INDEPENDENT EVALUATION UNIT
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT

INDEPENDENT TERMINAL EVALUATION

MOROCCO

H2O MAGHREB

UNIDO PROJECT ID: 150259

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INDUSTRIAL DEVELOPMENT ORGANIZATION

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ABBREVIATIONS AND ACRONYMS

Acronym	Meaning
AGIRE	Integrated water ressources management programme (Appui à la gestion intégrée des ressources en eau)
DAC	Development Assistance Committee of the Organization for Economic Cooperation and Development
DFP	Département de la Formation Professionnelle
EQ	Evaluation Question
EON Reality	Firm and project partner
FESTO DIDACTIC	Firm and project partner
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH,
H2O Maghreb	Official project name
JC	Judgment Criterion
IEA	Institut International de l'Eau et de l'Assainissement
IWRM	Integrated Water Resources Management
M&E	Monitoring and Evaluation
MENA	Middle East and North Africa.
MENFP	Ministry of National Education and Vocational Training, or simply "Ministry of National Education"
OECD	Organisation for Economic Co-operation and Development
OFPPT	Office de la Formation Professionnelle et de la Promotion du Travail
ONEE	Office National de l'Electricité et de l'Eau Potable
PPDP	Public Private Development Partnership
TOC	Theory of Change
ToR	Terms of Reference
ToT	Training of Trainers
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USD	US Dollar
VR	Virtual Reality

GLOSSARY OF EVALUATION-RELATED TERMS

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	Management tool used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, and impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results-based management) principles.
Outcome	The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs.
Outputs	The products, capital goods and services which result from an intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
Relevance	The extent to which the objectives of an intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.

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EXECUTIVE SUMMARY

The purpose of this evaluation is to independently assess the project "*H2O Maghreb",* financed by USAID and implemented by UNIDO with the Vocational Training Department as Government Coordinating Agency. Executing partnerships have been set with ONEE and its International Training Centre (IEA), Festo Didactic and EON Reality. The project was endowed with a total budget of 2,349,000 USD financed by USAID. Additional in-kind contributions were also provided by ONEE, Festo Didactic and EON Reality.

The evaluation has two specific objectives: i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, coherence and progress to impact and ii) develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects.

The goal of H2O Maghreb is *"to improve industrial and municipal water management practices in the Maghreb/MENA region in an inclusive and sustainable way".* The main expected outcome is: "*to transfer improved water management knowledge and technologies and increase the employability of Moroccan youth with the appropriate and requisite training*". The intervention logic foresees three outputs (or project components): 1) Assessment of current and future skills and job needs in the Moroccan water sector, 2) Aquatronics virtual reality demonstration and teaching hub established and functional and 3): Outreach, advocacy and possible replication of i) Aquatronics and ii) PPDP approach to other countries in the Maghreb/MENA region

Evaluation methodology; The evaluation applied contribution analysis and the theory of change using mixed qualitative and quantitative methods to collect data. The evaluation framework was structured along 7 main questions, aligned to OECD DAC evaluation criteria and informed by the evaluation priorities defined by the terms of reference. Findings have been supported by data triangulation, ensuring a sound evidence-base. Data collection tools included: i) documentary review, from approximately 50 documents , ii) visit to IEA / ONEE training Centre, iii) interviews with 30 project stakeholders and beneficiaries (both head-to-head meetings and distance call / video conferences), iv) a quantitative and qualitative survey targeting all participants of promotions 4 and 5 , v) organization of Focus Group Discussions held in IEA training Centre with a) group of trainers and b) group of trainees and vi) review of the project monitoring system.

Key findings;

Relevance and coherence: The project is aligned to national priorities for the water and sanitation sector. The intervention addresses an important gap existing at national level in skills development. The evaluation evidences scope for a strengthened alignment with national Vocational Training strategies and approach. Key USAID priorities for Morocco and the Region are well supported by the project, including for the targeted sector and aspects of employability, inclusive support to youth and women, natural resources management and a Public Private Development Partnership (PPDP) approach. The intervention is coherent with UNIDO mandate to promote "*inclusive and sustainable industrial development*". Relevance to the Agency mandate could have been heightened by a more strategic approach.

Project design; Innovative approach and high ambitions were not supported by adequate design. The formulation process is assessed as particularly shallow and due diligence was not adequately applied to safeguard the investment against risks related to sustainability. Need assessment (part of output 1) also proved not adequate to provide a comprehensive sector overview and consider viable strategic options.

Effectiveness; The project intended to test for Morocco and MENA Region a new model for water and sanitation skills development, supported by an international public – private partnership,

technological innovation and digital content. The project established optimal conditions for a 4-months potable water and sanitation training, achieving remarkable outcomes in skills development, employability and employment for a pilot of 112 beneficiaries. The pilot did not involve cost – benefit analysis and did not study the sustainability of the arrangements. With the completion of the project the training will be stopped as conditions are not in place for the IEA Centre to train external students without project support; although the modules developed by the project will be adopted by other training institutions, conditions are not in place for upscaling and the replication of a comparable process and results in other training centres.

Several activities were implemented by the project to support awareness and demand of the H2O Maghreb training concept, in Morocco and in other countries. Several Countries manifested interest to test a similar approach. However, by the end of the project results in terms of the development of a specific demand for this training and the upscaling and replication of the pilot has been modest; comparable training facilities have not been established or planned either in Morocco or abroad.

Contributions to crosscutting priorities; H2O Maghreb promoted very actively gender inclusion. Results have been beyond expectations and over a total of 112 trainees, 75% were women. The project carried out a specific study to assess gender dimension in water sanitation sector. Overall, the project contributes positively to SDG 5 (gender equality).

The thematic area of intervention, water and sanitation, provides a main focus on sustainable management of natural resources, with direct contributions to SDG 6 (clean water and sanitation). The project did not actively pursue important opportunities for an accrued impact on national resources management. Inclusiveness was supported by targeting young technicians, the large majority of modest origins. Selection procedures favoured candidates more likely to obtain an employment rather than applying socio-economic criteria, supporting an inclusive approach.

Sustainability and opportunities for upscaling; sustainability is achieved mainly a) for the strengthening of IEA capacities to pursue its mandate of continuous training of ONEE staff and other professionals and b) for the opportunity of diffusing training materials and the accredited modules developed by the project.

<u>The project, although it established a successful model of training, did not achieve to set up sustainable mechanisms that may allow a comparable stream of benefits to be continued after the end of the intervention.</u>

The project developed during its last semester of implementation a “sustainability plan”. While some arrangements have been envisaged to export modules, no short-term solutions have been identified to sustain training mechanisms and results after the end of promotion 5.

Progress towards impacts; H2O Maghreb managed to establish for the first time a high-quality “Water Agent” skills development training in Morocco (*formation qualifiante)* responding to an important gap in the water and sanitation sector. Factors that may contribute to long term changes include the development and initial diffusion of accredited modules, capacities (including technology) accrued within the IEA training Centre to train sector professionals and in the potable water and waste water sector and the successful training pilot supported by modern equipment technology. The project laid an initial foundation stone for a future large and complex work addressing the outstanding gap for water and sanitation skills development, with the main merit of showing optimal conditions for a successful training. Notwithstanding the very encouraging results achieved in terms of employability and employment for the target of 112 trainees, measurable contributions to the project outcome are so far particularly contained, considering a total sector work force of over 35,000 persons and the absence of conditions to continue a similar flow of benefits in absence of project support.

Efficiency For USAID and UNIDO the project represented good value for money as, for a contained financial envelop of 2,4 M US$, it established a model (concept) which is being now proposed in several other countries. Festo Didactic and EON Reality also had positive economic returns on the investment thanks to the visibility earned, the opening of new promising markets and the development of new tools. ONEE as well had a very positive return in terms of image, equipment and know-how.

Although the evaluation was not equipped to assess unitary costs per training, the qualitative assessment made by ONEE trainers shows that the investment costs applied for the implementation of the pilot are excessively high for the context of Morocco.

H2O Maghreb featured positive implementation performances supported by a proactive and committed UNIDO management. Management approach was based on continued consultation, coordination and follow up with key stakeholders, connecting successfully the different partners involved in the project. Relationships of the Project Team with ONEE, USAID, FESTO Didactic and EON Reality have been consistently good, a finding confirmed by stakeholders manifesting their appreciation with the quality of UNIDO facilitation, dialogue and coordination. Quality of management reflects as well in the building of trust across players and facilitating the smooth implementation of the partnership between public and private sector stakeholders.

The Steering Committee could have played a more strategic role in project guidance; Governance would have benefitted from the participation of additional important sector stakeholders, particularly regional water boards, private sector stakeholders and training centres.

H2O Maghreb adapted remarkably well to the restrictions imposed by the pandemic. Although COVID 19 affected significantly the delivery of training and slowed down water and sanitation labour market, the Programme adjusted with distance learning mechanisms and activities could be followed up without significant solution of continuity. Overall, the evaluation assesses as exemplary the adjustments made by the project to allow continuity of trainings during the COVID 19 period; the final result of 5 promotions being completed is an indicator of particularly positive adjustments to the pandemic.

The Project earned a positive reputation and remarkable visibility in Morocco and outside, thanks to the positive results, an effective communication and a specific value added related to the technological dimension brought by training equipment and virtual reality simulators. As an effect the “H2O” concept has been branded and UNIDO has developed a pipeline of approximately 10 “H2O projects” being identified and promoted around the world. H2O Maghreb high visibility status includes an USAID presentation to Congress as an example of an effective PPDP approach.

Performance of partners; Overall the partnership experiment worked out quite well, in consideration of a clear definition of roles and responsibilities and the effective work of UNIDO who acted as a catalyst to make the different components to work smoothly together. There is a consensus across stakeholders that the success of the experiment is largely a result of the commitment, ownership and generosity of contributions of ONEE and the International Training Centre. It is also well acknowledged that, by and large, each partner delivered its part well and timely, allowing for an overall project satisfactory performance, notwithstanding the challenges of two years of implementation under COVID restrictions. Probably the successful partnership is one of the best practices to be evidenced for the project and an opportunity to be considered for future skills development interventions supporting water and sanitation.

Conclusions

Overall assessment; The project managed to test an improved model with positive lessons emerging for water and sanitation skills development in Morocco and a well-designed training curriculum was established, responding to an important gap in the offer of skills in Morocco. To a limited extent value added was provided in consideration of PPDP approach, technology and digitalization. The proposed model did not establish sustainable and replicable conditions, limiting opportunities of impact. The evaluation evidences scope and opportunities to a more strategic approach to water efficiency and IWRM. The evaluation findings support 10 main conclusions:

C.1 H2O Maghreb tested a new concept, addressing very relevant needs;

C.2 The model designed by H2O Maghreb managed to gather optimal conditions supporting a high-quality training.

C.3 The model featured very positive results in terms of high participants' satisfaction, high employability rates and satisfactory employment outcomes; The model established as well a successful reputation and visibility across stakeholders in Morocco.

C.4 Satisfactory project delivery and performances; H2O Maghreb was supported by a proactive management, linking, coordinating and communicating effectively across partners. The project adopted smart solutions to meet challenges of COVID restrictions. Key factors for a successful delivery were the strong level of ownership and commitment of the ONEE / IEA as national counterpart and the positive interactions across partners.

C.5 Sustainability was achieved for a number of outcomes; however, H2O Maghreb did not set conditions for sustainability and upscaling of the training model.
Solutions adopted by the project were far too expensive and impossible to replicate outside the IEA. The Centre very specialized assets are not put at their best use for the development of basic level skills for bac + 2 technicians.

C.6 The evaluation evidences opportunities for a more strategic approach and contributions to an increased water efficiency and integrated water resources management.

C.7 The model supports well inclusiveness, opportunities for women and environmental sustainability; opportunities for impacts are however modest; Also, the environmental impact on national water resources could have been increased significantly by a more strategic approach. Overall impact opportunities have been significantly limited by i) sustainability shortcomings (see conclusion 5) and ii) the targeting of basic skills rather than more strategic topics.

C.8 The public – private partnership worked well and delivered value added for the technological content and the digitalization of the training; technological inputs and digitalization offer a well-appreciated dimension; however, these aspects are not considered an essential feature of the training; key strengths of H2O Maghreb training model rely on the quality of the new modules and on the Centre' equipment and infrastructure and on the outstanding senior trainers' quality and commitment.

C.9 Linkages with national private sector and with decentralized water and sanitation stakeholders deserve to be considerably strengthened to reinforce contributions to project goals;

C.10 The project was not adequately supported by due diligence in project design and need assessment; Design and implementation would have benefitted of a more strategic guidance (at level of management and governance);

Recommendations:

R1 Support to water and sanitation skills development in Morocco needs to align to national strategies for the sector and vocational training mechanisms, including through the support to regional capacities and the creation of development poles.

R2 Private sector and regional stakeholders should be encouraged to strengthen its contribution to future partnerships for water and sanitation skills development.

R3 Sustainable solutions should be sought to optimize the stream of benefits after the end of the project.

R4 Positive work initiated by the project with internships and career support should be pursued and expanded.

Table 1: Project Ratings

Evaluation criteria	Rating
Impact	**3**
Project design	**2**
Overall design	2
Logframe	2
Project performance	**4**
Relevance	4
Effectiveness	4
Efficiency	5
Sustainability of benefits	2
Cross-cutting	**5**
Gender	6
M&E and design	4
Results-based Management	5
Performance of partners	**5**
UNIDO	5
National counterparts	6
USAID	5
Overall assessment	**4**

Table 1 summarizes the evaluation ratings according to UNIDO evaluation guidelines and instructions for rating. Scores vary between 1 (minimum) and 6 (maximum). The range 1 to 3 is defined as “unsatisfactory” and the range 3 to 6 as “satisfactory”.

1. Introduction

1.1 Evaluation objective and scope

The purpose of the evaluation is to independently assess the project "*H2O Maghreb"* financed by USAID and implemented by UNIDO as executing Agency, with support from relevant Government entities [1] and the Office for National Electricity and Drinking Water [2] (ONEE). Executing partnerships have been set with ONEE, Festo Didactic and EON Reality. The project was endowed with a total budget of 2,349,000 USD financed by USAID. Additional in-kind contributions were also provided by ONEE, Festo Didactic and EON Reality (see table 1).

The evaluation aims to help to improve performance and results of ongoing and future programmes and projects, with two specific objectives:

1. Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, coherence and progress to impact
2. Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

The temporal scope of the terminal evaluation embraces the entire duration of the project, from the project approval date (28 April 2017) to its planned end date (February 27, 2022). The evaluation also considers events and context, which may have shaped the project before start-up, including the design phase.

The geographic scope includes all the territory of Morocco and other countries in the region that may potentially benefit from the results of the intervention.

The intervention legal scope is defined by:

a) The Agreement signed between the Donor (USAID) and UNIDO (executing agency)
b) The contractual cost extension signed by USAID and UNIDO (31/12/2019)
c) The Project Document [3] endorsed by the Government
d) Contracts signed with Private Sector Partners FESTO Didactic and EON Reality.

The thematic scope covers the whole water and sanitation sector in Morocco as well as skills development, vocational training and education.

1.2 Overview of the context

In Morocco, the production and distribution of water has gradually moved from decentralized systems, corresponding to modes of occupation and development of territories compatible with an agro-pastoral economy, peri-urban agriculture and artisanal production to an increasingly centralized system operating over increasingly large urban areas, requiring regulation of

[1] the Ministry of National Education, Vocational Training, Higher Education and Scientific Research and the Ministry of Equipment, Transport, Logistics and Water. Government changes in 2021 brought to a new Ministerial set up, with the following Ministries sharing functions of education and vocational training: 1) Ministry of Economic Inclusion, Small Business, Employment and Skills, 2) Ministry of National Education, Preschool and Sports and 3) Ministry oif Higher Education, Scientific Research and Innovation

[2] Office National de l'Electricité et de l'Eau Potable, ONEE

[3] H_2O Maghreb, A Private Public Development Partnership (PPDPs), *A project by ONEE, FESTO Didactic, EON Reality, the Government of the Kingdom of Morocco and UNIDO to support improved water management skills and youth employability,* Project Document, 25 January 2017

withdrawals and discharges. Within this system, several constraints have emerged[4]. These can be summarized in three groups:

a) The scarcity of water due to the growing demand in urban areas for drinking water, industrial and service activities and, in rural areas, for irrigation, and the increase in its cost and energy expenditure linked to its collection and distribution and the waste of usable or reusable water due to a lack of adequate infrastructure;
b) The pressure of a growing demand, aggravating the risks of pollution on clean underground and surface water sources;
c) The degradation of living spaces and ecosystems, terrestrial, coastal and marine, receiving wastewater.

Morocco over the past decades privileged the acquisition of an important hydraulic infrastructure, to improve access to drinking water, to meet the needs of industries and tourism and to develop large areas of irrigation. As early as the 1980s, the State adopted a long-term planning policy. This made it possible, to ensure a supply covering needs and anticipating water shortages. Also, water demand management approaches have been established, through an institutional set up, regulatory measures and pricing policies.

In 2016 the Country passed the law 36-15. This guarantees the right and security of access to water for all. It sets the rules for integrated, decentralized and participatory management of water resources, for rational and sustainable use and enhancement of water, aquatic environments and public water resources. It has established a participatory management system and measures to increase the accountability of operators and users.[5]

A significant number of institutions and organizations are involved in the water administration system. Law 36-15 established a High-Water Council, Hydraulic Basin Agencies, Hydraulic Basin (watershed) Councils and prefectural or provincial commissions. These structures are consultation frameworks bringing together all the players in the water sector. Key players include:

a) Central public administrations and their decentralized services (Equipment, Water, Environment, Interior, Health, Agriculture, Industry and Trade, Finance)

[4] Amongst the references in the bibliography, refer to: Agoumi, Ali et Debbarh, Abdelhafid (2006), « Ressources en eau et bassins versants du Maroc : 50 ans de développement (1955-2005) », www.rdh50.ma ; Arrifi, El Mahdi (2009), La gestion intégrée en eau au Maroc : ressources, contraintes et implications sur l'économie d'eau , Revue HTE 140 : 77-79 ; Quarouch H., Kuper M., Abdellaoui EL et Bouarfa S., (2014), Subterranean waters, a source of dignity as well as a social resource: The case of farmers on the Saïss plain of Morocco, Cahiers Agricultures,Volume 23, Number 3, Mai-Juin 2014, 158 - 165

[5] Section 1 of Law 36-15 presents its objectives and general principles. Chapter 2 establishes the limits of the hydraulic public domain, the recognized private rights and the rights and obligations of the owners. Chapter three defines the conditions of use and exploitation of the hydraulic public domain (royalties, authorization and concession regimes, as well as the uses of agricultural and food water). Chapter 4 concerns the development of rainwater, Chapter 5 the recovery and use of non-conventional water and the desalination of seawater.
Chapter 7 establishes the national water plan and the master plan for the integrated development of water resources. Chapter 6 establishes the composition of the organizations in charge of water administration. Chapter 8 is devoted to the preservation of water, aquatic environments, groundwater, water quality and liquid sanitation. It lays down the rules for the discharge of wastewater into the hydraulic public domain. Chapter 9 concerns the management of water-related risks: floods and water scarcity. Chapter 10 establishes the water information system and chapter 11 the water police, offenses and penalties.
In addition to administrative actors and public establishments, the bodies present in these councils and commissions are the regional councils, higher education and scientific research establishments working in the fields of water and climate, prefectural councils and provincial councils, chambers of agriculture, chambers of commerce, industry and services, cooperatives and associations of users of the public hydraulic domain, chambers of crafts, ethnic communities, associations working in the field of water and climate, and concessionaires responsible for the production/and/or distribution of water.

b) Hydraulic basin agencies responsible for the protection and mobilization of water resources
c) Agricultural regional development bodies responsible for the distribution of irrigation water in large areas,
d) National Office for Water and Electricity (ONEE) responsible for the production and distribution of drinking water
e) Local authorities
f) Public service providers
g) Private concessionaires responsible for the final distribution of water
h) Economic operators intervening in the supply chain of services and supply of inputs for the main branches of the national hydraulic system

The water sector employed directly, according to data from the 2014 population and housing census, 35,450 people, three-quarters of whom were in the private sector. Public institutions in the water sector, administrations, agencies and enterprises and public establishments employed 8,210 employees.

1.3 Overview of the project

Development goal: *The goal of the project is to improve industrial and at the same time municipal water management practices in the Maghreb/MENA region in an inclusive and sustainable way*

One main outcome is foreseen for the intervention:

"*The project will transfer improved water management knowledge and technologies and increase the employability of Moroccan youth with the appropriate and requisite training*".

The evaluation measures the success of the project according to its capacity to achieve its goals. The intervention logic (see Annex 5) foresees three outputs (or project components):

- Output 1: Assessment of current and future skills and job needs in the Moroccan water sector
- Output 2: Aquatronics virtual reality demonstration and teaching hub established and functional
- Output 3: Outreach, advocacy and possible replication of i) Aquatronics and ii) PPDP approach to other countries in the Maghreb/MENA region.

Figure 1 illustrates the Theory of Change reconstructed by the evaluation team

Table 1 Project Synopsis

Project title	H2O Maghreb
UNIDO ID	150259
Thematic Area	Water and Sanitation (Integrated Water Resources Management)
Country	Morocco
Project donor	USAID
Project Approval date	28 April 2017
Planned project start date	28 April 2017
Actual project start date [6]	9 June 2017 (as per UNIDO database)
Planned project completion date	27 April 2019
Actual project completion date [7]	27 February 2022

[6] First Project Approval Date (PAD) issuance date
[7] as indicated in UNIDO ERP system

Project duration	Planned: 2 years; Actual 4 years and 10 months
Implementing agency	UNIDO
Government coordinating agency	Vocational Training Department, initially under the Ministry of National Education, Vocational Training, Higher Education and Scientific Research and recently transferred to the Ministry of Economic Inclusion, Small Business, Employment and Skills Ministry of Equipment, Transport, Logistics and Water (Ministry of Equipment and Water following the forming of a new Government in 2021)
Executing Partners	ONEE (National Electricity and Drinking Water Office) Festo Didactic and EON Reality
Donor Funding (USD)	- Initial budget: USD 1.4 million - Cost extension: USD 949,200 Total funding: USD 2,349,200
UNIDO Input (in-kind)	N.A.
Co-financing (USD)	• Initial budget: USD 1,270,000 - Festo Didactic: USD 350,000 - Eon Reality: USD 520,000 - ONEE: 400,000 • Cost extension: USD 440,000 ONEE: 440,000
Total project costs (USD)	• Initial budget: USD 2,508,938 (1,238,938 excluding in-king contributions) • Cost extension: USD 1,280,000 (840,000 excluding in-kind contributions) 3,788,938 (including in-kind contributions from partners) 2,078,938 (USAID only, excluding in-kind contributions)
Mid-term review date	N.A.

Source: Project document and evaluation terms of reference

The project has only one outcome and the budget structure does not present disaggregation by sub-results or by component. Updated budget expenditure data is discussed with the evaluation criterion of efficiency (section 2.5).

Table 2 describes important milestones dates along the timeline of the project implementation.

Table 2. Benchmarks in the project timeline

Benchmark date	Event
Project Approval Date	28 April 2017
Actual Project Start Date	9 June 2017 (as per UNIDO database)
Project visit to Germany	January 2018
Training of IEA trainers; works on two workshops and installation of equipment	• ToT activities for IEA trainers on didactic and pedagogical tools and approaches held in May 2019, February 2020, June 2020 and November/December 2020. • ToT sessions for IEA trainers on the 4 additional modules developed during the extension held in March and April 2021.

Benchmark date	Event
	• ToT sessions for IEA trainers on digital training tools and equipment in February 2022
Training of first batch (promotion) of trainees	November 2018 – April 2019
Project official ceremony	13 March 2019
Project planned completion date	27 April 2019
Training of second batch (promotion) of trainees	June to November 2019 (course completion on 4/12/2019)
Project Cost extension	31/ 12 / 2019
Training of third batch (promotion) of trainees	• February 2020 – July 2020 (initial training period, including in person and remote learning) • Complementary practical training sessions (2 weeks) held in subgroups: first group in December 2020 and second group in February 2021.
Training of fourth batch (promotion) of trainees	• April 2021 – August 2021 (initial training period, remote learning) • Complementary practical training sessions (3 weeks) held in November 2021.
Training of fifth batch (promotion) of trainees	December 2021 – February 2022
Project completion date after extension	27 February 2022
H2O Project Terminal evaluation	January - February 2022

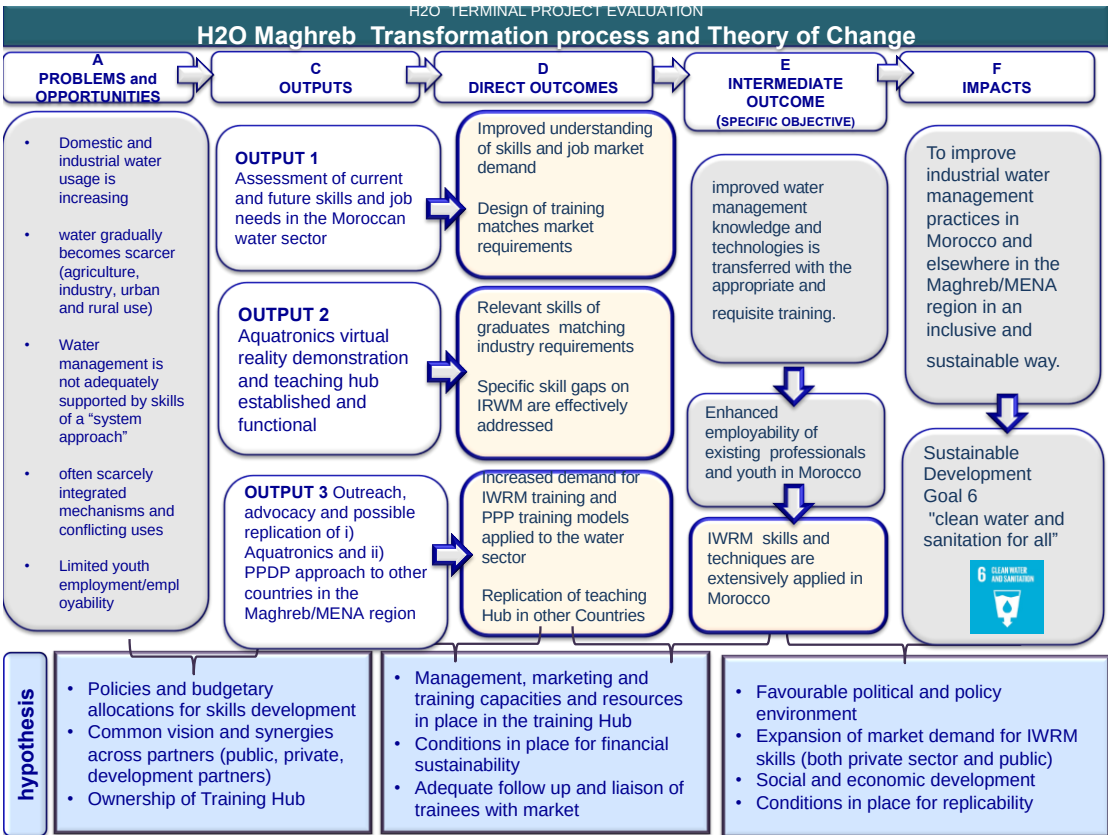
Source: Project reports and official project documents

1.4 Theory of Change

The Theory of Change (TOC) has been reconstructed by the evaluation team (see figure 1) to build a common understanding of the logic underlying the project and to identify key factors contributing to the expected transformation process. The flow chart represents the changes stated by the project document in the intervention logic (outputs, in white colour boxes) and intermediate and long-term changes (grey boxes in columns E and F). The project intervention logic does not address direct outcomes (light yellow boxes of column D) and higher-level intermediate outcomes in Column E. This reconstruction infers that the Theory of Change implicit in the project intervention logic describes only part of the changes expected by the intervention, evidencing a gap between the transformation of project deliverables into expected impacts.

The Theory of Change assumes that delivering the three project outputs, if external variables related to the political, policy, institutional, market and socio-cultural environment will concur, then the project will lead to an increased knowledge and skills of IWRM, contributing to a better employability of trainees and improved water management practices in Morocco, leading to a more effective and efficient use of water resources and contributing to inclusive and sustainable development. The project intervention logic makes no attempt to quantify the outcomes produced by the training.

Figure 1: Project Theory of Change



Source: Elaboration by the Evaluation Team, based on the project document and intervention logic

1.5 Evaluation methodology

The evaluation uses contribution analysis and the theory of change applying mixed qualitative and quantitative methods to collect data. The evaluation framework (see Annex 2) was structured along 7 main questions, aligned to OECD evaluation criteria and informed by the evaluation priorities, as evidenced by the terms of reference. For each question the evaluation framework specifies sub-questions, indicators, sources and data collection tools. Findings have been supported by data, ensuring a sound evidence-base.

Data collection included the following sources:

- Documentary review, from 50 documents (see list of documents consulted in Annex 3)
- Visit to IEA / ONEE training Centre
- Interviews with 30 project stakeholders and beneficiaries (see list in Annex 4); these included both face-to-face meetings and distance call / video conferences
- Survey for quantitative and qualitative data collection. The survey intended to complement data collected by the project M&E system on participants to promotions 1,2 and 3. The survey targeted all participants (40) to promotions 4 and 5 (the latter was ongoing at the time the evaluation exercise was conducted). Annex 6 details the questionnaire form (10 questions) and presents the survey report.
- Organization of Focus Group Discussions held in IEA training Centre with a) group of trainers and b) group of trainees
- Review of Project monitoring system and data on indicators.

1.6 Limitations of the evaluation

The mission timing and the duration of fieldwork were affected by COVID restrictions, which did not allow the Team to travel to Morocco before mid-February. Although the fieldwork timeline was of less than two weeks the team managed to cover interviews with key stakeholders in Rabat and could implement a beneficiary survey. Time and resources limitation did not allow traveling outside of the Capital. The following points summarize key challenges met by the evaluation team and the mitigation measures adopted:

Table 3. Main limitations and opportunities affecting the evaluation process

Challenging factors	Mitigation measures
Limited access to the IEA training centre (in consideration of simultaneous activities engaging the staff of the training Centre, evaluators could access the Centre only on two occasions)	• The limited access did not allow sufficient time with the key project beneficiary, including follow up interviews with the training director, with the pedagogic director, responsible for logistics, trainers and promotion 5 trainees • Survey and other tools were used to counterbalance the limited access to IEA and dialogue with its stakeholders
Unclear definition of project goals, strategy, outcomes and targets and, at times, an unclear narrative of project reports	• The project theory of change does not specify how " *the project is to improve industrial and at the same time municipal water management practices in the Maghreb/MENA region in an inclusive and sustainable way"* and neither how it will sustainably *"transfer improved water management knowledge and technologies"* • The shallow quality of preparation did not allow to define with accuracy goals, priorities and strategies. For instance the IWRM approach, stated as a main priority by the project document, was not pursued by strategy, implementation and reporting. • Targets, as presented by the project were at times confusing in project reports (i.e. 222 beneficiaries of training activities); [8] • Important facts did not surface from project reports (as for instance the fact that following project completion no more students' training would be implemented by the IEA and that the 5th would be also be the last promotion of students trained in water and sanitation skills by the IEA. • Triangulation from several sources allowed a better understanding of project dynamics
Outstanding M&E mechanisms tracking employability and employment outcomes for first three promotions	• The evaluation designed and implemented a survey to gather data not yet available for promotions 4 and 5
Lack of disaggregation of project financial data	• Project financial follow up does not aggregated expenditures by results
Covid and restrictions limiting access to stakeholders	• Face to face meetings have been organized in Rabat with stakeholders, always adopting Covid precautionary measures • Distant calls were used with stakeholders whenever there was no possibility to organize face to face meetings

Source: Project evaluation team, February 2022

[8] The number of 222 of training beneficiaries of trainings includes very different and non-comparable entities and their sum does not provide a meaningful information. For instance the number of 222 includes about 100 students who did benefit of 6 months of intensive training and internship, and professionals who may have benefitted of half a day support of project equipment or modules within the context of a workshop held at IEA.

2. Evaluation questions and findings

2.1 EQ 1: Project Strategy

To what extent is the intervention relevant to Government priorities and to water sector key stakeholders? Is the project coherent with policies and/or other interventions in Morocco? To what extent the intervention is coherent to USAID cooperation priorities and in line with UNIDO mandate?

2.1.1 *To what extent is the H2O project relevant to National policies and priorities for water management?*

The project is fully aligned to national priorities for the water and sanitation sector. The intervention addresses an important gap exiting at national level in skills development. By the time of H2O Maghreb design there were no fully adequate skills development mechanisms in place in Morocco to prepare youth for the profession of "water technician". H2O Maghreb is contributing to priorities set by the National Water Strategy (2014), the National Water Plan (2015) and the National Waste Water Reuse Plan (2016).

Notwithstanding the relevance to water and sanitation sector priorities and to national concerns to establish adequate skills at all levels, and the effort of development and alignment of H2O Maghreb curriculum in close consultation with the Vocational Training Department (DFP), the intervention strategy and design were not adequately coordinated and harmonized with the national approach to skills development and particularly with the Vocational Training Department [9] to set up sustainable mechanisms for skills development related to the water sector. [10]

2.1.2 *To what extent is the project coherent with USAID priorities for Morocco and the Region?*

The intervention matches well USAID key priorities related to increased efficiency of water resources management in the Region, accrued employability and employment, targets of youth and women (with a particularly high rate of female participation), the PPDP approach, the technology dimension of Aquatronics and the interest for replicability.

2.1.3 *To what extent the IWRM, the PPP training approach and the pedagogical tools applied by the project are relevant to the needs of beneficiaries, participating institutions, local administrations and the private sector?*

The skills development efforts have been fully relevant to students, professionals, institutions and private sector operators working in water and sanitation. In addition, the intervention had a strong pertinence to ONEE and its training centre capacity development needs.[11]

The emphasis in Moroccan development planning has been for the last five decades on maximizing the capture of the country's surface water resources and providing for their optimal use in irrigated agriculture, potable water supplies, industrialisation and energy generation on a sustainable basis. [12] The project strategy to support skills development, contributing to Integrated Water Resources Management was fully in line with Government priorities. However,

[9] Department de Formation Professionnelle (DFP); this finding is supported by the evaluation team interview with DFP

[10] During the last period of implementation the project sought to establish bridges with skills development institutes and Universities, although no sustainable solution is defined yet by the end of the project to follow up with student training, either rin IEA or in other establishments

[11] This finding is supported by several converging sources, including trainees' satisfaction surveys (promotions 1,2 and 3), evaluation survey (promotions 4 and 5), interviews with beneficiaries and a wide range of private and public sector stakeholders

[12] Khadi Mohamed, - Ziyad, Abdeslam, Integrated Water Resources Management in Morocco, 2018

the project relevance to an IWRM approach was significantly diluted as IWRM was only marginally pursued during implementation.
The setup of a PPDP training approach is fully relevant to skills development needs for the water and sanitation sector. The PPDP was remarkably pursued through the partnerships with FESTO Didactic and EON Reality (see section 2.6) as well as with successful linkages with private sector companies to support trainees' internships. [13] The project design and implementation however did only marginally involve the Moroccan private sector in the definition of sustainable solutions for skills development and IWRM.

2.1.4 *To what extent is the project supported by effective strategic choices and quality of design?*

The project formulation builds on an innovative approach and strategic concepts (IRWM approach, PPDP, technology and Virtual Reality supporting training); the project document reflects high ambitions compared with the initial contained budgetary envelop and timeline.

Innovative approach and high ambitions however were not supported by adequate design. [14] Project formulation is more focused on PPDP and technical approaches than the sustainable changes that these should support. The formulation process is assessed as particularly shallow and due diligence was not adequately applied to safeguard the investment against risks related to sustainability. Design shortfalls include:

1. Good design practices need to be supported by detailed problem analysis. The formulation did not include a specific need analysis and the need assessment is deferred to project implementation (output 1). The assessment of output 1 evidences that the need assessment carried out in project year 1 was particularly shallow and not adequate to set up a strategy to address needs (see also analysis of effectiveness / output 1, section 2.2.3)
2. Project strategies and implementation do not take into account the existing sector analysis for water and sanitation sector labour needs carried out by MENFP. In addition, the need assessment carried under output 1 does not appear to be coordinated /harmonized with the national sector study. [15]
3. The project document makes no reference to the important work carried out over a period of a decade by the AGIRE Programme (GIZ) in support of Integrated Water Resources Management in Morocco[16] and design missed the opportunity to capitalize on these experiences.
4. Notwithstanding the experimental nature of H2O Project, design should have attempted to compare strategic options and to address key sustainability issues, addressing significant liabilities left unsolved by the end of the project
5. Design was built on a broad process of consultation with key stakeholders but did not associate key sector actors (including the Department de la Formation Professionnelle (DFP), existing training facilities, private sector entities and local administrations) to key strategic decisions related to the design of the intervention and to sustainability mechanisms. [17]
6. The design did not explore the complexity of proposed partnerships (across private sector companies and with national stakeholders)
7. Design did not set mechanisms for sustainability, replicability and upscaling

[13] Examples of such partnerships include the arrangements established with Avendis (Tangiers) and Lydec.(Casablanca).
[14] In the context of this evaluation sound project design is intended as "*a strategic organization of ideas, materials and processes for the purpose of achieving the project goal.* " Sound design part of due diligence to safeguard the investment from risks and pitfalls, providing parameters to maintain crucial aspects of the project, like the schedule and the budget.
[15] The DFP sector analysis was completed after the project was designed (and even after the H2O Maghreb needs assessment was initiated) (source: communication from Project Management);
[16] www.agire-maroc.org
[17] Régies decentralisées pour la gestion de l'eau et de l'assainissement

8. An important design shortfall was not to address the constraints set by the juridical status of the IEA training centre and implications for project sustainability. Design may have considered a project result to support institutional changes required to achieve sustainability.

***1.5** To what extent was the programme relevant to UNIDO's mandate?*

The intervention is coherent with UNIDO mandate to promote "*inclusive and sustainable industrial development*". Relevance to the Organization's mandate could have been however significantly heightened by a more strategic approach:

- Relevance to inclusive development: the project trained 112 water and sanitation technicians of, in general, modest origins[18]; however the intervention did not achieve to set up sustainable mechanisms for this technical training to be continued after the end of the project (see analysis of sustainability, section 2.3)
- Relevance to sustainable industrial development; the initial goal of supporting integrated water resources management was not pursued by a specific strategy to strengthen water efficiency through system approaches at local and regional levels. [19]
- Nevertheless H2O Maghreb contributions to specialized training, miniaturized equipment, didactics, digital platforms and Virtual contributed to enrich ONEE / IEA capacities, with positive effects in water management practices. The diffusion of the 23 accredited modules is also likely to produce trickle down effects on efficient water and sanitation plants and equipment.

2.2 EQ 3: Effectiveness

To what extent did the project H2O Maghreb contribute to its goal of improved IWRM skills development training in an inclusive and sustainable way?

***2.2.1** Results related to the development of sustainable and inclusive training for water technicians*

The project at its start intended to test for Morocco and MENA Region a new model for water and sanitation skills development, supported by an international public–private partnership, technological innovation and digital content. The H2O Maghreb concept was initially supported by a contained financial envelop (1.4 million US$) and a short timeline (two years), limiting the capacity to explore sustainable mechanisms. The pilot was successful in establishing optimal conditions for relevant skills development for water and sanitation technicians. Outstanding results have been achieved in terms of quality of training for water and sanitation technicians (level "Bac plus 2") with very positive outcomes in terms of employability and access for youth and women. These results have been achieved between 2018 and 2021/22, for 5 groups of students (promotions). Each promotion had 4 months of alternation of theory and practice. The concept included initially 2 months of internship, but in consideration of COVID restrictions internships could be implemented only for the first two promotions. A total of 112 students did benefit from the training. The evaluation considered several indicators to appreciate the quality of the training (trainees' satisfaction, quality of hard skills and soft skills, employers' satisfaction, employability, employment outcomes); all indicators scored outstandingly well. Training results are summarized in table 4.

[18] See evaluation survey (annex 6) and interviews with trainees

[19] Nevertheless H2O Maghreb contributions to specialized training, miniaturized equipment, didactics, digital platforms and Virtual contributed to enrich ONEE / IEA capacities, with positive effects in water management practices. The diffusion of the 23 accredited modules will also likely to produce trickle down effects on efficient water and sanitation plants and equipment.

Table 4. Summary results of the 5 Promotions

Promotion	Number of participants	Internship	% women	Trainees' satisfaction	Employability (1) assessment	Employment outcomes (2)	Average age	Previous studies
Promotion 1	17	Yes	88,2%	High	High	71%	22	Bac +2 à +5
Promotion 2	25	Yes	68,0%	High	High	68%	22	Bac +2 à +5
Promotion 3	24	No	75,0%	High	High	54%	24	Bac +2 à +5
Promotion 4	28	No	78,6%	High	High	18%	23	Bac +2 à +5
Total	**112**	**42**	**75,9%**	**High**	**High**	**38%**	**23**	**Bac +2 à +5**

Sources: Project monitoring data and end of training Survey (Promotions 1, 2 and 3); Évaluation Survey for promotions 4 and 5 (February 2022).

Note 1 Employability of H2O training graduates; the indicator is based on the self-appreciation of graduates / trainees on opportunities of finding a job.

Note 2 Employment outcomes; this indicator designates the percentage of employed active graduates by the time the evaluation survey was conducted. The fourth promotion presents more integration difficulties due to the backlash of the Covid-19 crisis and the fact that the training was completed only 3 months before the evaluation team survey.

The project proved the initial hypothesis (or "project concept) to hold true i.e. that when optimal conditions are set for water and sanitation training, remarkable outcomes can be achieved in terms of skills development, employability and employment. Positive results apply to the pilot of 112 beneficiaries. The pilot did not involve cost – benefit analysis. Several factors, including limited timeline, limited resources and quality of the design, did not allow to set up sustainable arrangements for the H2O Maghreb training to be pursued after the end of the intervention. [20]

With the end of the project [21] the training will be stopped as conditions are not in place for the IEA Centre to train external students without project support[22]; also conditions are not in place for the replication of comparable process and results in other training centres (see table 6).

The following bullets describe key factors contributing to the successful training results. Some of these factors were pre-existing and some were established with partial or full contribution from the project.

1. **Quality of the training Centre**; IEA training Centre offers an outstanding infrastructure for water and sanitation training, including for its location in Rabat, the large green areas, numerous laboratories, digital platforms, miniaturized equipment, meeting spaces and outstanding accommodation facilities. IEA is considered as one of the best water and sanitation training centres in the region and in Africa. The outstanding quality of IEA is supported by efficient management, high organisational capacities and adequate staffing.

   Several trainees interviewed by the evaluation expressed the perception that the only areas to improve the training experience was related to some aspects of the logistics, including for better internet and quality of restoration. These were evidenced not as negative points but as areas with margin of improvement and did not affect the overall positive assessment of the training.

2. **Training modules development**; the project developed a total of 23 modules. [23] The quality of training modules has been consistently well-appreciated by a range of stakeholders interviewed by the evaluation. [24] Training modules have been accredited by the project with the national system (DFP) which will allow their transfer and adoption to other training institutions and Universities in Morocco. Training modules represent the core of the didactic contribution provided by the project. Although the 23 modules are tailored for the 4 months course (*formation qualifiante*), their modular nature allows for a flexible use and to be adapted to a wide range of technical skills development in vocational training and higher education. Modules contents are also beneficial for the training of water sector professionals.

[20] Nevertheless as discussed under "sustainability" and "impacts" some benefits are expected to be maintained after the end of the project support
[21] Completion date: 27 February 2022
[22] This in consideration of IEA statute and mandate which narrows the Centre activities to ONEE staff continuous training (IEA management communication to the evaluation team)
[23] 19 before the extension and 4 after the extension
[24] Including Trainers, management staff of other training centres and universities. Positive feedback on modules was also received by trainees perception surveys (project monitoring)

Modules represent the most "transferrable" content of H2O Maghreb delivery. Modules were developed in a coordinated and participated effort by FESTO Didactic, UNIDO and ONEE/ IEA staff.

3. **Quality of trainers**; Evaluation respondents [25] pointed consistently how the fundamental factor contributing to the quality and the success of the training has been the outstanding preparation, commitment and flexibility of the group of 10 trainers. This group of IEA permanent trainers is a unique capital asset for Morocco and the countries in the region in terms of specific know how for water and sanitation sector skills development. The trainers have been unanimously appreciated by survey respondents for their availability, competence and pedagogy.

4. **Additional training of the trainers**. The project contributed to the already outstanding capacities of the trainers with specialized additional capacity development related to the modules, new didactic equipment, Virtual reality and Aquatronics digital platform. This capacity building effort was sustained during at least two years of project implementation. IEA trainers benefitted from several training sessions and interactions with project experts (e.g. about curricula development). Additional training sessions were completed in year 5 (when COVID restrictions were partially lifted). [26]

5. **Practical work and alternation of theory and practice**; Practical work was considered one of the best assets of the training. Part of survey respondents expressed the desire to have more time dedicated to practice. The quality of the practical work was appraised by graduates as excellent: "*The richness of this learning was more valuable than 5 academic years.* » [27] Survey respondents also recommended that more time should be dedicated to practical work. Visits to external sites (Khemisset and Ifrane, etc.) were also considered as "very enriching".

6. **Added value of didactic equipment and Virtual Reality**; The equipment provided by the project is assessed by trainers, trainees and a range of other sector stakeholders as outstanding and an important factor to support the quality of the training.
   Miniaturized models and simulators offer according to trainers a significant advantage in terms of providing an overview of the whole cycle of water and sanitation, through its different segments. Equipment offers a valuable pedagogic support and complements well the range of existing IEA infrastructure and equipment.
   Exchanges with trainers, graduates and trainees pointed to how H2O Maghreb technological inputs, miniaturized equipment, Aquatronic digital platform and Virtual Reality provided an important value added to the quality of the course. According to some respondent's technological inputs and digitalization offered a margin of improvement "*between 10 and 20%*" to the overall quality of the training model. Survey respondents recommended that "*practical exercises with Virtual Reality tool should be done in the middle of the programme rather than by its end, to allow for more time dedicated to the tool*".

7. **Career follow up**; the project mobilized an expert to support career follow up linking graduates with potential recruiters. This follow up has been very appreciated by graduates and strengthened the employment outcomes of the intervention. [28] Survey respondents recommended to strengthen partnerships with private sector supporting apprenticeships and employment of graduates. The majority of respondents advocated much stronger links

[25] Evaluation survey of 23 participants to the 4th promotion
[26] Source: Communication of project management to the evaluation team.
[27] Evaluation survey to promotion 4 respondents, February 2022
[28] Interview with expert following up graduates, interviews with graduates and employers

of the project with regional and decentralized service providers and private sector stakeholders.

8. **Support to soft skills;** the 4-months training had one week dedicated to soft skills development (including resume' preparation, preparation to interviews, support to communication and positive attitude in the working environment). Soft skills development has been very positively appreciated both by graduates and by potential employers.[29] The majority of graduates felt that the "soft-skills" module was satisfactory. [30] For some, it allowed the success of the job interview. The following additional topics were recommended by survey respondents: i) Communication techniques, ii) Leadership, iii) Teamwork as a performance lever, iv) Preparation for interviews, v) Self-confidence, vi) SWOT analyses applied to personal development.

Box 1 Testimonies of recruiters about the quality of graduates from H2O training

"High satisfaction of candidates, with profiles well appreciated"
"Both technical and soft skills are highly appreciated"
"Soft skills appear way better of candidates with "licences professionnelles".
"Positive attitude in the work environment"
"*The company is highly satisfied with the quality of the graduates*"

9. **Internships**; Another important factor favouring positive training results was the access to internship to all training graduates, over a period of one month. These have been reported as a factor considerably strengthening employability of graduates. [31] A very positive assessment of training outcomes was provided by private sector employers [32] who collaborated with the project facilitating internships (see box below). However only the first two promotions did benefit from internships as COVID restrained their organization for promotions 3 and 4. The internships for the 5th promotion could not be pursued in consideration of the closure of project by February 2022.

10. **Screening of candidates**; Another factor that weighted considerably in favour of employability and employment outcomes was the selection process applied to training candidates. Following the successful results of the first promotions, a large number of applications were submitted and for the 5th promotion 300 candidatures were submitted for a total of 25 places available[33]. This allowed to choose for highly suitable and motivated candidates, including several boosting high studies and working experiences.

The following table summarizes project progress against targets defined by project reports.

Table 5 Project progress against targets

Indicator	Initial target	Target after extension	Assessment of achievement
# of trainers trained for the delivery of curriculum developed by H2O Maghreb	10	20	• 10 fully trained staff within IEA, a key achievement supporting quality of training and its outcomes • 10 external trainers did benefit from 1 week training.

[29] Evaluation survey and interviews with potential employers in Rabat, Casablanca and Tangiers.
[30] Evaluation survey to promotion 4 respondents, February 2022
[31] Evaluation survey and interviews with potential employers in Rabat, Casablanca and Tangiers.
[32] Interviews of evaluation team with private sector firms working in water and sanitation, February 2022
[33] Project team communication to the evaluation, February 2022.

Indicator	Initial target	Target after extension	Assessment of achievement
			• Quality and capacities achieved for second group "after extension" cannot be compared with results achieved with the first group
# of water training hubs established with the support of H2O Maghreb	1	2	• 1 Training hub established and fully equipped. (Note: training for students will not be continued after the end of the project) • Second hub not yet established and or operational • Three education institutions are provided with some technical support for the facilitation of the training modules developed under the project [34](note: trainers capacities, infrastructure quality, equipment and candidate selection institutions are unlikely to match the standards applied by the project)
# Innovations supported through the project	12	11	
# of young trainees and professionals who received training through the H2O Maghreb training hub	100	222	• 112 youth received quality training over a period of 4 months, with positive outcomes for employability and employment • 164 professionals received specific short-term training, part of IEA institutional mandate; these activities did benefit of punctual support from H20 Maghreb materials and equipment and ToT training.
# of project documents developed for the replication of H2O	1	6 [35]	• It is important to evidence that H2O established a successful experiment but not a sustainable and replicable model

Source: Project reports and monitoring data; the last column reflects the assessment by the evaluation team

2.2.2 *Results related to establishing capacities within IEA for continuous training of water and sanitation professionals and ONEE staff*

The main sustainable outcome achieved by the project was the strengthening of ONEE /IEA capacities for improved services and skills development, through the strengthening of the Centre function for continuous training of ONEE staff and water and sanitation professionals.

This result was achieved through the installation of equipment, the preparation of training modules and the additional training of 10 ONEE trainers (see § 2.2.1). The project contributed to specific skill enhancement inputs for 164 professionals over the past 3 years (see detail in table 6).

Contributions to ONEE staff and other sector professionals' skills development fall within IEA institutional mandate. Training inputs from H2O Maghreb proved relevant and well-appreciated

[34] Source: Project management communication; due to the limited timeline available, the evaluation team could not visit the three beneficiary institutions

[35] Including a concept note developed for Egypt (source: UNIDO communication to the evaluation team)

although often contained in scope (as for instance "*during a four-day workshop, half-a day session made use of H2O Maghreb equipment and modules*"). [36]

The project did not provide information on the quantity and the outcomes of these skills' development activities.

Table 6 IEA training of professionals with support from project inputs

Date	Days	Participants	% Women	Target	Subject / project contribution
January to December 2019	10	101	48%	New ONEE / IEA staff	• Water and sanitation, basic skills development. • Use for 5 days of didactic equipment from H2O Maghreb
14 to 30 October 2019	7	21	19%	Staff from REDAL (Rabat)	• Training of REDAL staff in charge of water sanitation stations • Use of project didactic equipment
15 to 19 April 2019	5	10	10%	Cooperation with Guinee Conakry	• In the context of the wastewater treatment project in the city of Conakry, • Capacity building and the development of the skills of Guinean technicians from the Ministry of Cities and Regional Planning, responsible for the water sanitation activity.
January to December 2020	10	32	71%	New ONEE / IEA staff	• Water and sanitation, basic skills development. • Use for 5 days of didactic equipment from H2O Maghreb
Total		**164**			

Source: Project communication to the evaluation team – February 2022

2.2.3 *To what extent the assessment of current and future skills and job needs in the Moroccan water sector supported the organization of a relevant and effective trainings?*

The need assessment produced under output 1 was a shallow exercise, too weak to provide a comprehensive overview of the sector offer and demand for skills development, without a dedicated analysis to ONEE/IEA skills development offer, lacking of adequate analysis and considerations for strategic options and alternatives.

The need assessment [37] identified 7 job categories [38] and a total of 42 jobs related to the water and sanitation sector, recommending the establishment of a "water agent curriculum". This was

[36] Interviews with the Center Manager, February 2022
[37] Training need assessment for Moroccan water sector, March 2018, H2O Maghreb
[38] The 7 categories being: 1) Technician in water resources management, 2) Drinking water technician, 3) waste water technician, 4) irrigation technician, 5) Water agent, 6) Manpower for construction water infrastructure networks and treatment plants and 7) Laboratory technician

intended to pave the way for the creation and accreditation of the job profiles for "Drinking Water technician" and "Wastewater technician". These job profiles would be established as career path for persons who already graduated as water agents. The training duration was envisaged for six months, including a two-month internship, to be considered as *"formation qualifiante*".

Box 2
"A training program for Water Agents does not exist to this day. A Water Agent has a generalist profile and is able to operate and maintain water infrastructure such as wastewater and drinking networks, pumping stations etc. Water Agents have a general knowledge of different water infrastructures and can be employed in a generic way".
Source: Training needs assessment, H2O Maghreb, 2018

The study could have provided additional granularity to the analysis of needs, specifying for instance the exact number of students to be trained (as expected by the study according to the project document).

Quantitative data from the 2014 population census on employed active population in the water and sanitation sector was not referred to by the study.

The need assessment was not coordinated with the comprehensive analysis carried out, during the same period, by the sectoral study for water and sanitation, "*Étude d'identification des besoins en compétences et d'élaboration du Répertoire des Emplois/Métiers) et des Référentiels des Emplois/Compétences* [39], evidencing the limited harmonization and alignment of the project to the national (MENFP) sectoral assessment.

Also the study did not look into the needs and opportunities related to Integrated Water Management skills, a key project priority.

2.2.4 *To what extent activities of outreach and advocacy have increased awareness and demand for IWRM training in Morocco and in other countries in the Maghreb/MENA region?*

Several activities were implemented by the project to support awareness and demand of the H2O Maghreb training concept, in Morocco and in other countries, including with participation to international events and actively supporting links with other training institutions / universities.

By the end of the project 3 education institutions have expressed their intention to use of the H2O Maghreb training material while the project has received several requests for assistance from other countries. Notwithstanding the emerging interest, overall results in terms of the development of a specific demand for this training and the replication of the pilot has been modest; comparable training facilities have not been established or planned either in Morocco or abroad. Although the concept has been well appreciated by a broad variety of stakeholders, several factors may have contributed to slow down replication mechanisms:

- Replication would require intensive capacity building, considerable investment and an external (project) support over a prolonged period of time
- The model established by the project can export easily only a fraction of the factors that contributed to the training success (i.e.: the 23 training modules)
- The training targeted medium level technicians (Bac plus 2), may limit the participation of trainees from other countries. Morocco offers opportunities for the regional training of specialized water sector professionals: IEA and LIDEC for instance have been hosting regional technicians for specialized training over recent years. Specialized subjects (as

[39] Capital Consulting, 2017, Study contracted by Ministère de l'Education Nationale et de la Formation Professionnelle (MENFP).

IWRM training) may have raised a regional interest and demand. It should be however considered to what extent other Countries may be willing to finance the skill development for Bac+2 technicians in Morocco. This analysis is not yet carried out.

- Links and connections made by the project with the national private sector and regional water administrations have been few, with limited participation to project design, governance and implementation (see box below)
- The fact that the pilot established by the project was a one-off exercise without in-built sustainability mechanisms may have limited the demand for replication in other sites in Morocco.

Box 3 The private sector stakeholders interviewed by the evaluation recommended strengthening project communication, including with the water and sanitation authorities, [40] aiming to increase the knowledge of the training, particularly in decentralized context.

It is noted that project linkages with decentralized entities (local and regional organizations) were limited by recruitment mechanisms based on competitive examinations ("*concours*"). It should also be considered that the skills developed by H2O Maghreb may have contributed to increase candidates' chances to pass successfully the examinations.

2.2.5 *To what extent H2O Maghreb supported, through design and implementation, gender empowerment, inclusiveness and a sustainable management of natural resources?*

H2O Maghreb promoted very actively gender inclusion. Initial plans defined a 50% target of women participation to student training. Results have been beyond expectations and over a total of 112 trainees, 75% were women. The evaluation could not identify a specific rationale to explain the prevalence of women amongst trainees. Trainers offered the explanation of women better performances during application to the training. The project carried out a specific study to assess gender dimension in water sanitation sector. Overall, the project contributes positively to SDG 5 (gender equality).

The thematic area of intervention, water and sanitation, provides a main focus on sustainable management of natural resources, with direct contributions to SDG 6 (clean water and sanitation) and to SDG 13 (climate action). However, the project did not actively pursue important opportunities for an accrued impact on national resources management. Options included:

- Pursue a strategy for Integrated Water Resources Management, as anticipated by the project document
- Developing a training of trainers to achieve a multiplier effect at national level, particularly for regional and municipal water and sanitation services
- Developing specific trainings modules for senior water professionals and decision makers
- Strengthen modules' contents on environmental management and sustainable use of water resources; Both trainees and recruiters, interviewed by the evaluation, observed that it would have been desirable to have more technical contents in sustainable environmental management. [41]

Inclusiveness was supported by targeting young technicians, the large majority of modest origins. The training was free of charge and food and accommodation were also provided for free. However, selection applied to training candidates did not include criteria as region of origin or socio-economic conditions. Selection procedures was based on merit, favouring candidates with more experience and better training, rather than applying an inclusive approach. The large majority of participants were young and single women, with average age of 23 (minimum of 21

[40] Interviews of evaluation team with private sector firms working in water and sanitation, February 2022
[41] Sources: Survey with Promotion 4 and interviews with private sector operators in Morocco, February 2022

and maximum 25).[42] More than 63% of the learners come from the Rabat – Salé - Kénitra region - therefore in the immediate vicinity of the current training centre. Participants pointed to the interest to replicate the training in other regions to strengthen inclusiveness and diffusion across the national territory.

Inclusiveness and impact would have been significantly enhanced by the establishment of sustainable training mechanisms.

2.3 EQ 3: Sustainability and opportunities for upscaling

To what extent are H2O Maghreb outputs and outcomes likely to be sustained in the long term?

The "sustainability plan" presented by the project document was based on the partnership with an existing training centre, the building of ownership and high-level national commitment. [43] The project document envisaged the implementation of a business plan supporting diversification of income streams. Alignment to the "New National Water Strategy 2010-2030" was considered as well a factor of sustainability. The project document did not consider and address IEA statutory limitations which would not allow to continue training for external students after the completion of the project.

The business plan was not developed by the project and neither were defined diversified source of income that may support financial sustainability. [44] It is noted that the survey carried out by the evaluation with promotion 4 graduates, pointed to respondents' potential interest to pay for a course of this quality. This finding wasn't sustained by results obtained for trainees from promotion 5.

Box 4 Respondent's interest to pay for the training
More than 80% of graduates declared themselves ready to pay for this training, from an average 8,600 Dirhams to a maximum of 25,000 Dirhams.
Source: Evaluation survey of graduates from promotion 4

Table 7 reviews sustainability mechanisms for H2O Maghreb, assessing to what extent conditions underlying the successful training results are ready to be replicated in other training institutions in Morocco or in other Countries.

Table 7 Conditions for replicability of training results for water and sanitation technicians

Factors contributing to positive training results	mechanisms in place for sustainability	Opportunities for replicability
Continuous training of ONEE staff and professionals in IEA Centre	• The project achieved sustainable mechanism for follow up continuous quality training to be pursued in IEA for ONEE staff and other sector professionals	• Conditions for sustainability are in place for follow up of skills development within ONEE and IEA (see 2.2.2)
23 training modules developed for drinking water and	• Training accredited • Modularity and flexibility	Conditions for replicability are in place:

[42] Ibidem
[43] H2O Maghreb Project document, January 2017
[44] Note from the project team to the evaluation "*The IEA status and related discussions with DFP about the training sustainability made the development of a proper business plan irrelevant. It was instead decided to draft a sustainability plan, included in the final report*"

Factors contributing to positive training results	mechanisms in place for sustainability	Opportunities for replicability
sanitation (high relevance and quality of modules)		• Modules are in demand and opportunities are in place for sharing with other training institutions / Universities
Equipment in IEA (including Virtual Reality) contributed substantially to the quality of training	• The project is supporting linkages of IEA with other training institutions • This equipment will have limited accessibility to students from other training centres / facilities	• These conditions are unlikely to be available outside of IEA without external support • The equipment should be purchased by other capacity building institutions to provide similar conditions to IEA
A tight process of applicants' selection (up 300 candidates for a 25 students' promotion)	• Capacities and procedures should be established outside IEA for screening of candidates	• These conditions are unlikely to be applied outside of IEA and without a project support
Outstanding quality of IEA trainers	• Short training (1 week duration) provided to 10 external trainers • The establishment of equivalent capacities and high level of commitment may require a sustained project support to other training centres	• These conditions are unlikely to be replicated outside of IEA without a sustained project support
Alternation of theory, practice and internships	• Capacities and mechanisms to be established	• Capacities need to be established outside IEA for replicability and upscaling
Career follow up services	• Mechanisms to be established outside IEA	• These conditions are unlikely to be applied – with similar standards - outside of IEA and without a project support
Financial and non-financial incentives (training free of costs, tablets lent out to participants)	• Financial and budgetary mechanisms and adequate regulatory framework need to be put in place	• These conditions unlikely to be replicated outside IEA and without a project support

Source: Evaluation Team Assessment

In conclusion sustainability is achieved mainly a) for the strengthening of IEA capacities to pursue the mandate of continuous training of ONEE staff and other professionals and b) for the opportunity of diffusing training materials and the accredited modules developed by the project.

<u>The project, although it established a successful model of training, did not achieve to set up sustainable mechanisms that may allow a comparable stream of benefits to be continued after the end of the intervention.</u>

The project is currently working on a "sustainability plan" to address sustainability issues.[45] While some arrangements have been envisaged to export modules, no short-term solutions have been identified to sustain training mechanisms and results after the end of promotion 5. [46]

[45] The "sustainability plan has been drafted and included in the final report (H2= team communication to the evaluation team

[46] Evaluation interview with UNIDO expert supporting the "Sustainability Plan" – February 2022

2.4 EQ 4: Progress toward impacts

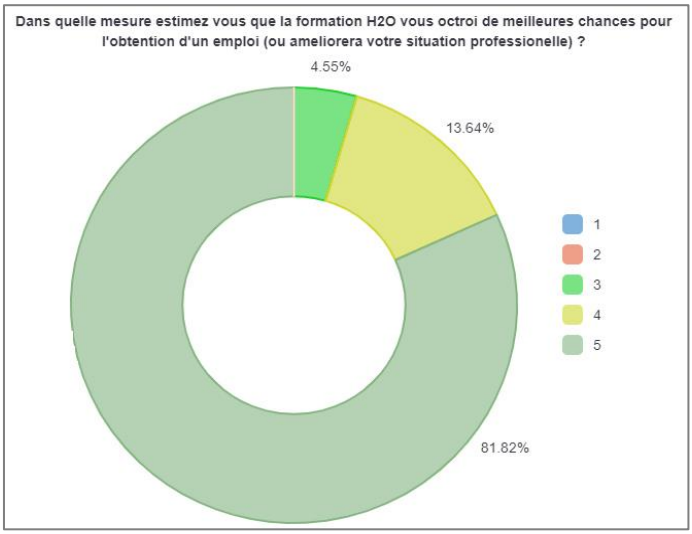
To what extent did the project H2O Maghreb contribute to long term goals of improved industrial and municipal water management practices in Morocco and in the Maghreb/MENA region in an inclusive and sustainable way?

H2O Maghreb managed to establish for the first time a high-quality "Water Agent" skills development training in Morocco (*formation qualifiante)* responding to an important gap in the water and sanitation sector. Factors that may contribute to long term changes include the development and initial diffusion of accredited modules, capacities (including technology) developed within the IEA training centre and in the potable water and waste water sector and the successful training pilot supported by modern equipment technology.

The project laid an initial foundation stone for a future large and complex work addressing the outstanding gap for water and sanitation skills development, with the main merit of showing optimal conditions for a successful training.

Notwithstanding the very encouraging results achieved in terms of employability and employment for the target of 112 trainees, measurable contributions to the project outcome[47] are so far particularly contained, considering a total sector work force of over 35,000 persons [48] and the absence of conditions to continue a similar flow of benefits in absence of project support. Figure 2 below evidences positive perceptions to employability of the evaluation survey respondents.

Figure 2 - Employability perceptions *(source: evaluation survey, promotion 4, February 2022)*



Contributions to the project development goal of "*improvement of industrial and municipal water management practices in the Maghreb/MENA region (and sub-Saharan countries) in an inclusive and sustainable way*" are also modest, in consideration of limited work directly supporting industrial and municipal management practices and the limitations observed for sustainability.

[47] The project outcome is defined as ""*transfer of improved water management knowledge and technologies and increase the employability of Moroccan youth with the appropriate and requisite training"* H2O Project document, 2017

[48] Source: *General population and housing census of 2014 (in www.hcp.ma),*

The expansion of the initial impact will depend on follow up work for setting sustainable training mechanisms that, building on the project experiences and lessons, may manage to upscale the pilot in Morocco and in other countries.

Key factors that contained impact opportunities are:

- Inadequate and non-strategic design
- Limited timeline and financial envelop (compared to initial goals and sector gaps)
- COVID 19 restrictions affecting the sector over the past two years

The project could have sought stronger opportunities for contribution to long-term changes through a more strategic approach (for instance focusing on training of trainers or supporting changes at a more strategic and less "technical" level), linking more effectively to the national private sector (including through PPDPs) and decentralized water administrations, establishing conditions for training sustainability, developing products which could have been more appealing in other countries. Additional impact opportunities could be sought in future work supporting integrated water resources management.

2.5 EQ 5: Efficiency

To what extent did the project perform satisfactorily and was managed efficiently? Did the project offer good value for money?

2.5.1 Financial performances

H2O Maghreb was endowed with a total allocation of 4,059,200 US$, of which 2,349,500 US$ as a financial contribution from USAID [49] and 1,710,000 US$ as in kind contributions from ONEE (840,000 US$), FESTO Didactic (350,000 US$) and Eon Reality (520,000 US$). Table 8 below shows budget disaggregation for the different contributors. Budget total execution is presented in table 9.

Table 8 Project budget: Donor and partners in-kind contributions

Contributions to budget	Donor (USAID) (US$)	In kind Co-Financing (US$)	Total (US$)
Donor (USAID)	2,349,500		
ONEE		840,000	
Festo Didactic		350,000	
Eon Reality		520,000	
Total (US$)	2,349,500	1,710,000	4,059,200

Source: Project document and cost extension documentation (initial estimates)

Table 9 Project expenditures by end of 2021

Item Description	Total budget per contract (US$)	Expenditures (31/12/2021 (US$)
1. Personnel	800,400	686,485
2. Contract and services	233.000	312.093
3. Training and workshop	825.738	682.161
4. Other Direct Costs	165.800	100.806
5. Travel	54.000	48.718
H2O MAGHREB subtotal	2.078.938	1.830.263
Indirect costs (13%)	270.262	237.934
H2O Project total budget	**2.349.200**	**2.068.197**

Source: H2O MAGHREB

[49] This includes the initial allocation by the project document (1,400,000 US$) and the cost extension in 2019.

The average yearly budget allocation over the 4-year implementation amounts to 496,840 US$. Main expenditures items have been training organisation (37 %), personnel, including expertise and management, (38 %) and contract and services (17%). The budget structure does not allow to discern the detail of expenditures per project output.

The partnerships with Festo Didactic, EON Reality and ONEE leveraged 74% of additional resources (in kind contributions) from USAID financial contribution (2,349,500 US$).

2.5.2 *Value for money*

For USAID and UNIDO the project represented good value for money as, for a contained financial envelop of 2,4 M US$, it established a model (concept) which is being now proposed in several other countries. Festo Didactic and EON Reality also had positive economic returns on the investment thanks to the visibility earned, the opening of new promising markets and the development of new tools. ONEE as well had a very positive return in terms of image, equipment and savoir-faire.

Although the evaluation was not equipped to assess unitary costs per training, the qualitative assessment made by ONEE trainers show that the investment costs applied for the implementation of the pilot are excessively high for the context of Morocco and the development of sustainable mechanisms for capacity development of water technicians (see cost considerations in Box 5).

Box 5 Unitary costs considerations for water and sanitation skills development in the context of Morocco

In 2018, the unit cost of training per OFPPT trainee was 10,568 dirhams per year. [50] This cost only includes the training costs covered by the annual budget of the OFPPT in 2018.

The cost of training in the higher education system was estimated at 15,205 dirhams per year per student, for the year 2006. [51]

The cost of training financed by H2O Maghreb, including financial and in-kind contributions amounts to 4,059,200 USD (see table 8) or about 37.8 million dirhams. The total number of student learners' beneficiaries of the project is 112.[52]

By deducting approximately 750,000 dirhams (80,000 USD) for food for the 5 promotions and 1,250,000 Dirhams for accommodation at the IEA Centre (i.e. 2 million dirhams), the unit cost of training would be 319,642 dirhams for a training spanning over a duration of 6 months.

Such cost bears no relation to the standard supervision and equipment conditions in universities and vocational training establishments in Morocco. It is rather similar to the unit cost in selected institutes in US and in Europe.

In terms of efficiency, such a cost can only be justified for Morocco if the expenditure on training engineering is intended to be amortized over a target ranging from 1,800 learners (hypothesis of unit cost of 20,000 dirhams) to 3,600 learners (hypothesis unit cost of 10,000 dirhams per learner), regardless of the amortization period.

[50] Source: data reporting the deliberations of the OFPPT Board of Directors and the approved activity report for the year 2018.
[51] Estimation from a publication of the Higher Council , 2006
[52] Cost analysis does not take into account benefits related to the training of professionals at ONEE, using project knowledge and tools

The level of efficiency of the project therefore depends largely on the capacity to devise mechanisms to "scale up" or dissemination of the effects of the investment in training engineering.

2.5.3 Project management

H2O Maghreb featured positive implementation performances supported by a proactive and committed UNIDO management. Management approach was based on continued consultation, coordination and follow up with key stakeholders, connecting successfully the different partners involved in the project. Relationships of the Project Team with ONEE, USAID, FESTO Didactic and EON Reality have been consistently good, a finding confirmed by stakeholders manifesting their appreciation with the quality of UNIDO facilitation, dialogue and coordination. [53] Quality of management reflects as well in the building of trust across players and facilitating the smooth implementation of the partnership between public and private sector stakeholders.

The Project had a satisfactory technical management that allowed a timely delivery of outputs. Overall the project delivery achieved good quality standards for its products and services (with the exception of Output 1); the intervention needed a stronger guidance at a strategic level to pursue a more strategic approach to skills development and the initial vision of contributing to sector planning and efficient resource use through a IWRM approach.

2.5.4 Governance

Project governance was supported by the Project Steering Committee. The Committee provided adequate representation to institutional stakeholders and supported ONEE/IEA ownership. The Steering Committee accompanied positively project implementation, although after 2020 meetings were held with less regularity. The role of the Steering Committee has been mainly of ratification of project decisions discussed previously through bilateral meetings facilitated by UNIDO. Institutions were represented at technical rather than at political level, with limited authority to support significant changes and orient project strategies.

The Steering Committee could have played a more strategic role in project guidance, including:

- Addressing as a key priority sustainability gaps since the earliest stage of implementation
- Providing a stronger voice to the DFP and linking project need assessment to the comprehensive sectoral analysis of water sector professional needs [54]
- Strengthening the "regionalisation" and "decentralisation" of the project,
- Strengthening the inclusiveness of the approach
- Facilitating coordination and liaising with other important initiatives supporting the water sector skills development and integrated water sources management

Governance would have benefitted from the participation of additional important sector stakeholders, particularly regional water boards, private sector stakeholders and training centres.

2.5.5 Result orientation, monitoring, reporting and lesson learning

Management was supported by effective monitoring and evaluation tools, tracking individually each trainee of the 5 promotions, defining baseline surveys for each promotion and carrying out end of training surveys for the graduates. Trainees' satisfaction surveys provided tools to gauge the quality of the training and to the extent it fulfilled expectations. Specific studies supported analysis of important issues (as for instance gender analysis applied to water and sanitation skills

[53] Stakeholders' interviews , February 2022
[54] MENFP, Rapport étude sectorielle, 2018, Capital Consulting

development)[55]. The application of this broad range of monitoring and evaluation tools supporting project management is assessed by the evaluation as a best practice for a skills development project.

The project tracked its three contractual outputs and, importantly, followed as well the outcomes related to the training, including for trainees' satisfaction, employability and employment outcomes.

Aspects of M&E, which need to be reinforced within the H2O Project, include:

- A mid-term review would have been important to take stock of lessons during implementation
- Identification and follow up mitigation measures to address sustainability issues
- Project narration and reporting is at times confusing; project reports for instance do not mention that IEA training will not continue after the 5th promotion, following the end of the project. Also the description of targets' achievement need clarification; statements as "*2 training hubs achieved*" are subject to different interpretations.

2.5.6 *Adjustments to Covid-19 and to sanitary crisis*

H2O Maghreb adapted remarkably well to the restrictions imposed by the pandemic. Although COVID 19 affected significantly the delivery of training and slowed down the water and sanitation labour market, the Programme adjusted with distance learning mechanisms and activities could be followed up without significant solution of continuity. Overall the evaluation assesses as exemplary the adjustments made by the project to allow continuity of trainings; the final result of 5 promotions being completed is an indicator of particularly positive adjustments to the pandemic.

Box 6
When on Monday 21st of March 2020 all trainings were abruptly interrupted at IEA due to the pandemic, the project had full partners' commitment and support to shift from a 100% presential delivery mode to a 100% online mode within very few days: modules contents were transferred online, providing e-learning access to all participants. Festo Didactic contributed with the digitalization of e-learning modules. Special practical sessions were organized in the Centre by the end of the promotions as soon as conditions allowed.
Source: UNIDO management team communication to the evaluation, February 2022

Some stakeholders highlighted that in consideration of the eminently practical nature of the training, distance learning offered an inadequate surrogate to presential learning.[56]

2.5.7 *Communication and visibility*

The project earned a positive reputation and remarkable visibility in Morocco and outside, thanks to the positive results, an effective communication and a specific value added related to the technological dimension brought by training equipment and virtual reality simulators. As an effect the "H2O" concept has been branded and UNIDO has developed a pipeline of approximately 10 "H2O projects" being identified and promoted around the world. H2O Maghreb high visibility status includes an USAID presentation to Congress as an example of an effective PPDP approach.[57]

[55] Rapport d'analyse sur les femmes dans le secteur de l'eau, H2O Maghreb, February 2022
[56] Evaluation survey of promotion 4 graduates, February 2022; A survey respondents pointed that "*training activities may better be postponed to a later date in the event of a resurgence of Covid and distance learning should be avoided as it is not suitable for this type of practice-based training.*"
[57] Communication of UNIDO to evaluation team, February 2022

2.6 EQ 6: Performance of partners

To what extent project partners contributed were committed and contributed to a positive achievement of the intervention?

The project concept was based on an alliance across its main partners: USAID as Donor, the Vocational Training Department as Government Coordinating Agency, ONEE with its International Water Centre (IEA) as main national counterpart and central project stakeholder and beneficiary, FESTO Didactic as private sector development partner specialized in didactic equipment, EON Reality, private partner specialized in Virtual Reality and UNIDO as executing Agency, specialized in sustainable and inclusive industrial development.

Although the players shared a common development goal, the design of such partnership had inherent risks in consideration of diverse corporate cultures, interests, agendas and modus operandi. Overall the partnership experiment worked out quite well, in consideration of a clear definition of roles and responsibilities and the effective work of UNIDO who acted as a catalyst and glue to make the different components work smoothly together, through a participatory management approach based on continuous dialogue and sound coordination. Some uneasiness was registered, for instance across the two private sector partners, but nothing that altered the implementation course.

There is a consensus across stakeholders that the success of the experiment is largely a result of the commitment, ownership and generosity of contributions of ONEE and the International Water Centre. It is also well acknowledged that, by and large, each partner delivered its part well and timely, allowing for an overall project satisfactory performance, notwithstanding the challenges of two years of implementation under COVID restrictions.

Probably the successful partnership is one of the best practices to be evidenced for the project and an opportunity to be considered for future skills development interventions supporting water and sanitation.

The evaluation evidences the following lessons merging from the partnership experience:

- The achievement of project goals needed the participation of additional strategic partners, which were not adequately involved in project design and implementation, including private and public sector stakeholders which represent, beyond ONEE, the employment demand.
- It's important to note that the PPDP is an instrument and not the goal of an intervention;
- Complex and sensitive partnerships as the one promoted by the project should be supported by sound design and good leadership by the executing agency. The leadership is important to avoid that partners with stronger weight may influence project outcomes while promoting own legitimate interests.

3. Overarching assessment and rating table

The following table summarizes the evaluation ratings according to UNIDO evaluation guidelines and instructions for rating (see table 11). Scores vary between 1 (minimum) and 6 (maximum). The range 1 to 3 is defined as "unsatisfactory" and the range 3 to 6 as "satisfactory".

Table 10 Summary of the evaluation ratings

#	EVALUATION CRITERIA	SUMMARY ASSESSMENT	Rating
A	**Impact**	The project developed an innovative mechanism for water and sanitation skills development. Impacts are related to the strengthening of ONEE capacities for skills development and the design of a new water technician training. The limited strategic approach, design issues and lack of sustainable /replicable mechanisms limit considerably the opportunity of impacts.	**3**
B	**Project design**	Project design is largely inadequate to safeguard the investment and build sustainability; Considerable opportunities to promote impacts and support sustainability / replicability were not adequately explored. The need assessment was very shallow, incomplete and not coordinated with national sectoral study for employment.	**2**
1	Overall design	Due diligence not adequately applied to the formulation process (and need assessment)	2
2	Logframe	Very rudimentary design of Logframe and theory of change	2
C	**Project performance**	Overall satisfactory performances to deliver innovative and relevant products	**4**
1	Relevance	• An ad hoc initiative with limited resources facing a very big challenges with a very strong relevance to sector needs; • Limited alignment and harmonization to national approach to Vocational Training strategies and mechanisms; • High relevance with the ONEE/IEA mandate and the approach for incremental improvement to the IEA didactic tools; • strong coherence to USAID priorities and UNIDO mandate. • Partial relevance to the IWRM priority with a selective target (development of skills for the management of existing plants versus the overall planning as IWRM priority)	4
2	Effectiveness	The project established successfully a model for a 4 + 2 months high quality water and sanitation skills development training with high technical and digital content to support didactics	4
3	Efficiency	• The project was delivered with remarkable efficiency, particularly considering that 3 of the 5 promotions were implemented under COVID. • PPDP worded also remarkably well. • Management was committed and proactive, with outstanding communication and liaison across partners	5
4	Sustainability of benefits	• Although modules were accredited to the national system, the training course did not adopt sustainable mechanisms of implementation • Training modules will be used after project completion, but the model is not sustainable and replicable in the context of Morocco • Positive tentative to adapt with the design limitation with the opening on several academic institutions.	2

#	EVALUATION CRITERIA	SUMMARY ASSESSMENT	Rating
D	**Cross-cutting**	Positive contributions to inclusiveness, youth women and environment	**5**
1	Gender	Outstanding benefits for youth and women	6
2	M&E and design implementation	Exemplary practices in M&E; The project did not carry out a mid-term review Scope for improvement of reporting	4
3	Results-based Management	Project has been focusing on results (deliverables and outcomes) Need for an accrued M&E attention to achievement of goals and sustainability	5
E	Performance of partners	The partnership experiment worded out remarkably well	**5**
1	UNIDO	Very efficient and effective management, with savvy communication and liaison across partners. Building a solid reputation for H2O Maghreb. Need for an accrued strategic vision and attention to sustainability and impacts. IWRM priorities were not actively pursued during implementation Quality of output 1 with scope for improvement to provide better guidance to project strategic choices	5
2	National counterparts	Exemplary role of IEA and ONEE	6
3	USAID	Very active support and flexible approach throughout implementation; Need to apply due diligence to project formulation	5
4	Private sector partners	Remarkable performances, commitment and collaboration	5
F	**Overall assessment**	**An improved model with positive lessons emerging for water and sanitation skills development in Morocco.** **Well-designed training module, responding to an important gap in the offer of skills in Morocco.** **Value added in consideration of PPDP approach, technology and digitalization.** **The intervention would have deserved a higher overall score; however, the proposed model did not establish sustainable conditions for upscaling, limiting opportunities of impact.** **The intervention offered untapped opportunities to a more strategic approach to water efficiency and IWRM**	**4**

Source: Assessment by the Evaluation Team, February 2022

Table 11 UNIDO evaluation rating scale

Score		Definition	Category
6	Highly Satisfactory	Level of achievement presents no shortcomings (90% - 100%) achievement rate of planned expectations	SATISFACTORY
5	Satisfactory	Minor shortcomings (70% - 89%) achievement rate of planned expectations and targets	
4	Moderately Satisfactory	Moderate shortcomings (50% - 69%) achievement rate of planned expectations and targets	
3	Moderately Unsatisfactory	Some significant shortcomings (30% - 49%) achievement rate of planned expectations and targets	UNSATISFACTORY
2	Unsatisfactory	Major shortcomings (10% - 29%) achievement rate of planned expectations and targets	
1	Highly Unsatisfactory	Severe shortcomings (% - 9%) achievement rate of planned expectations and targets	

Source: UNIDO evaluation Manual, 2018

4. Conclusions and Recommendations

4.1 Conclusions

C.1 H2O Maghreb tested a new concept, addressing very relevant needs; The intervention was successful in testing a skills development training in Morocco for the profile of "water and sanitation agent", based on 23 modules articulated across the 4 phases of the potable water and sanitation cycle. The training, of the duration of 4 months - plus one month of internship - was based on alternation of theory and practice and was delivered to a total of 112 youths (76% women), with a minimum level of Bac + 2, in 5 clusters (or "promotions") between 2019 and February 2022. The intervention brought substantive innovations improving the didactic tools of the IEA/ONEE, through the "Aquatronics" and the Virtual Reality simulation tools.

The H2O Maghreb concept addressed an important gap in Morocco water and sanitation skills development market, featuring a strong demand for qualified potable water and sanitation technicians and the absence, by the time the project was designed (2016/17), of a quality offer of relevant training products.

The evaluation recognizes that by its start the project had few viable options to consider for implementation, in consideration of the relatively small financial envelop, the short initial timeline and the proposed PPDP approach.

C.2 The model reunites ideal conditions for training; The model designed by H2O Maghreb managed to gather optimal conditions supporting a high-quality training, including:

1. A very modern training infrastructure (the International Water Training Centre (IEA)), in Rabat, supported by state-of-the-art training equipment and excellent logistics. The Centre is equipped with several modern digitalized training platforms. IEA is considered one of the best (if not the best) specialized training infrastructure in Africa and the Middle East Region.
2. IEA core group of 10 senior trainers, a unique asset in Morocco in terms of expertise and didactic related to potable water and sanitation
3. A course designed through the project, structured in 23 modules, supported by training materials and an additional digital platform. The curriculum was accredited in the national system
4. 1 new laboratory fully equipped with small-scale equipment simulating the 4 phases of the potable water and sanitation cycle, supported by Aquatronics digital platform
5. 1 new laboratory equipped by the project with Virtual Reality equipment, including 10 Virtual Reality simulations related to water and sanitation operation and maintenance
6. Additional training benefitting the core group of IEA trainers, supporting use of the modules and the new equipment provided
7. One-month internships (Internship due to COVID restrictions was applied only to the first two promotions)
8. Training and logistics delivered 100% free of charge to all participants
9. A very tight selection of candidates, with up to 10 candidates for each available training position

C.3 The model featured very positive results for the 112 graduates, in terms of high participants' satisfaction, high employability rates and satisfactory employment outcomes; the model established as well a successful reputation and visibility across stakeholders in Morocco.

C.4 Satisfactory project delivery and performances; H2O Maghreb was supported by a proactive management, linking, coordinating and communicating effectively across partners. The

project adopted smart solutions to meet challenges of COVID restrictions. Key factors for a successful delivery were the strong level of ownership and commitment of the ONEE / IEA as national counterpart and the positive interactions across partners.

C.5 Sustainability was achieved for a number of outcomes; however, H2O Maghreb did not set conditions for sustainability, replication and upscaling of the training model. Sustainability was achieved for a number of outcomes, including a) strengthened capacities within IEA to support the Centre' mandate for continuous skills development of ONEE staff and sector professionals and b) a new training course with 23 flexible accredited modules that can be fully or in part transferred to other training institutions.

Efforts of transferring the modules are currently ongoing, although no evidence of outcomes is yet available. The utilisation of the modules by other training institutions or education establishment is unlikely to produce training outcomes comparable to the ones achieved by the project (see conclusion 3). It is very unlikely that the optimal training conditions established by the project for the pilot can be replicated outside the IEA training centre and without project support. The model established by H2O Maghreb is ending with the completion of the project and no new promotions are expected to be delivered. On the other side the modules are likely to be used in other training institutes, expanding benefits related to the module preparation

The absence of conditions for replicability are due to inadequate considerations of sustainability. H2O Maghreb formulation and implementation faced two strategic options:

a) To build new and strategic skills development products and capacities within the IEA Centre, aligned to ONEE / IEA institutional mandate
b) To design a new sustainable training course for water and sanitation technicians, aligned to mechanisms for vocational training in Morocco (with the numerous practical limitations that such an option would imply).

The project adopted a hybrid solution, designing a new course for Bac + 2 technicians (option b), within the IEA (option a), but without an institutional mandate of the centre to deliver such training and with the impossibility to pursue it after the end of the project.

Solutions tested out by the project were far too expensive and impossible to replicate outside the IEA.

The Centre's very specialized assets were effectively applied for the development of an innovative training pilot but are not put at their best use for the continued training of bac + 2 technicians.

IEA could provide leading services to Africa and MENA Region for water and sanitation skills development. Opportunities should be sought in the development of specific products, relevant to an international demand and positioned at a strategic level.

IEA already is providing support for skills development to Sub Sahara African and Middle East countries. Concerted efforts between the countries and technical and financial partners should help strengthening these efforts, establishing an international pole for water and sanitation sector skills development.

C.6 Opportunities for a more strategic approach and to contribution to an increased water efficiency and integrated water resources management. IWRM goals, a key priority emerging from the project document, were not actively pursued by design and implementation. Opportunities to intervene at a strategic level in water and sanitation skills development were available but these were not followed up by the project in consideration of its inadequate design, a very rudimentary need assessment and the choice to follow up a more "technical" approach" privileging the setup of "optimal" training conditions rather than a sustainable and replicable model, adapted to Morocco context.

The assessment of H2O Maghreb design and implementation calls as well for a reflection about the role of UNIDO in the context of its mandate as UN Agency responsible for inclusive and sustainable industrial development. The Organisation should consider whether to focus its role as one of project implementer, as, by and large, it held in the context of H2O Maghreb. Or whether, in line with the letter and the spirit of its mandate, it should raise its ambitions to a higher level, seeking a long-term development vision, a more strategic approach, opportunities of impacts at national and regional level, support sectoral strategies, engage in policy dialogue and contribute to sustainable solutions.

The technical approach targeting basic skills for a Bac + 2 level limited the project capacity to develop strategic products that could have generated a demand in other countries for training in Morocco. Opportunities for exporting skills development have been identified for i) specialized training for trainers, ii) Integrated planning and water management. The very visible model generated a certain interest in other Countries with opportunities to develop similar approaches. The project created, with the module on technical water training, a training that did not exist before. The main strength of this training model is that it relies on a well-thought curriculum.

Technology and digital contents offer as well opportunities for marketable products.

C.7 The model supports well inclusiveness, opportunities for women and environmental sustainability; opportunities for impacts are however modest; Also, the environmental impact on national water resources could have been increased significantly by a more strategic approach.

Overall impact opportunities have been significantly limited by i) sustainability shortcomings (see conclusion 5) and ii) the targeting of technical skills rather than more strategic issues (examples of more strategic options may have included: IWRM, planning skills for decision makers, training of trainers for different categories of skills, support to skills development at Regional and Municipal level)

C.8 The public – private partnership worked well and delivered value added for the technological content and the digitalization of the training; technological inputs and digitalization offer a well-appreciated dimension; however, these aspects are not considered an essential feature of the training; key strengths of H2O Maghreb training model rely on the Centre's equipment and infrastructure and on the outstanding senior trainers' quality and commitment.

C.9 Linkages with national private sector and with decentralized water and sanitation stakeholders have been limited and deserved to be considerably strengthened to reinforce contributions to project goals;

C.10 the project was not adequately supported by due diligence in project design and need assessment; Design and implementation would have benefitted of a more strategic guidance (at level of management and governance);

4.2 Recommendations

Recommendation 1
Support to water and sanitation skills development in Morocco needs to align to national strategies for the sector and vocational training mechanisms, including through the support to regional capacities and the creation of development poles

To serve this agenda the investment in skills development should complete the technician training for water and sanitation installations management with other needed training modules in IWRM: water demand and offer planning simulation tools, project conception and elaboration and project implementation. These training modules should target higher and more experimented profiles than the technician.

Recommendation 2
Private sector and regional stakeholders should be encouraged to strengthen its contribution to future partnerships for water and sanitation skills development

Recommendation 3
Sustainable solutions should be sought to optimize the stream of benefits after the end of the project

Although the training model designed within IEA cannot be replicated outside the centre with comparable mechanisms and results, the project should urgently identify practical solutions to allow stream of benefits to be maintained (and eventually expanded) after the end of the project. Options may include:

- Development of training products for IEA to support its institutional mandate of continuous training
- Organization of training of trainers' courses applying H2O concept and tools
- Continued outreach efforts for training centres and educational institutions to use the training modules and training materials developed with the contribution of the project
- Links IEA and ONEE with regional and municipal services providers, with training modules adjusted to H2O concept and tools

Sustainable solutions should be aligned with ongoing reform processes, supporting decentralization, building up of development poles and with the reform of vocational training in Morocco.

Recommendation 4
Positive work initiated by the project with internships and career support should be pursued and expanded

The evaluation evidences a number of aspects of the trainings deserving additional interest and support:

1. The evaluation evidences a strong demand for more time dedicated to practical work and site visits
2. Internship is a key priority for trainings
3. Additional demand of support to soft skills development, both at the beginning but also at the end of the training
4. Strengthening technical subjects (including environment and sustainable development).

4.3 Lessons learned

UNIDO development efforts should apply the highest standards and due diligence to project preparation, need assessment, attention to sustainability issues and impacts. When a new concept is tested, it is essential that design and implementation seek conditions for upscaling and replicability.

UNIDO should seek a comprehensive and longer-term development vision for the water and sanitation sector, supporting clever approaches and promoting opportunities of impacts at national and regional levels, engaging in policy dialogue and contributing to sustainable solutions.

ANNEX 1: EVALUATION TERMS OF REFERENCE

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent terminal evaluation of project

H2O Maghreb

UNIDO ID: 150259

11/2021

I. Project background and context

1. Project factsheet[58][59]

Project title	H2O Maghreb
UNIDO ID	150259
GEF Project ID	N.A.
Country(ies)	Morocco
Project donor(s)	USAID
Project approval date/GEF CEO endorsement date	28 April 2017
Planned project start date (as indicated in project document/or GEF CEO endorsement document)	28 April 2017
Actual project start date (First PAD issuance date)	9 June 2017 (as per UNIDO database)
Planned project completion date (as indicated in project document/or GEF CEO endorsement document)	27 April 2019
Actual project completion date (as indicated in UNIDO ERP system)	27 February 2022
Project duration (year): Planned: Actual:	 2 years 4 years and 10 months
GEF Focal Areas and Operational Programme	N.A.
Implementing agency(ies)	UNIDO
Government coordinating agency	Ministry of National Education, Vocational Training, Higher Education and Scientific Research Ministry of Equipment, Transport, Logistics and Water
Executing Partners	ONEE (National Electricity and Drinking Water Office) Festo Didactic EON Reality
Donor funding	• Initial budget: USD 1.4 million • Cost extension: USD 949,200 Total funding: USD 2,349,200
UNIDO input (in kind, USD)	N.A.
Co-financing at CEO Endorsement, as applicable	• Initial budget: USD 1,270,000 o Festo Didactic: USD 350,000 o Eon Reality: USD 520,000 o ONEE: 400,000 • Cost extension: USD 440,000 o ONEE: 440,000
Total project cost (USD), excluding support costs	• Initial budget: USD 2,508,938 (1,238,938 excluding in-king contributions) • Cost extension: USD 1,280,000 (840,000 excluding in-kind contributions) 3,788,938 (including in-kind contributions from partners) 2,078,938 (USAID only, excluding in-kind contributions)

[58] Data to be validated by the Consultant

Mid-term review date	N.A.
Planned terminal evaluation date	Q4 2021 – Q1 2022

(Source: Project document, UNIDO ERP system)

2. Project context

Morocco, like other countries in the Maghreb region, faces the challenge of developing and managing water resources in a sustainable way. Population growth, urbanization, and economic development make efficient and economic water management practices vital. The country's water resources are scarce, marked by wide geographical disparities and extremely dry weather conditions. Furthermore, Morocco's industrial production is growing. Therefore, the importance of applying sustainable water management practices is high. For example, Morocco's phosphate industry is planning to almost double its production between 2012 and 2020. Such industries may have negative environmental impacts, which can adversely affect the quality of surface and groundwater through the release of processing water, the erosion of sediments, and leaching of toxic minerals. Morocco has published a new legislation regarding discharge limits of industrial water (*Valeurs limites générales de rejet: VLGR and Valeurs limites spécifiques de rejet: VLSR*), which was planned to be effective in 2018. Yet, the industry has limited knowledge on how to comply with the new legislation.

In addition to industry demands, Morocco is a nation heavily dependent on agriculture, which is responsible for 19 % of the country's GDP. As a result, the water table in the Saiss Basin, for example, has plummeted, falling 70 m over the past 27 years, leading to ever deeper wells and less available water. Despite a shortage of supply, the demand for water has continued to rise, and farmers must compete with cities and industries for their water needs, as they are not given priority in accessing the limited water supply in the urbanized north part of the country. Water in Morocco is increasingly used domestically and by local industries, which affects agricultural enterprises. As domestic and industrial water usage is increasing, water gradually becomes scarcer for agricultural production and growth.

The concept of Integrated Water Resources Management (IWRM) has been discussed and applied in many countries since the 1920s. IWRM highlights that water should be treated in a systems manner taking into account all the user groups at the watershed level. Management decisions in the upstream/sector will influence water resources downstream/other sectors. While IWRM has been incorporated in water management policies in many countries, its practical and successful applications are scarce.

The proposed project aims to bring the concept of IWRM to a practical level, by developing a curriculum on "Aquatronics", which aims to combine different professions and specializations related to water and wastewater for civil and industrial (including agro-industrial) applications, thereby meeting the challenge of improving water access and treatment in a systems manner.
Virtual Reality (VR) applications can be useful to introduce professionals to new disciplines and technologies as well as to dangerous and difficult to reproduce situations. Festo Didactic and EON Reality have created a Virtual Reality Aquatronics training simulator that features several water and wastewater scenarios in which users interact with a virtual water treatment plant, operate machinery, and perform emergency procedures.

The H2O Maghreb project is the result of a Public Private Development Partnership established between USAID, the Moroccan government, ONEE's international water and sanitation training institute (IEA), Festo Didactic, Eon Reality and UNIDO to contribute to better water resource management in Morocco and the MENA region through skills development targeting new and existing water professionals. It was designed as a pilot with a two-year initial project implementation period that effectively started in April 2017.

A short no-cost extension to the project was granted by USAID in April 2019 until December 2019 in order to compensate for early delays in training launch and enable the project to fully meet its original targets. Based on the project's encouraging pilot results, USAID then granted the project a cost extension until April 2021, transforming it into a full-fledged 4-year project. The extension aimed to scale up project activities and step-up efforts to encourage the replication of the training model across Morocco, Africa and the Middle East. This also involved a new set of activities, such as the training of additional trainers or the establishment of a second training hub in Morocco. Due to the impact of the COVID-19 outbreak on the ability of the project to progress on some of the planned activities, a second no-cost extension was approved by USAID until February 2022.

3. Project objective and expected outcomes

The development objective of the proposed project is to improve industrial water management practices in Morocco and elsewhere in the Sub-Saharan Africa/MENA regions in an inclusive and sustainable way.
The project outcome is to **transfer improved water management knowledge and technologies, and thereby increase the employability of Moroccan existing and new water professionals with the appropriate and requisite training**.
The following **project outputs** have been developed, in addition to project management, to achieve the project objectives:

Output 1: Assessment of the current and future skills and employment needs in the water sector in Morocco.
Output 1 consist of a market assessment and training needs assessment to identify i) the exact number of students to be trained (including the proportion of male/female students) in order to address the future skills gaps in Morocco, ii) gaps or needs (including soft skills, such as team work) compared to existing curricula or trainings in the same domain; iii) education and/or experience requirements to be completed prior to Aquatronics training; iv) possible career paths for graduating students v) ideal duration of teaching programs, vi) equipment to be installed and, vii) companies (Moroccan and multinational) willing to hire interns and employees now and in the future.

Output 2: Aquatronics virtual reality demonstration and teaching hub established and functional
This component mainly includes i) the development of training curricula for new and existing water professionals on "Aquatronics", a new and innovative educational concept that combines different professions and specializations related to water and wastewater for civil and industrial applications ii) the training of ONEE trainers and the upgrading of training hubs with innovative didactic tools, iii) the delivery of training programs to young trainees and experienced water professionals.

Output 3: Outreach, advocacy and replication to other countries in the Sub-Saharan Africa/MENA regions

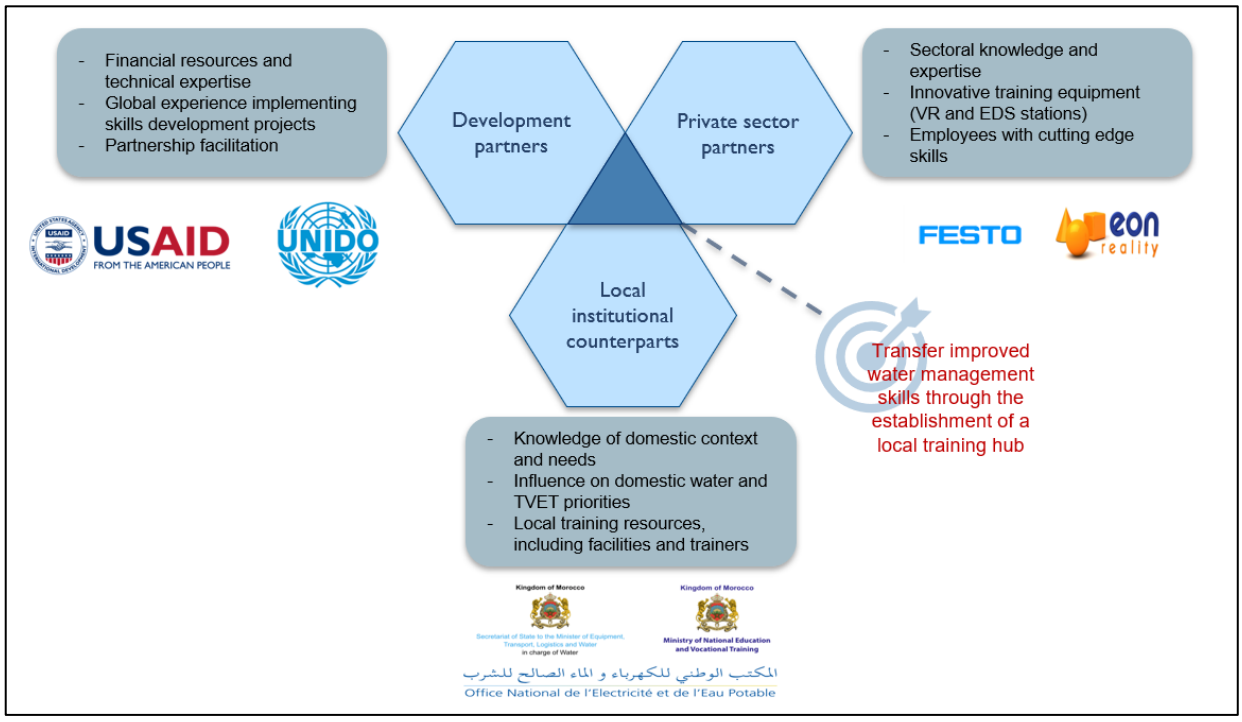
Implementation of outreach, advocacy and replication activities, includes presenting the Moroccan experience through yearly meetings (virtual or face-to-face) to other countries in the MENA/Sub-Saharan Africa regions and supporting the replication of the training approach in these regions.

The following table provides, in brief, some of the expected results of the project/programme. The distinction has been made between initial project targets, and updated targets following the cost extension.

Indicators	Initial project target	Updated cumulative target (cost extension)
# of Moroccan trainers trained for the delivery of the water-related training curriculum developed by H2O Maghreb	10	20
# of water training hubs established in Morocco with the support of H2O Maghreb	1	2
# innovations supported through the project, including virtual reality applications	12	12
# of young trainees and professionals who received training through the H2O Maghreb training hub	100	222
# of project documents (concept notes, project proposals) developed for the replication of H2O Maghreb in Morocco and other countries and shared with external stakeholders	1	5

4. Project implementation arrangements

The Public Private Development Partnership was identified as the appropriate model to source the necessary expertise and capabilities needed to implement such a project. The figure below illustrates the complementarity between the project partners' resources:



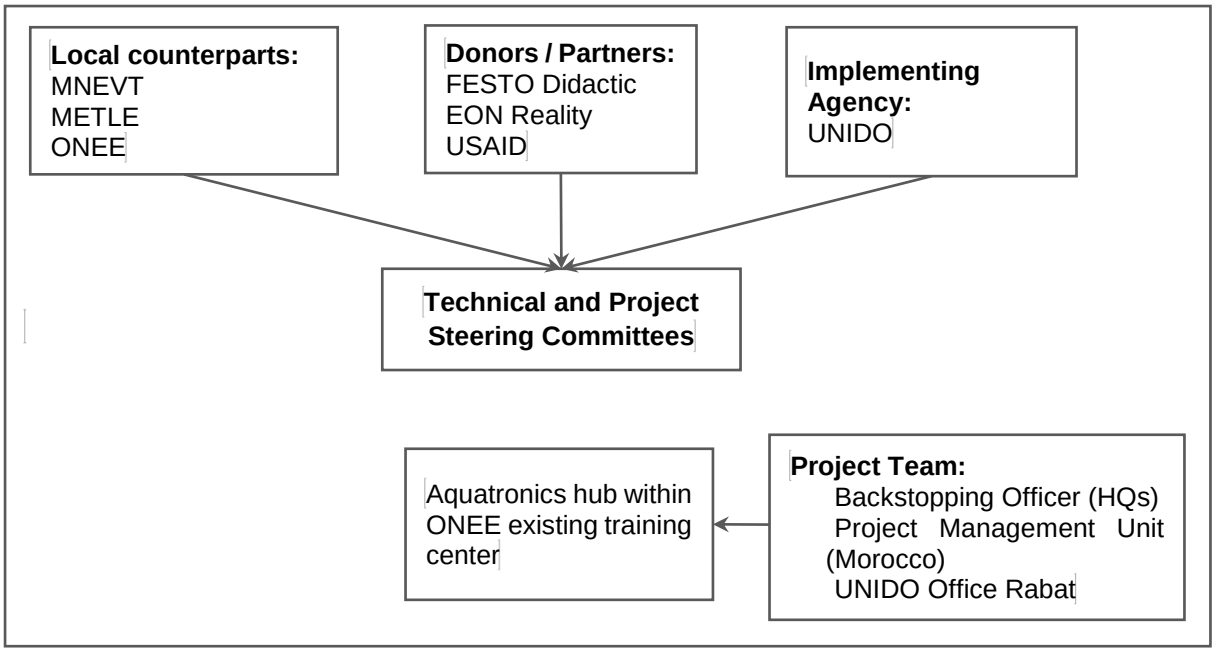
The roles and responsibilities assigned to the project partners are the following:

- **Local Partners - Ministry of National Education and Vocational Training and ONEE/Ministry of Equipment, Transport, Logistics and Water**: The Aquatronics demonstration and training hub will be established in close cooperation with the Government of Morocco relevant ministries and offices, in particular with the *Office National de l'Electricité et de l'Eau Potable* (ONEE). ONEE is the main counterpart and plays an important role as it has integrated the project into an existing ONEE wastewater treatment plant and training center. As part of the project, ONEE has been provided with Aquatronics equipment to run the H2O Maghreb curricula, and its trainers have undergone skills upgrading in technical and teaching proficiency. The

Ministry of National Education and Vocational Training and the Ministry of Equipment, Transport, Logistics and Water are responsible for making sure that the project curricula are aligned with Moroccan standards and priorities. The Ministries and ONEE ensure that all necessary inputs are provided to the project including all necessary infrastructure, space, training and managerial staff, cover the centre's operational costs, participate in the dissemination, awareness and communications efforts of the project, as well as in project follow-up, such as supporting the selection process of trainees and possible employment opportunities post-training.

- **Private Partners - FESTO Didactic and EON Reality**: FESTO Didactic is a world market leader in industrial education. FESTO Didactic engages in the development of the training curricula in cooperation with the local partners, and UNIDO. EON Reality is the world leader in Virtual and Augmented Reality ("VR") based knowledge transfer for industry, education, and edutainment. Together with FESTO Didactic, EON has developed a VR Aquatronics simulator that features several wastewater scenarios in which users interact with a virtual water treatment plant, operate machinery, and perform emergency procedures. Through the Aquatronics hub, the private sector partners have been able to test their new and innovative educational concept of Aquatronics and develop it further. The hub will serve as a model concept, thereby promoting possible replication of such training centres in the Maghreb and other African countries, especially in the MENA region.
- **International Development Partner - USAID**: In line with the USAID Morocco country strategy, as well as the Middle East Water Security Initiative (MWSI), USAID aimed to contribute to making water management practices in Morocco and elsewhere in the MENA region more sustainable by providing funding for this PPDP project. The financial resources provided by USAID have been significantly complemented by the private partners. In addition to the provision of funding, USAID has actively participated in project governance structure. USAID also contributes technically to the implementation and dissemination of this innovative project for youth employability and improved, sustained water management practices.
- **Implementing Development Partner - UNIDO**: UNIDO is a specialized agency of the United Nations. Its mandate is to promote inclusive and sustainable industrial development. This project aims to help introduce sustainable water management practices in Morocco. By placing a special emphasis on youth who are disproportionally affected by Morocco's high unemployment rates, the project seeks to contribute to making industrial development more inclusive. UNIDO is responsible for overall project management and for ensuring the smooth implementation of all project activities through funds received from project partners. In order to ensure that all partners are abreast of the latest project developments, UNIDO engages in regular project reporting. UNIDO has rich experience in the implementation of Technical and Vocational Education Training (TVET) projects and in water management through its cleaner production and resource efficiency unit where solutions for water efficiency have been developed for many stakeholders, for various conditions, and in different parts of the world.

The following diagram presents an overview of the project organizational structure:



5. Main findings of the Mid-term review (MTR)

N.A.

6. Budget information

Table 1. Financing plan summary - Outcome breakdown

Project outcomes/components	Donor (USAID) (US$)	Co-Financing (US$)	Total (US$)
Project Preparation	N/A	N/A	N/A
Outcome 1	2,349,500	1,710,000	4,059,200
Total (US$)	2,349,500	1,710,000	4,059,200

Source: Project document and cost extension documentation

Table 2. Co-Financing source breakdown

Name of Co-financier *(source)*	In-kind	Cash	Total Amount (US$)
ONEE	840,000		840,000
Festo Didactic	350,000		350,000
Eon Reality	520,000		520,000
Total Co-financing (US$)	1,710,000		1,710,000

Source: Project document and cost extension documentation

Table 3. UNIDO budget allocation and expenditure by budget line

Budget line	Items by budget line	Year 1	Year 2	Year 3	Year 4	Total expenditure (at completion)		Total allocation (at approval)	
						(USD/EUR)	%	(USD/EUR)	%
2100	Contractual Services								
4500	Equipment								
1500	Local travel								
1700	Nat. Consult./Staff								

Budget line	Items by budget line	Year 1	Year 2	Year 3	Year 4	Total expenditure (at completion)		Total allocation (at approval)	
						(USD/EUR)	%	(USD/EUR)	**%**
5100	Other Direct Costs								
4300	Premises								
1100	Staff & Intern Consultants								
300	Train/Fellowship/Study								
Total									

Source: Project document and UNIDO Project Management ERP database as of dd/mm/yyyy

Table 4. UNIDO budget allocation and expenditure by component

		Total allocation (at approval)		Total expenditure (at completion)	
#	Project components	USD/Euro	%	USD/Euro	%
1					
2					
3					
4					
5					
6					
7	Project management				
	Total				

Source: Project document and UNIDO Project Management ERP database as of dd/mm/yyyy

II. Scope and purpose of the evaluation

The terminal evaluation (TE) will cover the whole duration of the project from its starting date in 04/2017 to the estimated completion date in 02/2022 .Its purpose is to independently assess the project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability, coherence and impact.[60]

The TE has an additional purpose of drawing lessons and developing recommendations for UNIDO, the Government, Donors, and the programme stakeholders and partners that may help improving the selection, enhancing the design and implementation of similar future programme and activities in the country and on a global scale. The TE report should include examples of good practices for other projects in the focal area, country, or region.

The evaluation has two specific objectives:

(i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, coherence, and progress towards impact; and
(ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

[60] As per new DAC evaluation criteria: https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

III. Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy[61], UNEG Norms and Standards for Evaluation, the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[62], and the UNIDO Evaluation Manual.

The evaluation will be carried out as an independent in-depth exercise using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the process. The evaluation team leader will liaise with the UNIDO Independent Evaluation Unit (EIO/IEU) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach[63] and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will depict the causal and transformational pathways from project outputs to outcomes and longer-term impacts. It also identifies the drivers and barriers to achieving results. The learning from this analysis will be useful for the design of the future projects so that the management team can effectively use the theory of change to manage the project based on results.

1. Data collection methods

Following are the main instruments for data collection:

(a) **Desk and literature review** of documents related to the project, including but not limited to:
- The original project document, monitoring reports (such as progress and financial reports, mid-term review report, technical reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence).
- Notes from the meetings of committees involved in the project (project steering committee meetings).

(b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussions. Key stakeholders to be interviewed include:
- UNIDO Management and staff involved in the project; and
- Representatives of donors, counterparts and stakeholders.

(c) **Field visit** to the project site in Morocco if applicable and in line with COVID-19 restrictions[64]
- On-site observation of results achieved by the project, including interviews of actual and potential project beneficiaries.
- Interviews with the relevant UNIDO Country Office(s) representative to the extent that he/she was involved in the project, and the project's management members and the various national authorities dealing with project activities as necessary.

(d) **Online data collection** methods: will be used to the extent possible.

[61] UNIDO. (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)NEW POLICY ISSUED IN 2021

[62] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

[63] For more information on Theory of Change, please see chapter 3.4 of UNIDO Evaluation Manual

[64] Due to the global COVID-19 pandemic, the terminal evaluation will be conducted in line with measures announced by UNIDO and the Government of Morrocco. It will consider overall UNIDO guidance and rules responding to the global crisis, and prioritize the health and safety of all parties involved.

2. Evaluation key questions and criteria

The key evaluation questions are the following:

1) How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money? How well has the project fit?
2) What are the project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent will achieved results sustain after the completion of the project?
3) What are the key drivers and barriers to achieve the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
4) How well does the intervention fit? Is the project compatible and consistent with policies and/or other interventions in the country in the same context (coherence)?
5) What are the key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and how these risks may affect the continuation of results after the project ends?
6) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?
7) To what extent have recommendations from the Mid-Term Review been considered and implemented?

The table below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2 of UNIDO Evaluation Manual. https://www.unido.org/sites/default/files/files/2018-04/Evaluation%20Manual%20e-book.pdf#page=71

Table 5. Project evaluation criteria

#	Evaluation criteria	Mandatory rating
A	**Progress to impact**	**Yes**
B	**Project design**	**Yes**
1	• Overall design	Yes
2	• Logframe	Yes
C	**Project performance**	
1	• Relevance	Yes
2	• Effectiveness	Yes
3	• Coherence	Yes
4	• Efficiency	Yes
5	• Sustainability of benefits	Yes
D	**Cross-cutting performance criteria**	
1	• Gender mainstreaming	Yes
	• Environment and socio-economic aspects	
2	• M&E: ✓ M&E design ✓ M&E implementation	 Yes Yes
3	• Results-based Management (RBM)	Yes
E	**Performance of partners**	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Donor	Yes
F	**Overall assessment**	Yes

Performance of partners

The assessment of performance of partners will ***include*** the quality of implementation and execution of the project executing entities in discharging their expected roles and responsibilities. The assessment will take into account the following:

- Quality of Implementation, e.g. the extent to which the agency delivered effectively, with focus on elements that were controllable from the given implementing agency's perspective and how well risks were identified and managed.
- Quality of Execution, e.g. the appropriate use of funds, procurement and contracting of goods and services.

The following topics may also be covered as applicable:

The terminal evaluation will assess the following topics, for which ***ratings are not required***:

a. **Need for follow-up**: e.g. in instances financial mismanagement, unintended negative impacts or risks.
b. **Materialization of co-financing**: e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results.
c. **Environmental and Social Safeguards**[65]: appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

3. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Unit uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per table below.

Table 6. Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

[65] Refer to GEF/C.41/10/Rev.1 available at: http://www.thegef.org/sites/default/files/council-meetingdocuments/C.41.10.Rev_1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf

IV. Evaluation process

The evaluation will be conducted from 12/2021 to 02/2022. The evaluation will be implemented in five phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

1) Inception phase: after a comprehensive desk review of existing documentation and related data analysis the evaluation team will prepare the inception report providing details on the evaluation methodology and include an evaluation matrix with specific issues for the evaluation to address; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
2) Interviews, surveys and further documents and literature review as required; site visits (if applicable) and interviews of key relevant stakeholders in the field (either virtually or through actual field visits as circumstances demand and allow);
3) Preparation of the a full draft evaluation report.
4) Review of the draft report by EIO/IED and by the substantive project manager for factual validation. ; and
5) Final report issuance and distribution with management response sheet, and publication of the final evaluation report in UNIDO website.

V. Time schedule and deliverables

The evaluation is scheduled to take place from 12/2021 to 02/2022. The evaluation field mission is tentatively planned for 01/2022. At the end of the field mission, the evaluation team will present the preliminary findings for key relevant stakeholders involved in this project in the country. The tentative timelines are provided in the table below.
After the evaluation field mission, the evaluation team leader will visit UNIDO Headquarters for debriefing and presentation of the preliminary findings of the terminal evaluation. Online presentation will be arranged in case the visit cannot take place. The draft TE report will be submitted 4 to 5 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO Project Manager (PM), UNIDO's Independent Evaluation Unit, the project donor and other stakeholders for comments. The ET leader is expected to revise the draft TE report based on the comments received, edit the language and submit the final version of the TE report in accordance with UNIDO ODG/EIO/EID standards.

Table 7. Tentative timelines

Timelines	**Tasks**
1-18 December 2021	Desk review and writing of inception report
10 December 2021	Online briefing with UNIDO Evaluation Manager and Project Manager based in Vienna.
18 December 2021	Submission of the inception report
3 – 15 January 2022	Field visit to Morocco and presentation of preliminary findings to project stakeholders
17 January 2022 18 January – 18 February 2022	Debriefing in Vienna Preparation of first draft evaluation report
21 February 2022	First draft evaluation report shared with UNIDO Project Manager & Evaluation Manager, and project partners
21 – 25 February 2022	Internal peer review of the report by UNIDO's Independent Evaluation Unit and other stakeholders
4 March 2022	Final evaluation report based on comments from project stakeholders
By 11 March 2022	Validation of the final report by UNIDO

VI. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national (Moroccan) evaluation consultant. A national or international subject matter expert specialized in water resources management will also be part of the evaluation team. The evaluation team members will possess a mixed skill set and experience including evaluation, relevant technical expertise, social and environmental safeguards and gender. The three consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference. According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.
An evaluation manager from UNIDO's Independent Evaluation Unit will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and the project management team in Morocco will support the evaluation team and the evaluation manager.

VII. Reporting

Inception report

These Terms of Reference (ToR) provide some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the team members, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager. The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework ("evaluation matrix"); division of work between the evaluation team members; field mission plan, including places to be visited, people to be interviewed (if applicable) and possible surveys to be conducted and a debriefing and reporting timetable[66].

Evaluation report format and review procedures

The draft report will be delivered to UNIDO's Independent Evaluation Unit (with a suggested report outline) and circulated to UNIDO staff and key stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report will be sent to UNIDO's Independent Evaluation Unit for collation and onward transmission to the evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit (or remotely in case no field mission could be undertaken) and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ afterwards.

The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way

[66] The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by UNIDO Independent Evaluation Unit.

that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English, including an executive summary in French and follow the outline given by UNIDO's Independent Evaluation Unit.

VIII. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO's Independent Evaluation Unit. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO's Independent Evaluation Unit, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Unit).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO's Independent Evaluation Unit should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO's Independent Evaluation Unit, which will submit the final report to the donor and circulate it within UNIDO together with a management response

ANNEX 2: EVALUATION FRAMEWORK

Key evaluation questions and sub-questions	Data Collection tools
EQ 1 - RELEVANCE To what extent the intervention is relevant to Government priorities and to water sector key stakeholders? Is the project coherent with policies and/or other interventions in Morocco? To what extent the intervention is coherent to USAID cooperation priorities and in line with UNIDO mandate?	
1.1 To what extent H2O project is relevant to National policies and priorities for water management??	• Interviews UNIDO Project Team (Rabat, Vienna) and Representative in Rabat • Interviews to national counterpart and institutions in Morocco • Review of national legislative framework • Analysis of project document and formulation studies
1.2 To what extent the IWRM, the PPP training approach and the pedagogical tools applied by the project are relevant to local needs relevant to the needs of beneficiaries, participating institutions, local administrations and the private sector? *In general, the relevance to beneficiaries will be assessed against the demand for IWRM skills*	• Focus group with Hub staff • Interviews with trainers (Focus Group Discussion and individual interviews) • Interviews with trainees (Focus group and individual interviews) (quantitative questionnaires) • Interviews with the Project Team • Interviews with partners and institutions • Interviews with ONEE, water institutions, local administrations, and other stakeholders interested in IWRM • Interviews with private sector stakeholders • Analysis of project formulation document and Output 1, with specification of national demand • Review of existing data on national demand for water and sanitation sector skills
1.3 To what extent the project is supported by effective strategic choices and quality of design?	• Assessment of design

Key evaluation questions and sub-questions	Data Collection tools
	• SWOT analysis applied to key strategic choices • Interviews with USAID, UNIDO, ONEE and partners
1.4 To what extent was the programme relevant to UNIDO's mandate?	• Interviews with UNIDO staff (Vienna and Rabat – UNIDO Representative) • Review of UNIDO priorities and policy statements and coherence check
1.5 How well the project aligns with related regional and international initiatives supporting tools for IRWM skills development?	• Interviews with partners and institutions (Morocco, other Countries in MENA region) • Review of ongoing initiatives • Interviews to businesses • Interviews with UNIDO project staff
EQ 2 - EFFICIENCY To what extent the project performed satisfactorily and was managed efficiently? Did the project offer good value for money?	
2.1 To what extent was the project efficiently implemented, in line with its plans and budget?	• Review of progress reports (both technical and financial) and monitoring system on output delivery • Review of Steering Committee minutes and guidance notes • Focus group interview (Training Hub) • Interviews with key stakeholders (including detailed interviews with UNIDO management staff Value for Money will be seized with the following approach a) stakeholders' perceptions (interview question) and b) CBA (cost benefit analysis): definition of ratios for key deliverables and outcomes • • Interviews with ONEE and Private Sector Partners *(the assessment of EQ 2 will attempt to benchmark of some efficiency indicators (trainees number by trainer ; working*
2.2 Was the project supported by adequate management, with focus on results and appropriate definition of roles, responsibilities and accountabilities?	
2.3 Did national institutions establish adequate ownership and commitment, with provision adequate political, technical and administrative support?	
2.4 Was the Project supported by adequate monitoring and lesson learning tools?	
2.5 Were adequate governance, coordination and consultation mechanisms established ?	
2.6 Did the intervention provide good value for money?	

Key evaluation questions and sub-questions	Data Collection tools
	time by trainer ; cost by trainees ; inputs costs by trainee) in regards of other vocational training centers in Morocco
3 EFFECTIVENESS To what extent the project H2O Maghreb contributed to its goal of improved IWRM skills development training in an inclusive and sustainable way?	
3.1 To what extent the assessment of current and future skills and job needs in the Moroccan water sector supported the organization of a relevant and effective trainings?	• Document review • Questionnaire and survey applied to 50 trainees • Expert assessment of training (content, quality of materials and equipment) • Beneficiary satisfaction and perception of trainings • Site visits • Workshop at Hub (including with trainers and trainees) • Interviews with private sector partners, UNIDO, ONEE • Possibly interviews with other Centers for skills development for water management • Focus group with women beneficiaries of training • Detailed analysis of activities of advocacy and outreach
3.2 To what extent the project established a functional center for water skills training?	
3.3 To what extent activities of outreach advocacy have increased awareness and demand for IWRM training in Morocco and in other countries in the Maghreb/MENA region?	
3.4 To what extent H2O Maghreb supported, through design and implementation, gender empowerment, inclusiveness and a sustainable management of natural resources?	
EQ 4 PROGRESS TO IMPACTS AND OPPORTUNITIES FOR UPSCALING To what extent the project H2O Maghreb contributed to long term goals of improved industrial and municipal water management practices in Morocco and in the Maghreb/MENA region in an inclusive and sustainable way?	
4.1 To what extent the project contributed (or provided opportunities for future contribution) to expected goals of improving industrial and municipal water management practices in the Maghreb/MENA region (and sub-Saharan Countries) in an inclusive and sustainable way?	• Interviews to private and public sector potential employers • Interviews to key stakeholders, including trainees • Interviews with key national institutions • Questionnaire and survey applied to 50 trainees
4.2 To what extent has the project established the necessary conditions for increasing the employability of the trainees?	
4.3 To what extent has H2O contributed to develop a "skills development" model replicable in other Countries?	

Key evaluation questions and sub-questions	Data Collection tools
4.4 Did the Project contribute to additional impacts, positive or negative?	• Workshop in Training Hub *(note – the hypothesis of a workshop at the Training Academy will be confirmed following the first week of field work)*
4.5 To what extent the project helped to put in place conditions to address drivers and overcome barriers to achieve its long-term objectives?	
EQ 5 SUSTAINABILITY To what extent H2O Maghreb outputs and outcomes are likely to be sustained in the long term?	
5.1 To what extent sustainable mechanisms are in place (including market demand, institutional set up, policy and legislative framework, financial mechanisms and socio cultural environment) for trainings to be continued after the end of external support?	• Evaluation Team assessment of sustainability arrangements and business plan • Review of preparatory documents and progress reports • Interview with key stakeholders • Review of budgetary allocations for follow up years • Assessment of market demand and willingness to use the training • Institutional and organizational arrangements by the training Hub
6.2 What are key factors that may affect (negatively or positively) the sustainability of the project's results?	
EQ 6 PERFORMANCE OF PARTNERS To what extent Project Partners contributed were committed and contributed to a positive achievement of the intervention?	
6.1 To what extent UNIDO, USAID Private Partners and ONEE were committed to the successful implementation of the intervention, providing value added and building synergies across partners	• Interviews with UNIDO staff • Interviews with Private Sector Partners • Interviews with USAID • Interviews with ONEE • Review of project reports • Interviews with private and public sector stakeholders
6.2 To what extent UNIDO, USAID Private Partners and ONEE provided value added and built synergies across partners	

ANNEX 3: LIST OF DOCUMENTATION REVIEWED

Project reports

1. Semi-Annual performance report, Project H2O Maghreb, October 2017
2. Semi-Annual performance report, Project H2O Maghreb, Abril 2018
3. Semi-Annual performance report, Project H2O Maghreb, October 2018
4. Semi-Annual performance report, Project H2O Maghreb, Abril 2019
5. Semi-Annual performance report, Project H2O Maghreb, October 2019
6. Semi-Annual performance report, Project H2O Maghreb, Abril 2020
7. Semi-Annual performance report, Project H2O Maghreb, Abril 2021

Project monitoring studies

8. H2O Maghreb – Baseline-Endline comparison and end line analysis
9. H2O Maghreb – Baseline analysis
10. H2O Maghreb - Rapport d'analyse - Enquête des recruteurs H2O Maghreb Novembre 2020
11. H2O Maghreb Updated Monitoring, Evaluation and Learning Plan, (MELP), September 2021
12. H2O Maghreb Enquête de satisfaction H2O Maghreb, Promotion 1, Mai 2019
13. H2O Maghreb Enquête de satisfaction H2O Maghreb, Promotion 2, 2020
14. H2O Maghreb Enquête de satisfaction H2O Maghreb, Promotion 3, 2020
15. H2O Maghreb Rapport d'enquête sur les dispositifs de formation à distance mis en place par H2O Maghreb – Promotion 4, Septembre 2021

Training manuals

16. Formation qualifiante - brochure UNIDO - H2O Maghreb
17. Manuel de formation, ressources en eau,
18. Manuel de formation, reseaux et ouvrages d'assiainisssement et caracterisation des eaux usées
19. Manuel de formation, Fonction exploitation analytique
20. Manuel de formation, Fonction de maintenance

Steering Committee minutes

21. Réunion du Comité de Pilotage Projet H2O Maghreb, 11 juillet 2017, Rabat Compte-rendu
22. Réunion du Comité de Pilotage Projet H2O Maghreb, 8 Février 2018, Rabat Compte-rendu
23. Réunion du Comité de Pilotage Projet H2O Maghreb, 2 Octobre 2018, Rabat Compte-rendu
24. Réunion du Comité de Pilotage Projet H2O Maghreb, 3 Mars 2029, Rabat Compte-rendu
25. Réunion du Comité de Pilotage Projet H2O Maghreb, 4 Décembre 2019, Rabat Compte-rendu

Contractual documents

26. H2O Maghreb Project Document
27. H2O Maghreb - Request for project extension 16 September 2021
28. Grant No. AID-608-IO-17-00001, Request for incremental funding and no-cost extension until 27 February 2022, Explanatory note

Examples of international replication documents

29. OFID Grant Application Burkina Faso_Nov 2020
30. Format grant application 2020 H2O Uganda
31. Concept Note H2O Sierra Leone
32. La gouvernance par la gestion integrée des ressources en eau au Maroc, levier fondamental de développement durable, Auto-saisine AS n° 15 / 2014 , Avis du Conseil Economique, Social et envirennemental

Literature on IWRM and Virtual reality training

33. A Review on Virtual Reality Skill Training Applications, Frontiers in Virtual reality, April 2021
34. Lessons from Integrated Water Resources Management in Practice, Policy brief 9, Global Water Partnership

ANNEX 4: STAKEHOLDERS' LIST

Partners	Name	Function
USAID	Salma Kadiri	H2O Project, Officer in charge
UNIDO	Max Pierotti	Chef de Projet
	Lya Ajenjo	Responsible suivi éValuation
	Virpi Stucki	Spécialiste IWRM – UNIDO HQ
	Ulrike Bletterie	Responsible étude de durabilité
	Chaimae Agusoul	Responsible suivi inertion professionnelle
	Stavros Papastavrou	Coordinateur Projet
	Johannes Dobinger	Evaluation Department
	Simone La Rosa Monier	Evaluation Department
Festo Didactic	Imani, Nader Iman	
EON Reality	Mikael Jacobsson	
ONEE/ EIA	Othmane Aziz Drissi	
	Abderrafi Mardi	
	Hassane Mbitel	
	Hassane El Hadiri	Senior Trainer, Coordinator trainers
DFP	Mme Laila El Rhilassi	
	Nasry Assia	Chef Service sectuer primaire et secondaire
Université, Politechnique Mohammed 6	Nabil Mosleh	
Private Sector / Régies eau		
SINPEC,	Mme Mounia ALizbar	Responsible DRH
LIDEC		
	Mme Lachquer Latifa	Responsible DRH

Liste de participation au focus-group Apprenants IAE / ONEE-BO du 21 février 2022	
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Liste de participation au focus-group Formateurs IEA/ONEE-BO du 21 février 2022				
Nom et prénom	Fonction	Spécialité	Email	Téléphone
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Lagrani Saadia	Formatrice	Assainissement	slagrini@onee.ma	0671907461
Laknizi Sami	Formateur	maintenance	slaknizi@onee.ma	0674170748
Benrahmane Loubna	Formatrice	Assainissement	lbenrahmane@onee.ma	0660323484
Lazrek Abderrazzaq	Formateur	Eau Potable	alazrek@onee.ma	0616408364
Bouftiha Mohamed	Formateur	Eau Potable	mbouftiha@onee.ma	0671956660
Oumezdi badr	Formateur	Eau Potable	boumezdi@onee.ma	0662242496

ANNEX 5: PROJECT LOGICAL FRAMEWORK

Narrative Summary	Indicators	Targets	Means of Verification	Assumptions/Risks
Development Objective: To improve industrial water management practices in Morocco and elsewhere in the Maghreb/MENA region in an inclusive and sustainable way.	• Improvement in waste water related indicators (e.g. UN-Water Task Force on Indicators, Monitoring and Reporting, USAID water indicators).		• Selected waste water-related indicators in 2017 versus 2019.	• Private and public sector actors working on industrial water management are willing and able to implement improved water management practices.
Outcome: To transfer improved water management knowledge and technologies with the appropriate and requisite training.	• Number of people educated on tools, approaches, and/or methods for water security, integrated water resource management, and/or water source protection	• 65% of students enrolled in aquatronics graduate	• Aquatronics hub records, data collected	• The Ministry of National Education and Vocational Training is committed to supporting the initiative.
Outputs: 1. Assessment of future skills and job needs in the Moroccan water sector	• Market assessment/training needs assessment carried out	• 1 Market assessment/training needs assessment	• Report	• Sector-specific information on job and skills needs is widely missing.
2. Aquatronics virtual reality demonstration and teaching hub established and functional	• Number of action plans (Morocco specific syllabi out of the existing curricula on Aquatronics) implemented for water security, integrated water resource management, and/or water source protection	• Curricula and syllabi in Aquatronics developed	• Curricula, syllabi and supporting learning aids • Enrolment and attendance lists	• The programme receives enough applications from students who fulfil the application criteria to be able to train 10 trainers and 100 beneficiaries • The Ministry of National Education and Vocational

Narrative Summary	Indicators	Targets	Means of Verification	Assumptions/Risks
	• # trainers trained on the new curriculum • # beneficiaries trained on the new curriculum • # hubs established	• 10 trainers and 100 beneficiaries, 50/50 female/male representation[67] • 1 hub established[68]	• Progress reports, pictures	Training/ Ministry of Energy, Mines, Water and Environment /ONEE support the initiative and host the hub within an existing center.
3. Outreach, advocacy, and replication including participation in the LKD Facility	• # meetings/events organized to showcase the Aquatronics virtual reality training approach • # cases of replication of best practices elsewhere	• 2 meetings/events (virtual or face-to-face) conducted with minimum of 25 participants in each meeting/event[69] • 1 in Morocco with the possibility to train and enhance the employability of Moroccan youth [70]	• Progress reports • A project document to establish a demonstration lab elsewhere	• The concept of Aquatronics and VR application is deemed useful in Morocco and elsewhere in the Maghreb/MENA region

[67] Amended to 20 Moroccan trainers and 222 beneficiaries through the project cost extension
[68] Amended to 2 training hubs in Morocco through the project cost extension
[69] Amended to 4 Community of Practice meetings and 4 webinars during project implementation and through the project cost extension
[70] Amended to 5 concept notes or proposals for replication in Sub-Sahara African and MENA through the cost extension

ANNEX 6: ÉVALUATION TERMINALE DU PROJET H2O

Enquête près des lauréats et des apprenants

a) Questionnaires

b) Rapport

c) Graphiques

ANNEX 6.1: QUESTIONNAIRE D'ENQUETE PRES DES LAUREATS ET DES APPRENANTS

Date
Enquêteur
Formulaire N ____

M. / Mme
Age
Célibataire / Marié
Nombre d'enfants
Promotion
Téléphone

1. **Quelle est votre situation de travail?**
   a. Travail formel
   b. Travail informel
   c. Auto employé / Travail de famille
   d. En formation
   e. Pas de travail

e) Pas de travail

D1 Pas de travail - en recherche ou pas en recherche

D2 Est que vous avez confiance que la formation vous permettra de trouver du travail dans le court terme?

D3 Expliquez pourquoi vous n'avez pas rencontré du travail

2. **Dans quelle mesure vous estimé que la formation H2O vous permets des meilleures chances d'obtenir un emploi (**ou une meilleure situation dans le cadre de vos services) ?
   Fort *Moyen* *Faible* *Pas du tout*

Commentaires:

3. **Dans quelle mesure la formation vous a permis une meilleure rémunération ?**
   Fort *Moyen* *Faible* *Pas du tout*

Commentaires:

4. **Niveau de rémunération obtenu** (valeurs en Dirhams)

	0-3,000	3,000-4,500	4,500-6,500	6,500-10,000	Plus de 10,000
Avant formation					
Après					

5. **Dans quelle mesure le sujet de la formation a répondu à vos attentes ?**
   Beaucoup *Moyen* *Faible* *Pas du tout*

6. **Dans quelle mesure le sujet de la formation est appliqué dans votre travail ?**

Beaucoup *Moyen* *Faible* *Pas du tout*

Exemples :

7. **Dans quelle mesure cette formation vous permet de meilleures performances dans votre travail?**

Beaucoup *Moyen* *Faible* *Pas du tout*

Exemples :

8. **Dans quelle mesure l'outil de Réalité Virtuelle a contribué à la qualité de la formation?**

Fort *Moyen* *Faible* *Pas du tout*

Commentaires:

9. **Dans quelle mesure l'équipement facilité par le projet a contribué à la qualité de la formation?**

Beaucoup *Moyen* *Faible* *Pas du tout*

Commentaires:

10. **Décrivez trois points forts de la formation :**

1 - _____

2 - _____

3 - _____

11. **Décrivez trois points faibles**

1 - _____

2 - _____

3 - _____

12. **Recommandations pour des futures formations / futur projet**

1 - _____

2 - _____

3 - _____

ANNEX 6.2: ENQUETE PRES DES LAUREATS (PROMOTION 4) DU PROJET H2O MAGHREB

Analyse et recommandations

Pour une majorité, cette formation a permis aux participants de développer le côté opérationnel de leur profil professionnel, ce qui a aidé certains à obtenir un emploi dans l'immédiat.
100 % des apprenants ont apprécié la formation qui a répondu à leurs attentes.

La qualité des travaux pratiques est excellente : « La richesse de cet apprentissage avait plus de valeur que 5 ans académiques. »

Néanmoins, plus de temps est recommandé pour les modules de travaux pratiques (TP), ainsi que la vérification individuelle des prérequis nécessaires.

Les TP de l'outil réalité virtuelle devraient être fait en milieu de programme et pas à la fin de la formation, car elles ont été finalement raccourcies dû au manque de temps.

Un enrichissement du contenu des modules concernant le dimensionnement des réseaux, la maintenance et l'impact sur l'environnement est très demandé.

Il est souhaitable de développer un programme de partenariat avec des entreprises pour un stage ou une proposition d'embauche après la formation.

La formation devrait être reportée à une date ultérieure en cas de résurgence de Covid et le distanciel est à éviter car il n'est absolument pas adapté à ce type de formations basées sur la pratique.

D'après certains candidats, les modalités de recrutement de certains recruteurs publiques ou semi-publiques écartent leur profil d'emblée et refusent certaines formations non techniques, malgré que le candidat possède un Master et la complétion de la formation.

La majorité des apprenants a estimé que le module « soft-skills » était suffisant. Pour certains, il a permis la réussite de l'entretien d'embauche.
Néanmoins, il serait opportun de développer d'autres sujets :

- Techniques de communication,
- Leadership
- Le travail en équipe pour un levier de performance
- Préparation aux entretiens
- La confiance en soi
- SWOT ANALYSIS appliqué au développement personnel.

Une initiation concernant les applications professionnelles AUTOCAD, COVADIS serait un atout considérable.

100% des apprenants sont jeunes et célibataires, avec une moyenne d'âge de 23 ans (minimum 21, maximum 25 ans).

Nous remarquons que plus de 63% des apprenants sont originaires de la région Rabat-Salé-Kénitra - à proximité donc immédiate du centre de formation actuel. Il serait opportun de répliquer

la formation dans d'autre régions via d'autres partenaires afin de la vulgariser sur l'ensemble du territoire national.

La formation est uniquement connue au sein du cercle universitaire, presque 100% des participants en ont eu connaissance via les anciens lauréats de Maghreb H2O. Il serait judicieux utiliser d'autres moyens marketing pour toucher plus de prospects.

Seulement 18.18 % sont employés. Ceux-là perçoivent un salaire situé entre 4.500 et 6.500 Dhs. Le fait d'être déjà employé ou poursuivant des études (master ou doctorat) implique que seulement 59% sont en situation de recherche active d'emploi.

Les 3 points forts de la formation :

- Les formateurs sont appréciés à l'unanimité du fait de leur disponibilité, compétence et pédagogie.
- Le contenu des travaux pratiques est très complet et très utile.
- Les visites des sites extérieurs (Khemisset et Ifrane, etc) étaient très enrichissantes. Certains apprenants ont souhaité l'organisation de visites similaires des sites d'épuration dans les pays de l'UE

Les 3 points faibles de la formation :

Il n'y a pas, à proprement dire, de faiblesses dans la formation, ce ne sont que des soucis satellites :

- Faible couverture wifi.
- Qualité de la restauration sur place.
- L'inadaptation de la formation à l'enseignement en distanciel

La majorité des participants a souligné que la tablette électronique n'a pas été fournie durant la formation.

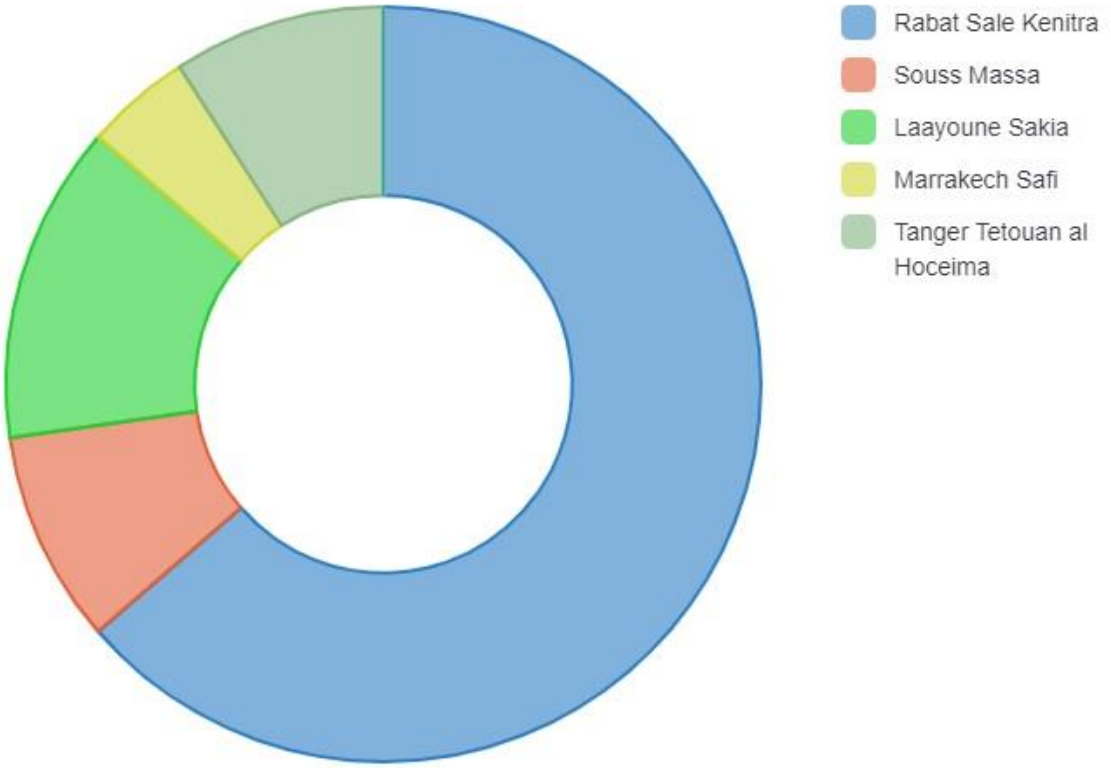
Plus de 80% des apprenants sont prêts à payer pour cette formation, soit 8.600 dhs en moyenne avec un maximum de 25.000 dhs.

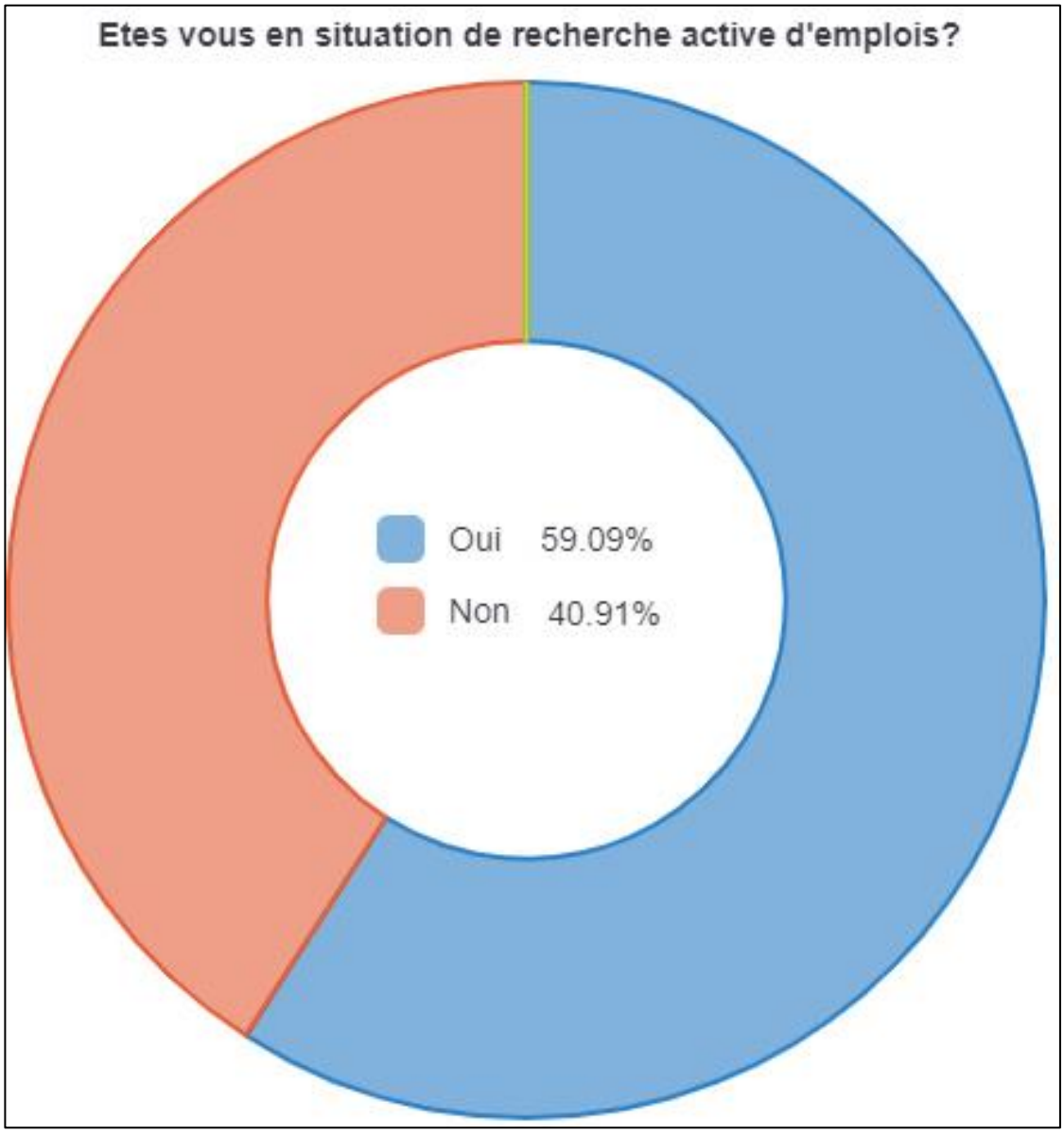
Les raisons ou difficultés qui ont empêché les apprenants de trouver un travail sont essentiellement dues à des facteurs externes :

- La pandémie Covid
- Secteur difficile
- Le gel des recrutements
- Aucune réponse des recruteurs
- 28% n'ont trouvé aucune difficulté

ANNEX 6.3: GRAPHIQUES

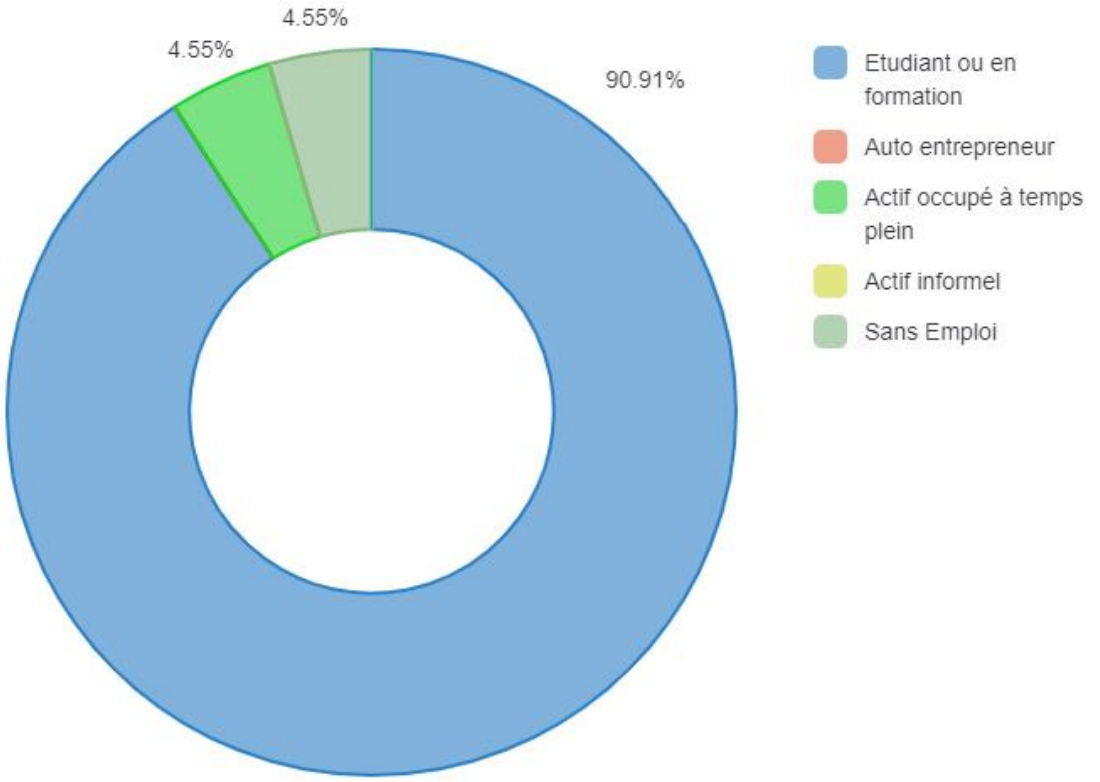
Region d'origine		
Réponse	**Décompte**	**Pourcentage brut**
Rabat Sale Kenitra	14	63.64%
Souss Massa	2	9.09%
Laayoune Sakia	3	13.64%
Marrakech Safi	1	4.55%
Tanger Tetouan al Hoceima	2	9.09%
Total(brut)	**22**	**100.00%**




Etes vous en situation de recherche active d'emplois?
Oui 59.09%
Non 40.91%

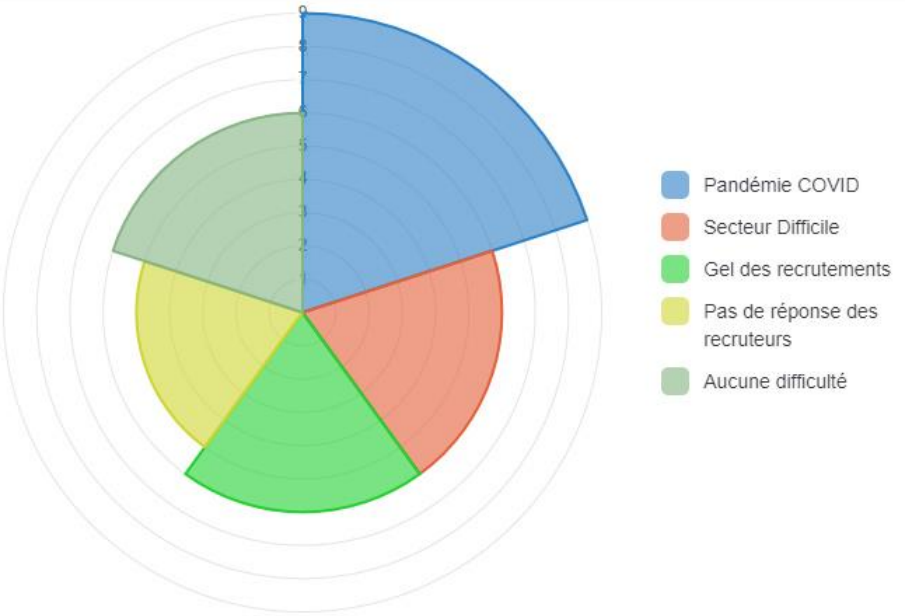
Situation d'activité avant la formation

Réponse	Décompte	Pourcentage brut
Etudiant ou en formation (A1)	20	90.91%
Auto entrepreneur (A2)	0	0.00%
Actif occupé à temps plein (A3)	1	4.55%
Actif informel (A4)	0	0.00%
Sans Emploi (A5)	1	4.55%
Total(brut)	**22**	**100.00%**

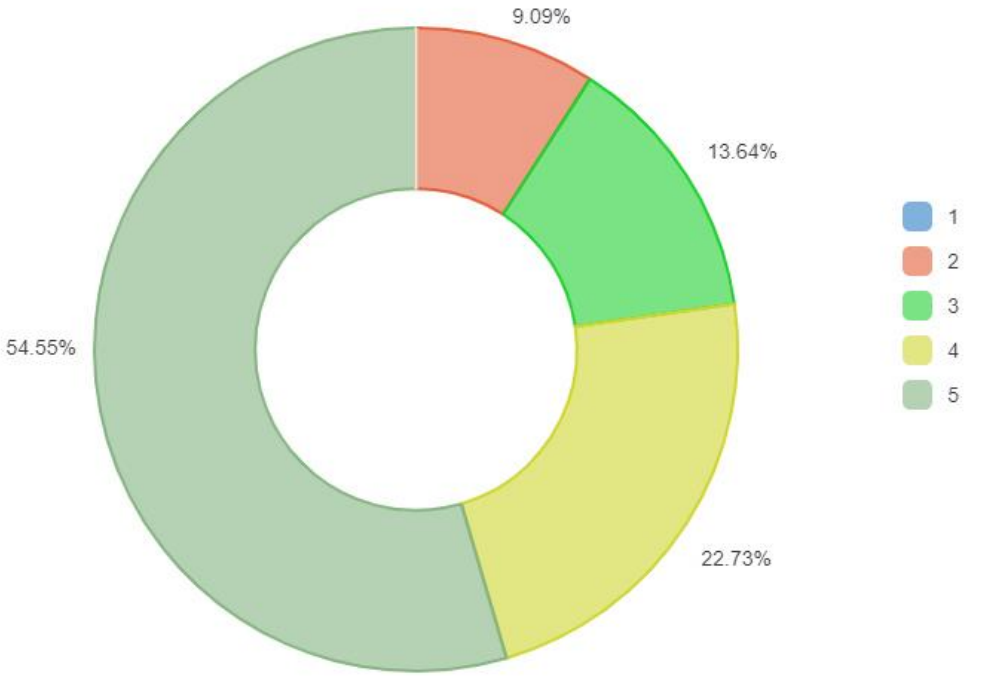


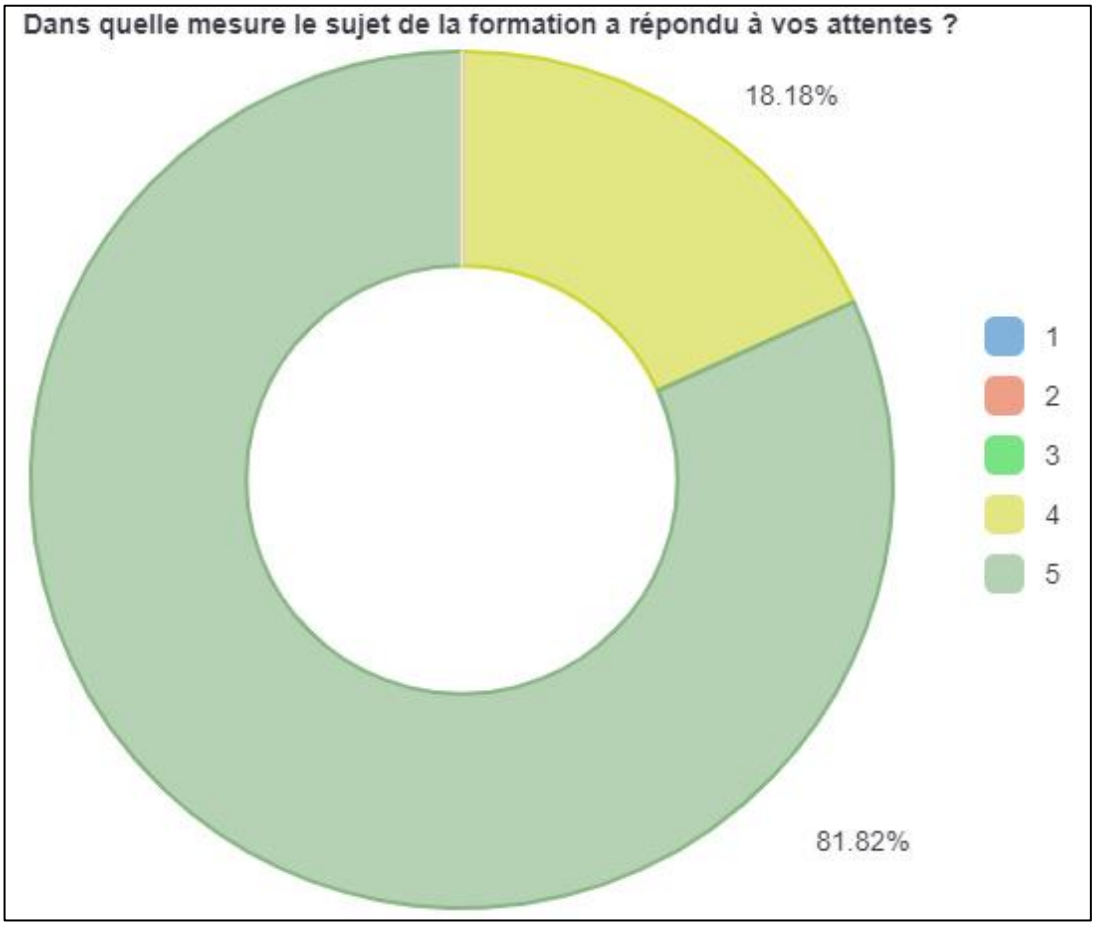
les raisons ou difficultés qui vous ont empeché de trouver du travail

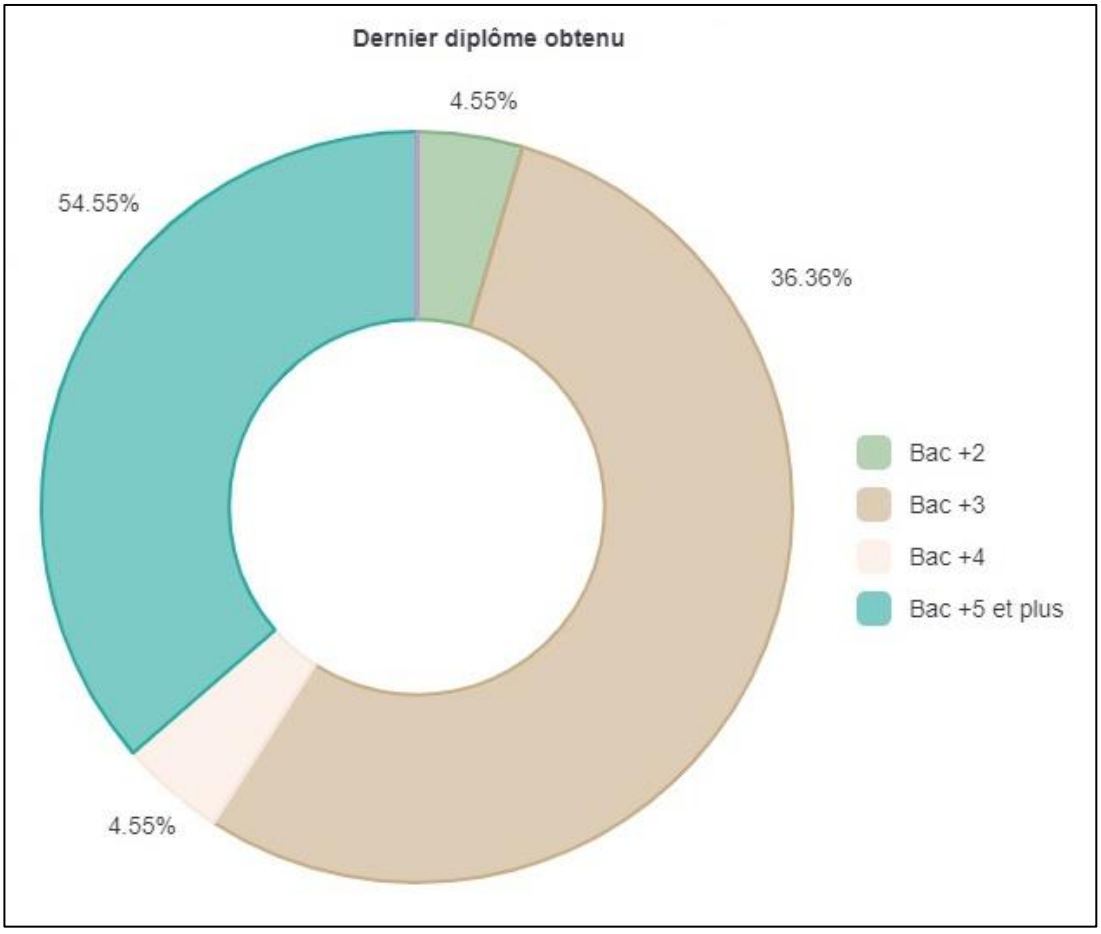
Réponse	Décompte	Pourcentage brut
Pandémie COVID	9	40.91%
Secteur Difficile	6	27.27%
Gel des recrutements	6	27.27%
Pas de réponse des recruteurs	5	22.73%
Aucune difficulté	6	27.27%
Total(brut)	**32**	**100.00%**



Dans quelle mesure le sujet de la formation est appliqué dans votre travail ou étude actuel ou future?

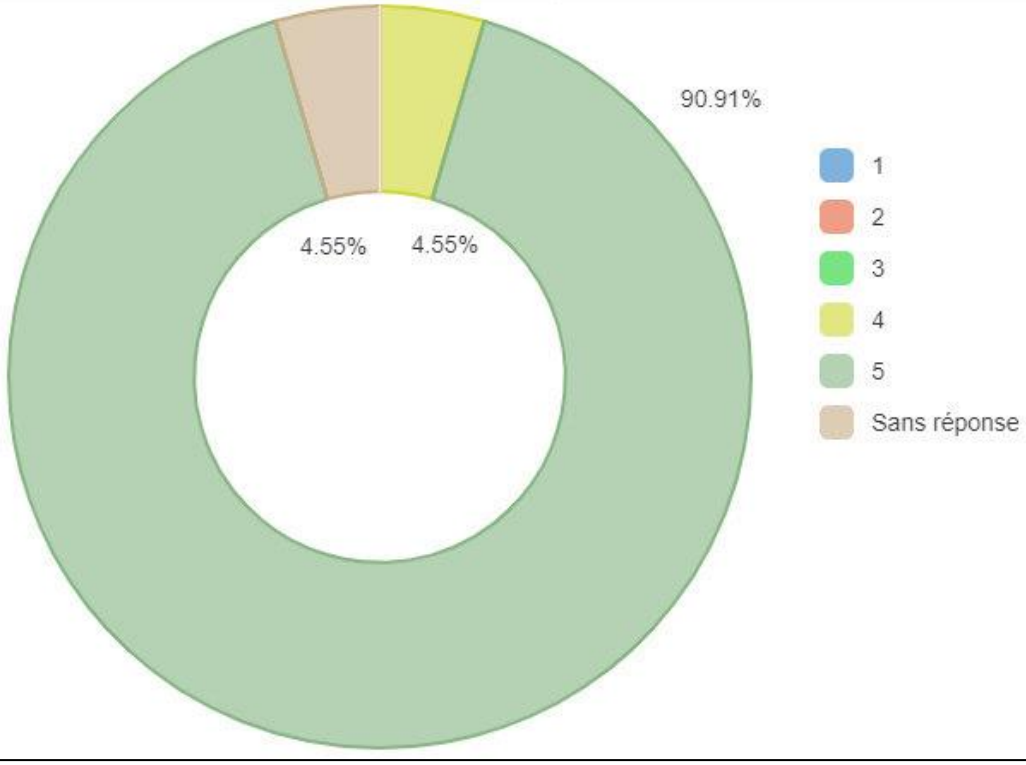



Dans quelle mesure le sujet de la formation a répondu à vos attentes ?
18.18%
81.82%
1
2
3
4
5

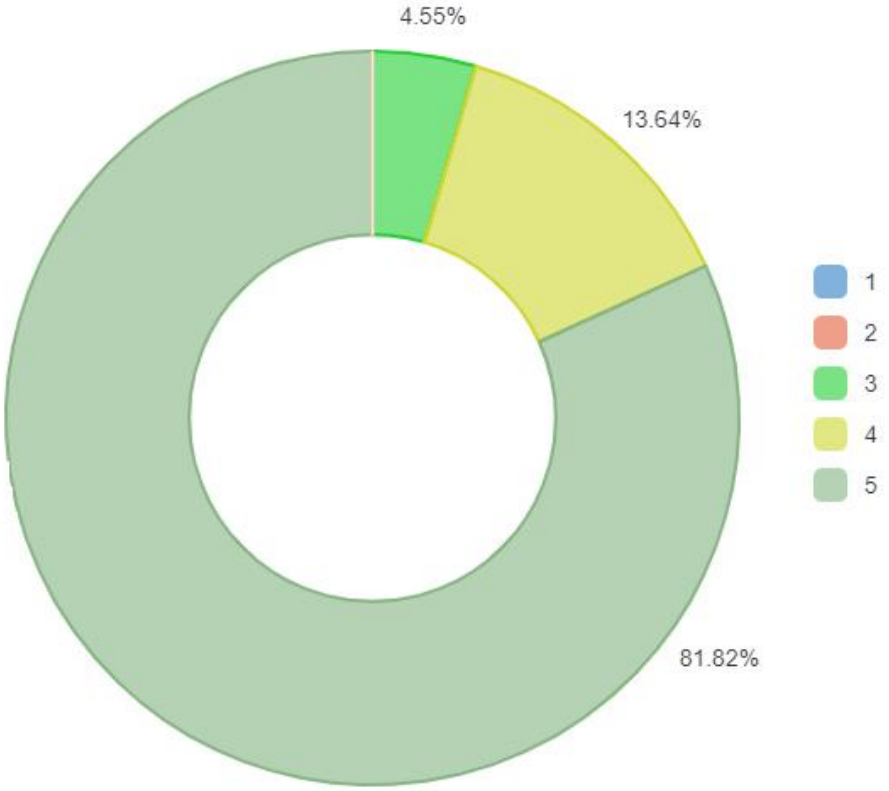

Dernier diplôme obtenu
4.55%
54.55%
36.36%
4.55%
Bac +2
Bac +3
Bac +4
Bac +5 et plus

Dans quelle mesure l'équipement mis à disposition par le projet a contribué à la qualité de la formation?

Réponse	Décompte	Pourcentage brut	Haut 2, Milieu, En bas 2
1 (1)	0	0.00%	0.00%
2 (2)	0	0.00%	
3 (3)	0	0.00%	0.00%
4 (4)	1	4.55%	
5 (5)	20	90.91%	100.00%
Total(valide)	**21**		**100.00%**
Sans réponse	1	4.55%	
Total(brut)	**22**		**100.00%**
Statistiques descriptives			
Moyenne arithmétique		4.95	
Écart type		0.22	

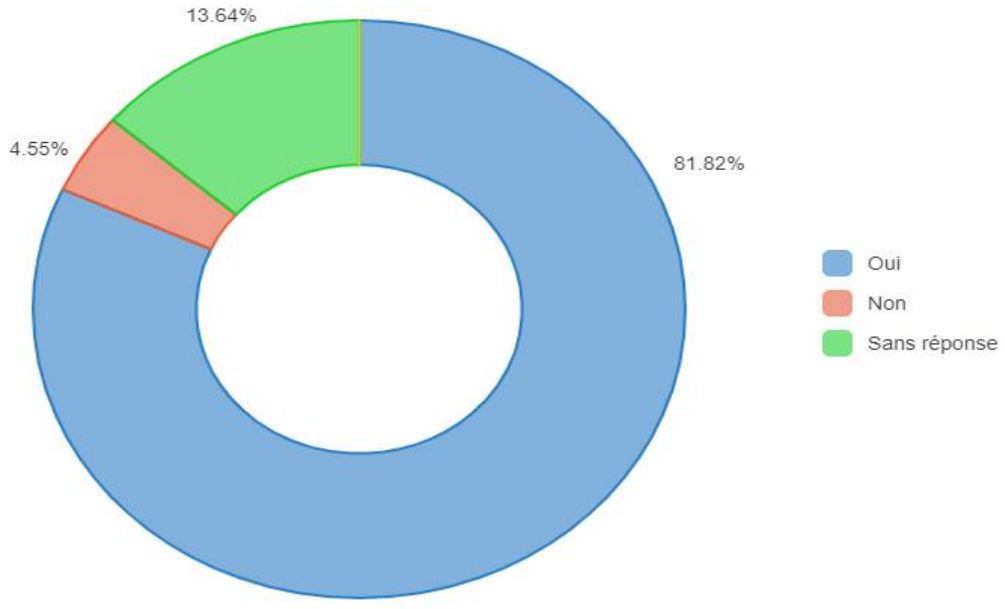


Dans quelle mesure estimez vous que la formation H2O vous octroi de meilleures chances pour l'obtention d'un emploi (ou ameliorera votre situation professionelle) ?

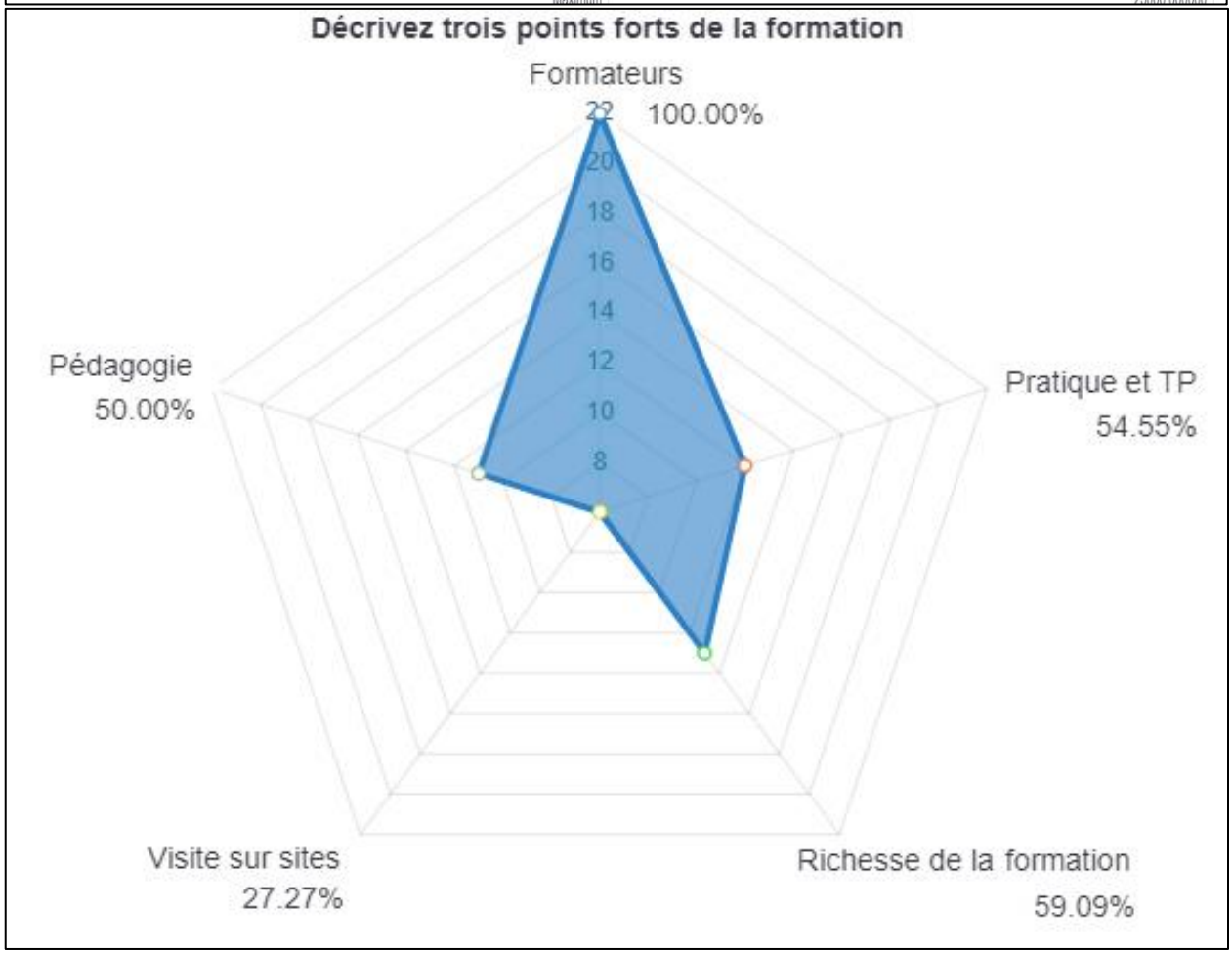


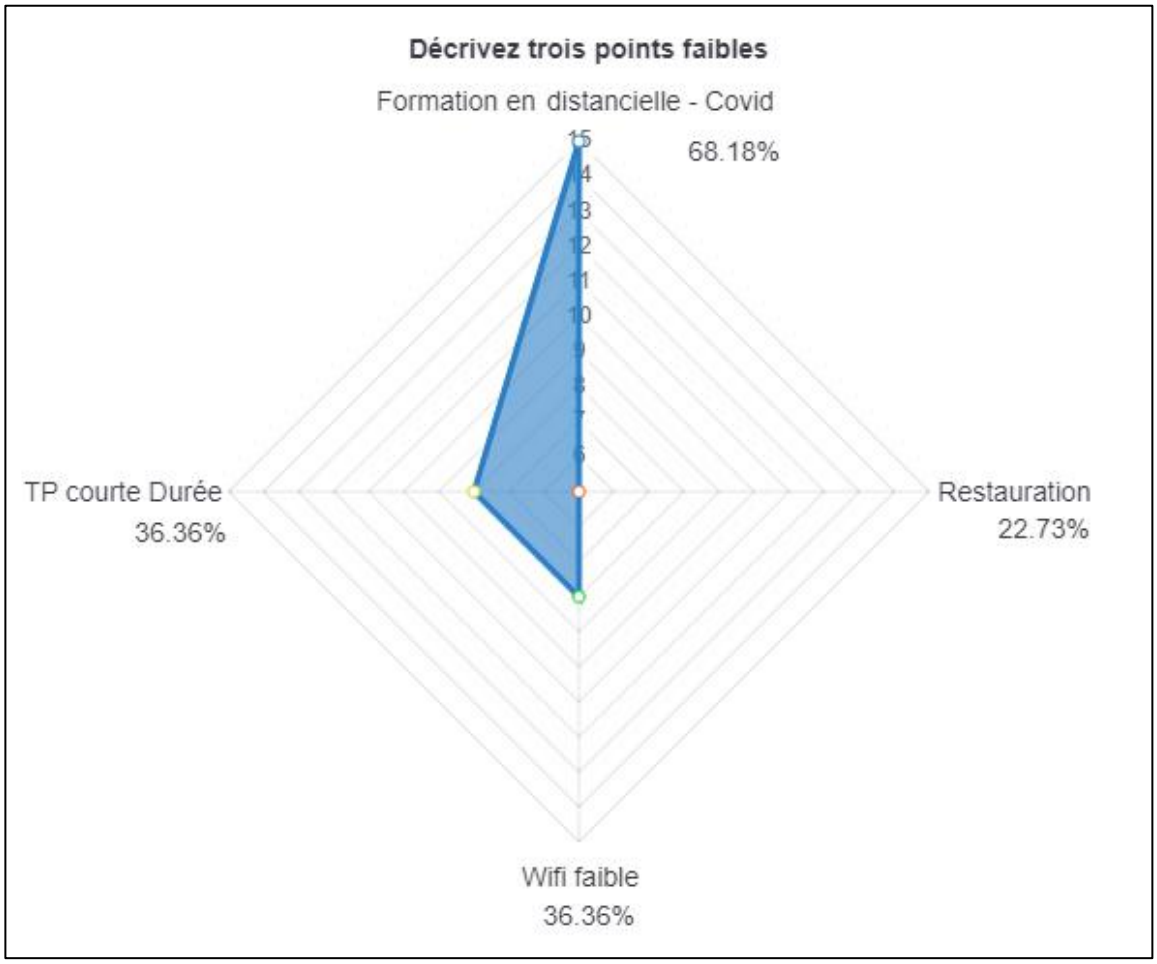
Seriez vous pret a payer pour cette formation?

Réponse	Décompte	Pourcentage brut
Oui (Y)	18	81.82%
Non (N)	1	4.55%
Sans réponse	3	13.64%
Total(brut)	**22**	**100.00%**



Combien seriez vous pret a payer?	
Calcul	**Résultat**
Décompte	18
Somme	156000.000000
Écart type	8103.5
Moyenne	8666.67
Minimum	1000.000000
1er quartile (Q1)	2000
2ème quartile (Médiane)	5000
3ème quartile (Q3)	20000
Maximum	25000.000000




Décrivez trois points faibles
Formation en distancielle - Covid
68.18%
Restauration
22.73%
Wifi faible
36.36%
TP courte Durée
36.36%

Dans quelle mesure l'outil VR ou Réalité Virtuelle a contribué à la qualité de la formation?

Réponse	Décompte	Pourcentage brut	Haut 2, Milieu, En bas 2
1 (1)	0	0.00%	4.76%
2 (2)	1	4.55%	
3 (3)	2	9.09%	9.52%
4 (4)	5	22.73%	
5 (5)	13	59.09%	85.71%
Total(valide)	**21**		**100.00%**
Sans réponse	1	4.55%	
Total(brut)	**22**		**100.00%**
Statistiques descriptives			
Moyenne arithmétique		4.43	
Écart type		0.87