### FINDINGS

In this section the report will provide comparative analysis of the M&E results between regions, highlighting any differences or relevant outcomes which have appeared as part of the data analysis.

#### 14. Regional Thematics Analysis

Each institution undertook a Gap Analysis of Human Capacity needs in their country's water sector prior to the M&E component of the project being developed and implemented.

Figure 13: Regional Course/Module Participants by Theme

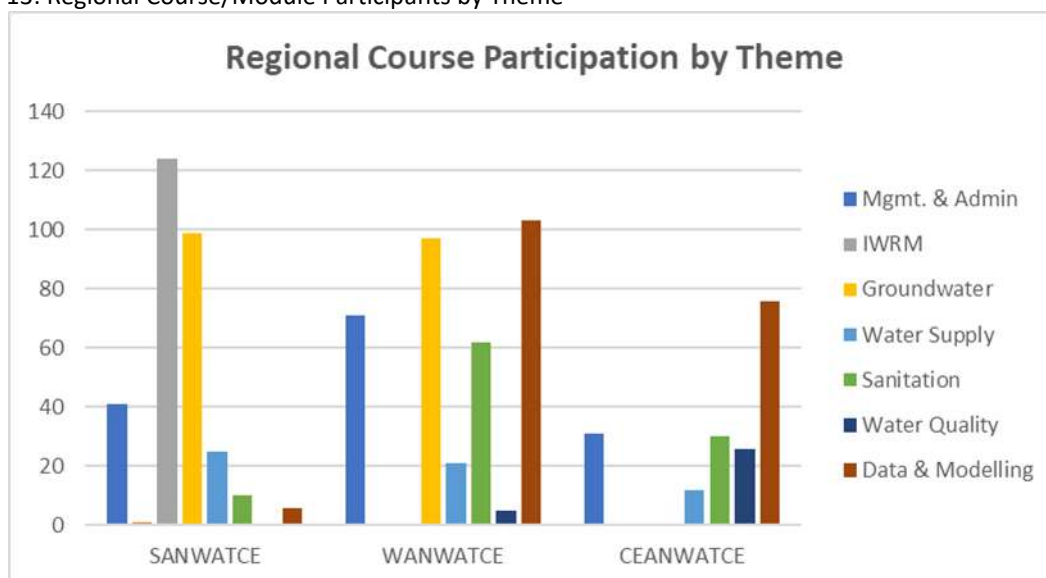


Figure 13 above shows the number of participants per thematic of the implemented courses by a regional breakdown. While it does show that the priorities are slightly different per region the number of thematic choices available is fairly consistent across the three regions. Both SANWATCE and WANWATCE offers six different thematic choices, whereas CEANWATCE provides five thematic choices. Four thematics appear in all the regions:

- Data and Modelling
- Water Supply
- Management and Administration
- Sanitation

Regarding the take up of the thematics by participants the needs are different per region. SANWATCE had the majority of participants attending IWRM and Groundwater courses/modules. WANWATCE had a more even split with four-day thematics, Data and Modelling, Groundwater, Management and Administration and Sanitation accounting for the majority of participants. CEANWATCE had the fewest number of participants of the three regions with most participants attending the Data and Modelling related courses/modules.

#### 15. Regional Target Group Analysis

As stated in the findings section of the report, the four target groups for the pilot projects were:

- Junior Professional
- Senior Professional
- Junior Technician
- Senior Technician

Table 17: Target Group per Region

TARGET GROUP	SANWATCE	WANWATCE	CEANWATCE	TOTAL
Junior professional	7	4	2	13
Senior professional	0	7	1	8
Junior technician	1	1	0	2
Senior technician	0	0	4	4
TOTAL	8	12	7	27

Table 17 above shows the regional breakdown of course/modules by target group with SANWATCE providing the most courses targeted towards Junior Professionals. WANWATCE provided the most course/modules targeted towards Senior professionals accounting for all but one and CEANWATCE was the only region to provide course/modules for Senior Technicians.

Figure 14: Percentage of Target Groups by Region

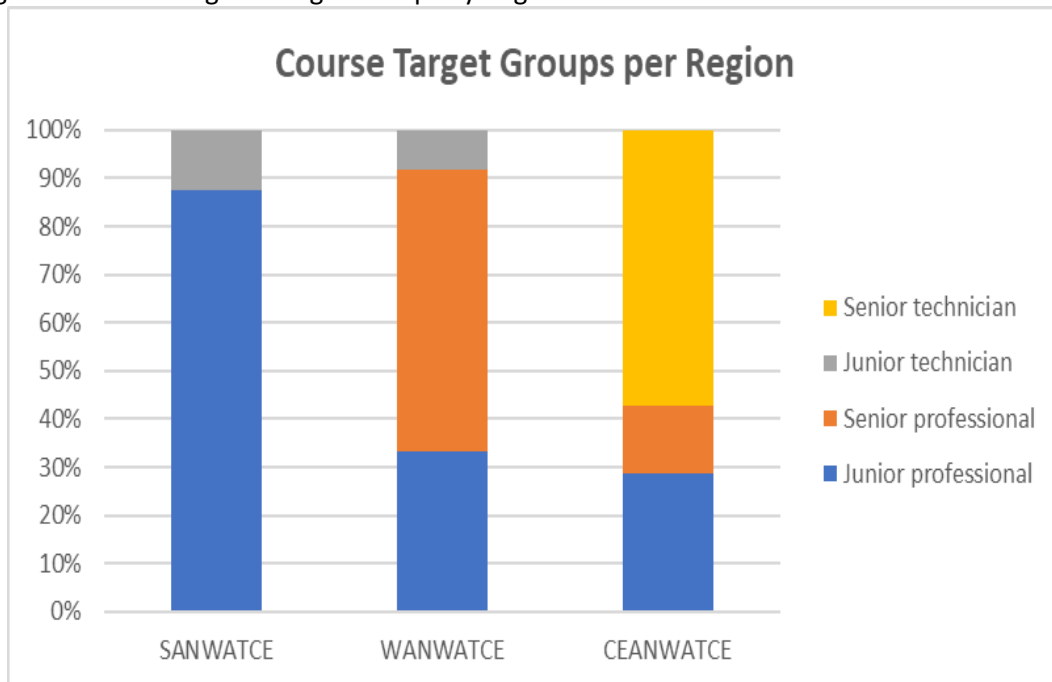


Figure 14 above shows the percentage breakdown per region of the course/modules per target group which clearly illustrates the difference between the three regions. SANWATCE targeted predominantly Junior Professional while with 87.5% of course/modules aimed at this group. WANWATCE targeted predominantly Professional groups: Junior (33%) and Senior (58%). CEANWATCE targeted Senior Technician (57%) followed by Junior and Senior Professionals, respectively.

The high number percentage of courses in WANWATCE is affected by NRWI of Nigeria, reporting 6 courses for Senior Professionals. Khartoum University provided over 50% of the courses in CEANWATCE and covered both Junior and Senior groups.

#### 16. Regional Gender Analysis

Regional gender analysis can be looked at through three different comparisons:

1. Course/Module participation
2. Thematic participation and
3. Target Groups

Figure 15: Percentage by Gender Participation per Region

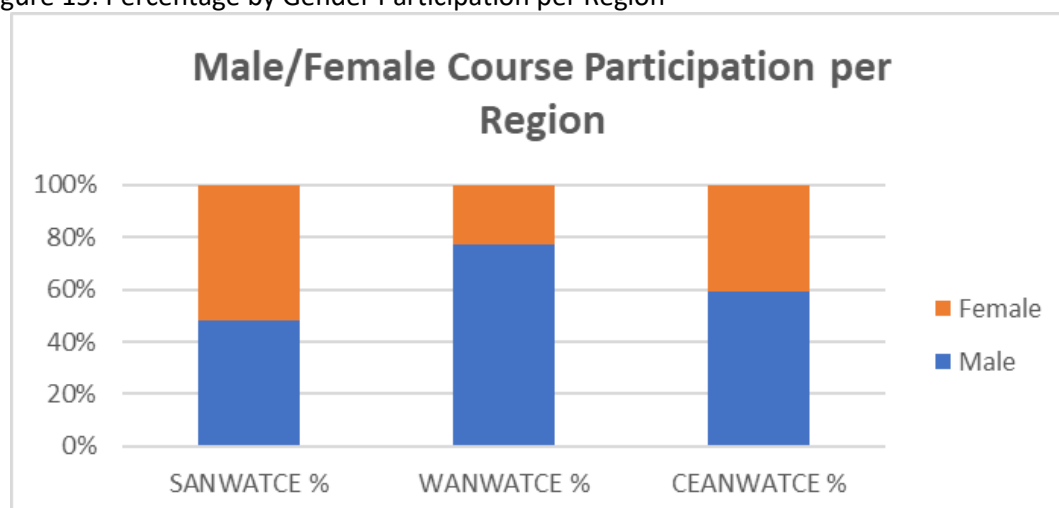


Figure 15 above shows the regional percentage breakdown by male/female gender. SANWATCE had a majority of female participants with 52% female and 48% male. CEANWATCE had a larger percentage in favour of males with a 58 male and 42% female breakdown. WANWATCE had by far the most disparity by gender with 77% male and 23% female.

Table 18: Regional Breakdown by Gender versus Thematic

THEME	SANWATCE		WANWATCE		CEANWATCE		Sub-Total		TOTAL
	Male	Female	Male	Female	Male	Female	Male	Female	
Mgmt. & Admin.	18	23	44	27	16	15	78	65	143
IWRM	45	77	0	0	0	0	45	77	122
Groundwater	36	61	58	10	0	0	94	71	165
Water Supply	13	12	6	0	10	2	29	14	43
Sanitation	7	3	47	15	12	18	66	36	102
Water Quality	0	0	5	0	9	17	14	17	31
Data and Modelling	3	3	73	30	38	38	114	71	185
<b>TOTAL</b>	<b>122</b>	<b>179</b>	<b>233</b>	<b>82</b>	<b>85</b>	<b>90</b>	<b>440</b>	<b>351</b>	<b>791</b>

Table 18 the breakdown of the participants is presented as gender by region versus thematic. The boxes where there is a zero for both Male and Female, indicates no course was implemented for that specific thematic. The data shows that only two course/modules from WANWATCE with small cohorts of 5 and 6 respectively were male only. There was no female only courses. The remaining courses were all represented by both male and female participants. Both SANWATCE and CEANWATCE had a majority Female number of participants across all thematics implemented while WANWATCE had predominantly Male participants. This was impacted by the number of courses implemented by NRW of Nigeria.

Figure 16: Gender Breakdown by Course/Module Theme

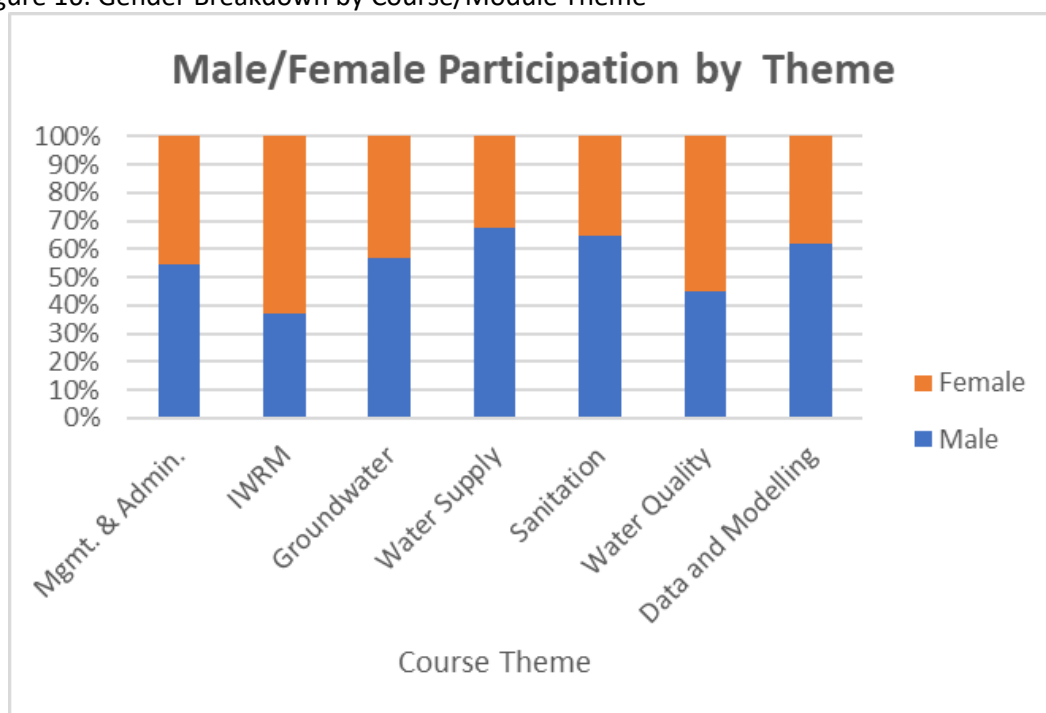


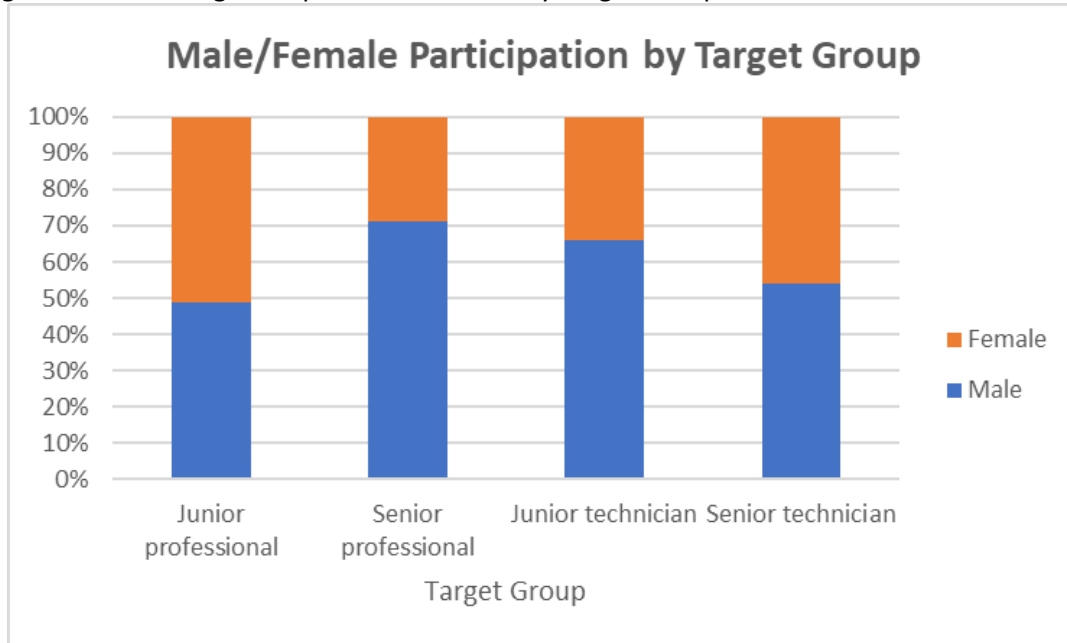
Figure 16 above represents Table 18's percentage as a breakdown of gender by thematic. This shows that only IWRM and Water quality had a majority female participant. Water Supply and Sanitation were the two thematics regionally with the highest percentage of male participants.

Table 19: Regional Gender Comparison versus Target Groups

TARGET GROUP	SANWATCE		WANWATCE		CEANWATCE		Sub-Total		TOTAL
	Male	Female	Male	Female	Male	Female	Male	Female	
Junior professional	111	170	98	37	30	42	239	249	488
Senior professional	0	0	113	37	16	15	129	52	181
Junior technician	11	9	22	8	0	0	33	17	50
Senior technician	0	0	0	0	39	33	39	33	72
<b>TOTAL</b>	<b>122</b>	<b>179</b>	<b>233</b>	<b>82</b>	<b>85</b>	<b>90</b>	<b>440</b>	<b>351</b>	<b>791</b>

When comparing gender versus target groups as shown in table 19 above, there is a fairly even split with regards Junior professionals between male and female participants. However, with Senior Professionals this shifts to predominantly a male oriented group size. The number of participants for both Junior and Senior Technician is small to draw much of a conclusion but do show a slight bias towards male versus female participants

Figure 17: Percentage Comparison of Gender by Target Group



In Figure 17 above, there is a percentage comparison by Gender versus Target Group (which has been defined earlier in the report). The data shows that there was a minimal percentage difference in the Junior professional group with 51% female versus 49% male representation. The Senior Professional group had a 71% male versus 29% female split. For the Junior and Senior technical groups, the split was 66%/34% and 54%/46% male /female split, respectively.

#### 17. Regional Analysis by Age

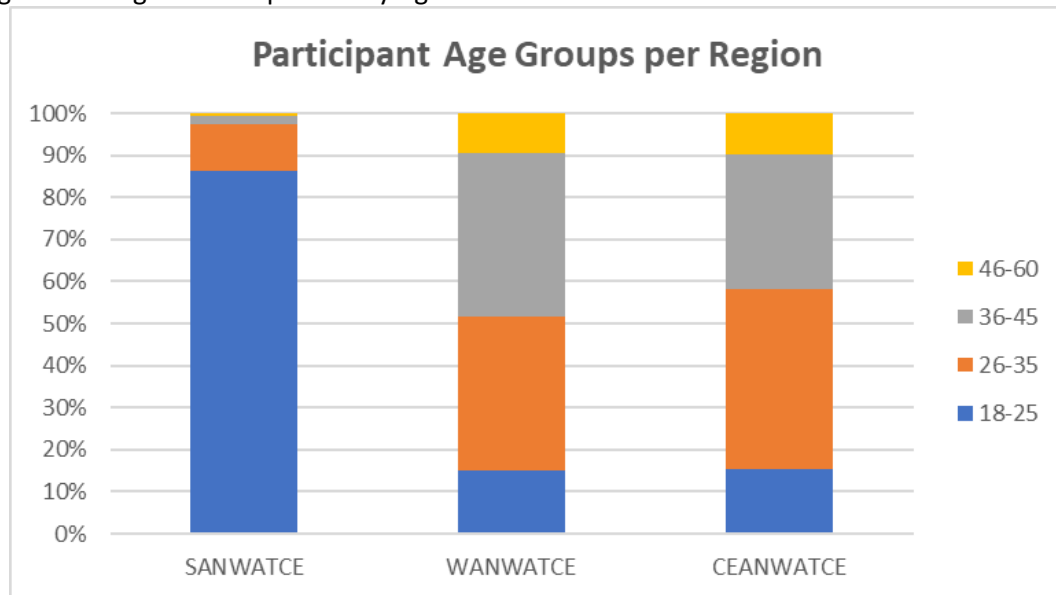
Table 20: Regional Age Group Comparison

CoE	AGE GROUPS				TOTAL
	18-25	26-35	36-45	46-60	
<b>SANWATCE</b>	263	34	6	2	<b>305</b>
<b>WANWATCE</b>	48	117	125	30	<b>320</b>
<b>CEANWATCE</b>	27	75	56	17	<b>175</b>
<b>TOTAL</b>	<b>338</b>	<b>226</b>	<b>187</b>	<b>49</b>	<b>800</b>

While all age of the defined age groups is represented in table 20 above, the three regions had limited participation from the older target group 46 to 60 years of age with only 49 of the 800 reported participants.



Figure 18: Regional Comparison by Age



SANWATCE course/modules targeted predominantly the 18 to 25 age group which accounted for 86% as shown in figure 18, of all participants from the three regions. WANWATCE targeted the 26 to 35 and the 36 to 45 age groups with 37% and 39% respectively.

CEANWATCE was the opposite with 43% from the 26 to 45 age group followed by the 32% from the 36 to 45 age group.

#### 18. Regional Analysis of Distribution of Qualifications

Table 21: Distribution of Participants Qualifications per Region

CoE	High School	Diploma	BSc. (incl. Honours)	Masters	TOTAL
<b>SANWATCE</b>	0	22	269	4	<b>295</b>
<b>WANWATCE</b>	2	20	166	123	<b>311</b>
<b>CEANWATCE</b>	0	8	90	77	<b>175</b>
<b>TOTAL</b>	<b>2</b>	<b>50</b>	<b>525</b>	<b>204</b>	<b>781</b>

The qualifications of the participants as shown in Table 21 provide a regional overview of the participants backgrounds. The data clearly shows that the courses were unable to attract participants with a High School qualification with only two of 781. It is unclear whether the restrictions and adaptations to the pilot training projects had an impact on this group. The vast majority of participants participating in the pilot courses/modules had a Bachelors including Honours degrees of which SANWATCE accounted for 51% of these followed by WANWATCE with 32%. WANWATCE accounted for 60% of the participants with a Master's degree.

Figure 19: Percentage Comparison by Qualification

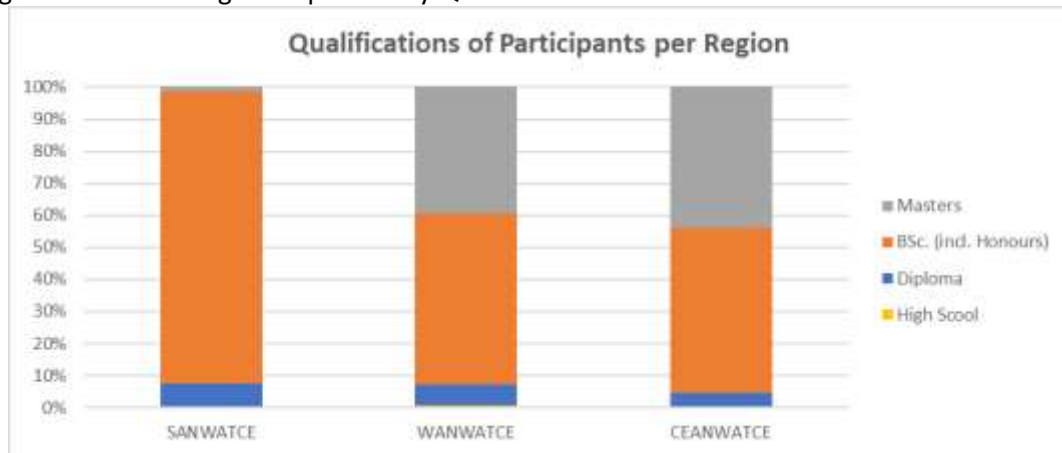


Figure 19 shows the percentage of qualifications by region which clearly shows that within SANWATCE the vast majority of participants had a Batchelors including Honours degree with 91%. In both WANWATCE and CEANWATCE the Batchelors including Honours were the majority but closely followed by a Master's degree. A small minority had a Diploma in all three regions with High School a negligible amount.

#### 19. Regional Analysis Source of Participants

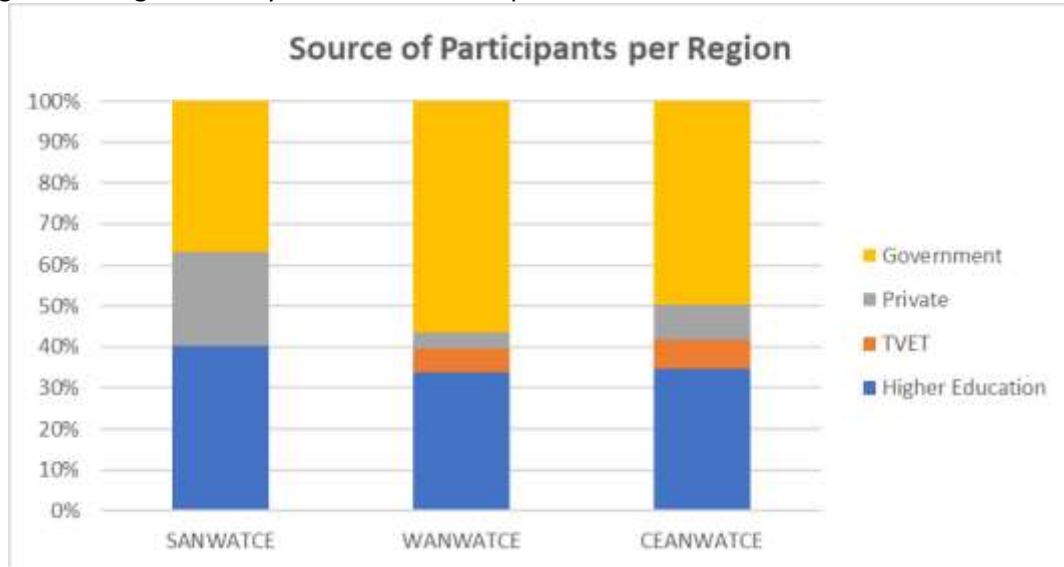
Only eight of the 14 CoEs reported data regarding the source of the participants with UWC and CSIR not providing any data. The other four CoEs did not implement any courses.

Table 22: Regional Comparison of Participants Source

SOURCE	SANWATCE		WANWATCE			CEANWATCE			TOTAL
	IWEGA	MALAWI	KNUST	NWRI	UCAD	KHARTOUM	MAKERERE	EIWR	
Higher Education	7	16	7	0	111	43	5	30	219
TVET	0	0	1	0	19	14	0	2	36
Private	13	0	6	0	8	19	0	0	46
Government	21	0	48	126	22	44	26	42	329
<b>TOTAL</b>	<b>41</b>	<b>16</b>	<b>62</b>	<b>126</b>	<b>160</b>	<b>120</b>	<b>31</b>	<b>74</b>	<b>630</b>

In Table 22 above the majority of participants came from a Government source with WANWATCE and CEANWATCE accounting for most of these participants. The next largest group came from High School with UCAD in Senegal accounting for 50% of this group. TVET and Private sector were underrepresented with only 36 and 46 participants, respectively.

Figure 20: Regional Analysis Source of Participants



The data represented in Figure 20 is presented as a percentage from the data in Table 22 by region and shows that both Government and Higher Education provided the majority of the participants backgrounds. CEANWATCE has an even spread of government participants from all three CoE whereas in SANWATCE it was only IWEGA of Mozambique and in WANWATCE the majority came from NWRI in Nigeria.

## 20. Mode of Teaching

Figure 21: Percentage of Mode of Teaching by Region

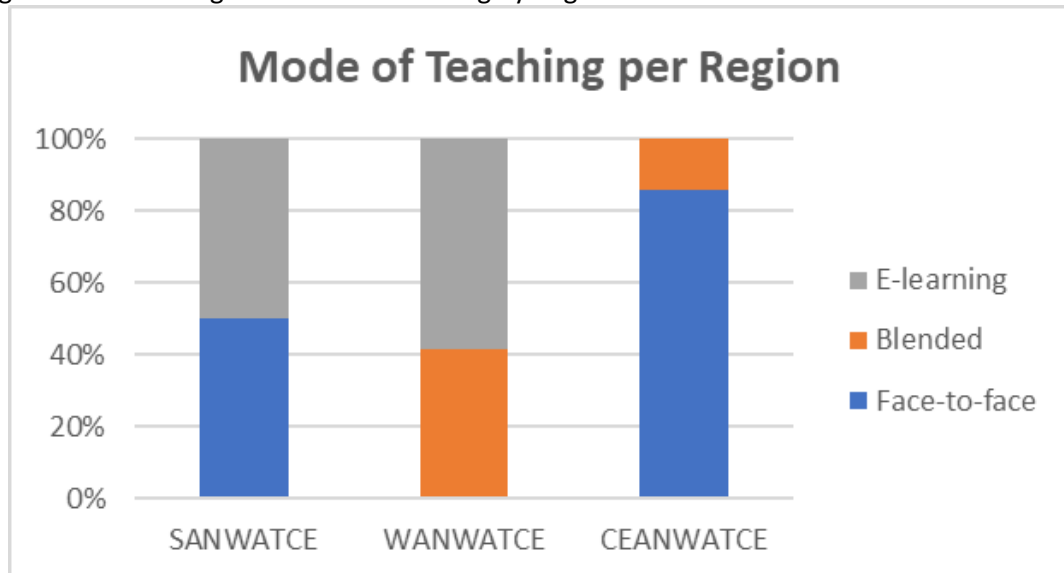
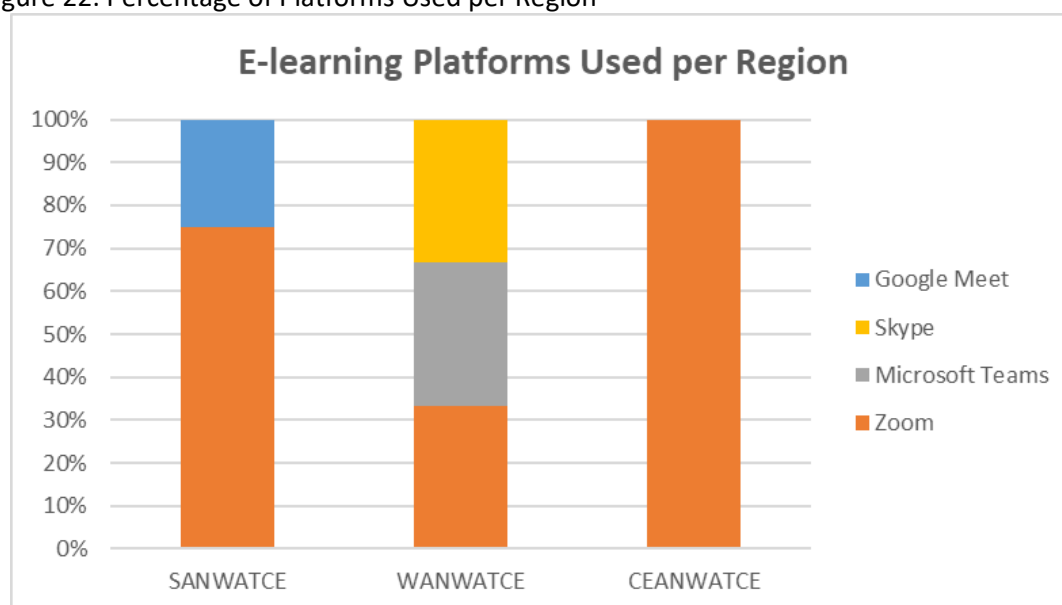


Figure 21 above presents the mode of teaching as a regional percentage derived from the 27 implemented courses/modules. In SANWATCE some pilot courses/modules were still able to implement Face2Face teaching but adapted to also include 50% E-Learning teaching. WANWATCE CoEs were forced to adapt their pedagogical methods and only used Blended and E-Learning strategies. CEANWATCE predominantly used Face2Face with one course as blended learning.

The CoEs have responded remarkably well to adapting the provision of courses to include Blended and E-Learning modes of teaching. This is testament to their flexibility and willingness to implement courses as part of the ACEWATER II NEPAD HCD project.

## 21. Pilot Course Platforms

Figure 22: Percentage of Platforms Used per Region



17 courses/modules were implemented using a software tool as highlighted in figure 22 above, to implement the courses/modules across the three regions. WANWATCE accounted for 12 of the 17 platforms and used predominantly Zoom as the method of delivering the course/module. SANWATCE delivered 4 courses/modules of which three used Zoom and One Google Meet. Makerere University of Ghana used Zoom for the one course/module they implemented.

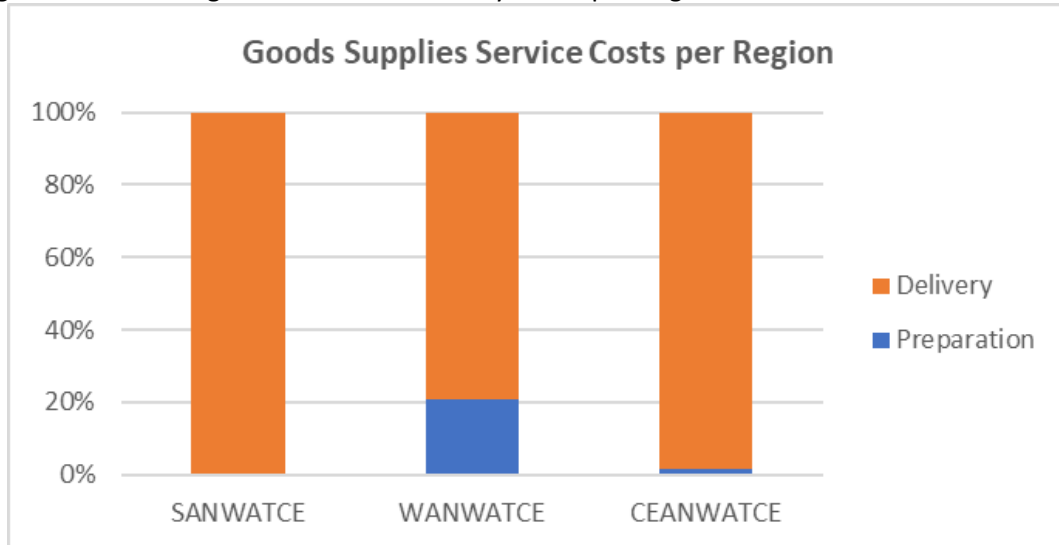
## 22. Regional Analysis of Distribution of Costs

Table 23: Regional Cost Comparison

REGION	GOODS SUPPLIES SERVICES		TOTAL	HUMAN RESOURCES		TOTAL
	Preparation	Delivery		Preparation	Delivery	
<b>SANWATCE</b>	\$11.14	\$16,013.80	<b>\$16,024.94</b>	\$26,561.15	\$35,187.55	<b>\$61,748.70</b>
<b>WANWATCE</b>	\$22,274.00	\$85,203.00	<b>\$107,477.00</b>	\$36,400.00	\$55,750.00	<b>\$92,150.00</b>
<b>CEANWATCE</b>	\$632.00	\$36,405.89	<b>\$37,037.89</b>	\$27,000.00	\$43,572.57	<b>\$70,572.57</b>
<b>TOTAL</b>	<b>\$22,917.14</b>	<b>\$137,622.69</b>	<b>\$160,539.83</b>	<b>\$89,961.15</b>	<b>\$134,510.12</b>	<b>\$224,471.27</b>

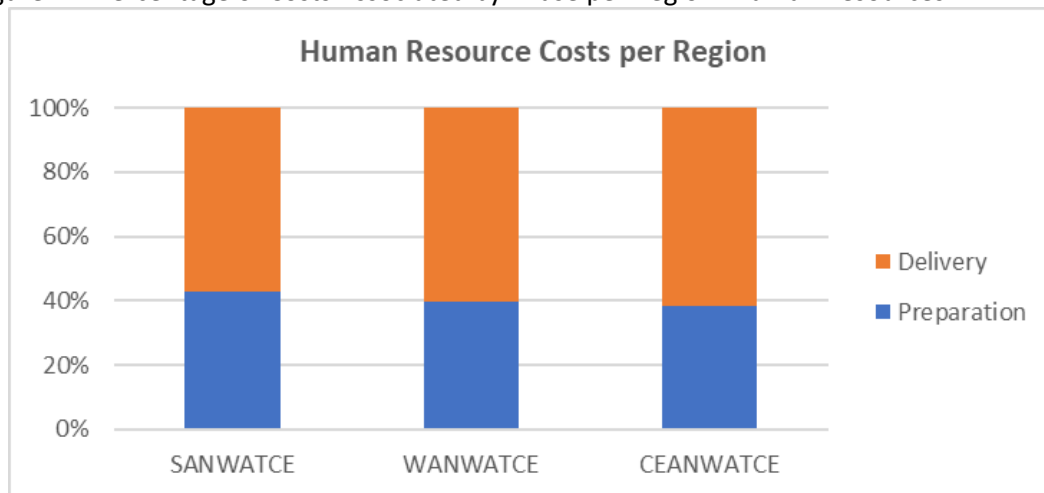
Table 23 above provides an overview of the distribution of the costs incurred by the Regions during the preparation and delivery phases of the pilot courses/modules. These are divided into Goods, Supplies and Services and Human Resource costs. For the delivery phase, Goods, Supplies and Services accounted for \$137,622 and Human Resources \$134,510, respectively.

Figure 23: Percentage of Costs Associated by Phase per Region- Goods



In Figure 23 above in relation to the requirement of Goods, Supplies or Services, all regions maximised the expenditure on the delivery phase and had minor costs associated with the preparation of the pilot courses/modules. Only WANWATCE had any significant expenditure recorded for this phase.

Figure 24: Percentage of Costs Associated by Phase per Region- Human Resources



In Figure 24 above with regards to Human Resources, there was more equilibrium between the preparation and delivery phase in the three regions, but all presented similar expenditure profiles with around 40% spent on preparation and 60% on the delivery.

## CONCLUSION

The conclusions address the M&E Process and the Data Analysis

### M&E PROCESS

The M&E process has been stop/start with a six month pause while the extension to the project with the CoEs was finalised as a result of the COVID-19 restrictions. The final M&E process was restarted with a revised format to include Blended and E-Learning in October 2020 and with the inclusion of SANWATCE to the M&E reporting.

While trainings and a guide on how to fill the report was provided this did not result in a smooth data collection process.

The reception of the M&E reporting from the CoEs was delayed by 9 of the CoE with extensions provided beyond the 15<sup>th</sup> of November to receive the completed M&E tool. This impacted on the ability to provide a timely report

Some CoE reported the intention to undertake a quality review of the participants knowledge up to a year after the course/module implementation. These reviews would assess how the course/module has helped the participant in their work environment and what benefits the training has provided.

### DATA ANALYSIS

There remain gaps in M&E reporting from 11 of the CoE which will require further follow up to ensure a complete process is concluded.

#### Pilot Course Development and Implementation

The Covid-19 outbreak affected the ability for the CoE to implement the planned training programmes. A total of 49 Courses and Modules were developed but only 27 were implemented in the three regions. Of the 22-pilot course/modules the project did not implement, the majority of the thematics involved were:

- Water Supply
- Data Modelling
- Groundwater
- Water Quality

NWRI accounted for 26% of all the course/modules implemented. Of the course/modules developed in total NWRI were responsible for 20% followed by KNUST at 12% and then Botswana, Benin City, UCAD, Khartoum and EIWR with 8%.

#### Target Groups

The pilot projects implemented were able to provide access to trainings for all the target groups. However, 13 courses/modules were developed but not implemented for Junior (7) and Senior (6) Technicians. This reduced the overall number of courses/modules which were originally intended for these two target groups.

#### Course/Module Participants

The number of participants were predominantly enrolled by only Five of the ten CoE who implemented pilot course/modules who accounted for 79% of all the participants. UCAD had the most participants totalling 160.

#### Mode of Teaching

The realignment of the project and the E-Readiness Assessment and subsequent changes to the project implementation ensured that 10 of the 14 CoE were able to implement a minimum of 1 pilot course/module.

#### Age Groups

All age groups were represented in the course/module implementation however the age group of 46 to 60 years of age had the least participation. This may be a result of the 8 courses/modules which were developed for Senior Professionals or Technicians but not implemented.

#### Gender Participation

The pilot course/modules implemented had representation from both male and female participants. Both SANWATCE and CEANWATCE had almost equal representation while WANWATCE was majority male participants.

#### Costs

The reported costs in the M&E tool included In-Kind costs as well as direct costs. NWRI accounted for two thirds of the global costs submitted by the CoE for the preparation phase in relation to Goods, Supplies and Services. There was little discrepancy between the total amounts for the delivery phase of the pilot course/modules whether in relation to Goods, Supplies and Services or Human Resources.

It can be concluded that the flexibility by the different stakeholders including UNESCO, JRC, the Regional Secretariats and the CoEs have helped to mitigate the impact of the pandemic on the project implementation. The extension of the timeframe for implementation of the pilot courses as well as reducing the number of courses/modules from four to one had a positive impact on the success of the project. The flexibility to reorientate the mode of teaching also contributed to some of the CoE being able to implement their courses/modules.



## RECOMMENDATIONS FOR POST HCD PILOT ACTIVITIES

The following recommendations are aimed at improving any future activities related to the ACEWATER II HCD Pilot Project.

1. It is recommended that an analysis of the course thematics developed and implemented versus the gap needs assessment which was undertaken by each CoE earlier in the project should be undertaken. This would provide a useful overview to understand if the project deviated from its original intentions or fulfilled the expectations of the different stakeholders at a country, regional and agency level.
2. To ensure that Monitoring and Evaluation is included and implemented from the start of the project. This will also allow for real-time analysis which will assist the decision makers to adjust the project in a proactive timely manner.
3. It would be recommended to ensure a closer alignment of the M&E Tool with the pilot course design to develop a good understanding of the M&E reporting requirements and the timeframe by which reporting should be completed
4. It would be advisable to create a central reporting environment which each CoE can access and complete the M&E information. This does not need to be a complicated database, but a shared document stored centrally where follow up and version control is easy to manage.
5. It would be advisable to request the CoE to conduct a further quality review of the pilot courses/modules six months to 12 months after their completion to assess the impact of the trainings. This would help guide the development and implementation of the any further phases of the ACEWATER HCD project.

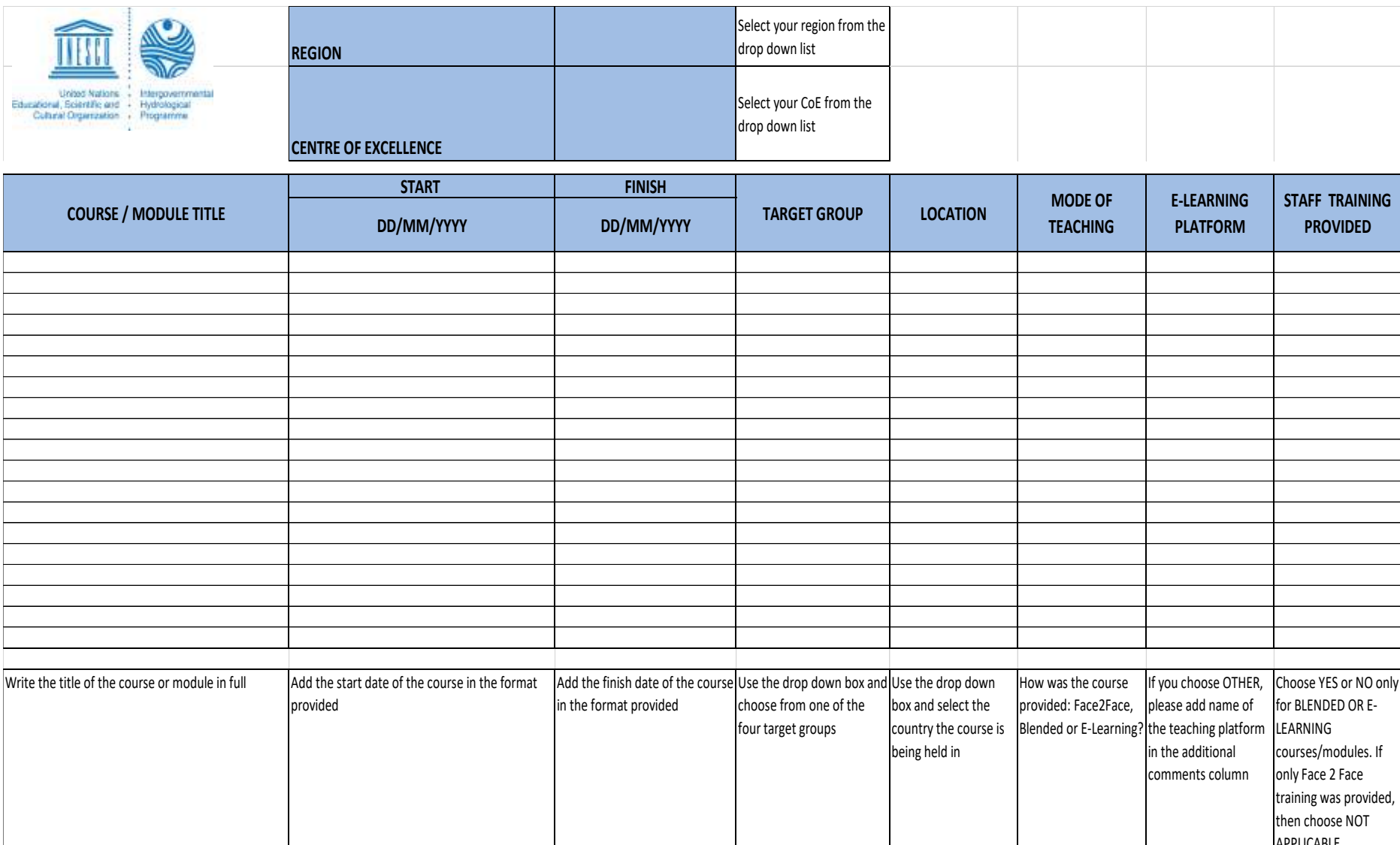


## Annex 1: Monitoring and Evaluation Frame ENGLISH

	<b>REGION</b>		Select your region from the drop down list							
	<b>CENTRE OF EXCELLENCE</b>		Select your CoE from the drop down list							
	<b>ACTIVITIES</b>	<b>INDICATOR</b>	<b>DATA</b>	<b>COMMENT</b>	<b>CURRENT STATUS</b>	<b>CHALLENGES</b>		<b>MITIGATION</b>	<b>RESPONSIBLE</b>	<b>ADDITIONAL COMMENTS</b>
	<b>DESCRIBING WHAT ACTION YOU SHOULD TAKE</b>	<b>DESCRIPTION OF INDICATOR</b>	<b>PROVIDE DATA FOR INDICATOR</b>	<b>ADDITIONAL CLARIFICATION</b>	<b>0= not started, 1= underway, 2= completed</b>	<b>PROJECT CHALLENGES? Y/N</b>	<b>HIGHLIGHT CHALLENGES</b>	<b>STEPS TAKEN TO REDUCE RISKS</b>	<b>REPORTING LEAD</b>	<b>ONLY IF THERE IS A SPECIFIC COMMENT TO MAKE</b>
<b>OBJECTIVE GLOBAL</b> Implement the Human Capacity Development Programme in up to four countries per region in collaboration with relevant institutions and fostering sustainable capacity development approach (per country) — each one of the activities will be implemented in each of the pilot countries.										
<b>OBJECTIVE 1</b>  Dissemination of the strategy to stakeholders, donors and training institutions at national level	Prepare the National Framework into an information package for dissemination partners and stakeholders (pamphlet, report, PPT etc.)	An information package was developed		Provide a copy of the dissemination information in attachment to the M&E frame in whatever format you developed						
	Disseminate the strategy to national training institutions?	Nr of national training institutions receiving the information package			0					
	Disseminate the strategy to other stakeholders?	Nr of other stakeholders receiving the information package								
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for Higher Education training for Junior and Senior professionals.	Nr of courses/modules developed		Please provide a synopsis of the courses as an attachment to the M&E framework						
	Deliver at least 2 pilot courses/modules for junior and/or senior professionals	Nr of courses/modules implemented		Provide in annex 1 additional information incl. age, gender, background etc.						
	Based on the strategy and on the implementation framework, prepare at least 2 courses or curricula adaptation and/or modules for vocational training for junior and senior technicians including education material	Nr of courses/modules developed		Write the course titles in Annex 1? Please provide a synopsis of the courses as an annex to the M&E framework						
	Deliver at least 2 courses/modules for junior and/or senior technicians	Nr of courses/modules implemented		Provide in annex 1 additional information incl. age, gender, background etc.						

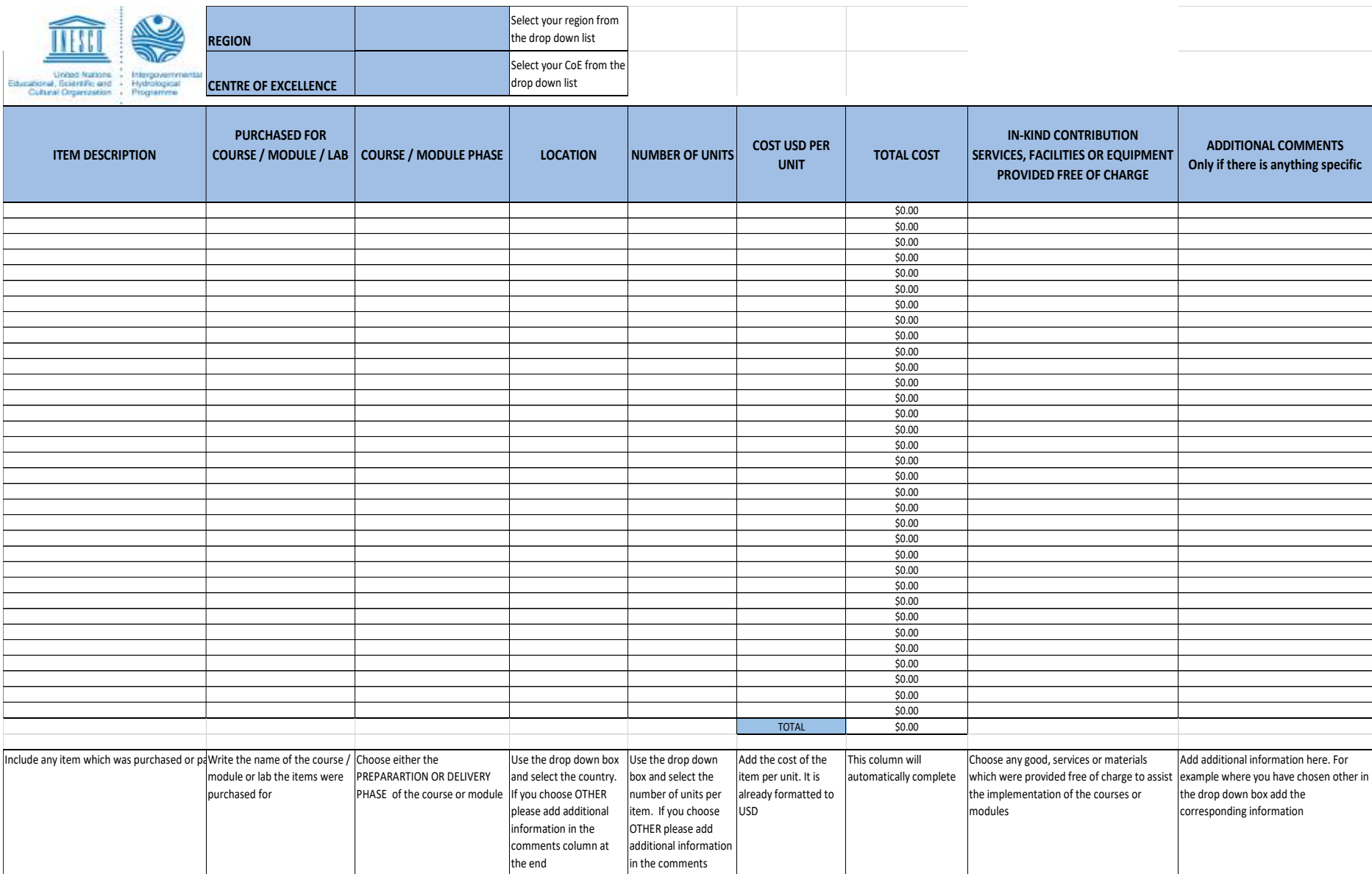
<b>OBJECTIVE 2</b>										
The Pilot courses/modules and laboratories are supplied with the relevant Software, Tools and Consumables in a timely manner	Purchase and use of Software, Tools and Consumables for courses/modules and labs	% of items purchased and used		Provide a list of items purchased & used including the cost in annex 2						
<b>OBJECTIVE 3 (DO NOT REPORT)</b>										
A strategy for Regional HR and student exchanges is implemented to improve regional networking	Participate in the Regional HR and Student exchange scheme	Are you participating in the Regional HR and Student exchanges scheme?								
		Nr of staff exchanged with another CoE?		Currently on hold due to COVID-19						
		Nr of students exchanged with another CoE?		Currently on hold due to COVID-19						
<b>OBJECTIVE 4</b>										
A quality review of the implemented courses/modules is undertaken including student and course interlocutors feedback with the results analysed and course adjustments implemented, where appropriate	Undertake a quality review of the course outcomes with Staff and Student participation	Has a quality review taken place for each course?		In Annex 1 record if a course has undergone a Quality review or not.						
		Nr of Staff consulted in the review?		Provide copy of the review template in attachment to the M&E frame in whatever format you developed (questionnaire,survey etc.)						
		Nr of students included in the review?		Provide copy of the review template in attachment to the M&E frame in whatever format you developed (questionnaire,survey etc.)						

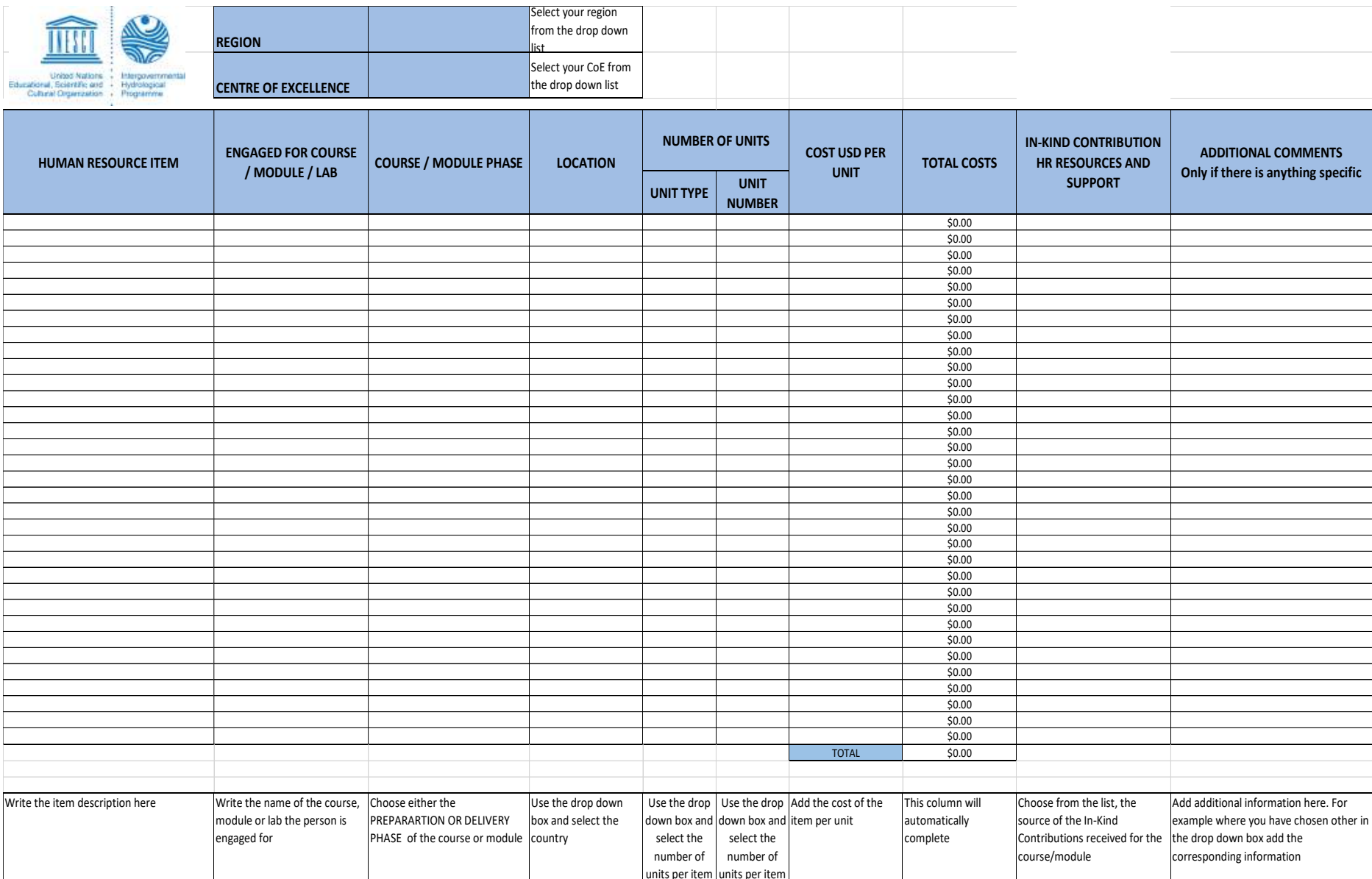
TITLE	HEADING	DESCRIPTION	ACTION
<b>OBJECTIVES</b>	GENERAL AND SPECIFIC PROJECT OBJECTIVES	These are the main objectives of the project as outlined in the project agreement. These do not change and should not be edited in the reporting framework	NONE
<b>ACTIVITIES</b>	DESCRIBING WHAT ACTION YOU SHOULD TAKE	Each activity is linked to the one of the 4 objectives. The activities are your outputs and provide the information for the monitoring and evaluation of the project	NONE
<b>INDICATOR</b>	DESCRIPTION OF INDICATOR	Indicators are measureable information used to determine if a program is being implemented as expected and achieving itsexpected outcomes	NONE
<b>DATA</b>	PROVIDE DATA FOR INDICATOR	Provide the data or answer to each indicator.	CHOOSE FROM DROP DOWN LIST: EITHER Y/N OR A NUMBER
<b>COMMENT</b>	ADDITIONAL CLARIFICATION	Provides additional clarification or information request for each indicator. Where requested please fill in the relevant annex at the bottom of the M&E frame.	FOLLOW THE INSTRUCTION AND EITHER PROVIDE THE INFORMATION DIRECTLY IN THE BOX OR COMPLETE THE CORRESPONDING ANNEX SHEET 1, 2 OR 3
<b>CURRENT STATUS</b>	REAL-TIME STATUS OF THE PROJECT ACTIVITY	Describes the current status of the activity and shown as a traffic light. <b>RED</b> - not started, <b>AMBER</b> - started but not completed, <b>GREEN</b> - Completed	CHOOSE FROM DROP DOWN LIST SELECTING 0, 1, 2
<b>CHALLENGES</b>	PROJECT CHALLENGES?	Has the project had any challenges?	CHOOSE FROM DROP DOWN LIST AND CHOOSE EITHER YES OR NO
	HIGHLIGHT CHALLENGES	Choose the main challenges for the activity	CHOOSE FROM DROP DOWN LIST AND SELECT AS MANY CHALLENGES AS REQUIRED. YOU WILL BE REQUIRED TO CLICK ON THE DROP DOWN LIST MULTIPLE TIMES IF SELECTINH MORE THAN ONE OPTION. IF CHALLENGE DOES NOT EXIST THEN CHOOSE OTHER
<b>MITIGATION</b>	STEPS TAKEN TO REDUCE RISKS	Were any steps taken to mitigate the challenges faced?	WRITE THE MITIGATION STEPS TAKEN
<b>RESPONSIBLE</b>	REPORTING LEAD	Who is responsible for completing the M&E Frame?	WRITE THE NAME OF THE PERSON RESPONSIBLE



[illegible]


[illegible]







## Annex 2: Monitoring and Evaluation Frame FRENCH

	REGION		Sélectionnez votre région parmi la liste des baisses							
	CENTRE D'EXCELLENCE		Sélectionnez votre CdE dans la liste des baisses							
	ACTIVITIÈS	INDICATEUR	DATA	COMMENTAIRE	ÉTAT ACTUEL	DÉFIS DE PROJET		ATTÉNUATION	RESPONSIBLE	ADDITIONAL COMMENTS
	DÉCHICRIEZ LES MESURES QUE VOUS DEVRIEZ PRENDRE	DE L'INDICATEUR	FOURNIR DES DONNÉES POUR L'INDICATEUR	CLARIFICATION SUPPLÉMENTAIRE	0= non commencé, 1= en cours, 2= terminé	DÉFIS DE PROJET ? Y/N	METTRE EN ÉVIDENCE LES DÉFIS	MESURES PRISES POUR RÉDUIRE LES RISQUES	SIGNALER LE PLOMB	Seulement s'il y a quelque chose de spécifique
<b>OBJECTIF GLOBAL</b> Mettre en œuvre le Programme de développement des capacités humaines dans un accès à quatre pays par région en collaboration avec les institutions concernées et en favorisant l'approche de développement durable des capacités (par pays) — chacune des activités sera mise en œuvre dans chacune des pays pilotes.										
<b>OBJECTIF 1</b>  Diffusion de la stratégie aux parties prenantes, aux donateurs et aux établissements de formation au niveau national	Préparer le Cadre national en une trousse d'information à l'intention des intervenants et des intervenants de la diffusion (pamphlet, rapport, PPT, etc.)	Un ensemble d'informations a été élaboré		Fournir une copie des informations de dissemination en attachement au cadre de la fusion dans n'importe quel format que vous avez développé						
	la stratégie aux établissements nationaux de formation ?	Nr des établissements nationaux de formation recevant le paquet d'information								
	Diffuser la stratégie à d'autres parties prenantes?	Nr des autres parties prenantes recevant la trousse d'information								
	Sur la base de la stratégie et du cadre de mise en œuvre, préparer au moins 2 cours ou adaptation de cursus et / ou modules de formation de l'enseignement supérieur pour les professionnels juniors et seniors.	Nr des cours/modules développés		Veuillez fournir un résumé des cours en tant qu'attachement au cadre de la M-E						
	Mettre en œuvre au moins 2 cours/modules pilotes pour les professionnels juniors et/ou seniors	Nr des cours/modules mis en œuvre		Fournir à l'annexe 1 des informations supplémentaires incl. âge, sexe, fond, etc.						
	Sur la base de la stratégie et du cadre de mise en œuvre, préparer au moins 2 cours ou adaptation de cursus et / ou modules de formation professionnelle pour techniciens juniors et seniors, y compris le matériel pédagogique	Nr des cours/modules développés		Écrire les titres du cours à l'annexe 1? Veuillez fournir un résumé des cours en annexe du cadre de la M-E						
	Mettre en œuvre au moins 2 cours/modules pour les techniciens juniors et/ou seniors	Nr des cours/modules mis en œuvre		Fournir à l'annexe 1 des informations supplémentaires incl. âge, sexe, fond, etc.						

<b>OBJECTIF 2</b>										
Les cours/modules et laboratoires Pilot sont fournis en temps opportun avec les logiciels, outils et consommables pertinents :	Achat et utilisation de logiciels, d'outils et de consommables pour les cours / modules et laboratoires	% d'articles achetés et utilisés		Fournir une liste des articles achetés, y compris le coût de l'annexe 2						
<b>OBJECTIF 3 (NE PAS SIGNALER)</b>										
Une stratégie pour les RH régionaux et les échanges d'étudiants est mise en avant pour améliorer le réseautage régional	Au programme régional d'échange de ressources humaines et d'étudiants	Participez-vous au programme régional d'échanges rhéaccaux et étudiants?								
		Nr du personnel échangé avec un autre CoE?		Actuellement en attente en raison du COVID-19						
		Nr des étudiants échangés avec un autre CoE?		Actuellement en attente en raison du COVID-19						
<b>OBJECTIF 4</b>										
Un examen de la qualité des cours/modules implemeted est entrepris, y compris la rétroaction des étudiants et des interlocuteurs de cours avec les résultats analysés et les ajustements de cours mis en œuvre, le cas échéant	Entreprendre un examen de la qualité des résultats du cours avec la participation du personnel et des étudiants	Un examen de la qualité a-t-il eu lieu pour chaque cours?		Dans l'annexe 1, si un cours a fait l'objet d'un examen de la qualité ou non.						
		Nr du personnel consulté dans l'examen?		Fournir une copie du modèle d'examen en pièce jointe au cadre de la fusion dans n'importe quel format que vous avez développé (questionnaire, enquête, etc.)						
		Nr des étudiants inclus dans l'examen?		Fournir une copie du modèle d'examen en pièce jointe au cadre de la fusion dans n'importe quel format que vous avez développé (questionnaire, enquête, etc.)						

Titre	Rubrique	DESCRIPTION	ACTION
<b>OBJECTIFS</b>	OBJECTIFS GÉNÉRAUX ET SPÉCIFIQUES DU PROJET	Tels sont les principaux objectifs du projet tels qu'ils sont décrits dans l'accord de projet. Celles-ci ne changent pas et ne devraient pas être modifiées dans le cadre de la	Aucun
<b>ACTIVITÉS</b>	DÉCHICRIEZ LES MESURES QUE VOUS DEVRIEZ PRENDRE	Chaque activité est liée à l'un des 4 objectifs. Les activités sont vos sorties et fournissent l'information pour le suivi et l'évaluation du projet	Aucun
<b>INDICATEUR</b>	DESCRIPTION DE L'INDICATEUR	Les indicateurs sont des renseignements mesurables utilisés pour déterminer si un programme est mis en œuvre comme prévu et atteindre ses résultats	Aucun
<b>DATA</b>	FOURNIR DES DONNÉES POUR L'INDICATEUR	Fournir les données ou répondre à chaque indicateur	CHOISISSEZ PARMIS LA LISTE DES ABANDONS : Y/N OU UN NUMÉRO
<b>COMMENTAIRE</b>	CLARIFICATION SUPPLÉMENTAIRE	Fournit des précisions ou une demande d'information supplémentaire pour chaque indicateur. Lorsque demandé, veuillez remplir l'annexe pertinente au bas du cadre du M-E.	SUIVEZ L'INSTRUCTION ET FOURNISSEZ LES INFORMATIONS DIRECTEMENT DANS LA BOÎTE OU REMPLISSEZ LA FEUILLE D'ANNEXE CORRESPONDANTE 1, 2 OU 3
<b>ÉTAT ACTUEL</b>	ÉTAT EN TEMPS RÉEL DE L'ACTIVITÉ DU PROJET	Décrit l'état actuel de l'activité et présenté comme un feu de circulation. <b>ROUGE</b> -pas commencé, <b>AMBRE</b> - a commencé mais pas terminé, <b>VERTE</b> -Terminé	CHOISISSEZ PARMIS DROP DOWN LIST SÉLECTIONNANT 0, 1, 2
<b>DÉFIS DE PROJET</b>	DÉFIS DE PROJET ?	L'ACTIVITÉ DU PROJET A-T-ELLE EU DES DÉFIS À RELEVER?	CHOISISSEZ PARMIS DROP DOWN LIST ET CHOISISSEZ OUI OU NON
	METTRE EN ÉVIDENCE LES DÉFIS	CHOISISSEZ LES PRINCIPAUX DÉFIS DE L'ACTIVITÉ	CHOISISSEZ DANS LA LISTE DÉROULANTE ET SÉLECTIONNEZ COMME DE NOMBREUX DÉFIS QUE NÉCESSAIRE. VOUS DEVREZ CLIQUER SUR LA LISTE DÉROULANTE PLUSIEURS FOIS SI VOUS SÉLECTIONNEZ PLUS D'UNE OPTION. SI LE DÉFI N'EXISTE PAS, CHOISISSEZ UN AUTRE
<b>ATTÉNUATION</b>	MESURES PRISES POUR RÉDUIRE LES RISQUES	DES MESURES ONT-ELLES ÉTÉ PRISES POUR ATTÉNUER LES DÉFIS AUXQUELS ILS SONT CONFRONTÉS?	CHOISISSEZ PARMIS DROP DOWN LIST L'ÉTAPE PRINCIPALE FRANCHIE
<b>RESPONSIBLE</b>	SIGNALER LE PLOMB	QUI EST RESPONSABLE DE LA FOURNITURE DU CADRE DE LA M-E	ÉCRIRE LE NOM DE LA PERSONNE RESPONSABLE



Organisation  
des Nations Unies  
pour l'éducation,  
la science et la culture

Programme  
hydrologique  
intergouvernemental

<b>REGION</b>		Sélectionnez votre région parmi la liste des baisses
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<b>CENTRE D'EXCELLENCE</b>	Sélectionnez votre CoE dans la liste des baisses
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[illegible]

Écrivez le titre du cours ou du module  
dans son intégralité

Ajouter la date de début du cours dans le format fourni

Ajouter la date de fin du cours  
dans le format fourni

Utilisez la boîte de dépôt  
et choisissez parmi l'un  
des quatre groupes cibles

Utilisez la boîte de  
dépôt et sélectionnez  
le pays où se tient le  
cours

Comment le cours a-t-il été dispensé: Face2Face, Blended ou E-Learning?

Si vous choisissez AUTRE, veuillez ajouter le nom de la plate-forme d'enseignement dans la colonne des commentaires supplémentaires

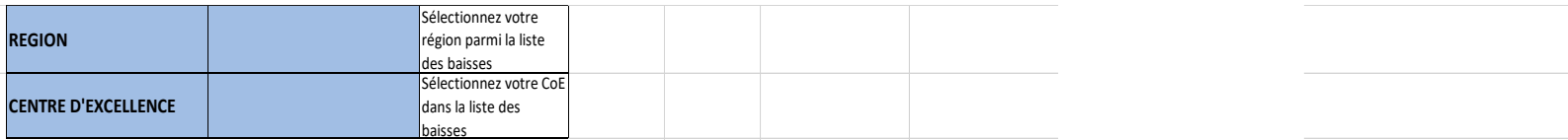
Choisissez OUI ou NON uniquement pour les cours / modules MIXTES OU E-LEARNING. Si seule la formation Face 2 Face a été fournie, choisissez NON APPLICABLE

NOMBRE DES PARTICIPANTS				QUALIFICATIONS DES PARTICIPANTS				SEXE DES PARTICIPANTS	
CEANWATCE	WANWATCE	SANWATCE	AUTRE	Lycée	Diplôme	BSC	MASTERS	M	F
Utilisez la boîte de dépôt pour entrer le nombre d'étudiants de la région qui comprend le Kenya, l'Ouganda, l'Éthiopie et le Soudan	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants de la région qui comprend le Nigeria, le Ghana et le Sénégal	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants de la région qui comprend l'Afrique du Sud, le Botswana, le Malawi, le Mozambique et le Zimbabwe	Choisissez parmi la boîte de baisse le nombre d'étudiants qui ne proviennent pas de l'une des régions reconnues	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants avec cette qualification	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants avec cette qualification	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants avec cette qualification	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants avec cette qualification	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants qui sont MALE	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants qui sont FEMALE

[illegible]

Utilisez la boîte de dépôt pour entrer le nombre d'étudiants de l'enseignement supérieur: Collège ou Université (public ou privé)	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants de TVET	Utilisez la boîte de baisse pour entrer le nombre d'étudiants du secteur privé, y compris les petites entreprises moyennes, les entreprises artisanales, etc. mais à l'exclusion des entreprises de grande envergure	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants des ministères	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants des ministères	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants des ministères	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants des ministères	Utilisez la boîte de dépôt pour entrer le nombre d'étudiants des ministères	Utilisez la liste des gouttes pour indiquer si un cours/module a fait l'objet d'un examen de la qualité	Ajoutez des informations supplémentaires ici. Par exemple, lorsque vous avez choisi d'autres dans la boîte de chute ajouter le pays, l'âge, l'emplacement, etc qui est pertinent.
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Annex 3: Monitoring and Evaluation Centre of Excellence Reports



ACEWATER II ME  
Framework\_EIWR.xlsm



ACEWATER II ME  
Framework EN\_ICPA



ACEWATER II ME  
Framework EN KHAR



ACEWATER II ME  
Framework Makerere



ACEWATER II ME  
Framework BOTSWAN



CSIR\_ACEWATER II  
ME Framework\_Ver02



ACEWATER II ME  
Framework EN\_Malaw



ACEWATER II ME  
Framework EN IWEGA



ACEWATER II ME  
Framework EN\_UWC2



ACEWATER II ME  
Framework EN\_UNZA



ACEWATER II ME  
Framework EN Unibe



Copy of ACEWATER  
II ME Framework NW



ACEWATER II ME  
Framework UCAD\_Ser



ACEWATER II ME  
Framework from KNU