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Mid Term Evaluation of DGIS – IHE Delft Programmatic Cooperation 2016- 2020 (DUPC2) in the field of international cooperation on water

Final evaluation report



Ministry of Foreign Affairs of the
Netherlands



IHE
DELFT

Global Partnership
for Water and
Development

Mid Term Evaluation of DGIS – IHE Delft Programmatic Cooperation 2016-2020 (DUPC2) in the field of international cooperation on water

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1 Executive summary

Introduction and framework for this evaluation

The DGIS IHE Delft Programmatic Cooperation 2016 - 2020 (DUPC2) supports a large number of partnership activities on three programme components: 1/ education & training, 2/ research & innovation and 3/ knowledge sharing & networks. Activities within these components work towards providing tangible contributions to solving water and developmental challenges worldwide and improving sustainable partnerships with and between developing country institutions.

This independent mid-term evaluation of DUPC2 was commissioned by the programme's funder - the Dutch Ministry of Foreign Affairs (DGIS) - in accordance with the monitoring and evaluation plans stated in the DUPC2 proposal for 2016-2020.

The overall purpose of the evaluation is to provide IHE Delft and DGIS with an evaluation of DUPC2 performance for the period 2016-2017, in order to learn lessons to improve the programme for the coming period, and provide inputs for future planning and programming.

The evaluation covers projects and initiatives implemented within the period 1 January 2016 until 28 February 2018. It also covers the DUPC1 SIDS fellowship programme that was selected as a case study.

The evaluation has both a summative and formative character and has five specific objectives:

- to assess the continued relevance of DUPC2 to the priorities of the Dutch government, beneficiary countries and key stakeholders;
- to measure the progress made towards achieving its planned objectives;
- to assess the performance of a selection of case studies;
- to assess sustainability of the programme and of project results;
- to help enhance achievement of results, optimize use of resources and decide on future directions for the programme.

Key achievements

The evaluation found an overall positive appreciation expressed by DUPC2 partners and beneficiaries and confirmed a high degree of relevance of the programme to the needs of developing countries, and to the thematic and geographic priorities of the Dutch Ministry of Foreign Affairs. The programme is also significantly relevant to the achievement of the 2030 Agenda for Sustainable Development, in particular to SDG 6, 13, 3 and 17.

DUPC2 has taken recommendations from past evaluations into account. The programme has a stronger monitoring and evaluation framework with SMART indicators, it has produced a number of guidelines and strategic notes contributing to better planning and organisation of programme activities.

DUPC2 has made great efforts to ensure synergies between DUPC components and projects, this contributes to stronger outcomes and impacts for beneficiary institutions.

The programme has an effective governance operating model, is managed in a collaborative manner and involves southern partners in decision-making processes (regional DUPC Committee members). The programme has a very professional and efficient management team. Overheads are limited to 4% of the total budget allocated to DUPC2. DUPC2 management team's role in strategic decisions, programme support and project implementation contributes their comprehensive understanding of the programme's functioning and hence to its effective management.

DUPC2 projects bring good value for money. Projects generally complete expected outputs on schedule, make good use of IHE and DUPC networks to mobilise key stakeholders with limited efforts, and benefit from involvement of Dutch Embassies for dissemination activities and/or to solve administrative issues such as the signature of a contract.

The programme has a number of interesting results:

- It is successful in establishing long-term partnerships and synergies between programme components and projects that contribute to a holistic approach of capacity building. As a result, a programme beneficiary from an institution that DUPC aims to strengthen can be involved in other DUPC projects and/or benefit from involvement in two programme components. This will establish continuity and coherence in building its organisational capacities.
- The programme stimulates social and technological innovations and problem oriented research.
- The programme promotes knowledge exchange in developing countries in particular between government and universities.

A number of factors embedded in DUPC2 projects contribute to sustainability of results:

- DUPC2 has the capacity to mobilise strong partners from various type of organisations (private, public and civil society) and is effective at sustaining partnerships.
- DUPC2 generally engages local partners in the co-design of initiatives.
- DUPC2 projects plan dissemination and communication activities.
- The programme invests in people that are intrinsically motivated.
- The programme promotes synergies between programme components and projects.

Challenges and overall lessons

DGIS has asked DUPC2 to integrate new priorities of the Dutch government in the areas of water cooperation. DUPC2 has successfully developed a regional strategy on water scarcity and water problems related to the refugee crises in the Middle East, which is being implemented. However, because of a lack of internal capacities DUPC2 has encountered difficulties to define a strategy on water diplomacy. With the recent hiring of additional staff IHE is strengthening the water diplomacy team and the team is working in collaboration with DGIS to develop a comprehensive approach including DUPC2 that meets the ministry's expectations and the needs of beneficiary countries.

DUPC2 is behind schedule in terms of budget expenditure. Efforts invested in planning and identification of activities and updating of strategies and guidelines during the first years of the programme have delayed the implementation of activities, in particular education and training activities focusing on lifelong learning, and cross learning activities between projects at national and regional level.

The programme's communication of results and impacts is insufficient. DUPC1 did not produce and/or communicate data on impact of its projects. It nevertheless developed guidelines on how to produce impact studies and had a first training for IHE project leaders to the production of impact videos. The current phase, DUPC2, after 2 years of implementation cannot show yet results and impacts, apart from intermediate ones. With the new website, which also makes project pages accessible, and the upcoming output database DUPC2 aims to make activities, outputs and stories of change more accessible. Capturing/measuring outcomes and impacts however is not done in a structured manner, and this needs improvement, as well as its communication.

The programme has made progress in raising co-funding for its projects. DUPC2 co-funds activities of relevant EU and international programmes. It also mobilises beneficiary institutions from developing countries to provide in-kind contributions. Co-funding resources represent about 30% of the total

budget for DUPC2. However 70% of DUPC2’s resources are allocated by the Dutch Ministry of foreign affairs making the programme highly dependent on the ministry to pursue its activities.

The programme has limited presence in the field, mainly through its partners and IHE staff when on mission. Many countries do not benefit from the presence of a water sector specialist at the embassy and the regional DUPC committee members have limited time allocated to the programme. This does not help to solve implementation difficulties, to ensure synergies with other international programmes, and to establish strong connections at political level.

Project proposals are required to explicitly demonstrate how impacts will occur, yet a number of project case studies have illustrated how challenging it can be to generate long term structural changes.

Sustainability of project results faces a number of constraints including (source survey):

- Lack of financial and human resources for follow up in the countries of implementation and at IHE Delft;
- Lack of capacities to efficiently anticipate and manage risks;
- Lack of commitment to change through coherence of policy and sustainability of support;
- Political instability in the countries of implementation;
- The social/cultural/political/and technical circumstances affecting institutional capacity building;
- DUPC2 projects do not systematically refer to national policy documents and objectives and/or strategic objectives of beneficiary institutions.

Recommendations

In order to enhance sustainability of the programme, as well as the likelihood of generating deeper and longer-term change in the future, we have the following recommendations:

At strategic level

- R1.1** Pursue the efforts to develop a Water Diplomacy strategy responding to:
- the ministry’s priorities
 - local needs
 - IHE strategic objectives
- Regular collaboration and coordination within the DUPC2 programme between IHE-Delft, DGIS, and the
- R1.2** Consider designing a few specific projects addressing gender and inclusivity effectively. Demanding every project to deliver in-depth on gender and inclusivity is not always realistic
- R1.3** Consider future project calls addressing issues from the policy document “Investing in Future Prospects”
- R1.4** Consider synergies of DUPC2 with IHE Delft activities such as an easier access to IHE training programmes for DUPC2 project partners

At programme support level

- R2.1** Continue efforts to enhance synergies between programme components and projects
- R2.2** Continue efforts to enhance the number of non-academic partners
- R2.3** Allow a 2-year extension without impact on budget to enable DUPC2 to fully implement its objectives

- R2.4** Pursue efforts to demonstrate the programme's value for money:
- better communicate on results and impacts
- R2.5** Enhance ownership and engagement of local actors:
- Ask project leaders to systematically explain in their proposals how the project links to national policies and/or strategic objectives of beneficiary organisations. This should be done in collaboration with local actors
 - Use activities like regional events to engage with policy and decision-makers, assess how local demands are addressed, and identify gaps
 - Award local initiatives to promote projects initiated and lead by southern partners
- R2.6** Enhance coherence with other international donor programmes, in particular at regional level, to avoid overlaps and ensure synergies
- R2.7** Organise national/regional DUCP2 meetings/events promoting learning from implementation of projects (e.g. Mozambique)
- R2.8** Develop an open culture to discuss project implementation issues with DUCP2 project management

At project implementation level

- R3.1** Strengthen the sustainability strategies in collaboration with local beneficiaries to insure effective use of project results, and impacts. These strategies should be receiving extra attention at two different stages of the project life cycle:
- At the design phase to ensure that a risk management strategy is developed. Potential barriers to achievement of impacts should be identified taking into account the dynamics of the local environment. The strategy should anticipate mitigation actions for each risk
 - At the end of the project, project leaders should draft recommendations or practical guidelines for project beneficiaries describing the steps that need to be achieved by the project beneficiaries and partners to ensure sustainability of results
- R3.2** Continuous support from Netherlands Embassies to alert on possible synergies with other initiatives and for the organisation of dissemination events: having a water officer at the Embassy is strongly recommended

2 Evaluation purpose and methodology

2.1 Evaluation purpose and scope

This external mid-term evaluation of DGIS IHE Delft Programmatic Cooperation 2016-2020 - DUPC2 was commissioned by DGIS in accordance with the monitoring and evaluation plans stated in the DUPC2 proposal for 2016-2020.

The overall purpose of the evaluation is to provide IHE Delft and DGIS with an independent evaluation of DUPC2 performance for the period 2016-2017, in order to learn lessons to improve the programme for the coming period, and provide input for future planning and programming.

The evaluation aims to assess the continued relevance of DUPC2 for beneficiary countries and key stakeholders, and, at the same time, to the MoFa agenda as well as the IHE agenda.

The evaluation has both a retrospective and a forward-looking perspective. It drafts recommendations that are expected to help enhance achievement of results, optimize use of resources and decide on future directions for the programme. It provides an opportunity to make modifications to ensure the achievement of expected results in an efficient manner and according to the agreed DUPC2 proposal.

As specified in the Terms of reference, the evaluation of DUPC2 covers projects and initiatives implemented within the period 1 January 2016 until 28 February 2018. It also covers the DUPC1 SIDS fellowship programme that was selected as a case study.

2.2 Evaluation methods

In the evaluation, a variety of information sources and data collection methods were used to reach conclusions and develop recommendations. These methods target all of the evaluation questions that are listed in Appendix A. We made use of multiple techniques in parallel in order to increase the reliability of the results (in evaluation terminology this is called triangulation).

The methods applied in this evaluation can be summarised as follows:

- Desk research of existing data regarding DUPC2, its funded projects and activities. This includes past evaluation reports, strategic documents, progress reports, calls texts and internal processes and policies. A comprehensive list of the documentation consulted is displayed in Appendix B.
- Policy interviews with DUPC Rectorate, DUPC management and DGIS. The list of evaluation interviewees is detailed in Appendix C.
- Focus groups discussions with DUPC project leaders on how partnerships, sustainability, coherence and evaluation and monitoring are apprehended in DUPC projects. The list of focus group participants is available in Appendix D.
- An online survey was carried out among project leaders and partners to learn about their experiences in implemented DUPC2 projects and the SIDS fellowship programme. This includes project leaders from IHE Delft, non-Dutch universities/institutes, students and researchers (including from Small Island Developing States), private companies, civil society actors and governmental employees. A detailed analysis of the survey can be consulted in Appendix E.
- Interviews at IHE Delft were conducted with project leaders of a selection of worldwide projects. Related case studies are presented in Appendix F.
- Field visits were conducted in the Middle East (Jordan and Lebanon), Mozambique and Uganda to interview project leaders and partners from a selection of projects also covering Sudan and the Palestinian Territories. Related case studies are presented in Appendix F.
- Aggregation and triangulation of data collected to finalize and present the evaluation results including a SWOT analysis.

Technopolis Group has carried out the evaluation with support from IHE Delft DUPC2 management for data collection and organisation of focus groups and field visits.

2.3 Evaluation limitations

The evaluation team did not face any significant challenges during the course of the evaluation and was able to successfully implement the foreseen evaluation methodology. However, a number of methodological limitations are worth highlighting:

- First and foremost, the resources available were limited for an ambitious evaluation exercise. Assessing such a broad programme with an important number of evaluation questions within the limited time (three months) and resources dedicated to the evaluation represented a significant challenge from a methodological standpoint. It required ensuring each evaluation method covered as many of the evaluation questions as possible while remaining efficient. In addition, limited resources also implied making significant compromises when it came to the number of case studies and the number of stakeholders interviewed.
- The case studies give us an overall overview on lessons learned from a selection of projects. They are however not comprehensive evaluations of these projects as the number of stakeholders interviewed per project was limited as well as the documentation reviewed (progress and annual reports).
- The evaluation findings are based, in part, on the views of interviewees and survey respondents with interest in DUPC and potentially biased in their responses regarding outcomes. The following measures were taken to reduce the effect of respondent biases and validate interview results: 1/ triangulation and mixed method research to answer the same evaluation criteria, 2/making sure that respondents understood the strict confidentiality of their responses; 3/ selecting a representative sample of case studies using criteria of country/region; theme; project size; and project length and including a mix of long term and new partners; and 4/ separating responses from IHE staff and responses from other partners in the survey analysis; 5/ asking respondents to provide a rationale for their responses, including arguments on how DUPC contributed to reported outcomes.
- Efficiency or cost/effectiveness was assessed through policy interviews and interviews with project leaders and partners and the review of a limited number of documents providing financial information on DUPC2.

3 Background

3.1 History of DUPC

The DGIS IHE Delft Programmatic Cooperation (DUPC) is a partnership programme on education and training, research and innovation, and institutional capacity development, which aims to provide tangible contributions to solving water and developmental challenges worldwide. Sustainable partnerships of IHE Delft Institute for Water Education, which is the largest international graduate water education facility in the world, in developing countries are expected to build synergies between civil society, NGOs, private sector and governments for addressing water-related challenges.

The launch of the DUPC was in 2008 and its first phase lasted until 2018 and had a total budget of EUR 26,3 million. The overall portfolio of DUPC1 consisted of 144 projects, involving more than 85 partner institutions in over 40 developing countries, and around 30 organisations from developed countries, 15 of which have been from the Netherlands.¹

The second phase of the DUPC (DUPC2 2016-2020) has comparable goals as DUPC1 - strengthening partnership through joint research, education and capacity development activities, but has the additional aim to address the gaps identified in the 2013 external evaluation of DUPC1, i.e. to strengthen institutionalisation of DUPC, focus on synergies between programme components and projects, strengthen the monitoring and evaluation system with a logical framework and SMART indicators for the programme, and establishment of an institutional learning culture (cf. list of recommendations for the 2013 evaluation in appendix I). Moreover, the current phase of the programme has expanded its focus to issues of inclusiveness, gender, water governance and climate change. It has also introduced focus on the water scarcity and water problems linked to the refugee crisis in the Middle East and water diplomacy. The evaluation of DUPC1 in 2013 has also recommended that DUPC2 provides attention to the relevance of applied research for solving existing water issues.²

3.2 Strategic objectives of DUPC2 for 2016-2020

The overall objective of DUPC2 is “the building of the IHE Delft Global Partnership for Water and Development to achieve stronger tangible impacts on development challenges and obtain a more diversified funding by strengthening the capacity of IHE Delft strategic partners in developing countries to provide problem-oriented research and education relevant to environmental and water development challenges at different scales, stronger involvement of and sharing of knowledge with non-academic partners, and better facilitation of the internal learning process of best approaches of addressing water and development challenges through partnership building”.

The programme is planning to achieve this objective by addressing needs of the water sector in developing countries, related to SDGs and priorities of the Dutch government. Specific objectives include³:

- Enhance the quality of problem-oriented water and development education and training at partner institutes, including joint programmes, increase their accessibility for larger audiences, and upscale successful delivery models.
- Conduct problem-oriented research jointly with partner institutes in support of development goals for environment and water, supporting social and technological innovations, and targeted to agents of change.
- Improve access to and sharing of gained knowledge and experiences, at the level of focus themes and regions and higher, and support the role of the Global Partnerships and related regional networks.

¹ Krijnen Consulting. (2017). Final Report: External Monitoring DUPC2, Phase 2, 2016-2020. (2017).

² Krijnen Consulting. (2017). Final Report: External Monitoring #2, 12-16 June 2017, DUPC2, Phase 2 – Semester 2&3, 2016-2020. (2017).

³ Monitoring Evaluation and Reporting Protocol DUPC2: DUPC Programme Management. (2017).

- Adequately manage and communicate the DUPC programme, and promote internal learning amongst partner organisations.

DUPC2 has a focus on specific countries and regions (Table 1). The choice of countries for development cooperation has been proposed by the Dutch Ministry of Foreign Affairs. However, other DAC countries can also participate in the programme, provided that at least one of the listed countries is involved in a project. The list of countries that are in the focus of the DUPC2 programme is dynamic, for example, Iraq has been recently added to the list of targeted countries.

The themes of the programme include: efficient water management, particularly in the agricultural sector; improved catchment area management and safe deltas; access to clean drinking water and basic sanitation; and water diplomacy.⁴ Due to the refugee crisis in the Middle East, water scarcity and other related problems in affected countries get particular attention of the programme.

Table 1 Geographic coverage of DUPC2

Region	DUPC2 countries, catchment areas, deltas and cities
Africa	<ul style="list-style-type: none"> • Mali, Yemen, Rwanda, South Sudan, Benin, Ghana, Kenya, Mozambique. • Catchment areas and deltas in Benin, Ghana, Kenya, Mali, and Mozambique. • Large cross-border catchment areas, groundwater systems and deltas (Incomati, Niger, Nile, Senegal, and Zambezi). • Cities to include Accra, Cotonou and Parakou.
Middle East	<ul style="list-style-type: none"> • Jordan, Lebanon, The Palestinian Territories. • Large cross-border catchment areas, groundwater systems and deltas (the West Bank Aquifer).
Asia	<ul style="list-style-type: none"> • Bangladesh, Indonesia, Vietnam and Myanmar. • Catchment areas and deltas in Bangladesh, Indonesia, and Vietnam. • Large cross-border catchment areas, groundwater systems and deltas (Brahmaputra, Mekong). • Cities to include Ho Chi Minh City and Jakarta.
Latin America	<ul style="list-style-type: none"> • Colombia.

DGIS IHE Delft Programmatic Cooperation 2016-2020: Information pack for partners, July 2016⁵

3.3 Financial resources of DUPC2

The total planned budget of the DUPC2 programme is €28,945mln⁶ over a period of 5 years (from January 2016 to December 2020). The costs that are covered by the DUPC2 include:

- Staff costs of southern partners for implementing the activities, based on the standard agreed rates with DGIS, including 2% post-docs;
- Staff costs of partner institutes for implementing the activities, based on actual salary costs and an overhead factor for the partner institute concerned, including post-docs;
- Costs of external expertise in accordance with prevailing rates and IHE procurement regulations;
- Equipment investment costs in accordance with prevailing IHE procurement regulations;

⁴ Krijnen Consulting. (2017). Final Report. External Monitoring DUPC2, Phase 2, 2016-2020.

⁵ DGIS IHE Delft Programmatic Cooperation 2016-2020: Information pack for partners. (2016). Retrieved from: https://www.un-ihe.org/sites/default/files/dupc2_information_package_july2016.pdf

⁶ Includes the recent addendum of 4.8M Euro approved in April 2018

- Operational costs for the implementation of research activities (e.g. local offices, non-durable equipment, office equipment, field-staff, communication);
- Out of pocket expenses (e.g. national and international travel, daily allowances);
- Research part of MSc costs, 50% of PhD costs; on the condition that MSc and PhDs are from developing regions.

Table 2 shows grant allocation as presented in the DUPC2 proposal submitted in the end of 2015. The programmes priorities are reflected by the sizes of allocated budget for each component with a strong focus on ‘Research and innovation’ and ‘Knowledge Sharing and Networks’.

The ‘Research and innovation’ component allocates 76% of its budget to ‘R.1 Problem-oriented scientific knowledge and insights developed and targeted to agents of change’ with a strong focus on ‘conducting integrated research projects’ (k€4,956) and ‘co-funding of relevant Dutch, EU, international research programmes’ (k€1,975).

Within ‘Knowledge Sharing and Networks’ component large attention is given to ‘Conduct the Global Water Accounting project’ (k€1000) and for the ‘support of relevant existing and new networks’.

Among education and training activities, the largest budget allocation is for the ‘development of new educational products’ (e-learning courses, role plays) (k€750) and for ‘testing of new delivery models for joint training and education’ (k€750) and for ‘developing a Joint Master on Water cooperation and conflict’ (Water Diplomacy) (k€1,000).

The ‘Programme management and Learning’ component represents 6.6% of the total budget for DUPC2, and 4% of DUPC2 budget is allocated to programme management and operation. This is a reasonable cost for administering a programme such as DUPC2.

During implementation of the programme additional opportunities have arisen responding to the priorities for Development Cooperation as identified by the Dutch Government:

- The Water, Peace and Security Initiative of The Hague (WPSI)
- 25% Water Productivity Improvement in Practice (Water-PIP)
- Phase 3: Boosting Effectiveness of Water Operators’ Partnerships (BEWOP3)
- Small Island Development States Fellowship Programme (SIDS2)

The budget of the activities agreed under this Addendum amounts to €4.8 M for the period 1st of February 2018 till 31st December 2020. The activities will be taken up through the existing DGIS - IHE Delft Programmatic Cooperation and its Logical Framework of Activities.

Table 2 DUPC2 approved budget 2016-2020 (excluding the addendum of 4.8M Euro (approved April 2018))

Approved budget

	Target	Average budget	Total
Education and Training			4 310 000
<i>R.1 New educational products developed for existing (joint) programmes</i>			
Act.1 New educational products e.g. e-learning courses, role plays, and case studies	25	30 000	750 000
<i>R.2 Quality of existing programmes up to standard and outreach and sustainability increased</i>			
Act.1 Support the quality of existing education and training programmes of partners	5	100 000	500 000
Act.2 Support the quality of existing joint master programmes	7	80 000	560 000
Act.3 Support joint supervision of MSc research fieldwork (joint master programmes)	20	15 000	300 000
<i>R.3 New (joint) training and education programmes developed</i>			
Act.1 Develop and test new delivery models for joint training and education	3	200 000	600 000
Act.2 Develop new joint master programmes	2	300 000	600 000
+ Joint Master Water cooperation and conflict (working title) (<u>Water Diplomacy</u>)	1	1 000 000	1 000 000
Research and Innovation			10 439 626
<i>R.1 Problem-oriented scientific knowledge and insights developed and targeted to agents of change</i>			
Act.1 Conduct integrated research projects (<u>includes Water Diplomacy and ME as theme</u>)	7	708 000	4 956 000
Act.2 Conduct south-south research projects led by southern partners (<u>includes ME</u>)	10	100 000	1 000 000
Act.3 Co-funding of relevant Dutch, EU, international research programmes	10	197 500	1 975 000
<i>R.2 Academic research linked with other "agents of change" in development issues</i>			
Act.1 Conduct research on knowledge management and capacity development	1	490 000	490 000
Act.2 Develop outreach products supporting the accessibility of research results	24	15 000	360 000
<i>R.3 Piloting / demonstration projects for initial phases of innovations supported</i>			
Act.1 Pilot / demonstrate research results resulting from DUPC funded projects (<u>includes ME</u>)	12	75 000	900 000

Act.2 Manage the Secretariat VIA (formerly Knowledge Platform)	1	758 626	758 626
Knowledge sharing and Networks			7 795 374
<i>R.1 Regional and international discussions initiated and facilitated</i>			
Act.1 Co-organise sessions at regional and (inter)national water fora and events	10	25 000	250 000
Act.2 Co-organise local, regional events highlighting DUPC themes or regions	7	50 000	350 000
+ Annual seminars on water and peace (<u>Water Diplomacy</u>)	5	50 000	250 000
<i>R.2 Knowledge sharing of programme results to wider audiences</i>			
Act.1 Support and promote Open Course Ware, TheWaterChannel, and SDI	3	175 000	525 000
<i>R.3 Targeted knowledge sharing with DGIS, EKNs and other parties</i>			
Act.1 Share knowledge with the Ministry of Foreign Affairs	15	25 000	375 000
Act.2 Support regional cooperation on water (SIWI, IHE) (<u>Water Diplomacy</u>)	10	50 000	500 000
Act.3 Support assistance to implementation UN Watercourses Conv. (<u>Water Diplomacy</u>)	10	35 000	350 000
Act.4 Conduct Global Water Accounting project (IHE, FAO and IWMI)	16	62 500	1 000 000
<i>R.4 Networks and partnerships supported, some existing supported in transition</i>			
Act.1 Support to relevant existing or new networks (<u>includes ME</u>)	4	263 500	1 054 000
+ NBCBN (<u>includes ME</u>)	1	1 101 000	1 101 000
+ WaterNet	1	200 000	200 000
Act.2 Conduct the Boosting the Effectiveness of Water Operator's Partnerships (BWOP)	1	684 000	684 000
Act.2 Conduct GWOPA part of Boosting the Effectiveness of WOPs (BWOP) (<u>includes ME</u>)	1	456 000	456 000
<i>R.5 Organisation and quality assurance of IHE Global partnership</i>			
Act.1 Support joint delivery of education and research IHE Global Partnership	1	700 374	700 374
Programme management and Learning			1 600 000
<i>R.1 DUPC programme is adequately managed, organised and operated</i>	1	1 000 000	1 000 000
<i>R.2 DUPC programme is communicated to target audiences</i>	1	400 000	400 000

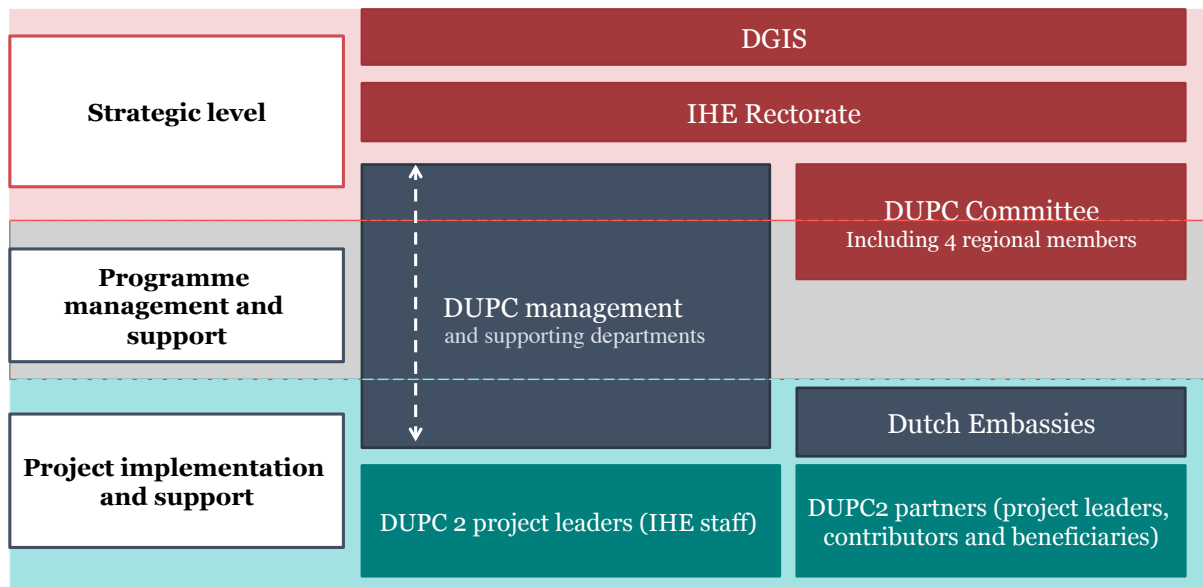
<i>R.3 DUPC programme learning is facilitated, supported by monitoring, eval. and reporting</i>	1	200 000	200 000
Total			24 145 000

Source: DUPC2 Budget summary update 23 December 2015

3.4 Governance

3.4.1 DUPC governance overview

Figure 1 DUPC2 governance overview



The DUPC management team (1.95 FTE - IHE staff) is involved in all programme decision levels. It is led by the Programme Coordinator. The Programme Coordinator is appointed by the Rectorate of IHE.

The management of the DUPC programme makes use of the **IHE supporting departments** (Finance, Liaison Office, Communication Office, Education Bureau) to help implement the programme. Finance for the financial control at programme and project level, Liaison Office for contracting and advise on project management and related processes, Communication Office for the communication strategy and Education Bureau for advice on Education and Training projects. A major effort was done to better integrate DUPC in IHE's supporting departments. An example is the new technical and financial database of DUPC2, which is aligned with the IHE Delft administrative systems, including a partner database⁷.

The Dutch Ministry of Foreign Affairs, Directorate General for International Cooperation (DGIS), is the main funder of the DUPC2 programme and provides inputs on strategic directions for the programme.

The communication between the coordinators of the programme and the Ministry of Foreign Affairs is arranged in a formal and informal way. The formal, regular meetings are scheduled for discussions on planning and implementation between the DUPC management and the DGIS. The Annual Plan is discussed annually during a dedicated meeting. The informal, regular communication is maintained between the coordinator of DUPC2, Mr. Wim Douven, and the senior policy advisor of the Ministry of Foreign Affairs, Mr. Aart van der Horst, to inform the Ministry about recent developments in implementation of the programme and to consult on arising issues. Besides, coordination meetings on water diplomacy gather DGIS, IHE Rectorate, DUPC management and the water diplomacy team.

Within IHE Delft, the **Rectorate** gives strategic orientations for DUPC2.

⁷ DUPC2 Annual Report 2016

The **DUPC Committee** (cf. Figure 2) provides recommendations for the strategic direction and implementation of the programme and is involved in the selection of larger projects.

Dutch Embassies provide support and advise at project level and at regional/country level. However, a very limited number of countries have a water sector specialist

Project leaders that are either IHE staff or staff at DUPC2 partner institutions carry out the implementation of projects. Project leaders are frequently involved in the definition of DUPC2 policies and in learning exercises to inform decision-making.

The 2017 external monitoring report⁸ indicate that DUPC2 programme is being managed in a collaborative manner and that this has substantially contributed to an increased and shared ownership of the program.

3.4.2 DUPC committee

According to the DUPC proposal, the DUPC Committee is responsible for the strategic direction and implementation of the DUPC programme and the allocation of funds to certain projects and defining the conditions for such funds and projects.

Discussions during the Committee meeting held in February 2017 lead to an agreement on the following tasks and responsibilities for the DUPC Committee:

- Further outline the strategic directions of DUPC, in relation to IHE and its partners.
- Advice on the development and implementation of the process for identifying and evaluating project proposals submitted for DUPC funding.
- Give recommendations on which projects to fund and the coordinator reports the final decision to the Rectorate and also to the Committee.
- Recommend and advise on the organisation of the implementation of activities under the programme.
- Advise on and review the MER process.
- Promote internal learning amongst partner organisations.
- Interact with the donor, report on progress, including the annual programme reports. Interact with donor, report on progress including the annual programme results.
- Role to communicate within organisations/departments about what is happening within DUPC2, and the other way around (the eyes and ears of the programme).

The DUPC2 coordinator appoints committee members for 2 years. Since 2016 the DUPC Committee has integrated southern representatives. Figure 2 presents the composition of the DUPC Committee.

⁸ Krijnen Consulting. (2017). Final Report. External Monitoring DUPC2, Phase 2, 2016-2020.

Figure 2 DUPC committee members

- *the DUPC Coordinator chairs the DUPC Committee and has voting right:*
 - *Dr. Wim Douwen, Associate Professor River Basin Management and DUPC2 programme coordinator*
- *IHE academic and support staff :*
 - *Carolien Jaspers, Liaison Officer EU Relations, IHE Delft*
 - *Prof. Chris Zevenbergen, Professor of Flood Resilience of Urban Systems, IHE Delft*
 - *Dr. Nirajan Dhakal, Lecturer in Water Supply Engineering, IHE Delft*
 - *Dr. Jeltsje Kemerink, Senior Lecturer in Water Governance, IHE Delft*
- *Regional representatives from partner institutions for Africa, Asia, Latin America and the Middle East:*
 - *Dr. Naser Almanasee, Head of Civil Engineering Department, Al-Balqa' Applied University, Jordan*
 - *Dr. Carlos M. Madera, Associate Professor Sanitary Engineering, Universidad del Valle, Colombia*
 - *Dr. Jean-Marie Onema, WaterNet manager, Southern Africa*
 - *Dr. Pham Hong Nga, Head of International Cooperation Office / Lecturer, Thuyloi University, Vietnam*

Source: DUPC Annual report 2016

The DUPC Committee can ask advice on certain decisions from other internal bodies like the IHE Academic Board, (Joint) MSc programme committees or the IHE Educational Bureau.

DUPC Committee members meet physically once a year in Delft and have regular meetings on Skype. The moderation of these meetings operates with a rotation among DUPC committee members. This participatory and collaborative approach with a mix of southern and northern partner representatives leads to strong ownership of the programme and supports good decision-making.

In addition to the tasks and responsibilities of the DUPC Committee, regional DUPC Committee members have been allocated the following specific tasks:

- Advice on opportunities for DUPC in addressing and contributing to civil society, government, and private sector challenges and needs, in collaboration with partners.
- Advise/comment/report/share information on the linkage between DUPC2 initiatives and activities to other relevant ones in the region.
- Advise on the DUPC Education and Training Calls and South-South research Calls.
- Involvement in the reviewing process of proposals for their particular region.
- Identify opportunities and support/facilitate side/parallel events/workshops to those happening in the region.

The evaluators see the role of the regional DUPC committee members as essential to provide inputs for strategic directions at regional level and to offer a link between DUPC and its local partners. They can act as ambassadors of the programme, enhancing its visibility among key partners and decision makers and contributing to the development and strengthening of local partnerships.

Because they are closer to the projects carried out in the region they could also play a key role to follow up on the performance of projects and reflect on implementation and learning from experience. At this moment this opportunity isn't sufficiently exploited because regional DUPC Committee members only get a basic compensation for two days per month, although this can be increased for additional missions/events.

Their regional presence also enables them to observe what other donors are doing and identify opportunities for collaboration and synergy. Given that only a limited number of embassies have a water sector specialist that would be in a position to identify synergies with the DUPC2 programme, regional DUPC Committee members could have a role to play here. Many international cooperation organisations are present in Jordan for instance, and the regional DUPC Committee member monitors activities implemented by USAID, GIZ, UNDP, etc. This has enabled the SCARCE project to benefit from facilities funded through the German cooperation. The SCARCE project has also created synergies at regional level, as two trainees from Lebanon were able to attend the workshops organised in Jordan and are now performing joint research with trainees in Jordan to compare performance of different wastewater technologies.

Regional DUPC Committee members use the communication material (flyers and posters) produced by DUPC to promote the programme in conferences and talks. However the programme can improve in terms of communication, for example the Regional DUPC Committee members do not have business cards mentioning their roles within the programme.

Regional DUPC Committee members also provide inputs for decisions on the selection of projects using their knowledge of the country/regional context.

3.5 Project selection process

DUPC management organizes the selection of proposals. Review of the proposals is done by various teams, often with externals, sometimes with the DUPC committee members, and is dependent on the type of call (see Table 3). DUPC management, based on the outcome of the review gives a recommendation to the IHE Rectorate. In case of the support of existing or new programmes the IHE Rectorate takes the decision, taking into account recommendations of the DUPC committee and of the Education Bureau for the Education and training programme (cf. Table 3). The committee members are involved as advisors.

Four calls have been published 2016:

1. Call on Integrated Research for Development – March 2016 (=component R&I)
2. Call for Education and Training Partnership – June 2016 (=component E&T)
3. Call for Outreach products from research – June 2016 (=component K&N)
4. Call for South-South Research for Development proposals – September 2016 (=component R&I)

The reviewers found no uniform and detailed selection procedure protocol for the programme explained in programme documents.

All calls specify criteria for funding in the call publication, which are used as criteria for the evaluation scoring sheet used by the DUPC committee. Common criteria focus on relevance, partnerships/consortia, thematical focus and cross-cutting themes. Additional criteria per programme components are formulated. In response to the recommendations from the evaluation of DUPC1, attention was paid to creating synergies between activities at thematic and regional level. This was, amongst others, done through the conditions of the calls, e.g. by only funding activities focusing on the DUPC themes and regions. Additional efforts were made to come to a coherent set of activities addressing water scarcity in the Middle East.

The selection process for the research and innovation component followed a 2-step process, which was specified in the call text: applicants submitted a first stage proposal following the template provided. Based on the proposals received an eligibility check was done and a selection was made. Consecutively, selected applicants were asked to develop a full proposal. A stakeholder / inception workshop in one of the target countries was part of the full proposal development process, and meeting(s) were facilitated to explore/create/enhance synergies between proposals (content/partners/methodologies).

Additionally, an “Impact for development” workshop for selected projects was organized with input from CGIAR in September 2016, with specific focus on pathways for impact. Invitees for a full proposal received a conditional grant allocation, which was converted in a final grant allocation after approval of the full proposal. The reviewers consider this to be an efficient grant and budget allocation

procedure for a pluriform programme such as DUPC2. The table hereafter presents an overview of selection procedures applied in the different calls.

Table 3 Selection procedures of the 4 DUPC2 calls published in 2016

	Selection criteria	Stages (concept proposal, full proposal) yes /no?	Stakeholder workshop yes/no?	Reviewers (recommendation to IHE Rectorate)
Education and Training	Combination of quality of proposal, local demand, and sustainability. (See further table 4)	1 stage	No	Internal review, plus (regional) cie members, plus Educational Bureau
Research for development		2 stage	Yes	External review
South-south research collaboration		2 stage	No	External review
Research outreach		1 stage	No	Internal review, plus (regional) cie members, plus Communication Office

Source: DUPC2 management

For 2017, calls for R&I and K&N were planned but have not been published. DUPC2 management indicated that this was decided to have sufficient time available to evaluate the starting of (new) activities and strengthen promising current ones, so that lessons learned could be considered for drafting new calls and improve the alignment with (local) research needs for achieving change on “the ground”. This decision contributed to the current underspending of the programme and delay in the implementation of programme activities.

For 2018 (second half) 1-2 new calls will be published (amongst others a south-south research collaboration call for the Research and Innovation component). Probably, no open calls will be launched anymore. DUPC2 management decided to approach (possible) strategic and ambitious partner institutions themselves or through third partner institutions, which seems a fair decision in order to achieve more effective and sustainable partnerships and projects in this component.

Table 4 Selection criteria per call

	Criteria for funding
Call 1 on Integrated Research for Development	<ol style="list-style-type: none"> 1. Address water related development challenges in 1 or more of the four above presented DUPC2 themes (Annex 1), in combination with at least one of the four cross-cutting agenda items: water governance, water diplomacy, climate change, and gender/inclusiveness; 2. Provide in depth understanding of the selected development challenges and the existing research activities in the project area; 3. Clearly demonstrate how the research will contribute to the development and uptake and/or piloting of solutions in close cooperation with the users of the research. How the research addresses and contributes to interests of government, NGOs, private sector and donor communities and what the opportunities are for using and scaling up of research outputs. See Box 1 for examples of impact strategies. 4. Develop the project proposal jointly with IHE strategic partners (see Annex 3), and the users of research results (including where relevant public or private sector partners); 5. Use and build on relevant projects in the region as well as past, current or planned joint education activities (e.g. joint degree programmes) and / or joint research activities of IHE and partners (for DUPC1 activities consult the Annual Report 2014 on The Source); 6. Include gender and diversity within project activities (e.g. research questions/topics) and consortium composition, particularly in regards to project research staff from developing country strategic partners; 7. Accept the open-source condition of DUPC2 and be willing to share and participate in learning events.
Call 2 for Education and Training	<ol style="list-style-type: none"> 1. Does the training or education product or programme proposed address a clear local training and education demand, e.g. proven by labour market survey or otherwise? 2. Does the proposal address one or more DUPC themes and one or more of the three cross-cutting items? Will

	Criteria for funding
Partnership	<p>the proposed activities target DUPC countries and regions?</p> <p>3. Is it clear how the product will be institutionalised in existing training and education structures? Is there a business case or plan for the implementation of the training or education product?</p> <p>4. Will the activities be carried out in partnership? Guideline is that at least 50% of the budget is to be spent by partners.</p> <p>5. Does the proposal clearly describe the proposed project, how it would support the DUPC mission? Are deliverables clearly defined?</p> <p>6. Is the budget appropriate for the work to be accomplished? Being able to show co-funding of the proposed project ideas is an advantage.</p> <p>7. Does the proposal pay explicit attention to gender and diversity?</p> <p>8. Will/can all products be made available to the IHE Partnership and the general public free of charge?</p>
Call 3 for Outreach products from research	<p>1. Does the proposed activity enhance the outreach and impact of promising results of DUPC1 co-funded research projects or other past/existing or new IHE Partnership research activities?</p> <p>2. Is there a clearly specified demand and target audience for the products? How will the product be used and disseminated after completion?</p> <p>3. Does the proposal address one or more DUPC themes and one or more of the three cross-cutting items? Will the proposed activities target DUPC countries and regions?</p> <p>4. Does the proposal clearly describe the proposed project, how it would support the DUPC mission? Are deliverables clearly defined?</p> <p>5. Is the budget appropriate for the work to be accomplished? Being able to show co-funding of the proposed project ideas is an advantage.</p> <p>6. Will/can all products be made available to the IHE Partnership and the general public free of charge?</p>
Call4 for South-South Research for Development proposals	<p>1. The proposal addresses one or more DUPC themes and one or more of the three cross-cutting items (see page 2)</p> <p>2. The proposed activities target DUPC countries and regions (see page 2 and 3)</p> <p>3. The DUPC2 contribution requested is 100k Euro maximum (see page 2)</p> <p>4. The proposal is submitted by a IHE Partner from a developing country (see page 3)</p> <p>5. The proposal proposes a cooperation between at least two partners from developing countries (see page 3)</p> <p>6. Costs presented are eligible costs as indicated above (see page 4)</p> <p>7. At least 25% of the total project budget must be dedicated to activities supporting impact strategies (see page 4)</p> <p>8. At least 15% of the total project budget is co-funded (cash, in-kind) by users of the results of the research project such as public, semi-public, private, civil society organisations (see page 4)</p> <p>9. At least 80% of the budget is to be spent by partners from developing countries (see page 4)</p> <p>10. The proposal is submitted in time (see page 7)</p> <p>11. The proposal is submitted in the correct First Stage Proposal template (available at https://www.unesco-ihe.org/global-partnership-water-and-development)</p> <p>12. Letters of support are included in the application</p>

Source: DUPC2 call texts

4 Relevance

4.1 Relevance of the programme towards the priorities of the Dutch government and the SDG's

The main priorities of the Dutch Ministry of Foreign affairs (MOFA) in the area of water cooperation, as written down in the policy letters water for development (2012) and the International Water Ambition (2016), have been defined as follows:

- Water supply, sanitation and hygiene (WASH);
- Agriculture (water efficiency);
- River basin management and safe delta's.

In relation to this, all DUPC2 projects (R&I or E&T or K&N) have to address key challenges in the following themes, which are closely related to the priority areas for development cooperation in the field of water of the Dutch Ministry of Foreign Affairs mentioned above:

- Efficient water management, particularly in the agricultural sector;
- Improved catchment area management and safe deltas;
- Access to clean drinking water and basic sanitation;
- Water scarcity and water problems related to the refugee crisis (focus: Middle East);
- Water diplomacy.

All projects enrolled in the programme pay additional attention to all, or a selection of, cross-cutting agenda items water governance, climate change, and gender/inclusiveness and include capacity building and institutional building components.

DUPC2 projects focus on the partner countries and river basins of the Ministry of Foreign Affairs as well as Water Mondial countries. Other countries and regions are eligible for funding, in particular those in which IHE Delft and partners have already established an intensive education or research collaboration over a longer time, but only in combination with partners from focus countries or regions, and with stricter co-funding requirements, which will depend on the type of relation the Netherlands, maintains with this country.

The thematic approach ensures that all projects are relevant for the Ministry's priorities, although project proposal templates do not ask for a specific description of this alignment to the Ministries priorities.

The priority settings of the Ministry link strongly to the 2030 Agenda for Sustainable Development, in particular to SDG 1,2,3,4,5 and 6. The project proposal template and logframe do contemplate a separate paragraph on gender and inclusiveness and also for specific contribution to the SDG's. The survey shows that, apart from obvious SDG goals like number 6 (Ensure availability and sustainable management of water and sanitation) and number 3 (Ensure healthy lives and wellbeing), also SD goal 13 (Take urgent matters to combat climate change) and 17 (Strengthen and revitalize global partnerships for development) are considered relevant to the projects. This makes sense, as climate change is a cross-cutting issue for the programme as well, and for the majority of the DUPC2 projects, while strengthening and revitalizing global (research) partnerships for development is a basic objective of the programme as a whole. Nonetheless, the field visits and additional case studies showed that the impact of international cross-learning through the projects in which several countries were involved, is still limited. Cross-learning on a national level between projects is also insufficient. That is unsatisfactory, as cross-learning must be considered as an important aspect of strengthening and revitalizing global partnerships.

In the operationalisation of the SDG's in and by the Netherlands, the collaboration between government and stakeholders like companies and social organisations has been prioritised. The DUPC2 programme responds to that by stimulating projects to include partners from academia, private sector, government and civil society (although it is not stated as an obligation in the proposal

template). The majority of projects that have been assessed by the reviewers represent a fair and interesting mix of representatives of all sectors, although in practice with mixed success as primarily private sector and government partners do not always show the same level of commitment as academic partners, as research results might not always be tangible (yet) or not aligned too much with policy priorities.

The topic of water diplomacy became increasingly prioritised on the policy agenda of MOFA prior to the signing of the contract for the DUPC2 programme. A new DGIS programme on water peace and security was included in the letter to Dutch parliament “Water for Development” (2012). DGIS anticipated that DUPC would develop a programme related to Water diplomacy in a new programme. In 2008, IHE Delft had established, under the UNESCO PCCP (From Potential Conflict to Cooperation Potential) programme, a short course on Water Management in South Africa with a specialisation in water conflict management. When the contract for DUPC2 programme was signed, an expert was assigned by DGIS to assist IHE Delft one day a week to further develop the topic of water diplomacy, as with only one senior researcher in place it lacked sufficient capacities. For the second half of 2018 it is expected that the capacity issue will be solved with the appointment of two lecturers and one programme assistant.

In their interview with the reviewers, the Rectorate elaborated on the IHE Delft Water Diplomacy Plan 2016-2020 that sets out a plan for making IHE-Delft a strategic partner for local governments to assist them in developing water safety strategies, water conflict resolution plans, etc. This strategy takes Dutch embassies on board as an important partner and responds to DGIS broader objectives in water peace and security. Therefore, the reviewers consider it justified that the DUPC2 programme is used by IHE to strengthen its strategic plans in water diplomacy.

This coordination has become even more relevant, anticipating the shift in foreign policy described recently in the policy document “Investing in Future Prospects” by the Minister for Foreign Trade and Development Cooperation, approved by the Dutch cabinet on 25 of May 2018. The strengthening of capacity in migration important countries, in particular in the Middle East region, to address the water scarcity issues and water problems related to the current refugee crisis have increasingly been considered in the programme. With input from DGIS, 4 projects have been developed in this area. More project specific calls on this theme are recommended.

4.2 Relevance of the programme towards local concerns, needs and priorities of the water sector in developing countries

Although proposals did not have to align specifically with national policy priorities and seem to be driven mainly by research interests, the majority of the projects reviewed do address -directly or indirectly- main local concerns, needs and priorities of the water sector in the various developing countries. This definitely has to do with the long-term professional interaction and quality of knowledge exchange between the IHE project leaders, partner institutions and actors in the water sector in the targeted countries. The structure of the proposal writing and selection procedure definitely adds to that, as it introduced a compulsory inception and proposal development workshop for the main project partners and stakeholders between the first stage and second stage proposal as part of developing the full proposal. This helped to increase the relevance of the project proposal with regard to local needs and priorities and further strengthens the integration of cross-cutting issues and other programme requirements. Moreover, it provides an opportunity to respond to specific comments made by the selection committee on the first stage proposal. The local relevance of the projects is further strengthened through the compulsory impact strategy descriptions in the proposals that force projects to include dissemination and communication activities. All projects that were reviewed by the reviewers include useful communication instruments like websites, newsletters, brief-lets etc. The limited alignment with national policy priorities however, may produce the risk that on the long run project results become irrelevant for national strategic developments.

The review of selected projects also made clear that the programme is a driving force for:

- the development of capacity of water sector organisations, institutes and persons in order for the water sector to become self-learning, to be capable of setting its own policies and practices, to conduct sustainable water management and be internationally connected;

- enlarging, making accessible, disseminating and applying practical knowledge and skills on good water management, also by linking to Dutch know-how and expertise;
- using and linking to existing networks to stimulate demand driven cooperation between water professionals and institutions and stimulate private sector involvement.

The DUPC2 programme does not offer country/regional profile documents that describe national or regional policy priorities or strategies related to the national/regional water sectors. Respondents from interviews and focus groups mentioned this would help scoping the alignment of projects with policy objectives.

4.3 Relevance of the programme towards IHE Delft institutional strategy

The strategic institutional aim of IHE-Delft for 2020 is to increase its impact and outreach over the next decade through the Institute's growing stature as a leading centre of water education, research, and capacity development (Strategic directions: UNESCO-IHE in 2020). The focus in the strategy is on strengthening and expanding its strategic partnerships network worldwide.

The idea for a Global Campus⁹ as such was cancelled in its original form late 2015. During 2017 the institute transformed from a UNESCO category 1 to a category 2 institution. Nonetheless, The institutional strategy that is currently being implemented by the newly appointed Rectorate (2016) still prioritises the enhancing and expanding of strategic global partnerships. The four inter-related DUPC2 programme components and related activities are expected to support the strengthening of the current IHE-Delft partnerships and add new ones.

DUPC2 as a programme enhances engagement with partners abroad, and creates opportunities to strengthen existing and new partnerships. Liaising with embassies more intensively is encouraged. In an effort to strengthen possible partners networks in the South, the South-South projects have been designed, enhancing collaborations between different partners in the South. The programme also helps to act as a knowledge broker for DGIS and Embassies of the Kingdom of the Netherlands (EKNs). Helping implement agenda's, like Water diplomacy, is supported by IHE's more neutral UN position.

⁹ "The Global Campus will be a network of intensely collaborating partner institutes that jointly carry out educational and research programmes on water and development with considerable mobility and flexibility for students and staff. In particular, this network seeks to offer jointly internationally appealing and accredited educational programmes that have a high level of impact, are of high quality and are affordable for the target group from developing and transition countries. Furthermore, the Global Campus will facilitate joint research and sharing of research data, findings and innovations among partners, but also reach out to all water professionals, specialists and scientists. Thus, through this partnership, it is anticipated to jointly have a greater impact in contributing solving the world's water problems", DUPC - Proposal 2016-2020

5 Coherence

5.1 Coherence with other donor programmes and embassy activities

The coherence between the DUPC2 programme and other donor-funded programmes needs continuous attention. For example, the letter to the Dutch Parliament “Water for Development” (2012) states that DGIS will seek alignment with educational programmes such as the Netherlands Initiative for Capacity development in Higher Education (NICHE) and that they will support the IHE Institute for Water Education, which awards over 200 MSc and PhD degrees in water management to students from developing countries each year. In practice little alignment between the Nuffic administered NICHE¹⁰ programme, DUPC2 projects and decentralized activities of the Dutch embassy in the water sector was noticed by the reviewers. For example, in Mozambique the Instituto Superior Politecnico de Gaza (ISPG) is one of the main partners of the A4-labs project. This institution is also recipient of a mayor NICHE capacity building project although this project does not specifically address water issues. Nonetheless, no mayor cross-learning or exchange of lessons learned in capacity building were recalled by Nuffic nor IHE. On the contrary, the Nuffic administrator for the Mozambique programme was not even aware of the DUPC2 programme in Mozambique. The water expert at the Dutch embassy in Mozambique also mentioned the necessity of improved cross-programme learning and harmonisation between Dutch interventions in the water sector. It is therefore highly recommended to increase mutual efforts in this respect, especially now DGIS and embassies will jointly elaborate multi-annual strategic plans and Nuffic launched its new capacity building programme OKP (Orange Knowledge Programme) that in Mozambique will focus on the water sector as well.

5.2 Coherence on programme level

The evaluation report of DUPC1 (2013) recommended to increasingly put an emphasis on synergies, coherence and focus. The reviewers have observed that the stronger geographic and thematic focus in DUPC2 has contributed to improved programme coherence and increased relevance, although the education and research components seem to be more closely aligned than the knowledge sharing component. The Water diplomacy theme is implemented through education, research and capacity development activities and therefore is supported by multiple DUPC2 components, including education and training and research and innovation. Some projects in DUPC2 are a follow-up of DUPC1 projects, building synergies to increase impacts. The appointment of regional DUPC Committee members also make efforts for coherence liaising with other international cooperation stakeholders in the water sector.

The introduction of structural monitoring and evaluation tools safeguards the coherence between the different programme components and projects. Nonetheless, the DUPC2 management does not regularly visit the countries for field monitoring visits, although project leaders at IHE Delft have very regular contact with the DUPC2 management. IHE Delft appointed national coordinators in the past, who also serve as a point of contact for DUPC2 projects. Another recently started effort to strengthen coherence at project level in Mozambique is the “national project and learning meetings”, which are warmly welcomed by project implementers and should definitely be continued.

¹⁰ Netherlands Initiative for Capacity development in Higher Education

6 Efficiency

Efficiency has been a sensitive matter for IHE, given the critical concerns highlighted by the external audits in 2013 and 2014 and the internal assessment performed in 2015. These reviews mentioned various compliance issues among which finance and procurement issues (VAT, insourcing, travel costs and student assignments) and weaknesses in the institute's organisation in particular its monitoring and evaluation system. As a consequence, the signing of the DUPC2 grant was suspended, and finally only authorised under the condition that during the first two years the programme is externally monitored to review implementation of recommendations from past appraisals and progress in accountability of the programme. Two external monitoring reports were produced in 2017 and shared with the evaluation team. The second report¹¹ confirms the successful execution of the compliance agenda. This is an important achievement as DUPC2 operates in the context of IHE.

The present evaluation will assess efficiency based on two elements: i) DUPC2 institutional arrangements and management; ii) efficiency of the programme or value for money based on the OECD DAC criteria where efficiency measures outputs in relation to the inputs.

6.1 Institutional arrangements and management

Since 2016 DUPC2 management has produced and updated a number of guidelines and policies that contribute to the good functioning and organisation of the programme and enhance the clarity and transparency of internal procedures:

- A note clarifying financial budgeting and reporting in DUPC2 was produced in November 2017. It includes a template for project financial proposals, process for approving budget, guidelines on contracting and payment of partners, process for DUPC2 project reporting and process for reporting to DGIS and IATI;
- A note from October 2017 on lessons learned from DUPC2 contracting for the period 2016-2017 and follow-up actions and recommendations. This note includes guidelines for good practices for example verifying national regulations for entering into international contract, choosing partners who have a legal entity or guidance on the drafting of contracts (clarity, terminology, etc.);
- A note from October 2017 on DUPC2 partnerships. The note presents DUPC2's vision and purpose of partnerships, its strategies to sustain and strengthen the partnership, planned activities with partners and ideas on 'measuring' the 'impact' of the partnerships;
- A note from March 2017 on Planning Education and Training component DUPC2: focus on e- and continuous learning. This note presents planned activities for the component 'Education and Training' and budget allocated to innovative approaches including e- and continuous learning;
- A communication plan presenting a description of outputs (website, regional/thematic meetings, programme flyer, annual report, social media posts) targeted audiences, method of delivery, frequency of communication and owner;
- A note describing the process of better aligning the Programmes logframe for a part of the Research and Innovation component with the logframes of the Research and Innovation projects;
- A logical framework was included in the DUPC2 proposal and a Monitoring, Evaluation and Reporting Protocol was drafted. Following remark from the external monitoring review on DUPC2 logframe, an update of the logframe was produced (13/01/2017) it presents the overarching outcome for the programme and SMART indicators to measure outcome and related outputs;
- A policy note on DUPC2 contribution to solve water scarcity and water problems related to the refugee crises in the Middle East in 2016 and 2017;
- Guidelines for communicating on impact.

DUPC management has demonstrated the ability to produce quality policy guidelines, developed through participatory approaches involving DUPC staff and partners, and formal discussions with the Rectorate. The update of DUPC2 policies and guidelines will certainly contribute to a better

¹¹ Krijnen Consulting. (2017). Final Report. External Monitoring DUPC2, Phase 2, 2016-2020.

organisational functioning and therefore enhanced efficiency of the programme. DUPC2 has also made good progress in the implementation of these policies:

- Projects have adopted budgeting and reporting rules. Project leaders are well informed of contracting issues and new rules. DUPC2 partners will need to adapt to the new contracting rules.
- Focus group discussions on partnerships have demonstrated that DUPC2 vision on partnerships is well understood by project leaders.
- DUPC2 has demonstrated great efforts to introduce thematic and geographical synergies and coherence that contribute to better efficiency and effectiveness of the programme.
- The programme has a comprehensive logical framework and SMART indicators, and all projects above 75k EUR have project specific logical frameworks. However, the 2017 external monitoring reports insisted on the need to have baselines for the larger projects that would concentrate on a few “top priority indicators”. This would indeed help measuring outcomes and impact. This is yet to be achieved.
- Guidelines for communicating on impact have been challenging to implement. Producing tracer and impact stories would be very positive for DUPC2 communication plan. This requires involvement of local partners after the project is achieved. DUPC2 is in contact with local communication experts with the objective to achieve this, for example with the African Journalist Network.

Interviews conducted by the evaluation team with policy interviewees and partners have all emphasised the excellent management of DUPC2. The Programme Coordinator and his team were praised for their responsiveness, professionalism and dedication to the success of the programme. Partners interviewed abroad also mentioned the responsiveness, expertise and reliability of DUPC2 project leaders.

Several policy interviewees raised concerns regarding the effectiveness of institutional management. Several examples were given to the evaluators that could point out that some IHE working rules may promote DUPC2 inefficiencies. These include the right to carry over some vacation leave into the following fiscal year, long procedures to hire new staff, inefficient distribution of tasks across teams (some junior work is taken over by senior academics), or an occasional use of an expensive location to organise a project event.

At project level, survey results highlight that at least 80% of project coordinators and team members from partner institutions of IHE Delft are highly or sufficiently satisfied with the management and organisation of work in projects, monitoring, contracting procedures and a framework for involving non-academic actors (cf. **Figure 17**).

Part of DUPC2 partners have raised concerns regarding contracting procedures during the field visits. They highlighted the difficulty for their organisations to follow DUPC2 contracting rules and the need to build more flexibility, in particular with new partners where the relationship isn't built on trust yet. About 30% of survey respondents from partner institutions consider that contracting procedures are not sufficiently efficient.

6.2 A stronger monitoring and evaluation framework contributing to better accountability

Following recommendations from the evaluation of DUPC1 in 2013 and the first external monitoring report in 2017, DUPC2 has developed a stronger monitoring and evaluation framework to guide strategic directions and programme implementation. Analysis of the programme's logical framework shows that DUPC2 objectives are clearly defined with expected outcomes and outputs outlined at high level and for each programme component. SMART indicators were defined for all expected outcomes and outputs, with target values and means of verification specified. The DUPC2 logical framework also specifies the budget allocated for the achievement of expected results (cf. DUPC2 Logical framework in Appendix G).

Outcome indicators include only a limited number of indicators measuring societal impacts. DUPC2 has planned to demonstrate societal impacts through ‘impacts stories’ of individual and/or institutional changes (direct and indirect beneficiaries) in knowledge, skills, practice, policy, investments, etc. that contribute to outcomes and/or impacts. An integrated approach is presented in

the note on “DUPC2 stories and highlights for communicating ‘impact’”. Implementation of these guidelines has been challenging and ‘Impact stories’ were not disseminated yet, but DUPC2 seems now in a good position start producing them because projects are further in their implementation. Project leaders have already benefited from training in collaboration with TheWaterChannel on how to make short videos presenting impact stories. IHE also plans to identify and approach local/regional journalists that can write local impact stories.

The logical framework was updated a few times along with identification of activities and experiences gained with the implementation of the monitoring, evaluation and reporting protocol. A revision of outcomes and indicators of the research and innovation component has been undertaken following a bottom up process in close consultation with activities under this component. This has resulted in a common set of indicators capturing outputs and outcomes. All updates to the logical framework were documented and approved by DGIS.

DUPC2’s monitoring, evaluation and reporting protocol is well adopted by project leaders. Discussions during the focus group on Monitoring and Evaluation have highlighted a good acceptance of tools in place. Reporting templates at project level are well designed and the programme annual progress report is very comprehensive.

The 2017 external monitoring reviews stressed that DUPC2 should include a few baseline indicators in its logical framework to better measure progression of the “dependant variables” over time. Some efforts were made to introduce a few baseline values to the logical framework.

6.3 DUPC2’s value for money

6.3.1 *The programme has reasonable management costs*

The overall costs for administering DUPC2 represent 4% of the total DUPC2 budget for 2016-2020¹². These programme overheads are reasonable (5-7% overhead costs is considered normal for other government programmes, although comparison is difficult because activities of the programme management may differ very much from programme to programme) and demonstrate efficiency in the administration of the programme.

6.3.2 *DUPC2 projects generally deliver high value for money*

At project level, documents review and case studies (cf. 20 project case studies in Appendix F) show that most of the projects have delivered expected outputs on time and in a cost-effective manner.

The projects are mostly well managed. Trainings and workshops are organised in a short period of time thanks to efficient mobilisation of DUPC network of partners and alumni. DUPC2 can mobilise rapidly influential people through its network and/or with the support of Dutch Embassies.

Great efforts are made to ensure coherence and synergy within DUPC2. Some projects in DUPC2 are a follow-up of DUPC1 projects. This contributes to organisational and institutional capacity building and supports stronger impacts.

¹² This excludes work implemented through IHE supporting departments.

7 Effectiveness

Effectiveness is interpreted as the contribution to expected results. At the project level, the expected results are set out in the project documents and logical frameworks. At the programme level, they are set out in the various strategic documents and mapped in the programme's theory of change and logical framework.

7.1 Effectiveness as perceived by DUPC2 partners

The assessment of effectiveness of the DUPC2 programme in the survey among DUPC2 project leaders and partners (including IHE staff) focuses on the aims of the programme, as defined in the DUPC2 proposal. Survey results show that DUPC2 partners perceive the programme's effectiveness as very high and display that DUPC2 was rated as highly effective in achieving the following objectives:

- contributes to regional and international knowledge exchange in the area of water and development;
- addresses local/regional problems and stimulates problem-oriented research in water and development sectors;
- stimulates research activities;
- improves sustainability of partnerships.

On the other hand only 30 respondents (39.5% of all respondents) stated that the project highly stimulates the development of new education and training programmes, and 28 respondents (36.8%) suggest that the project highly improves the quality of new and existing water education and training programmes (cf. *Figure 3*). Hence, based on views of respondents, less projects under the DUPC2 programme are focusing on creation of new education programmes and on the quality of trainings. This is confirmed by the programme's expenditure; least budget was committed to related activities.

Over 77% of respondents stated that the project in which they are/were involved is effective in strengthening their organisation/company.

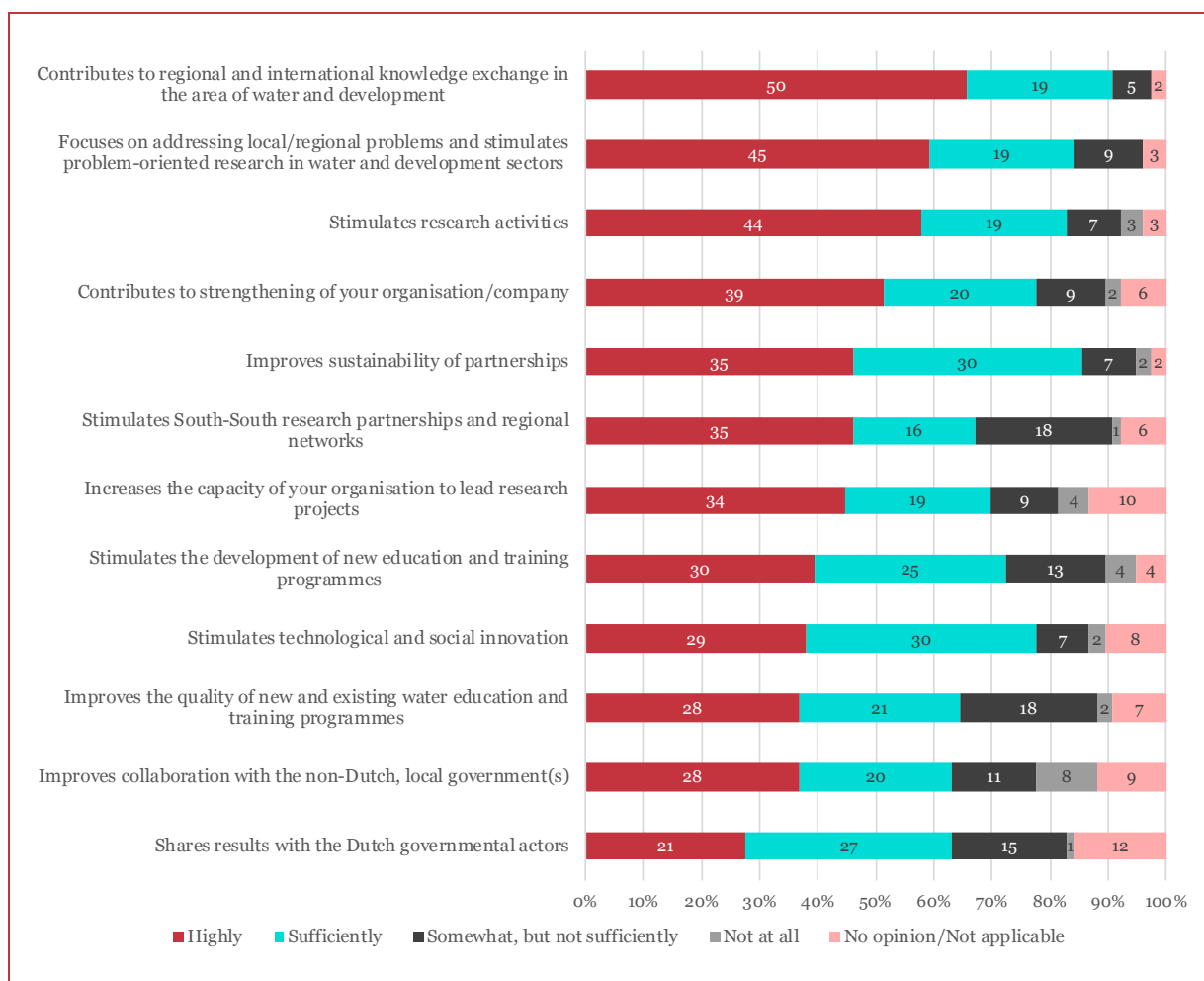
Over 67% consider that the projects highly or sufficiently stimulate South-South research partnerships and regional networks.

Around 77% of respondents stated that the project in which they are/were involved highly or sufficiently stimulates social and technological innovation. This is a relatively high result, which indicates that the DUPC2 programme stimulates innovations in countries where the projects are implemented. Open-ended responses on the effectiveness of DUPC2 projects also mention the programme capacity to foster innovation:

“The ability of this project to bring together and facilitate water journalists in the Nile basin to work together and further work with water scientists. This is something new in the region.”

“The project is highly innovative in terms of the issue it addresses, and the tools used to address it. It breaks new ground in understanding how water issues are used by political entrepreneurs to support different agenda and how citizens react to them.”

Figure 3 Responses of survey participants on the extent to which the project in which they are/were involved is effective (N=76)



Technopolis Group: Survey on IHE partnership programme DUPC2

7.2 A more focused number of project activities

The DUPC2 progress report of March 2018 gives an overview on activities implemented in the two first years of DUPC2. It specifies that the first year of DUPC2 - 2016 - focussed on the organisational start-up of the programme, the identification of first activities through Calls, introduction of new themes like water diplomacy and water scarcity in the Middle East, and communication of the programme and its activities. During the second year -2017- DUPC2 focused on further identification and facilitation of activities and themes in partnership, creation of synergies between activities at thematic and regional levels, planning activities aiming at strengthening quality and connectivity of partnerships, improving knowledge management and refining its indicators and programme level and integrating them with the MER protocol.

During its first year of implementation, the DUPC2 programme consisted of 43 running activities. By end of 2017 the total number of running activities had reached 56 in 30 developing countries. By mid-August of 2017, 8 new activities were in preparation, 10 were planned and 3 activities were achieved (cf. Table 5).¹³ Of the running projects most are within the categories ‘Research and Innovation’ (26)

¹³ DUPC2 Annual Plan 2018: IHE Delft Global Partnership for Water and Development

and ‘Knowledge sharing and Networks’ (14). 12 activities are focusing on ‘Education and Training’ and 3 activities are aimed to support ‘Programme management and Learning’.

The total number of DUPC2 projects (76) is in line with recommendations from past evaluations mentioning that the programme total number of projects should not exceed 80-85 projects ¹⁴(DUPC1 counted a total of 144 projects) in order to generate and maintain synergy and coherence and achieve better quality.

Table 5 Status of DUPC2 activities per component (31/12/2017)¹⁵

	Activities running (RUN)	Activities rejected (REJ)	Activities planned (PRO)	Activities in preparation (PIP)	Activities ended (END)	Total
Education and Training	12		3	1		16
Knowledge sharing and Networks	16		4	3	1	24
Research and Innovation	26	2	2	2		32
Management and Learning	3					3
Budget reservation			1			1
Total	56	2	11	6	1	76

Source: DUPC2 Annual Plan 2018: IHE Delft Global Partnership for Water and Development

Thematically, the majority of projects, 23 projects are related to WASH (water, sanitation and hygiene). Other prominent themes are: water scarcity & ME (19 projects), rivers and deltas (18 projects), both water & food and inclusiveness/gender are featured in 16 projects. Water diplomacy and climate change have been less common themes, as they are at the core of 13 and 11 projects respectively.¹⁶

The analysis of projects by region shows that in countries located in East Asia & Pacific the focus is on water governance and water & sanitation (Table 6). In Latin and Central America, there is no strong emphasis on any particular water-related theme, while in the Middle East & Northern Africa most projects within the DUPC2 programme are focused on issues of water scarcity, water governance and diplomacy. The countries in Sub-Saharan Africa are more frequently engaged in projects on water & sanitation and water governance.

Table 6 Number of projects in regions by theme

	East Asia & Pacific	Latin and Central America	Middle East & Northern Africa	Sub-Saharan Africa	Worldwide	Total
Water & food	4	2	6	4	8	25
Rivers & deltas	5		5	4	8	23
Water & sanitation	7	2	6	6	8	30

¹⁴ Krijnen Consulting. (2017). Final Report. External Monitoring DUPC2, Phase 2, 2016-2020.

¹⁵ The 4 activities part of the Top-up approved in March 2018 are not included.

¹⁶ Krijnen Consulting. (2017). Final Report: External Monitoring #2, June 2017

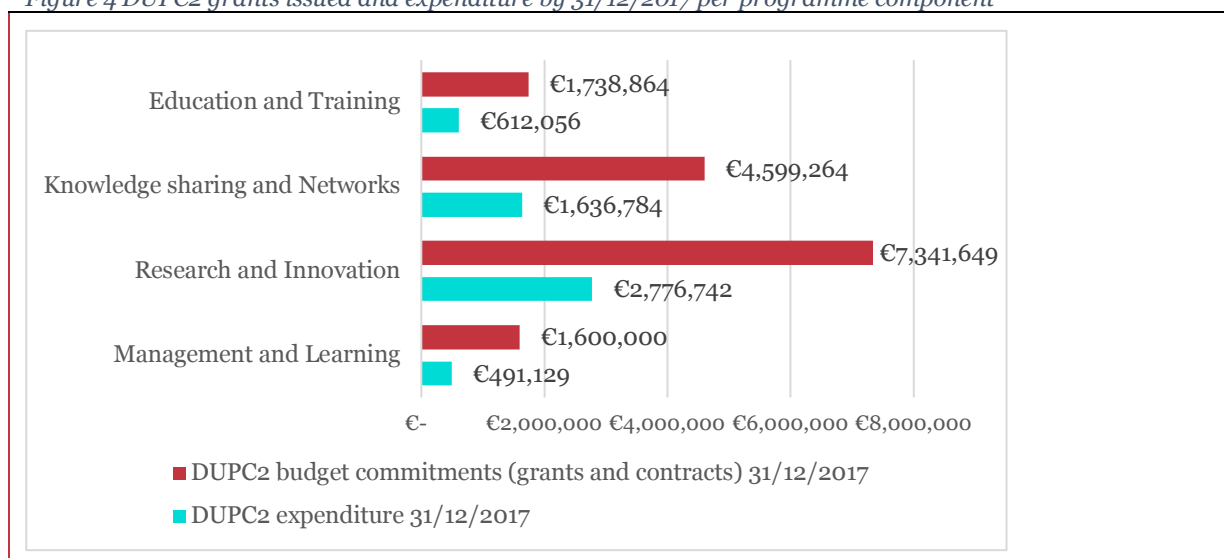
	East Asia & Pacific	Latin and Central America	Middle East & Northern Africa	Sub-Saharan Africa	Worldwide	Total
Water scarcity			15		7	23
Water governance	9	1	10	5	9	35
Water diplomacy			10		9	20
Gender/inclusiveness	4	1	7	4	7	24
Climate change	6	3	3	3	9	25

Source: DUPC2 Excel file - all projects within DUPC2 2017

7.3 DUPC2 expenditure of grant of total programme budget was delayed by preparation of activities

The Annual plan 2018 shows that the overall achievement of the objectives set is on track. This was also confirmed by the external annual review of June 2017¹⁷. However, if we look at the progress for the period 2016-2020, the overview of expenditure and grant commitments per programme component (cf. Figure 7) shows that the ‘research and innovation’ component is on track (38%) while other programme components are somewhat behind the expectation of 40% of budget spent for end of 2017: ‘Education and Training’ (35%), ‘Knowledge sharing and networks’ (35%) and the ‘Management and learning’ (30%).

Figure 4 DUPC2 grants issued and expenditure by 31/12/2017 per programme component



Source: Progress report DUPC2 March 2018

Expenditure and grant commitments per theme (cf. Figure 5) demonstrate under-utilisation of the approved budget for ‘Water and Food’ (30%), ‘Water scarcity in the Middle East’ (30%), ‘Rivers and deltas’ (31%) and ‘Water Diplomacy’ (34%). Figure 6 shows that expenditure and grant commitments per region have made very good progress in Sub-Saharan Africa (44%) but need further progress on the Middle East and North Africa (30%), a priority region for the Dutch Ministry of Foreign Affairs.

¹⁷ Final report of second external monitoring of DGIS IHE Delft Programmatic Cooperation (DUPC2) Phase 2 – Semester 2 & 3, 2016-2020, DGIS, August 2017.

Activities targeting Latin America & Caribbean and East Asia & Pacific show least commitments and expenditure, which also reflects the DUPC2 focus countries and regions.

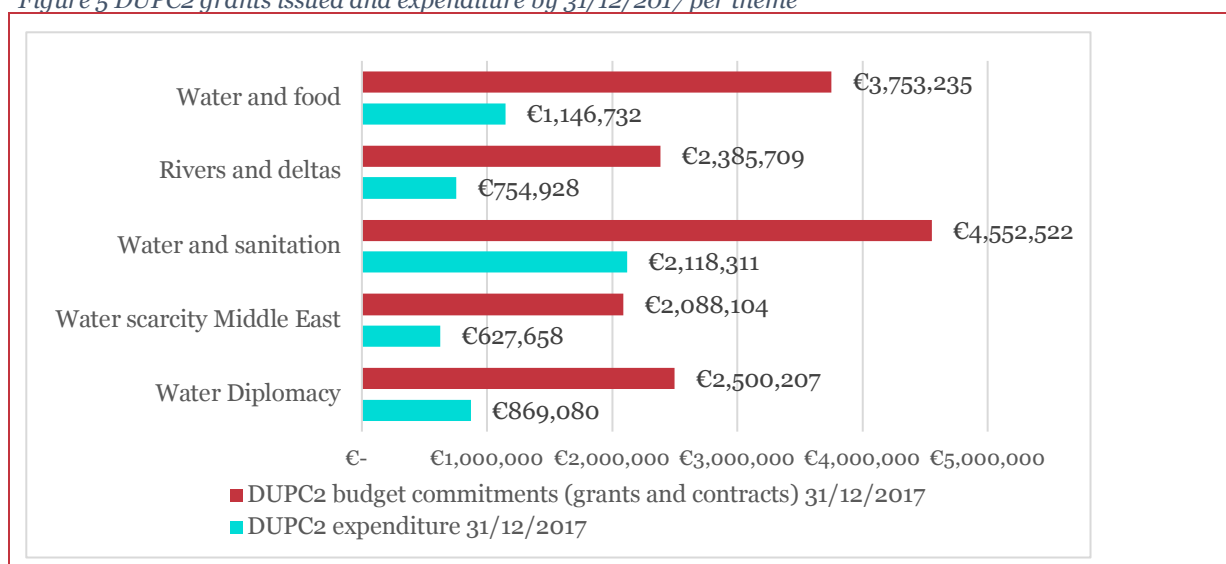
In terms of number of projects implemented by region the Middle East and Northern Africa, as well as, the Sub-Saharan Africa have the highest number of projects, 14 and 12 respectively (cf. Table 7).

Table 7 The number of projects by region

Region	Number of projects
Worldwide	25
Middle East & Northern Africa	14
Sub-Saharan Africa	12
East Asia & Pacific	4
Latin and Central America	3
Deleted from database	7
Total	65

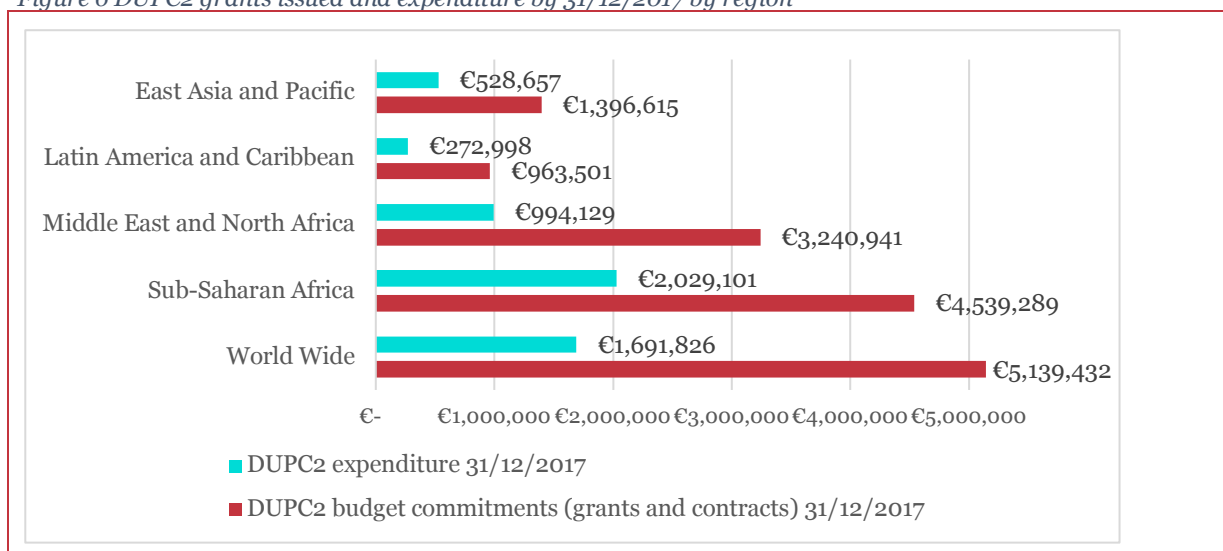
Krijnen Consulting. (2017). Final Report: External Monitoring #2, June 2017

Figure 5 DUPC2 grants issued and expenditure by 31/12/2017 per theme



Source: Progress report DUPC2 March 2018

Figure 6 DUPC2 grants issued and expenditure by 31/12/2017 by region



Source: Progress report DUPC2 March 2018

Underspending during these first two years is mainly explained by time spent in identifying and preparing activities, ensuring compliance to new conditions and synergy between activities. The DUPC2 annual report 2016 indicates that the programme spent considerable time on the identification of activities through Calls, external reviews, and recommendations to project teams. This is an investment in the quality, relevance and local ownership of DUPC2 activities.

DUPC2 plans to work in cooperation with supporting departments to accelerate implementation in 2018 and 2019. The DUPC2 Annual Plan 2018 mentions strategic objectives for 2018 that focus on areas where under-spending was strong:

- Initiate 2-3 education and training activities focussing on lifelong learning in a strategic partnership with selected southern organisations and / or networks. This strategy is based on the lifelong learning note, which is under development. Expected commitment in 2018 is 490,000 Euro and estimated expenditure is 98,000 Euro;
- Further strengthen programme management and support e.g. MER and learning, communication, website and knowledge base. Expected commitment in 2018 is 100,000 Euro and estimated expenditures is 100,000 Euro;
- Put increased focus on activities to strengthen the quality and impact of the partnership, including implementing joint activities, strengthening partners’ capacities, peer-to-peer learning, knowledge sharing and communication and engagement. This strategy is based on the partnership note currently under development. Expected commitment¹⁸ in 2018 is 775,000 Euro¹⁹ and estimated expenditure is 395,000 Euro.

7.4 DUPC2 has made good progress in achieving its target values

7.4.1 Alignment of activities and outputs with objectives and target values

The DUPC2 Annual report for 2016 presents in its appendix 5 a table showing progress on achieving the programmes’ components and results (cf. Appendix H). For each programme indicator the table compares progress for 2016 with target values. The table shows that identified activities, outputs and products are appropriate to the objectives in each area. It also indicates an **overall good progress**

¹⁸ In grants or contracts; is different from expenditure

¹⁹ Apart from 2018 commitments and estimated expenditure of the ongoing R&I, E&T and K&N activities.

on output indicators for the 4 programme components. By end of 2016 only a limited number of output indicators were behind schedule:

- **For the education and training component:** Indicator E&T R2 A2 “Number of current joint degree programmes with developing partners of which quality is reviewed and up to standard. Plus updated implementation arrangements, and / or sustainability plan”. The target set in the programme logical framework was “all 7 current joint degree programmes with developing partners in 2018”. By end of 2016 the programme had zero current joint degree programmes with developing partners.
- **For the research and innovation component:** Indicator R&I R2 A2: “Number of research products from DUPC 1 (or other) translated and targeting towards various non-academic audiences based on above recommendations”. The value attained was 4 outreach products against a target of 8 for 2016 and 24 by 2020.
- **For the knowledge sharing and Networks component:**
 - Indicator K&N R1 A1: “Number of IHE Delft and partners jointly co-organise led sessions at regional and (inter)national fora or events”. Target was 2 per year but zero was achieved by end of 2016;
 - Indicator K&N R1 A2: “Number of local-regional events co-organised highlighting a DUPC theme or DUPC activities in focus countries and regions”. Target was at least 2 per year but zero was achieved by end of 2016.
- **For the Management and Learning Component:** all target values of output indicators were achieved.

7.4.2 *Achievement of outcome indicators*

Outcome indicators were too early to measure after the first two years of implementation of the programme. These are currently being compiled and will be published in the DUPC2 Annual report for 2017 expected by end of June 2018.

Policy interviews have highlighted the need to further focus on **learning from other DUPC projects at regional or international level**. Dissemination of key outcomes and lessons learned at programme and project level is insufficient. Using monitoring and evaluation data to better disseminate results and lessons learned from implementation would contribute to institutional learning and promotion of the programme.

DUPC2 has however developed a number of initiatives contributing to knowledge sharing and learning. These include:

- The Arab Water Week organised in Jordan in 2017 as part of the Knowledge Sharing and Networks component was stated as an excellent practice by regional stakeholders and policy interviewees. The DUPC2 Middle East projects were presented at a large regional event, to inform local organizations of the project activities in the region, as well as to stimulate cooperation between local and international partners. These events can also be the opportunity to present societal impacts of successful projects and lessons learned from implementation that can be helpful in other projects.
- A note which presents the DUPC2 approach of learning has been developed and first activities were recently implemented in IHE and Mozambique.
- DUPC2 is IATI registered since 2016 this should help the programme to develop its knowledge base and better report and communicate on activities and impacts. The renewed DUPC2 website uses interesting visuals and interactive maps to present projects and activities.
- The Open Course Ware (OCW) making available free education material, tools, and exercises to water professionals worldwide.
- TheWaterChannel (c.f. case study in Annexe F).
- Spatial Data Infrastructure, a project aiming to enable DUPC2 projects and partner organisations to implement SDI's and the associated analytical tools for storing, analysing and sharing various types of data generated.

In the DUPC2 progress report of March 2018 DUPC presents its own reflexions on progress made in 2016 and 2017 and demonstrates focus on some of the activities that will need further attention in the second part of the programme implementation (cf. Figure 5).

Figure 7 DUPC2 lessons learned from progress made in 2016 and 2017

- **DUPC2 themes and regions are emerging, and DUPC puts a strong focus on strengthening synergy between activities at the thematic and regional levels.** Experience shows that an active role of IHE country and thematic coordinators and strategic partners is important as well as the engagement with local water sector, donor, and embassies. Interesting examples are the DUPC2 activities in the Middle East, Mozambique, and water accounting. DUPC wants to further encourage and support this approach through its knowledge sharing and communication budgets.
- **DUPC will use the remaining research and innovation and knowledge sharing and networks funds for the top-up of interesting and promising activities.** So instead of open calls, as was the modus operandi in 2016, DUPC aims to allocate remaining funds more strategically.
- **The largest part of the remaining funds is still available in the Education and Training Component.** DUPC wants to use these funds **for innovations in education and training in particular for supporting life-long learning initiatives with a focus on online and blended learning.** This is in line with IHE's strategy.
- **Key aspects of DUPC2 like impact on the ground, working in partnership, sustainability and upscaling, gender and inclusiveness, private sector involvement are explicitly addressed in its conditions for funding and hence activities.** DUPC however realises that this needs continuous attention and support, e.g. what are the intermediate outcomes, what are experiences and challenges, how can the programme further support? This will help DUPC2 identify further support these aspects, for instance through strengthening capacities and learning.
- **DUPC2 aims for a stronger focus on learning** as a key element to strengthen the partnership and its impact (and part of the MER). E.g. learning about the partnership / programme approach, but also – as mentioned above - learning on selected topics like addressing gender and inclusiveness in activities.
- **DUPC2 aims to have more activities led by southern partners** in view of ownership and sustainability of activities, but also to attract other funding sources. DUPC2 is initiating a discussion within the Institute and on the partnership, and on how the programme can support and further add value.
- **The programme supports the Institute and partnership in diversifying its funding.** DUPC2 funding can be regarded as seed-money for attracting additional funding. Different strategies are encouraged, including broadening partnerships, and co-funding. As a programme we have to further learn from own and other experiences.

Source: Progress report DUPC2 March 2018

8 Sustainability

Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn. In this section we will analyse the programme's financial sustainability and the sustainability of project results and partnerships.

8.1 Sustainability of the DUPC2 programme

DUPC2 is strongly dependent on funding from the Dutch Ministry of Foreign affairs. If the Ministry had to stop or strongly reduce its funding to the programme, DUPC2 would not be able to sustain its activities unless it is able to diversify its sources of funding.

Diversification of funding was recommended in the programme's external reviews in 2013 and 2017, it is also a specific objective of the DUPC2 proposal that states the following five strategies to attract different funding:

1. **Co-funding from project beneficiaries and partners in developing countries.** DUPC2 beneficiaries are currently requested to financially contribute to projects but this rarely goes further than secondment of personnel or provision of premises for meetings, research activities, trainings and conferences. DUPC2 beneficiaries from developing countries have governments that generally do not invest sufficient resources for vocational training and research making it difficult for them to co-fund DUPC2 projects. Their investment can rarely go beyond in-kind contributions. Nevertheless beneficiaries are requested to value the amount of this co-funding.
2. **DUPC will co-fund activities of relevant Dutch, EU, international programmes** which address its objectives, focus themes and regions and are carried out in partnership. This was successfully initiated (cf. Table 8).
3. **DUPC will actively seek for contributions of private sector and semi-public organisations like catchment organisations, water service organisations** by encouraging stronger collaborations and supporting the piloting of interesting research results like tools, instruments, recommendations, etc. This was introduced (cf. Table 8).
4. **DUPC will actively seek for support from piloting/implementation funds** e.g. Development banks including WorldBank, African development Bank and Asian Development bank. Some co-funding was achieved (cf. Table 8).
5. **DUPC will support activities to enhance strategic and organisational capacities of partners in attractive training and education, integrated research and innovation**, increasing visibility and impact, and attracting co-funding.

DUPC2 has demonstrated some progress in attracting new funds. In 2016-2017 almost €8,1 mln, i.e about 30% of DUPC2 funding is obtained through external fund raising (Table 8). Sources of co-funding are knowledge institutions, donors, civil society members, government and the private sector. Co-funding amounts include projects with the European Commission, the African development bank and partner or beneficiary organisations.

Table 8 DUPC2 co-funding sources and amounts in 2017

Type of co-funding	Total amount
Total co-funding	€8,057,206
• Total co-funding from knowledge institutions	€2,728,144
• Total co-funding from donors	€4,253,644
• Total co-funding from civil society	€583,690
• Total co-funding from government	€220,057

Type of co-funding	Total amount
<ul style="list-style-type: none"> Total co-funding from private sector 	€271,671

Source: IHE Delft- DUPC2

The 2017 external monitoring reviews recommended the programme should also pay more attention to income generation. A business model could be developed for DUPC2 with some of its activities presented as paid services. However, this would certainly be difficult to achieve with public partners in target regions such as the Middle East or Sub-Saharan Africa, where most beneficiaries have limited capacities to decide on budget expenditure. Opportunities for project-generated income could be explored with the private sector.

The programme is also very dependent on the fact that the knowledge on DUPC relies on a unique person at DGIS, the same at IHE Delft side. This was a deliberate choice in order to speak with one voice and facilitate communication and coordination between IHE and DGIS. Several interviewees mentioned to the reviewers that if the DUPC contact point at the Ministry was to leave his functions this might have an impact on the sustainability of the programme, although several other people in the Ministry are involved at the background and are expected to take over coordination responsibilities.

8.2 Sustainability of the benefits/results of DUPC2 projects

Sustainability of the benefits or potential benefits of DUPC2 projects (cf. Appendix F) is analysed through the assessment of the major factors that can influence the achievement or non-achievement of project impacts. These factors are described in the paragraphs hereafter.

8.2.1 Survey participants have a positive perspective on sustainability of DUPC2 projects

Over 80% survey respondents from IHE Delft and from partner institutions stated that they expect that the project in which they are/were involved in will have long-lasting impacts.

Around 84% of respondents expect/observe the start of new/follow-up projects as a result of the DUPC2 programme. This highlights that the majority of implemented projects are stimulating or are expected to stimulate new research, education and partnership activities.

8.2.2 A relevant partnership strategy that allows a holistic approach to capacity building

To implement its DUPC2 mandate IHE Delft collaborates with a wide range of partners worldwide: education and research partners from developing countries, Dutch and foreign partners from governments, private sector and civil society as well as international organisations. DUPC2 sees partnerships as “a long-term engagement in which different kinds of organizations collaborate on meeting relevant water challenges on a basis of complementarity, mutual respect, equality and inclusion of diverse actors”²⁰. This vision results in a database of over 125 DUPC2 partners with a mix of long-term partners and new partners. Almost 50% of DUPC2 partners have collaborated with IHE Delft in previous years.²¹

The consortia are expected to include a variety of partners within the project team, including governmental organisations, private sector actors, Dutch and international water sector organisations, civil society partners and/or media agencies. Partners from countries outside the OECD DAC list can participate in projects, but only at their own expense.

The roles of programme stakeholders depend on their areas of influence, expertise and capacity to contribute to project implementation.

Capacity building at organisational and institutional level requires time and resources. The majority of activities implemented by DUPC2 projects are short-term initiatives most likely to increase capacities at individual level only. However, the prospect of an impact of DUPC2 at the organisational and

²⁰ Discussion note on DUPC2’s contribution to the IHE Delft Global Partnership for Water and Development. Drafted by the DUPC2 Programme Committee. October 2017

²¹ DUPC2 Annual Plan 2018: IHE Delft Global Partnership for Water and Development. (2017).

institutional level is possible with long-term partnerships and synergies between IHE activities and DUPC2 projects. This allows for a more holistic approach to capacity building and constitutes an important strength of the programme. A significant example of sustainable impacts of IHE Delft and DUPC activities in terms of institutional capacity building is the water sector in the Palestinian Territories. The network of IHE Alumni in the West Bank occupies key leadership functions in governmental institutions and in the private sector. Besides DUPC 1 and 2 have contributed to the strengthening of the Institute of Environmental and Water Studies (IEWS) through several projects. The institute was recently labelled Centre of Excellence and is the main training institution for water professionals in the Palestinian Territories.

Alumni are important pillars of DUPC partnership network. Many of them are employed in local, regional and national private and public organizations and they know very well the needs from those organizations. They support IHE Delft in getting in contact with new partners and can also be involved in project activities.

IHE Delft is effective at sustaining partnerships: all interviewed partners during the field visits acknowledged the expertise and reliability of DUPC project leaders and many valued the improved knowledge and capacities they have acquired through this cooperation. All the new partners that were interviewed affirmed they would like to work again with IHE Delft in the future.

Several open-ended responses to the online survey on effectiveness of DUPC2 confirm that the programme contributed to capacity building of partners.

“Sustainability, partnership, problem-oriented research in modelling transboundary basins has impact on improving the capacity of our institute and gives opportunity to our researchers.”

“This project has initiated 2 PhD positions in my Centre and opened the opportunity to attract funds and to build cooperation with other international institutions.”

The profile of DUPC partners has been changing over time with a stronger focus on establishing partnerships with non-academic partners and partners from developing countries in DUPC2:

- 52.8% of DUPC2 partners are academic/knowledge institutions;
- 22.4% are civil society organisations such as cooperatives, water associations, local irrigation committees, NGOs (e.g. Oxfam, Engineers Without Borders Holland), and international organisations (e.g. UNESCO, UNICEF, FAO);
- 14.4% are governmental organisations;
- 10.4% are private sector organisations: private companies in the field of water, agriculture or engineering and business associations;
- 74% are partners from developing countries.²²

Several policy and project interviewees suggested that DUPC2 could increase its collaboration with the private sector by working with incubators or technology transfer structures in Universities to support the creation of start-ups in the water sector.

DUPC2 involves at least 40% of partners from developing countries in projects. This is very effective to stimulate knowledge exchange between IHE and partners from developing countries but also to stimulate partnerships among southern partners in particular between policy actors and academics but also between the public and private sectors. Responses to the online survey among DUPC2 partners show that 64% of respondents consider that DUPC2 is highly relevant for building partnerships (cf. **Figure 12**). Responses to open-ended questions on effectiveness of DUPC2 also mention achievements in building partnerships:

“Due to our project, there is ample learning and joint activities between the project's partners from Vietnam, Bangladesh, The Netherlands, including South-South learning between Vietnamese and Bangladeshi partners.”

²² DUPC Annual report 2016

“Linking academia with governmental entities and also linking academia with industry. However, the projects helped, to some extent, to bridge these gaps.”

“Improving relations between research institution and government entities.”

In Jordan it was interesting to see that the SCARCE project had enabled a first-time collaboration between the Water Authority of Jordan (governmental organisation) and the Marine Science Station of the University of Jordan (higher education and research institution). In the Palestinian Territories the private sector was involved in the restructuring of the two Masters programmes in collaboration with public sector organisations and academics to ensure the Masters better reflect the socio-economic needs. These two examples are good practices that can be further encouraged in project design.

The case studies and responses to the online survey have validated that IHE Delft performs strong stakeholder analyses. About 59% of respondents to the online survey consider that DUPC2 is efficient in involving the most relevant actors in its projects. The case study project in the Palestinian Territories is led by IEWS a southern partner. Its project leader has the necessary skills, network and motivation to successfully implement the project. He is fully committed to the success of the project. The selection of projects with strong project leaders is a better guarantee to long-term sustainable results.

DUPC2 aims at having an increasing number of projects led by partners from developing countries. This strategy is effective to stimulate ownership and leadership among beneficiary organisations but will only be feasible with a limited number of partners.

8.2.3 A need to further support the enabling environment by defining sustainability strategies for DUPC2 projects

For partners that are less structured and need strong capacity building, DUPC2 could invest more time on the definition and clarification of their roles and responsibilities in the project and in particular to ensure the sustainability of results. One of the key success factors in the SCARCE project was the definition of the role & responsibility of the Water Authority of Jordan (WAJ) in the selection of participants to training sessions. The WAJ made sure that the participants to the series of training organised were relevant in terms of functions and responsibilities, that the same individuals attended all workshops, and that the use of cell phones was forbidden during training sessions. The WAJ monitored presence of selected participants and completion of practical exercises handed during the workshop. Regrettably this is not done systematically for all trainings targeting beneficiaries in public institutions in the Middle East. In other projects the evaluators observed that some participants only attended the first workshop on basic skills and not the following that focused more on practical skills. Consequently, they cannot acquire the full set of skills and knowledge targeted by the project. It is important that the DUPC2 contact point in the beneficiary organisation understands this and engages in an efficient mobilisation of trainees. IHE project leaders also play a role in the transmission of a culture of professionalism and efficiency. During the SCARCE trainings they spoke about respecting the knowledge, the material, the importance of punctuality; moreover, they set high standards in terms of quality and rigor.

Sustainability of project results are dependent on the capacity of the beneficiary organisation to take over the project and make sure that new skills and methods are applied internally. This might only be possible if the organisation is able to invest in necessary software and/or data and/or is able to change its working methods (approval from strategic level). For this reason, it is important that DUPC2 projects systematically plan a sustainability strategy with the partner organisations. This implicates a co-definition of the necessary steps to take to ensure the application and use of project results.

Besides, DUPC2 project proposals would benefit from more systematically demonstrating alignment of the project to strategic objectives of beneficiary organisations and countries. This does not mean that DUPC2 projects do not respond to existing needs. During the proposal stage this alignment should be co-defined with local partners and beneficiaries. Demonstrating alignment of the projects with local strategies and policies will enable:

- Stronger ownership and commitment from local partners;

- Coherence with existing or future processes, systems and structures;
- Funding for dissemination, follow up and/or scaling up of project results.

In the same way ensuring that the project has commitment from the highest possible level within the beneficiary organisation is likely to enable conditions that are more favourable to sustainability of results.

An interesting comment was made in the online survey in open-ended responses on DUPC2 effectiveness:

“The project on its own cannot achieve most of what is asked, but it can have some contribution. There are other conditions that depend on reforms and actions within our own institution in order to improve research capacity.”

Defining a sustainability strategy with the partner organisation is a way to maximise the project impacts and ensure that due attention will be paid to possible extension or scaling up of project results. This can be done by actively involving the partner organisation in the design or inception phase of the project and by providing recommendations or guidelines at the end of the project.

Survey respondents questioned on sustainability of project results were asked whether organisations/companies that participated in projects have or plan to have a strategy to ensure sustainability of project results. **Figure 19** shows that 57.9% of organisations/companies have or plan to have a strategy, while 9.2% of survey participants do not see the willingness of their organisation/company to contribute to sustainability of project results, and over 30% of respondents have no opinion if their organisation will be designing such strategies.

Respondents who stated that they have or plan to have a strategy to ensure sustainability of project results were asked to describe their strategies. Among listed strategies three approaches could be distinguished:

- dissemination of the knowledge acquired during the project through new workshops and events;
- maintaining relationships with project partners and engaging with new partners;
- up scaling of current project results to other towns/regions or ambitions to launch follow-up projects.

The majority of respondents combine or plan to combine several approaches.

Although all case study projects have planned communication and dissemination activities (workshops, publications, conferences, etc.) and developed impact strategies during proposal writing, most of them encounter difficulties in their efforts to sustain project results involving recommendations and practical guidelines supporting policy makers, technicians or private sector actors. Without a successful sustainability strategy, some projects run the risk of not achieving long term impacts, for example the productivity training in the Middle East where beneficiaries in Jordan and Lebanon are currently not using the data they were trained to use. DUPC2 is working to strengthen many of its beneficiary organisations in developing countries, these organisations are likely to lack the necessary managerial skills to efficiently anticipate actions that will enable project results to be sustained. Stronger support in planning these actions at the beginning and at the end of the project is necessary to better ensure achievements of outcomes and impacts. IHE project leaders might also not be aware of all the environmental constraints in which the project operates and the co-design of a sustainability strategy with local partners will help to overcome some barriers.

This is essential in projects from the research and innovation component where DUPC2 does not systematically work with its partners to plan an effective translation of research results. For example, the STUUR project had good intentions in transferring knowledge from IHE, company VEI and Ugandan partner IREC to obtain optimal transfer to Rwandan partner WASAC, but in practice the plans to do this have not materialised.

Survey respondents were also asked to identify barriers to the achievement of project sustainability. The lack of financial and human resources and effective long-term partnerships were identified as the major factors influencing sustainability of project results (cf. **Figure 21**). Among “other factors that influence project sustainability” respondents mainly emphasized:

- the lack of clear sustainability strategies embedded in the project with commitment of implementing institutions;
- the lack of political commitment in beneficiary countries and institutions.

8.2.4 Planning exit strategies can contribute to sustainability of results

Policy interviewees noted the need for DUPC2 to develop exit strategies for its projects. This was also recommended in the second 2017 external monitoring review of DUPC2. Indeed, DUPC2 could build more projects where its funding is considered as seed money to start an initiative that would be taken over by other donors. An example of such a model is the WaterNet that was initially supported by DUPC and has gradually has grown into an independent network organisation with 72 members in 15 Southern and Eastern African countries and co-funded by supporting members such as GWP-SA and SADC and associate members. DUPC2 is also supporting the Nile Basin Capacity Building Network (NBCBN) to become an independent legal partner that would continue its mission in the Nile basin capacity development without or with diminished DUPC support.

9 Overview on results at regional level

9.1 Middle East

Relevance and alignment with national policies

The focus on the Middle East as a priority region is new for DGIS. Water cooperation in the region was introduced in 2016 in the DUPC2 proposal. Attention to water scarcity and other water-related problems, in the context of the refugee crisis in the Middle East was a specific DGIS request to DUPC2. However, IHE Delft has contributed since its creation to the training of a number of stakeholders from the Middle East working in the water sector and has therefore a solid reputation and good connections in the region.

In March 2016, a note was developed to explain how DUPC2 contributes to this theme. The basis for the note was a preliminary analysis of local demand, as well as synergy with other projects in the region. The note was discussed with DGIS and local stakeholders and served the purpose of developing four two year projects:

- Water Intelligence for the Near East;
- Desalination, Diplomacy and Water Reuse in the Middle East (SCARCE);
- Microwave based Faecal Sludge Treatment;
- Connecting Regional Experts from the Nile Basin and Middle East in order to solving Water Scarcity.

Water diplomacy is a topic to develop in the region. Interviewees mentioned the importance of transboundary water management for equity and equality in access to water, and the needs for installation of transboundary monitoring systems.

Effectiveness

Expected outputs are on track with project schedule, on very rare occasions delays were observed, for example delays in the design and manufacturing of the portable microwave unit in Jordan. However, these delays are explained by technical challenges rather than issues related to project management.

Support from the Embassy (Regional water and energy envoy) was very important for the effectiveness of projects; it helps to mobilise decision makers and solve administrative issues (e.g. the signature of a contract with a public institution in Jordan). The Water Envoy has regular meetings with the DUPC2 regional Committee member and provides guidance and advise on implementation of activities.

Although DUPC2 works with all category of actors in the Middle East, case studies and field interviews showed that DUPC2 partners in Jordan and Lebanon are mostly government ministries and water authorities while in other regions the programme works more with Universities. Collaboration with the private sector and civil society is also small in Jordan and Lebanon.

A very limited number of activities are implemented at regional level (the CONNECT project and the Water productivity project). The issues of water scarcity and pressure on water resources because of the refugee crisis, the impact of climate change and economic development are common to many countries of the region. The refugee crisis, which constitutes an enormous burden on water resources, infrastructure and the finances of water utilities in Jordan, Lebanon and Iraq. For these reasons regional cooperation is important for an efficient and effective use of funds.

Sustainability

IHE's solid technical expertise and reliability has contributed to build trust for its activities in particular in Jordan. Established and new DUPC2 partners in the Middle East have both claimed they would work again with IHE in the future.

In some countries such as the Palestinian Territories, the long-term investment of IHE Delft in the water sector has resulted in a strong Alumni network with stakeholder occupying important functions in public and private organisations.

In Jordan, high rank officials from the Jordanian governments ranging from Secretary General of Water Authority of Jordan and SG of the Ministry of Water and Irrigation were involved in some

projects from the beginning. Authorities have issued endorsement letters to these projects in the proposal-writing phase, and took part to the launch of the projects, and attended the capacity development activities (e.g. SCARCE project). Involvement of high rank officials is essential to ensure ownership and sustainability of projects.

The presence of regional DUPC2 Committee member can be further exploited to promote DUPC2 and monitor projects results at national and regional level.

Demand drivenness and ownership

Projects are generally initiated by project leaders. Among the case studies analysed only the project with the Birzeit University in the West Bank was led by a southern partner and thus driven by a local demand. All other projects were initiated by IHE project leaders who have contacted local stakeholders to check for relevance and interest. DUPC2 management is encouraging southern partners in capacity to lead a DUPC2 project to submit proposals when relevant.

Strong networks and solid partners have contributed to enhance ownership of DUPC2 projects and successfully mobilise stakeholders.

The evaluators have observed limited cooperation with local initiatives initiated by other donors in the region. The German cooperation is very present in Jordan with important projects in response to the challenges of the refugee crisis, inclusion and good governance, gender equality and the creation of employment opportunities. Large infrastructure projects were developed using low-interest loans and grants the German cooperation also funds human capacity development. Other actors such as USAID or the French cooperation are also active in field of water cooperation in the region, offering opportunities for cooperation to mutualise resources and avoid duplications. This can be organised through organisation and participation in regional events and with the support of the DUPC2 Regional Committee member and or Dutch Embassies.

9.2 Mozambique

Relevance and alignment with national policies

In general terms, the assessed projects are doing well, although some projects show delays for several reasons (partner conflicts, methodological problems, learning/capacity problems). The projects seem to be well developed conceptually and all have a good research structure with enthusiastic and skilled people in place. All projects managed to get actors from different sectors on board (governmental/private sector/academia, some NGO's) so the envisaged three-way collaboration seems to be well established, although not always with the same impact because primarily private sector and government partners do not always show the same level of commitment as academic partners as research results might not always be tangible (yet) or not aligned too much with policy priorities. Also, a good mix of long-lasting and new partner institutions has been observed. The embassy underlined that DUPC2 should put even more effort in aligning with their strategic priorities in the water sector, but also agreed that a certain level of academic freedom and experimentation is necessary in a programme like this as well. Precisely this kind of projects that operate in the margins of sectorial/thematic boundaries are able to open up new cross-cutting collaborations and insights, and even if they don't experimental failure can be as valuable as routine success.

Sustainability

Although all reviewed projects are planning dissemination activities at a certain moment in the project and developed communication and PR strategies, a difficult topic in all projects visited is how to "translate" research results into practical guidelines and tools for policy makers, technicians and private sector at the end of the project. Some projects also struggled to actively involve policy makers from the start of the project. Therefore, some project activities might run the risk to become interventions instead of achieving structural changes. Liaising with government officials and coordinate between research objectives and policy needs is advised for all projects. Alignment of the projects with institutional strategies (at least at faculty and/or research group level) and local needs is satisfactory, but with national policies could be improved.

Demand drivenness and ownership

The concept for all research projects seems to have originated in IHE Delft (mostly the current project leaders) who approached southern contacts and organisations for collaboration. Even the only South-south collaboration project in Mozambique has been conceived in this way. Nonetheless, this does not mean that research projects lack relevance for the local context or institutions, on the contrary they seem to be very relevant, and in some cases even forward-looking. All main project partners show strong ownership of the project, but on the long run it has to be seen if a strong institutional ownership of the project results will remain, as sometimes, at institutional level, the projects seem to operate quite independently.

Regional/international collaboration and exchange

The impact of regional and/or international collaboration and exchange in projects has been limited so far. The majority of the visited projects have several exchange activities implemented and/or planned, but much practical cross-learning has not been achieved. On a national level, the first national DUPC2 meeting, will most probably stimulate cross-learning among projects in Mozambique and therefore should definitely be continued. The regional committee member for Africa might also be able to play an encouraging role in regional cross-learning between projects and diversification of (local) funding for follow-up projects through alternative networks.

9.3 Uganda & Sudan

Relevance and alignment with national policies

Most projects in eastern and north-eastern Africa relate to the Nile basin. Other projects focus on drinking water and sanitation. Water scarcity, drinking water and sanitation are important topics in the national policies of all these countries.

For this evaluation three projects were visited with activities in Uganda, and one project was discussed in Kampala with the project leader from Sudan.

In Uganda water is no priority for the Dutch Embassy. However, they have chosen agriculture and food as their priority and a number of water issues are strongly related to this theme. Direct involvement of the embassy of the Netherlands in Kampala in DUPC2 projects is not realised but was not really needed either.

Effectiveness

Most of the that were visited are doing well, although, like in any R&D or capacity building support programme, the reality is more difficult than the planning, and some projects show delays (partner conflicts, methodological problems, capacity problems). As in Mozambique, the projects seem to be well developed conceptually and all have a good research structure with enthusiastic and skilled people in place with different backgrounds (government, private sector, academia).

A very successful project that was studied as a case, is the Tekeze Atbara project. This project is a good example where research goes well in hand with policy development. The research process is balanced and takes into account the research capabilities in both countries involved (see e.g. the choice of simulation software) and makes good use of the expertise at IHE. The connection to diplomatic/political level is well organised (a good example of science diplomacy) and involves not only the relevant ministries from both countries, but also the embassies, so that Foreign Affairs in both countries are involved as well. This is a model that could be expanded to/with other countries in the Nile Basin.

Capacity building networks such as the Nile Basin Capacity Building Network (NBCBN) also have a very useful role. As expert networks they are able to organise expertise very quickly. They are not as politicised as formal network from countries. Funding for the overhead costs of such networks is problematic, and the project under DUPC2 is focused on realising a more sustainable funding model. Because of lack of funds in the countries involved and political sensitivities this is not an easy process. One successful project was already realised with non-DGIS funding (Nile-Eco-VWU project, Nile Ecosystems Valuation for Wise-Use, funded by CGIAR).

Sustainability

IHE is generally seen as a strategic partner by the local partners, and relations often go a fairly long

way back, either because of (series of) projects, or because key-people in the organisations have studied longer or shorter periods at IHE.

In some projects it would have more impact in the long-term, if the projects had a broader, more integral scope. In the Tekezze Atbara project for example, the model development is focused on maximising the (economic) benefits of multi dam-management irrigation, electric power, and environmental flow). Environmental impacts are not directly in the model. These may be large in the longer term. It is suggested to discuss taking these into account as well in a possible next stage of the project.

Demand drivenness and ownership

Not in all projects international cooperation is working optimally. In the SMALL project there has been some interaction in the beginning of the project between partners from Uganda and Mozambique, but since then interaction was limited and therefore there seem to be untapped learning possibilities between the two countries that could be reaped by more intensive exchange of information between project partners and more systematic comparison of the water distribution and sanitation systems between Mozambique and Uganda and between small towns and big cities.

In the STUUR project, training courses are developed for water utility staff in Uganda and Rwanda, to be given by Ugandan and Rwandan trainers. This can be really of added value for water utilities, providing their staff with the skills needed to provide a public service within a commercial surrounding. Good in-house training facilities can provide the necessary sustainability to such training programmes. The role of Ugandan partner NWSC/IREC has been very positive in this project: they continued developing courses when support from IHE (because of staffing problems), Rwandan partner WASAC (they did not get a training centre from the ground) and Dutch partner Vitens Evidens International (they backed out after a sudden change in strategy) was more limited than expected. They have based their courses very much on the NWSC needs but will train WASAC staff at the end of the project, as well as, possibly, staff from utilities in other countries in the large waterworks project. Like in Mozambique, the international partnerships look good on paper, but require major efforts to make them work. This is especially valid for dissemination of the results.

10 SWOT analysis

The table below lists the strengths and weaknesses of DUPC2 and opportunities and threats regarding the future as identified during the evaluation. This overview is based on analysis of documentation, the interviews conducted (both with internal and external stakeholders), the evaluation survey, the field visits, the focus group discussions and reflects the interpretations by the evaluation team members.

Figure 8 DUPC2 SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • The programme clearly strengthens local and international long-term partnerships, IHE/southern and southern/southern, combining research and capacity building • The programme benefits from IHE’s reputation and its highly valued expertise in the field of Water cooperation • The programme invests in people that are intrinsically motivated • The programme makes good use of existing networks and capacity, including IHE Alumni network • The programme is well managed • Communication and Marketing activities are integrated in large projects • Appointment of regional DUPC Committee members offers better local inking to the programme • The programme has a good governance system with participatory decision making (mix of southern and northern partner representatives) • DUPC helps to introduce/promote new approaches and new technical solutions • The programme has made effort to create synergies between projects and activities • The programme contributes to organisational and institutional capacity building by investing in long-term partnerships • A solid Monitoring and Evaluation system was established • Dutch embassies provide support and advise 	<ul style="list-style-type: none"> • No country profile documents are drafted that describe national policy priorities or strategies related to the national water sectors • Project proposals do not explicitly refer to national policies • Cross-learning between national projects and within projects with an international component is weak • The programme is insufficiently aligned to other international donor programmes • Projects encounter difficulties to successfully implement sustainability strategies • “Translation” of research results into practical guidelines and tools for policy makers, technicians and private sector at the end of the projects • Capturing/measuring outcomes and impacts however is not done in a structured manner, and this needs improvement, as well as its communication • In many countries, no regional DUPC Committee member and / or water sector specialists at Dutch embassies DGIS water envoy are present
Opportunities	Risks
<ul style="list-style-type: none"> • Diversify DUPC2 funding resources or cofounding for DUPC2 projects • Encourage and capacitate organisations to broaden their funding sources • Further encourage ownership and leadership among local beneficiary and partner organisations • Further encourage alignment of projects with labour market needs and society through stronger involvement of private sector and civil society partners • Further encourage commitment of local partners from the highest possible level • Future project calls addressing issues from the policy document “Investing in Future Prospects” • Introduction of national DUPC2 project meetings as good practice to duplicate in all countries • Increase the number of non-academic partners in 	<ul style="list-style-type: none"> • Under-spending of the programme • Rules for contracting with partners are rigid and difficult to implements for public administrations in southern countries • There is no programme protocol for project selection procedures • DUPC is not visible: visibility opens new opportunities in particular with other international donors and government

<p>particular from the private sector</p> <ul style="list-style-type: none">• Increase collaboration with media to promote the programme and communicate on impacts• Develop e-learning models to up-scale project results and disseminate knowledge• The programme should stimulate the development of entrepreneurial skills among project partners	
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11 Conclusions

Relevance

DUPC2 objectives and activities address the concerns, needs and priorities of the water sector in developing countries. For the Middle East DUPC2 strategic objectives and activities were defined in consultation with local government and local stakeholders. In other regions the relevance of DUPC2 projects is certainly due to the long-term professional interaction and quality of knowledge exchange between the IHE project leaders, partner institutions and actors in the water sector in the targeted countries. DUPC2 project proposals do not specifically refer to national strategic policy priorities but the projects reviewed within this evaluation were all relevant to the needs of beneficiary countries. Respondents from interviews and focus groups mentioned however that the programme would benefit from having country/regional profile strategies.

DUPC2 is relevant to the thematic and geographic priorities of the Dutch Ministry of Foreign Affairs as written down in the policy letters Water for development (2012) and the International Water Ambition (2016). The Ministry's priorities are closely aligned to the 2030 Agenda for Sustainable Development, in particular to SDG 1,2,3,4,5 and 6. DUPC2 is therefore very relevant with respect to achieving these SDG's. The survey implemented among DUPC2 partners underlined the programme's relevance to additional cross-cutting SDGs such as SD goal 13 (Take urgent matters to combat climate change) and 17 (Strengthen and revitalize global partnerships for development)

DUPC2 has integrated new priorities of the Dutch government:

- The focus on solving **water scarcity and water problems related to the refugee crises in the Middle East** was successfully introduced in 2016 with a strategy developed by IHE-Delft with support of DGIS and Dutch Embassies. The strategy was developed in consultation with local partners and stakeholders to ensure alignment to needs and priorities of the water sector in target countries.
- The topic of **water diplomacy** was more challenging to develop because of limited capacities within IHE Delft. An expert was assigned by DGIS to assist the institute and it is expected that two lecturers and one programme assistant will be appointed in the second half of 2018 to solve the capacity issue and finalise a strategy. A possible role for IHE would be to assist local governments in developing water safety strategies, water conflict resolution plans etc. The Ministry could also benefit from IHE's expertise to predict water scarcity and migration issues. Implementation of a DUPC2 water diplomacy strategy will require a continuous strong collaboration of IHE-Delft with the Dutch Embassies and DGIS.

DUPC2 is aligned to IHE Delft strategic objectives for 2015-2020. The four inter-related DUPC2 programme components and related activities clearly support the strengthening of the current IHE-Delft global partnerships.

The evaluators have observed **room for improvement in the alignment of DUPC2 with other donor-funded programmes.** A stronger monitoring in the field of activities implemented by other donors would offer opportunities for joint efforts or exchange of lessons learned. Regional DUPC2 Committee members make efforts for coherence liaising with other international cooperation stakeholders in the water sector. In addition, water sector specialists / envoys of Dutch Embassies could help with aligning DUPC2 with national and donor agendas. The "national project and learning meeting' held in Mozambique were identified as a good practice for the programme.

Programme organisation and efficiency

DUPC2 is well managed and efficient, the overall costs for administering the programme are reasonable (4% of the total DUPC2 budget for 2016-2020). Improvements can be made in the institutional management of the programme's resources to demonstrate stronger efficiency to its current and future donors. This includes an update of its human resources policies and of its regulations with respect to maximum costs of the different budget expenses. The programme however demonstrates a strong value for money. Projects generally deliver their expected outputs on-time and

efficiently with support for its network of partners and Alumni and the Dutch Embassies. Efforts are made to build on results from past DUPC and IHE projects to achieve stronger synergies and impacts.

DUPC2 has taken recommendations from past evaluations into account to enhance its institutional arrangements and management. Its administrative and financial rules and regulations were redefined, and a number of guidelines and policies updated. The programme has defined a stronger monitoring and evaluation framework including a logical framework, SMART indicators, target values and means of verification. All projects above 75k€ include a logical framework. Going forward the programme could introduce a few baseline indicators for its larger projects as recommend in the 2017 external review of the programme.

DUPC2 monitoring system provides good data on the evaluation of progress. DUPC2 is behind schedule in terms of budget expenditure. Under-spending during the first two years of the programme is mainly explained by time spent in identifying and preparing activities through Calls, external reviews, and recommendations to project teams. Efforts in terms of implemented activities are aligned with DUPC2 priorities with a strong focus on the “Research and Innovation” and the “knowledge sharing and network” components that respectively represent 43% and 32% of DUPC2 grant allocation. Strong focus was made on Sub-Saharan Africa and the Middle East. DUPC2 has planned stronger emphasis on the “Education and Training” component in 2018 in particular to support life-long learning initiatives with a focus on online and blended learning.

Results, outcomes and impact

DUPC2 had various interesting results and outcomes including:

- The programme’s ability to build long-term partnerships and its efforts to build synergies within the programme contribute to capacity building at individual, organisational and institutional level;
- The programme stimulates social (participatory approaches, introduction of innovative education approaches, etc.) and technological innovations (new technologies and systems for the treatment of used waters, etc.);
- The programme stimulates problem-oriented research that can bring practical solutions to water issues;
- The programme strengthens links between universities and government in beneficiary countries.

The current phase, DUPC2, after 2 years of implementation cannot show impacts yet. With the new DUPC2 website, which also makes project pages accessible, and the upcoming output database DUPC2 aims to make activities, outputs and stories of change more accessible. Capturing/measuring outcomes and impacts however is not done in a structured manner, and this needs improvement, as well as its communication. The evaluators have found no communications on the website on impacts of DUPC1 for example. DUPC2 projects leaders from IHE have received training on how to produce impact videos. Besides the programme has drafted guidelines on the production and dissemination of impact stories. These tools haven’t been used yet because they rely on information provided by beneficiaries in the field. Regional DUPC2 Committee members could support in collecting impact data but their involvement should then be organised differently. At the moment DUPC2 plans to work with local communication specialists such as the African Journalist Network for the production and dissemination of impact stories.

Field visits and additional case studies showed that the impact of **national and international cross-learning** through the projects in which several countries were involved, is still limited. That is unsatisfactory, as international cross-learning must be considered as an important aspect of strengthening and revitalizing global partnerships.

Sustainability

The programme still heavily relies on funding from the Dutch Ministry of Foreign affairs. Efforts have been made to diversify its funding sources and should be continued.

A number of factors contribute to the **sustainability of DUPC2 projects results**:

- DUPC2 has the capacity to mobilise strong partners from various type of organisations;
- IHE Delft is effective at sustaining partnerships;

- DUPC2 has a holistic approach to capacity building through long-term partnerships and synergies across projects;
- DUPC2 generally engages local partners in the co-design of initiatives to build stronger ownership of the projects and continuation;
- Projects plan dissemination and communication activities;
- The programme invests in people that are intrinsically motivated.

However, sustainability of project results also faces a number of constraints:

- Lack of financial and human resources for follow up in the countries of implementation and at IHE Delft;
- Lack of capacities to efficiently anticipate and manage risks;
- Lack of commitment to change through coherence of policy and sustainability of support;
- Political instability in the countries of implementation;
- The social/cultural/political/and technical circumstances affecting institutional capacity building;
- DUPC2 projects do not systematically refer to national policy documents and objectives and/or strategic objectives of beneficiary institutions.

12 Recommendations

12.1 Recommendations at strategic level

#	Description	Lead actor	Priority
R1.1	<p>Pursue the efforts to develop a Water Diplomacy strategy responding to:</p> <ul style="list-style-type: none"> the ministry's priorities local needs IHE strategic objectives <p>Regular collaboration and coordination within the DUPC2 programme between IHE-Delft, DGIS, and the embassies that manage a water programme is recommended</p>	IHE Water Diplomacy team	High
R1.2	<p>Consider designing a few specific projects addressing gender and inclusivity effectively. Demanding every project to deliver on gender and inclusivity is not always realistic</p>	DUPC2 management and IHE Rectorate	Medium
R1.3	<p>Consider future project calls addressing issues from the policy document "Investing in Future Prospects"</p>	DUPC2 management	Medium
R1.4	<p>Consider synergies of DUPC2 with IHE Delft activities such as an easier access to IHE training programmes for DUPC2 project partners</p>	IHE Rectorate and DUPC2 management	Low

12.2 Recommendations at programme management and support level

#	Description	Lead actor	Priority
R2.1	<p>Continue efforts to enhance synergies between programme components and projects</p>	DUPC2 management	High
R2.2	<p>Continue efforts to enhance the number of non-academic partners in particular private sector partners that might be in a stronger position to co-fund projects</p>	DUPC2 management	High
R2.3	<p>Allow a 2 year extension without impact on budget to enable DUPC2 to fully implement its objectives</p>	DGIS	High
R2.4	<p>Pursue efforts to demonstrate the programme's value for money :</p> <ul style="list-style-type: none"> better communicate on results and impacts (website, dissemination activities, regional learning events) 	DUPC2 management	High
R2.5	<p>Enhance ownership and engagement of local actors:</p> <ul style="list-style-type: none"> Ask project leaders to systematically explain in their proposals how the project links to national policies and/or strategic objectives of beneficiary organisations. This should be done in collaboration with local actors Use activities like regional events to engage with policy decision-makers, assess how local demands are addressed, and identify opportunities of demand driven projects based on existing gaps Award local initiatives to promote projects initiated and lead by southern partners 	DUPC2 management and IHE project leaders	Medium
R2.6	<p>Enhance coherence with other international donor programmes, in particular at regional level, to avoid overlaps and ensure synergies This should be done in collaboration with Embassies and regional DUPC Committee members</p>	DUPC2 management / Regional DUPC members/Embassies committee	Medium
R2.7	<p>Organise national/regional DUPC2 meetings/events promoting learning from implementation of projects (e.g. Mozambique)</p> <p>This could be organised yearly, first at national level to reflect on difficulties and success factors of finalised projects. The recent learning event in Mozambique can</p>	DUPC2 management team with support from the regional DUPC Committee members	High

	<p>be duplicated in other countries</p> <p>Inputs at national level can be used for a reflection at regional level. When organising regional events on DUPC2 projects it is interesting to communicate on results, and lessons learned from past projects and not only on objectives of new projects</p> <p>Results from 1-2 relevant worldwide projects can also be presented during regional events</p>		
R2.8	Develop an open culture to discuss project implementation issues with DUPC2 project management	DUPC2 management	Medium

12.3 Recommendations at implementation level/ project level

#	Description	Lead actor	Priority
R3.1	<p>Develop sustainability strategies in collaboration with local beneficiaries to ensure effective use of project results, and impacts. These strategies should be developed at two different stages of the project life cycle:</p> <ul style="list-style-type: none"> • <u>At the design phase</u> to ensure that a risk management strategy is developed. Potential barriers to achievement of impacts should be identified taking into account the dynamics of the local environment. The strategy should anticipate mitigation actions for each risk • <u>At the end of the project</u>, project leaders should draft recommendations or practical guidelines for project beneficiaries describing the steps that need to be achieved by the project beneficiaries and partners to ensure sustainability of results 	DUPC2 management team	High
R3.2	<ul style="list-style-type: none"> • Continuous support from Embassies to alert on possible synergies with other initiatives and for organisation of dissemination events: having a water officer is strongly recommended 	DGIS	High

Appendix A Evaluation questions (as listed in the ToRs)

A.1 Relevance

- To what extent do the DUPC objectives and activities address the concerns, needs and priorities of the water sector in developing countries?
- How relevant is the program with respect to achieving the SDG's?
- To what extent does the DUPC program support the priorities of the Dutch government as written down in the policy letters water for development (2012) and the International Water Ambition (2016)?
- To what extent has DUPC been able to adjust its program in the course of time to new challenges and policy priorities? Specifically, has the programme been able to address new challenges in the area of water diplomacy and respond to particular requests from the Dutch Ministry of Foreign Affairs in this respect?
- How has the program fulfilled its role to support the implementation of the strategy document 2015-2020 of IHE Delft in the review period? How can this role be made more effective in the future, and what are the related options and possibilities going forward?
- Were the objectives of DUPC clearly defined in the proposal and measurable?
- Were the identified activities, outputs and products appropriate to the objectives in each area of the proposal?

A.2 Effectiveness

- To what extent does the programmatic funding facilitate flexibility and effectiveness in program planning and management?
- Does the DUPC monitoring system provide good data for the evaluation of progress and impacts?

A.3 Efficiency

- To what extent is there sufficient attention to operate the program in a cost-efficient manner?
- Does the program have clear regulations with respect to maximum costs of the different budget items?

A.4 Institutional arrangements and management

- What are the most effective relationships (and specifically partnerships) in which DUPC and its programs operated?
- Do DUPC and its programs cooperate with the most important partners in the area of work?
- Is DUPC able to involve non-academic partners in its programs? What are the results of this involvement so far?
- How appropriate and effective is DUPC organizational structure and staffing profile in realizing a relevant, effective and efficient DUPC program of activities? What changes, if any, are needed to DUPC organizational structure, and staffing profile going forward?
- Who is DUPC accountable to and to what extent, and how is M&E built into programming and strategy to strengthen that accountability?

- How well does DGIS interact with DUPC and what are the recommendations for improving the effectiveness and efficiency of this interaction?
- Are there examples of innovative approaches? What are the results and how do projects learn from others.

A.5 Sustainability

- How sustainable are DUPC and its programs? Identification of factors which may be constraints and those which may be beneficial to sustainability, organizational embedding, staff capacity, ambition and financing.
- Does DUPC enhance local ownership of program activities with the aim to increase sustainability on the long term?
- What are the main medium-long term developments anticipated by DUPC with regard to 1) demands from its customers and clients, 2) its programs and services, and 3) its funding?
- How can the financial sustainability of the DUPC be improved?
- How did DUPC take into account aspects of ecological sustainability, climate change, gender and inclusiveness?
- Does the DUPC already have strategic directions for its future and if any, how realistic and feasible are those directions?

Appendix B List of documents consulted

- DUPC2 proposal 2016-2020
- UNESCO-IHE strategy 2015-2020
- The BEMO (Beoordelingsmemorandum) of the DUPC-2 program (appraisal doc)
- The kamerbrief Water voor ontwikkeling (2012)
- The IWA (International Water Ambition) (2016)
- The DUPC2 Annual Report 2016
- The DUPC2 Annual Plan 2018
- Progress Report DUPC2 March 2018
- DUPC2 approved budget 2016-2020
- The evaluation report of DUPC1 2013
- External monitoring report #1, Krijnen Consulting – Geneva (KCG), 04 January 2017
- External monitoring report #2, Krijnen Consulting – Geneva (KCG) 14 August 2017
- Monitoring, evaluation and reporting (MER) protocol
- Monitoring, evaluation and reporting (MER) sheets
- Running projects:
 - Database of running projects with technical and financial details
 - Project proposals, grant letters, logframes and budgets
 - Project mid-year progress reports and final projects annual reports
- DUPC2 calls text
- DUPC note on the contribution of the DUPC2 to solve Water scarcity in the Middle East 2016-2017
- DUPC2 update to logframe (2017)
- Note on DUPC2 contribution to the IHE Delft partnership, October 2017
- Note on planning and education and training component and DUPC2 focus on continuous learning
- Note on improved logframe for research and innovation component
- Notes to the Rectorate presenting the recommendations of the DUPC committee for funding of proposals received in 3 Calls in 2016
- Monitoring evaluation and reporting protocol DUPC2, May 2017
- DUPC2 Stories and highlights for communicating impact
- Communication plan
- Notes on evaluation mid-year and final project progress reporting (2016 and 2017)
- Note on financial budgeting and reporting in DUPC2, November 2017
- Partner financial report and timesheets
- DUPC link: <https://www.unesco-ihe.org/global-partnership-water-and-development>

Appendix C List of Interviewees

C.1 Policy interviews

	Name of interviewee	Function	Date of interview	
IHE Delft Rectorate	Prof. Eddy Moors	Rector	28 March 2018	
	Prof.dr.ir Charlotte de Fraiture	Vice Rector		
	Dr Johan A. van Dijk	Business director		
DUPC management	Wim Douven	Coordinator DGIS - IHE Delft Programmatic Cooperation (DUPC) Associate Professor of Integrated River Basin Management		
	Carolien Jaspers	Liaison Officer EU Relations		
	Nadine Sander	Project Assistant of DUPC and Liaison Office		
	Mita Kusumaningrum	Project Support Officer		
	Prof. Chris Zevenbergen	Professor of Flood Resilience of Urban Systems		
DGIS	Aart van der Horst	Senior policy adviser water		6 April 2018
	Karin Roelofs	Head Water Cluster		
	Tineke Roholl	Former senior adviser water diplomacy		
DUPC committee member in the Middle East	Dr. Naser Almanaseer	Director of the Office of Scientific and International Relationships, Al-Balqa' Applied University, Jordan		

C.2 Interviews at project level

C.2.1 Middle East

Jordan

Date	Time	Activity / Meeting	Interviewee / address	Location
22.04.2018	11:00 – 12:00	Regional DUPC committee member	Dr. Naser Almanaseer Regional DUPC Committee Member	Hotel Reception
22.04.2018	12:30 - 13:00	Water Authority of Jordan	Dr. Ahmed Uleimat SCARCE Focal Point Email: ahmed_uleimat@mwi.gov.jo Mobile: +962777785251	Water Authority of Jordan
22.04.2018	13:00 - 13:30	Dutch Embassy (Via Skype)	Tessa Terpstra Dutch Embassy – Amman	Hotel Reception

Date	Time	Activity / Meeting	Interviewee / address	Location
22.04.2018	15:00 – 16:00	Short visit to full-scale wastewater treatment plant Meeting with selected operators who took part in SCARCE project	Three Trainees	Fuhais Treatment Plant
23.04.2018	10:00 – 11:00	SCARCE Project -Sea Water Component Project Partner - University of Jordan, Marine Science Station at Aqaba	Dr. Mohammad Ahmad Wahsha, Assistant Professor of Ecotoxicology (Ph.D) Faculty of Marine Sciences The University of Jordan/Aqaba branch Eng. Muna H. Gharaibeh	Water Authority of Jordan The Laboratories and Quality Affairs <i>The meeting is arranged here due to the distance to the Faculty of Marine Sciences</i> <i>The University of Jordan/Aqaba branch.</i> <i>Thanks to WAJ for hosting the meeting and offering meeting room</i>
23.04.2018	11:00 – 12:00	SCARCE Project - Brackish Water Component Water Authority of Jordan	Eng. Muna H. Gharaibeh	Water Authority of Jordan The Laboratories and Quality Affairs
23.04.2018	13:30 – 15:30	Enhancing water and environment MSc programme Birzeit	Dr. Nedal Mahmoud Birzeit University Email: nmahmoud@birzeit.edu	Hotel Reception
24.04.2018	10:00 – 11:00	Water Productivity Trainings project - Ministry of Water and Irrigation (MWI)	Eng Adel Alobeat Head of water strategy section MinWR&I Hadeel Smadi MinWR&I (Participant to the trainings)	Ministry of Water and Irrigation
24.04.2018	12:00 – 13:00	Mobile Microwave Project	Zakariya Dalala, Ph.D. Chairman, Energy Engineering Department, Zakariya.dalalah@ju.edu.jo Tel: + 962 6 429 4215 Fax: + 962 6 430 0207	German Jordanian University
24.04.2018	13:00 – 14:00	Regional DUPC committee member – Closing Remarks	Dr. Naser Almanaseer Regional DUPC Committee Member	To be confirmed

Lebanon

Date	Time and subject	Address, contact details
25.04.2018	WIN 9:30-10:30 am Litani River Authority Meeting with Mr Mohamed Younes, Eng. 11:00-12:30 American University of Beirut (AUB): Prof. Hadi Jaafar, Assistant Professor at Agricultural Sciences, AUB (participant of WIN)	LRA Beer Hassan Offices

Date	Time and subject	Address, contact details
	training and final workshop, beneficiary of project)	AUB
26.04.2018	<p>Dutch Embassy</p> <p>9:30-10:30 Meeting with Ms Bina Saib (First Secretary)</p> <p>Water Productivity Trainings project</p> <p>11:00-12:00 Ministry of Agriculture Interview with Maya Mhanna - staff member of the Ministry of Agriculture (and chair of the Technical Committee on Water Management for Agriculture) (participant of the Water Productivity training) and 2 colleagues who also took part in the trainings.</p> <p>Ali Nasrallah Phd Student CNRS Liban involved in Water productivity and Water intelligence trainings 13:00-14h00</p>	<p>Dutch Embassy The Netherlands Tower 10e verdieping Avenue Charles Malek 2073-0802 Achrafieh Beiroet</p> <p>Ministry of Agriculture</p>

C.2.2 Africa

Country	Project	Name of interviewee	Organisation	Function	Date of interview
Mozambique	SALINPROVE	Dinis Juizo	UEM / Department of Engineering	Professor	02.05.18.
Mozambique	SALINPROVE		UEM/ CAP		02.05.18.
Mozambique	SALINPROVE		Ara-Sul		02.05.18.
Mozambique	SALINPROVE		AFORAMO		02.05.18.
Mozambique	SALINPROVE		Local water provider		02.05.18.
Netherlands	SALINPROVE	Tibor Stigter	IHE Delft	Project leader	25.05.18.
Mozambique	A4 Lab	Aldemar Ribeiro	OXFAM Mozambique	Coordinator	09.05.18.
Mozambique	A4 Lab		ISPG	Trainer/ coordinator	09.05.18.
Mozambique	A4 Lab		SDAE Guijá	Director	09.05.18.
Mozambique	A4 Lab		Local agricultor		09.05.18.
Mozambique	A4 Lab	Pieter van der Zaag	IHE Delft	Project leader	09.05.18.
Mozambique	Dengue	Sandra Manuel (including student researchers)	UEM / Department of Archaeology and Anthropology, Eduardo Mondlane	Professor and project leader	07.05.18.
Netherlands	Dengue	Tatiana Acevedo	IHE Delft	Professor	22.05.18.
Mozambique	SMALL	Pedro Cardoso	Collins Ltd.	Director	03.05.18.
Mozambique	SMALL	Elisa Taviani	UEM / Centro de biotecnologia	Researcher	03.05.18.
Netherlands	SMALL	Giuliana Ferrero	IHE Delft	Project leader	22.05.18.
Netherlands	Water	Pieter van der Zaag	IHE Delft	Project leaders	22.05.18.

	Diplomacy	/ Zaki Shubber			
Mozambique	Dutch embassy	Antje van Driel	EKN Maputo	Water Attaché	07.05.18.

C.2.3 Worldwide

Project	Name interviewee	of	Organisation	Function	Date interview	of
TheWaterChannel	Lenneke Knoop		MetaMeta Communications	Operations manager	17.04.18	
TheWaterChannel	Abraham Abhishek		MetaMeta Communications	Production assistant	17.04.18	
SIDS	Maria Kennedy		IHE Delft	SIDS coordinator 2015 – April 2018 and professor of Water Treatment Technology	17.04.18	
SIDS	Erik de Ruyter van Steveninck		IHE Delft	SIDS2 coordinators April 2018 – 2019 and Senior Lecturer Aquatic and Marine Ecology	17.04.18	
Open Courseware	Raquel dos Santos– de Quaij		IHE Delft	Education Facilitator	17.04.18	
Open Courseware	Erwin Ploeger		IHE Delft	Head of the Education Bureau	17.04.18	

Appendix D List of participants to focus groups

Focus group session: DUPC2 Partnerships & Sustainability

Monday 15 April, 10.00-12.00 hrs, Delft-IHE

1. Jaap Evers, Senior Lecturer/Researcher River Basin Governance - project leader GDPDP Sustainable Delta Planning and Management (project no 106790) and H2Online (project no 106300)
2. Tineke Hooijmans, Associate Professor of Sanitary Engineering - project leader Mobile Microwave (project no 106538)
3. Jeltsje Kemerink-Seyoum, Senior Lecturer in Water Governance - project leader Support to Waternet (project no 106369)
4. Maria Kennedy, Professor of Water Treatment Technology / Head of EEWT department - project leader SCARCE (project no 106537)
5. Peter van der Steen, Associate Professor of Environmental Technology - project leader KIDRONNAR (106477), Enhancing WE Birzeit (project no 106791)
6. Tibor Stigter, Senior Lecturer/Researcher in Hydrogeology and Groundwater Resources - project leader SALINPROVE (project no 106476)

Focus group session: DUPC2 Coherence and Monitoring & Evaluation

Monday 15 april, 14.00-16.00 hrs, IHE-Delft

1. Tatiana Acevedo Guerrero, Lecturer/Researcher in Politics of Sanitation and Wastewater Governance - project leader Dengue Water (project no 106962)
2. Schalk Jan van Aniel, Senior Lecturer/Researcher in Hydroinformatics - project leader CONNECT (project no 106539) and Support to NBCBN (project no 106257)
3. Berry Gersonius, Senior Lecturer/Researcher in Urban Flood Resilience - project leader City to City Learning (project no 106794)
4. Carel Keuls, senior knowledge management advisor - involved in Education in Water and Sanitation in Benin (project no 106789)
5. Michael McClain, Chair Professor of Ecohydrology - former project leader of S-MultiStor (106472), project leader Delta Flows (project no 106959)
6. Branislav Petrushevski, Associate Professor in Water Supply Technology - project leader GW DEMO (106808), involved in SCARCE project (project no 106537)
7. Mireia Tutusaus Luque, Lecturer/Researcher in Water Services Management - involved in SMALL (project no 106475)
8. Leonardo Alfonso Segura, Senior Lecturer/Researcher in Hydroinformatics - involved in Evidence4Policy (project no 106471)

Appendix E Survey results

E.1 Introduction

The current analysis is based on survey responses of project coordinators from IHE Delft and partner institutions, project team members and project partners, which include representatives of private organisations, members of civil society, representatives of knowledge institutions and of governments. The survey responses were collected between the 30th of April and 20th of May via the online software tool SurveyMonkey.

The IHE Delft has provided the database of potential survey respondents. In total, 160 survey invitations have been sent to email addresses of respondents, 43.9% of them were sent to representatives of knowledge institutions, 24.5% of invitations were directed towards project managers, 15.1% of invitations were sent to representation of civil society, 9.4% to private companies and 7.2% of invitations were sent to government employees. In total, 85 respondents filled in the survey, the survey response rate was of 53%.

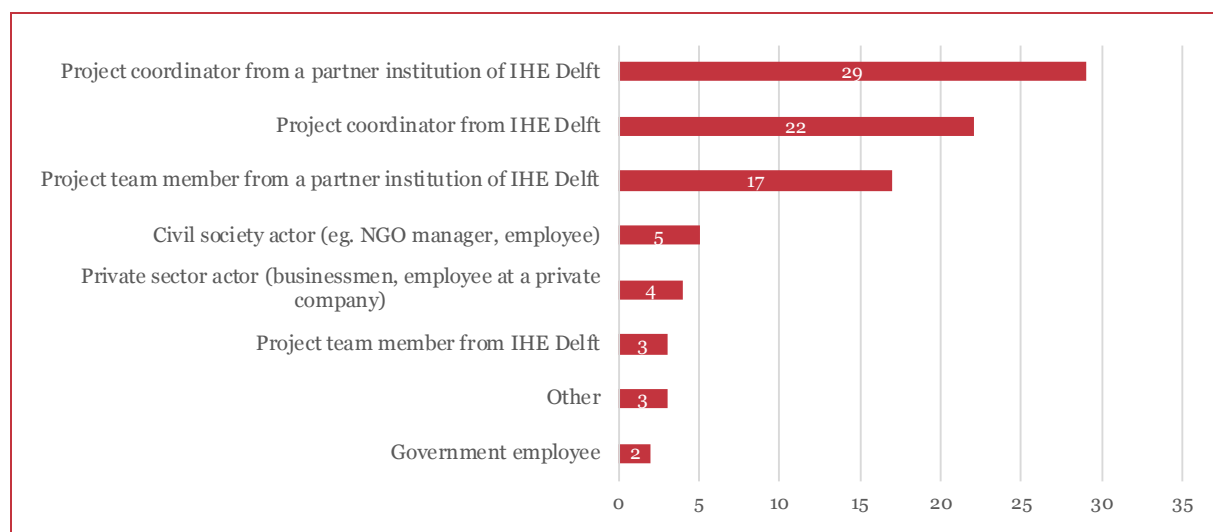
The survey analysis is organised in the following way: first, we present information about survey respondents and their familiarity with the DUPC2 programme (IHE partnership programme), second, we show the findings on five evaluation criteria, namely, on relevance, alignment of the programme with the UN SDGs, effectiveness, efficiency and management, and on sustainability. The last section of the survey analysis presents the summary of responses about the improvement of projects and of the DUPC2 programme.

E.2 Information about survey respondents

Most survey respondents (29 or 34.1% of respondents) are project coordinators from a partner institution of the IHE Delft (*Figure 9*). The project coordinators from IHE Delft represent 25.9% of survey participants, whereas project team members from a partner institution of IHE Delft are the third largest group of respondents (17 respondents or one fifth of all survey participants). Hence, the findings of the current analysis will, to a large extent, represent opinions of project coordinators and views of actors from partner institutions of IHE Delft.

The civil society and private sector actors, project team members from IHE Delft and governmental employees together account for only 16.5% of respondents. Only three respondents could not identify themselves in any of available categories, 2 of those respondents are regional members of DUPC2 committee and one respondent characterised himself/herself as a member of a project partner organisation, however, did not specify what type of organisation he/she represents.

Figure 9 The occupation of survey respondents in relation to projects under the DUPC2 programme (N=85)



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The geographic distribution of survey respondents indicates that 41.2% of respondents are from the Netherlands, which is relatively unbalanced (Table 9). This can be explained by a high number of project coordinators and team members from IHE Delft. In addition, 4 out of 5 civil society actors that completed the survey, 3 out of 4 private sector actors, and 5 out of 29 project coordinators from partner institutions of IHE Delft are also living in the Netherlands.

Since most respondents are project coordinators and team members from IHE Delft and from partner institutions, and due to skewedness of results in terms of geographic distribution of survey respondents, we will compare results of two groups - project coordinators and team members from partner institutions (first group) versus their colleagues at IHE Delft (second group). Such comparison will complement the general descriptive statistical analysis of responses. Since the first group (46 respondents from partner institutions of IHE Delft) is larger than the second (25 respondents from IHE Delft), the analysis will be focusing on comparison of shares of respondents rather than on absolute numbers.

Table 9 The country of residence of survey respondents (N=85)

Country	Number of respondents	Country	Number of respondents	Country	Number of respondents
The Netherlands	35	Serbia	2	Ireland	1
Mozambique	6	Sudan	2	Lebanon	1
Vietnam	5	Zimbabwe	2	Mexico	1
Palestine	3	Australia	1	Myanmar	1
Uganda	3	Bangladesh	1	Slovenia	1
United States of America	3	Brazil	1	South Africa	1

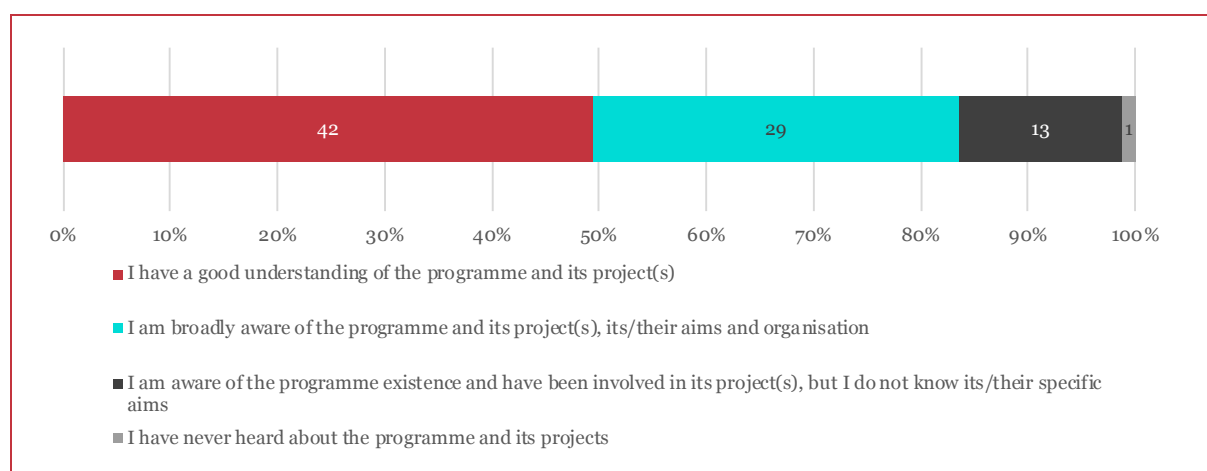
Country	Number of respondents	Country	Number of respondents	Country	Number of respondents
Colombia	2	China	1	Spain	1
Egypt	2	Costa Rica	1	Sweden	1
Italy	2	Ethiopia	1	United Kingdom	1
Jordan	2	Indonesia	1		

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The check on familiarity with the DUPC2 programme (IHE partnership programme) of survey respondents is essential for understanding the extent of awareness about the programme and to eliminate respondents that have no knowledge about the programme and its objectives. Only one respondent that was invited to participate in a survey has stated that he/she has never heard about the programme, therefore his/her participation in the survey was terminated after this question. According to *Figure 10*, almost a half of respondents have a good understanding of the programme and its objectives, 29 of survey participants stated that they are broadly aware of the programme and its objectives. Hence, the majority of respondents (more than 80%) who have completed the survey are well informed to provide opinions on relevance, effectiveness, efficiency, alignment with SDGs and sustainability of projects and, consequently, of the DUPC2 programme.

No major differences are found in familiarity with the DUPC2 programme between project coordinators and team members of IHE Delft and of partner institutions. However, at IHE Delft all project coordinators and team members have either good understanding of the programme or are broadly aware of the programme, while 78.5% of project coordinators and team members in partner institutions have the same level of knowledge about the programme and its objectives. Hence, the staff of partner institutions could be better informed about the overall objectives and aims of the programme.

Figure 10 Familiarity with the DUPC2 programme (N=85)

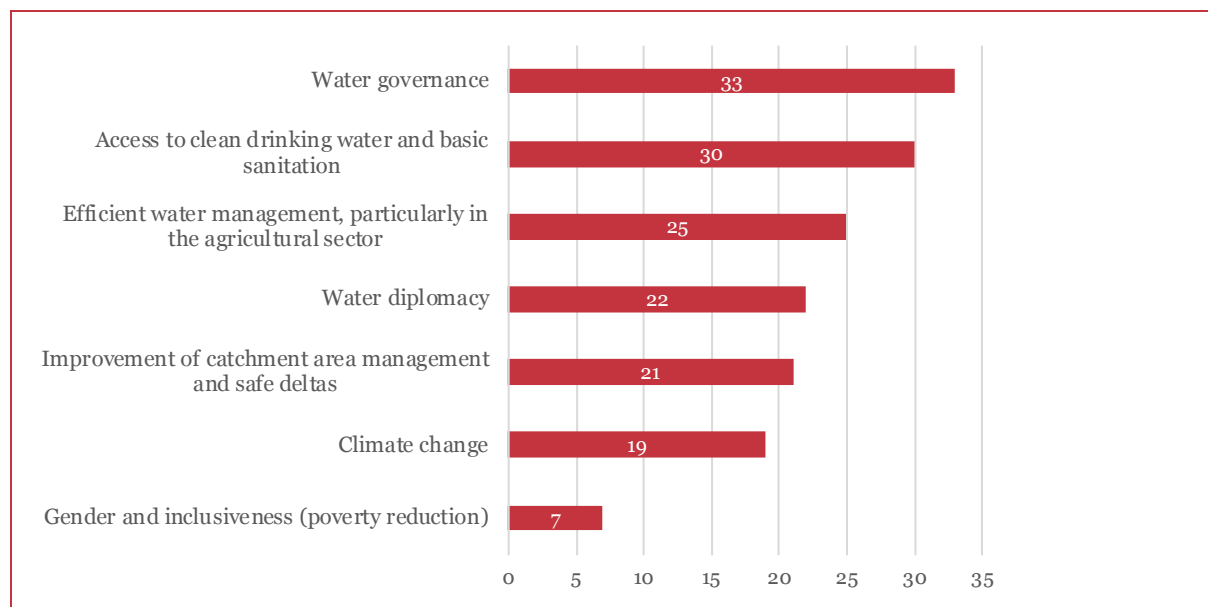


Technopolis Group: Survey on IHE partnership programme DUPC2

The fourth question of the survey asked the respondents about the major theme(s) of the project in which they are/were involved within the DUPC2 programme. *Figure 11* reveals that the three major themes of the projects are water governance, access to clean drinking water and basic sanitation, efficient water management, particularly in the agricultural sector. All themes are captured in projects under the DUPC2 programme, which indicates that the portfolio of the programme is relatively well-

balanced and comprehensive. However, gender and inclusiveness theme is included only in 7 project, therefore it requires more attention in projects under the DUPC2 programme.

Figure 11 The major themes in the projects in which survey respondents are/were involved within the DUPC2 programme (N=84)



Technopolis Group: Survey on IHE partnership programme DUPC2

E.3 Evaluation of the DUPC2 programme on 5 evaluation criteria

E.3.1 Relevance of the DUPC2 programme

The survey respondents were asked to assess to what extent the project in which they are/were involved within the DUPC2 programme is relevant in terms of meeting needs in the water sector, relevant for their organisation, for building partnerships, and is complementary to other programmes that support the water sector. Figure 12 depicts that for at least 65% of respondents all of these categories are seen as highly relevant for projects in which they are/were involved.

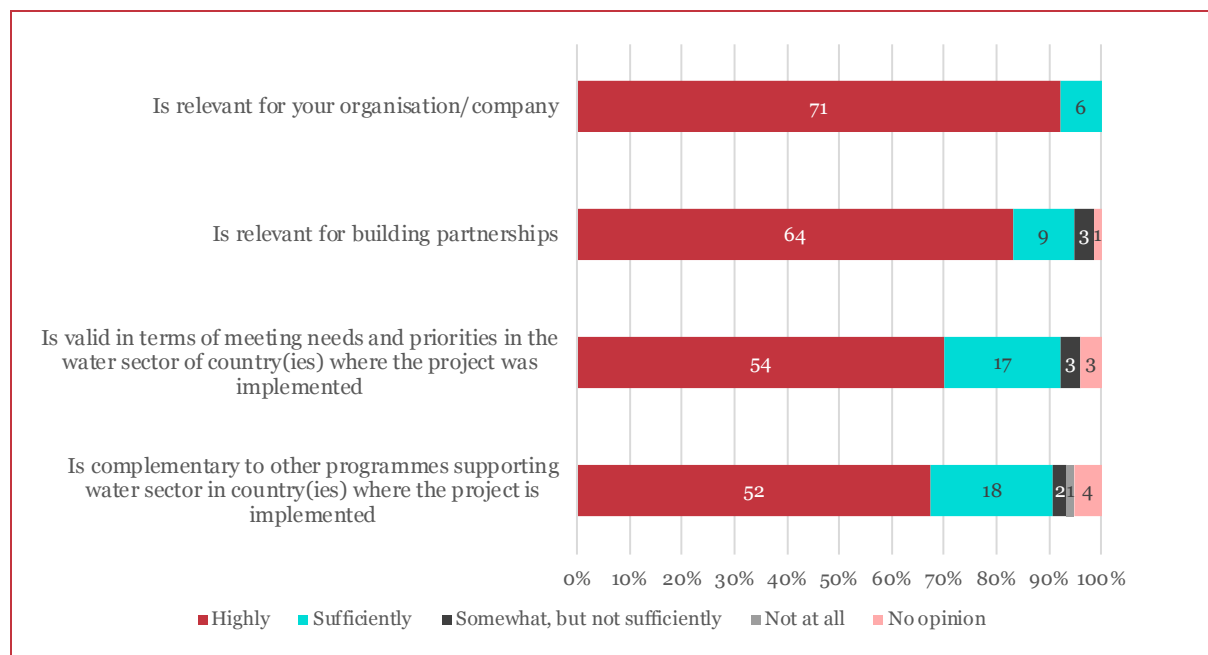
More than 90% of respondents stated that project in which they participate(d) is highly relevant for their organisation or company. Hence, implementing organisations consider that participation in a project under the DUPC2 programme has a high value for them. More than 80% or 64 survey participants assume that projects in which they are/were involved are highly relevant for building partnerships. Since the strategic objective of the DUPC2 programme is to support the building of the IHE Global Partnerships for water and development, the responses of survey participants indicate that the programme is on the right track towards reaching its objective. Some of the comments of respondents are presented below:

“Through this project UEM strengthened existing partnerships, as well as, created new ones that already opened the doors for future research. This project builds directly from the DUPC2 funded project SMALL.”

“Some relationships with partners involved are strengthened, but not all, as it is not easy to find strong partners in the South that have expertise in social sciences or water.”

“There are many synergies of the A4Labs action research and other related activities by consortium partners and new partners. At least three new additional projects have been successfully acquired - A4A Action Group (AfriAlliance funded, led by Mekelle University), NaBWIG (NWO funded, led by IHE) and IPSAR (funded by Partners voor Water/RVO, led by Acacia Water).”

Figure 12 Responses of survey participants about the relevance of projects in which they are/were involved within the DUPC2 programme (N=77)



Technopolis Group: Survey on IHE partnership programme DUPC2

Less respondents, namely 54, stated that the project in which they are/were involved is highly relevant for meeting the needs and priorities in the water sector of country(ies). Despite the overall high appreciation of projects and their effect on the water sector, several respondents explained that the needs in the water sector are too large to be addressed within the scope and time of the projects. The limited budget of the projects is not sufficient for meeting the challenges and satisfying the needs in the water sector. In addition, some respondents pointed out that the tackling of issues within the water sector requires involvement and commitment of governmental actors, the change of policies and the support from other local actors. Hence, some respondents perceive relevance of projects in light of its (potential) impact and sustainability.

“The budget and time available is low and hence the impact it can have. For our project the long timeline is needed... Government is not always supportive...a lot of work has to restart after elections and changes in ministries.”

“The program itself was relevant. However, it was difficult to find matching funds (as we were working in developing countries) to commence a pilot.”

“The project is a starting point to achieve a better performance in terms of water systems operation in the country, and most of all it helps the local operator to implement the best practices in the sector.”

According to Figure 12, the lowest number of respondents, namely 52, stated that the projects in which they are/were involved are highly complementary to other programmes that support the water sector in country(ies) where the project was implemented. Based on comments of respondents, such result shows that some projects are supported by other initiatives and stakeholders in countries, while other projects under the DUPC2 programme are novel, pilot projects. The quote below highlights this issue:

“In my country, groundwater is an important resource, but somehow neglected by most government entities. There are very few initiatives to improve groundwater management in the country, thus, our activities are like swimming against the current, but is worth pushing for it.”

Overall, the feedback of respondents about the relevance of the projects in which they are/were involved is positive:

“In our project, we work directly with the implementing agencies and we periodically reshape activities to suit the needs of the local water sector. The project is relevant for our organization, since it contributes to fulfill our mandate, but mostly it is relevant for the achievement of SDG6. The project builds on and strengthens a long-standing partnership with some institutions and welcomes new institutions, offering unique peer to peer learning possibilities.”

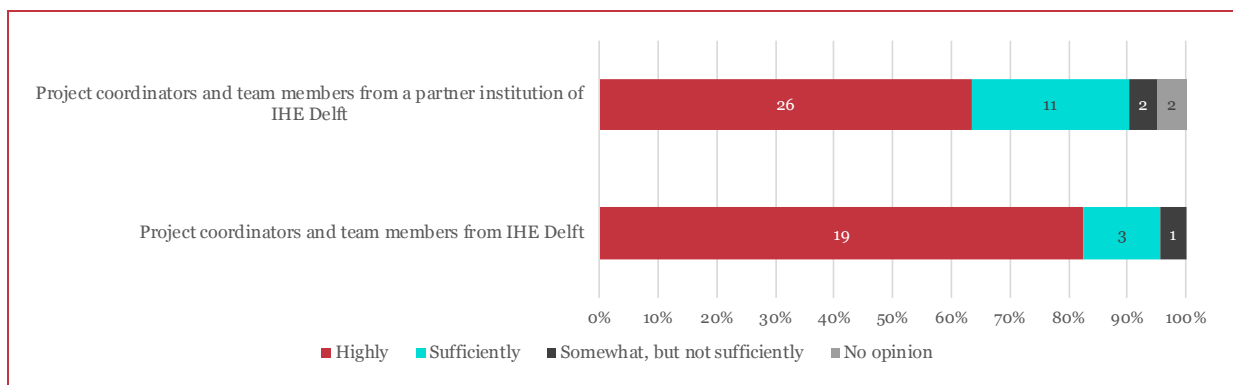
“I participate in a project in Latin America. We do network building, research, teaching, all in the field of sanitation. So, the project is highly relevant for people, for us, and it is fitting with the local needs.”

“The project supports capacity development in the African water sector, which is highly relevant locally and also fits well with our mission. The project supplements ongoing partnerships within the programme WaterWorX.”

“Projects are well-designed to effectively tackle problems of young professionals, researchers, and policy makers. Remarkable, integrated impact.”

The comparison of opinions among two groups of respondents, namely, project coordinators and project team members of partner institutions (first group) and project coordinators and project team members from IHE Delft (second group) about the relevance of projects under the DUPC2 programme shows that their views are very similar, and they mirror results presented in *Figure 12*. There is almost no difference in opinions among the two groups of respondents about the relevance of projects for building partnerships and for their own organisations. Their assessment of the extent to which projects are complementary to other programmes supporting water sector in country(ies) where the project is/was implemented are almost identical. The only difference in opinions that is apparent is presented in *Figure 13*. It shows that project coordinators and team members from a partner institution of IHE Delft find the projects less valid in terms of meeting needs and priorities in the water sector of country(ies) than their colleagues at IHE Delft.

Figure 13 Responses of project coordinators and team members from IHE Delft and from partner institutions on the extent to which the projects are valid in terms of meeting needs and priorities in the water sector of country(ies) (N=64; N from partner institutions=41; N from IHE Delft=23)



Technopolis Group: Survey on IHE partnership programme DUPC2

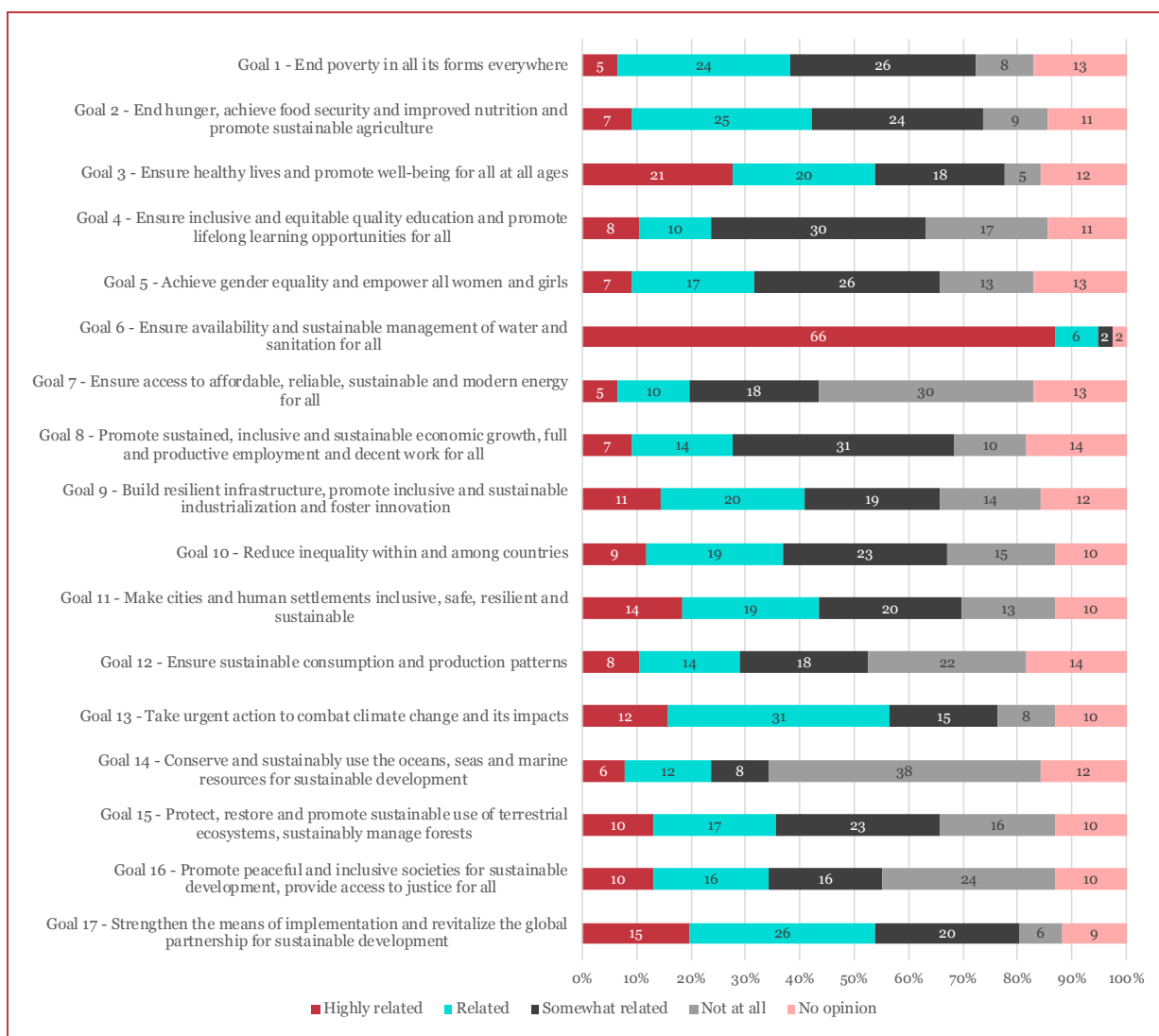
12.4 Alignment of the DUPC2 programme with the UN SDGs

Figure 14 shows that 66 respondents (86.8% of survey participants) stated that the project in which they are/were involved is highly related to the Goal 6 – ensure availability and sustainable management of water and sanitation for all. Such finding is not surprising, considering the focus of the DUPC2 programme. Among other UN SDG goals that are considered highly related and related by a greater number of respondents are Goal 13 (43 respondents), Goal 3 (41 respondent) and Goal 17 (41 respondent). Hence, the projects of the DUPC2 programme are seen to contribute in combating

climate change and its impacts, in ensuring healthy lives and promoting well-being for all at all ages, and in revitalizing global partnerships for sustainable development. The meeting of these goals is in line with the objectives of the DUPC2 programme.

Among the UN SDG goals that are associated with the aims and thematical focus of the DUPC2 programme, but, based on opinions of respondents, are not very related to the projects are Goal 14 – conserve and sustainably use the oceans, seas and marine resources for sustainable development (38 respondents or 50% of survey participants consider that their project is not all related to the Goal) and Goal 4 – ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (17 respondents or 22.4% of survey participants stated that their project is not all related to the Goal). Goal 5 that aims to achieve gender equality and empower all women and girls also does not receive significant attention in projects under the DUPC2 programme, according to views of 26 respondents (34.2%) that consider that the Goal is somewhat related to projects and 13 respondents (17.1%) that state that the Goal is not at all related to the project in which they are/were involved.

Figure 14 Responses of survey participants on the extent to which the project in which they are/were involved is most related to the UN SDGs (N=76)



Technopolis Group: Survey on IHE partnership programme DUPC2

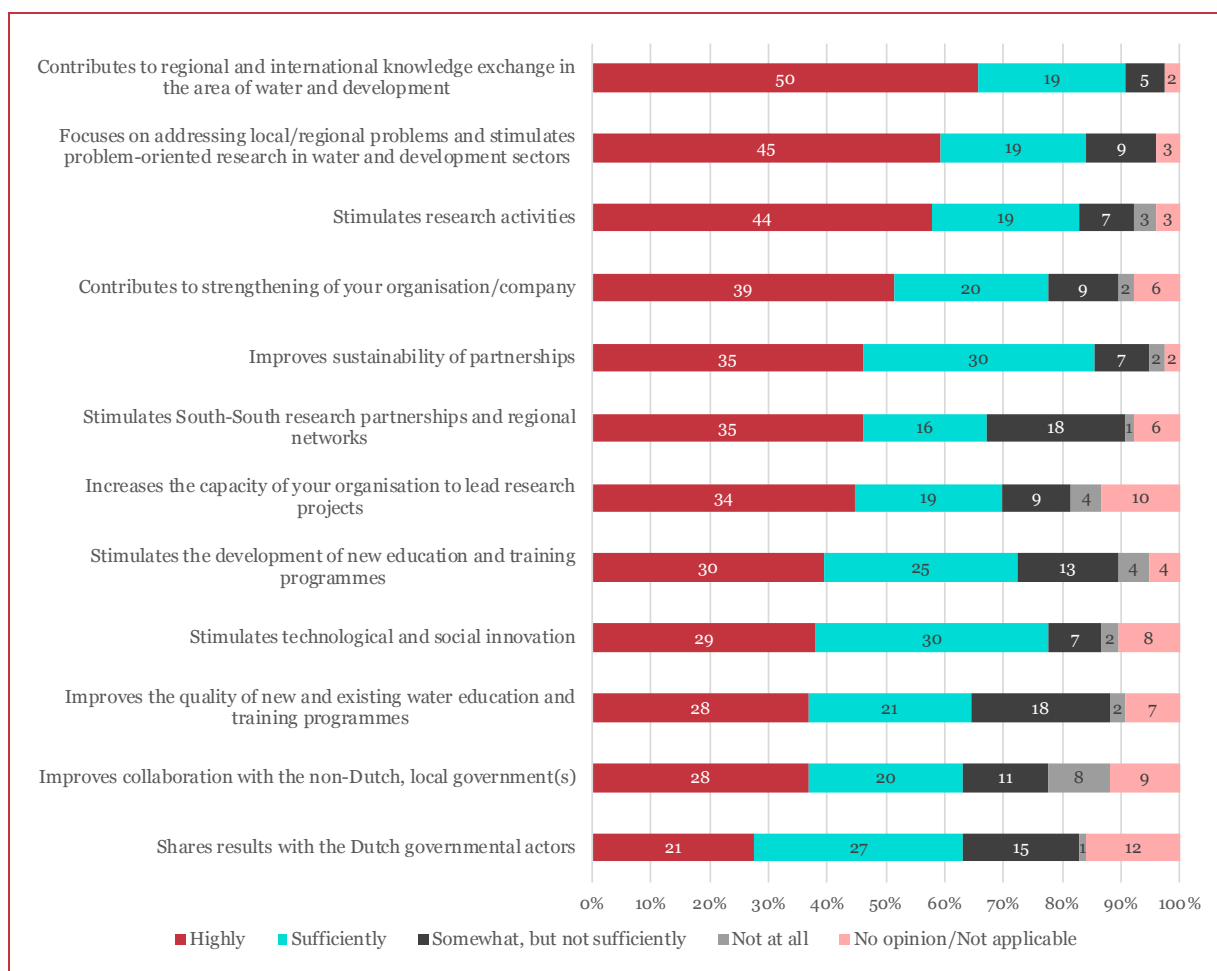
12.5 Effectiveness of the DUPC2 programme

Our assessment of effectiveness of the DUPC2 programme focuses on 12 different categories, such as creation of new education and training programmes, stimulation of research activities and technological/social innovations, and others. All of these categories were included in the aims of the programme. According to *Figure 15*, more than 80% of respondents consider that the project in which they are/were involved within the DUPC2 programme highly or sufficiently contributes to regional and international knowledge exchange in the area of water and development, focuses on addressing local/regional problems and stimulates problem-oriented research in water and development sectors, stimulates research activities, and improves sustainability of partnerships. The first three above-listed categories also have a greater number of respondents that suggest that the project does it to the high/large extent. Despite that the largest number of respondents (50 or 65.8% of survey participants) consider that their projects highly contribute to regional and international knowledge exchange, only 30 respondents (39.5%) stated that the project highly stimulates the development of new education and training programmes, and 28 respondents (36.8%) suggest that the project highly improves the quality of new and existing water education and training programmes. Hence, based on views of respondents, less projects under the DUPC2 programme are focusing on creation of new education programmes and on the quality of trainings.

Over 50% of respondents consider that the projects contribute to strengthening of their organisation/company, however, the number of respondents that stated that the project highly or sufficiently increases the capacity of their organisation to lead research projects is lower by 7.6%. Despite that 65 survey participants (85.5%) stated that the projects highly and sufficiently improve sustainability of partnerships, 51 respondents (67.1%) consider that the projects highly or sufficiently stimulate South-South research partnerships and regional networks. Thus, more attention should be paid to the building of partnerships between the developing countries.

Around 77% of respondents stated that the project in which they are/were involved highly or sufficiently stimulates social and technological innovation. This is a relatively high result, which indicates that the DUPC2 programme stimulates innovations in countries where the projects are implemented. The lowest share of respondents find that the projects improve collaboration with the local (non-Dutch) governments and shares results with the Dutch governmental actors. The most negative result among presented is that 8 respondents (10.5%) suggest that their project does not at all improve collaboration with the local governments. Hence, based on opinions of respondents, the engagement of state authorities in the projects is not very active.

Figure 15 Responses of survey participants on the extent to which the project in which they are/were involved is effective (N=76)



Technopolis Group: Survey on IHE partnership programme DUPC2

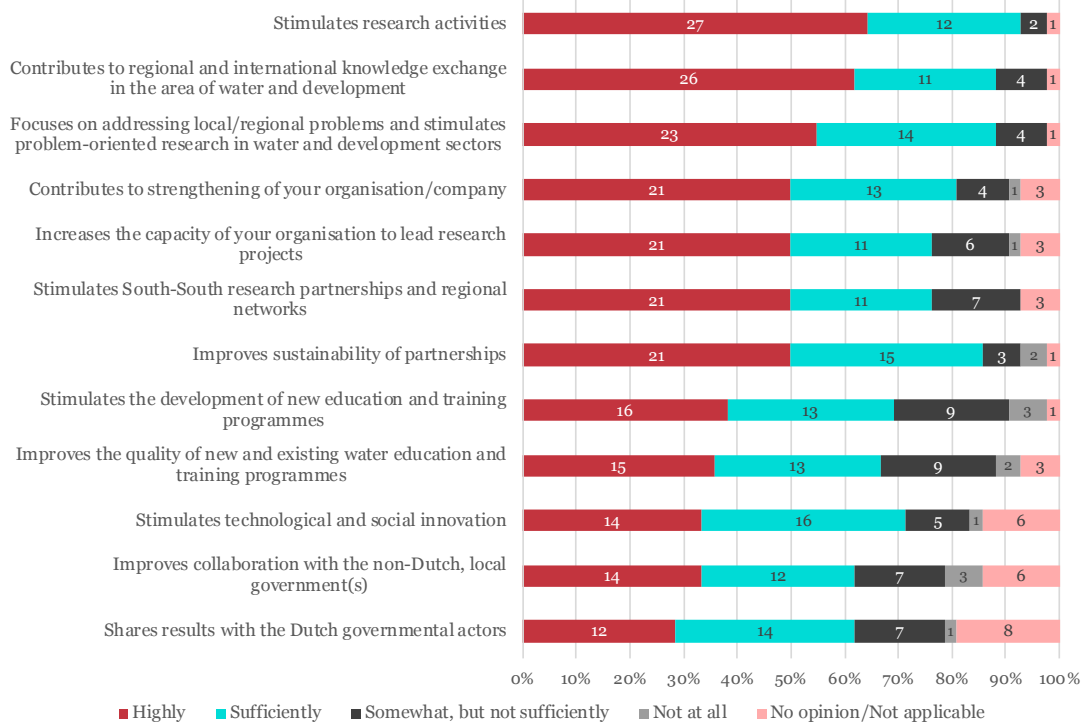
The comparison of responses between project coordinators and team members of IHE Delft and of partner institutions are presented in *Figure 16*. Despite that the order of categories is slightly different, it is visible that the greater number of respondents in both groups has highly rated the same four categories, namely, the projects stimulate research activities, contribute to regional and international knowledge exchange, focus on addressing local/regional problems, and contribute to strengthening of your organisation/company. However, the opinions of respondents from IHE Delft are more divided. 21.7% of respondents from IHE Delft consider that the projects are not sufficiently focusing on addressing local problems and stimulating problem-oriented research in water and development sectors. A high share of respondents at IHE Delft (91.3%) consider that the project in which they are/were involved highly or sufficiently improves sustainability of partnerships. In contrast, 50% of respondents from partner institutions of IHE Delft suggest that projects are highly stimulating South-South research partnerships and regional networks and improving sustainability of partnerships. Overall, the project coordinators and team members from partner institutions provide a more positive feedback about the effect of projects on partnerships.

The opinions of respondents from partner institutions of IHE Delft about the contribution of projects to strengthening of their organisations and increasing capacity to lead research projects are also more positive than at IHE Delft. Hence, projects have a greater added value for partner institutions. Slightly more respondents from IHE Delft (73.9% versus 69% of respondents at partner institutions) consider that their project highly or sufficiently stimulates the development of new and training programmes, while more survey participants from partner institutions (66.7% versus 56.5% of respondents from IHE Delft) consider that projects in which they are/were involved improve the quality of new and existing water education and training programmes.

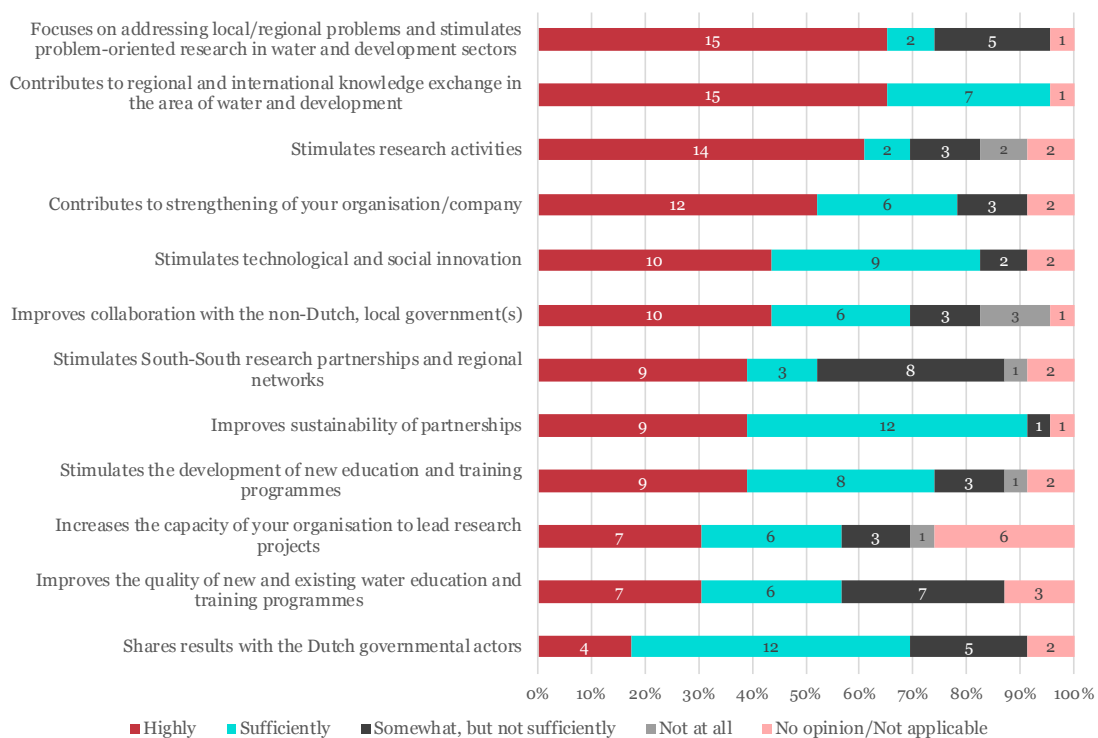
In general, the responses of participants from IHE Delft are slightly less positive than in partner institutions. This could be partially attributed to a smaller group of respondents from IHE Delft, which may produce a larger dispersion of opinions. However, more respondents from IHE Delft, namely 82.6% versus 71.4% of survey participants from partner institutions, consider that the projects highly or sufficiently stimulate social and technological innovation. Similarly, more respondents from IHE Delft stated that projects highly or sufficiently improve collaboration with the local, non-Dutch governments and share results with the Dutch governmental actors. Hence, project coordinators and team members from IHE Delft are more actively engaged in collaboration with state authorities.

Figure 16 Responses of project coordinators and team members from IHE Delft and from partner institutions on the extent to which the project in which they are/were involved is effective (N=65; N from partner institutions=42; N from IHE Delft=23)

Responses of project coordinators and team members from partner institutions of IHE Delft



Responses of project coordinators and team members from IHE Delft



Technopolis Group: Survey on IHE partnership programme DUPC2

When survey participants were asked to elaborate on their answers about the effectiveness of projects most of them described how their project is/was effective in a particular area, what benefits the projects produce and why some categories were rated lower than others. Many respondents confirmed

that listed categories are precisely the ones that are being targeted by projects, hence, most aspects were taken into consideration in the design of projects.

Around 70% of responses/descriptions on project benefits and impacts are related to building or strengthening of partnerships and to development of education and research in the water sector.

“New research will develop from this research project. We are already planning an application for a future project, a South-South will be developed between Mozambique and Colombia. Through this project, the research will make a significant step forward, as students will progress to the postgraduate research and produce new comparative data.”

“Sustainability, partnership, problem-oriented research in modeling transboundary basins has impact on improving the capacity of our institute and gives opportunity to our researchers.”

“DUPC2 projects helped to build effective synergies among international projects in the Middle East and, hence, improved the effectiveness and efficiency of these projects by avoiding duplication.”

“The WE project of DUPC2 program has improved the quality of teaching, quality and structure of courses. Networking is best aid for partnership and knowledge sharing that induced joint projects, academic and research activities.”

“Due to our project, there is ample learning and joint activities between the project's partners from Vietnam, Bangladesh, The Netherlands, including South-South learning between Vietnamese and Bangladeshi partners.”

“For the last 17 years the support from the Dutch Government to NBCBN through different supporting programmes, through IHE-Delft have proven to play an important role in developing partnerships and collaboration between the Network countries member institutions and promoting the development of several innovative research and training programmes. The DUPC2 programme continued this mission of IHE in supporting projects and partners in their regional activities in a broader and inclusive way, and it gave the opportunity for the running projects to develop and improve to a more effective and sustainable status to implement their planned activities.”

“The project will bring to society many solutions, and it increases the human development index, reduces the human poverty index and contributes to achieving sustainable development goals.”

“This project has initiated 2 PhD positions in my Center and opened the opportunity to attract funds and to build cooperation with other international institutions.”

Some respondents explained that projects in which they are/were involved cannot be sufficiently effective in some or all areas, due to their limited scope and impact. Among other reasons why some respondents gave a low rating or chose the answer option “No opinion/Not applicable” was that the project did not aim to cover all of listed categories, or it was difficult for respondents to assess effectiveness of projects.

“The project on its own cannot achieve most of what is asked, but it can have some contribution. There are other conditions that depend on reforms and actions within our own institution in order to improve research capacity.”

“The training programme does focus on professionals in delta planning, therefore the project does not focus on research, but on education (thus many answers are not applicable).”

“The project is all about knowledge exchange, building a network, starting up and supervising research together. There is very little contact with the Dutch sector, for the moment, as our sanitation field is so different.”

“As a research/development project, I believe we are having good results in terms of partnerships and link to the government in countries where the project is implemented. It is difficult to say at this moment to what degree technological and social innovation are stimulated.”

Several respondents highlighted issues that negatively affected effectiveness of projects and suggested areas for improvement. The major criticism refers to the lack of partnerships or involvement of other relevant stakeholders.

“In general, more joint work could be done; it seems difficult to get that off the ground. Cooperation and exchange with embassies could definitely be enhanced. Cooperation is mainly focused on non-Dutch national governments. We would prefer to do more on capacity development, knowledge dissemination for ministries, river basins etc. budget is sufficient for that.”

“There was a strong focus on solution-oriented research in the network. There was knowledge exchange within the countries, within the water sector, local (research) partners played an important role. Yet, except for one regional conference, there was no knowledge exchange between the two countries involved (hence no South-South exchange).”

“There is huge potential for DUPC to contribute to all of these areas. However, the project was administratively difficult to establish. We found the DUPC requirements for administration and reporting disproportionate to the amount of funding on offer. Also, there was an assumption that the South-South partners had the resources and processes in place to manage an international collaboration. This was not always the case and required substantial intervention to move forward. The fact that funding was not allowed to be distributed to my organisation (as I was not a South partner) made it difficult for me, because my time was in-kind. But I devoted a lot of time to project management in the early stages.”

When respondents were asked to mention the added value of projects that were not listed in selected categories, they provided a great variety of examples that are related to specific projects. However, around 80% of comments are related to learning opportunities and capacity building of different stakeholders, the strengthening of communication and trust with other partners, and to raising visibility of important issues or of organisations.

“The opportunity for professionals from major cities in Vietnam who were involved in climate change to learn together and to develop potential adaptation solutions relevant across cities.”

“Linking academia with governmental entities and also linking academia with industry. However, the projects helped, to some extent, to bridge these gaps.”

“1- Ensuring the continuous trust between regional partners and countries involved in the NBCBN network and activities. 2- supporting the NBCBN to become an independent legal partner to continue its mission in the Nile basin capacity development. 3- Giving the NBCBN the opportunity to continue to become an important future strategic partner with IHE-Delft after the transition phase.”

“Giving visibility to an almost ignored disease in Mozambique and working with local community-based organizations elucidating on water practices and health.”

“Capacity building among researchers.”

“Trust building in politically sensitive area.”

“The project also improves partnerships with international actors (in my case GWOPA/UN-Habitat) and Dutch non-governmental actors (in my case Dutch water utilities).”

“Improve awareness on the private sector for the water safety issues.”

“The ability of this project to bring together and facilitate water journalists in the Nile basin to work together and further work with water scientists. This is something new in the region.”

“Improving relations between research institution and government entities.”

“Builds individual and network leadership in local governments.”

“Increase the visibility of partners in the region.”

“Contribute to building communication and outreach capacities of IHE and its partners.”

“The project provides opportunities to jointly produce and publish relevant results, to work with Dutch companies, to strengthen communication between the local water actors and institutions (e.g. university - water authority - water utility - private water operators).”

“The project is highly innovative in terms of the issue it addresses, and the tools used to address it. It breaks new ground in understanding how water issues are used by political entrepreneurs to support different agenda and how citizens react to them.”

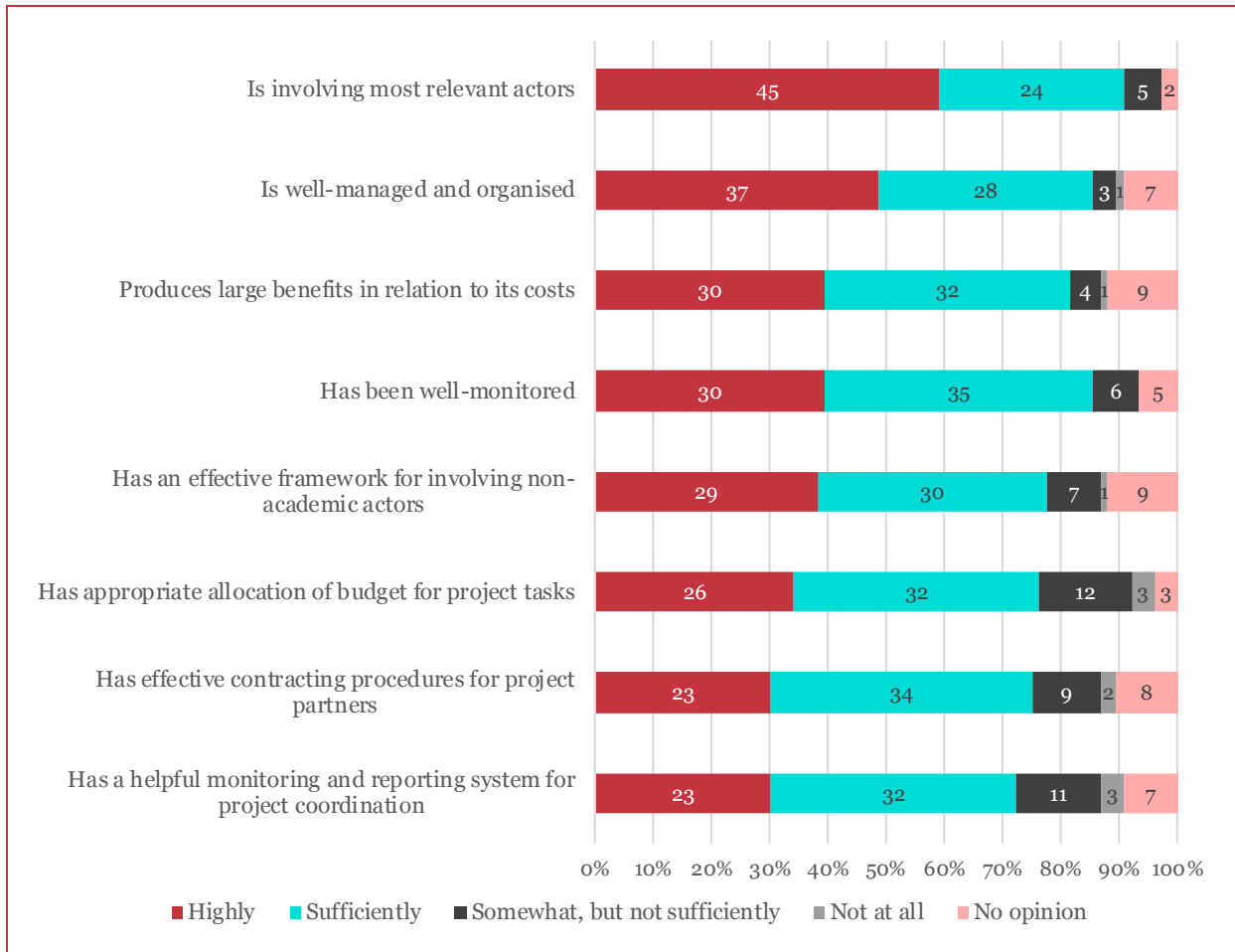
E.4 Efficiency and management of the DUPC2 programme

For evaluation of efficiency and management of projects, the respondents were asked to assess the extent to which the project in which they are/were involved is/was well-monitored, involved most relevant actors, has effective contracting procedures for project partners and other aspects. In total, 8 categories were offered for assessment.

According to *Figure 17*, at least 72% of respondents consider that all of listed categories are highly or sufficiently addressed within their projects. This indicates that the majority of respondents were satisfied with the procedures, processes and management of projects, however, the share of respondents that highly rate categories in this section is lower than on relevance and effectiveness of the projects. 59.2% of respondents stated that the project in which they participated is/was involving most relevant actors to a high/large extent. Hence, in general, responders consider the partners and stakeholders with whom they are collaborating throughout the projects useful and important. 85.5% of survey participants stated that the projects are highly or sufficiently well-managed and organised. Considering that the majority of respondents are project managers, such result is not surprising, and it indicates that, according to perception of project managers and team members, the projects were smoothly implemented.

Overall, the results on different categories of responses do not show large differences. The most negative feedback of respondents relates to the budget for project tasks, as 12 respondents consider that projects do not have a sufficiently appropriate allocation of budget for tasks, while 3 respondents stated that the budget is not at all appropriately allocated. The similar number of respondents expressed an opinion that the projects do not have a helpful monitoring and reporting system for project coordination, or the system is not sufficiently helpful.

Figure 17 Responses of survey participants on the extent to which the project in which they are/were involved is efficient and well-managed (N=76)

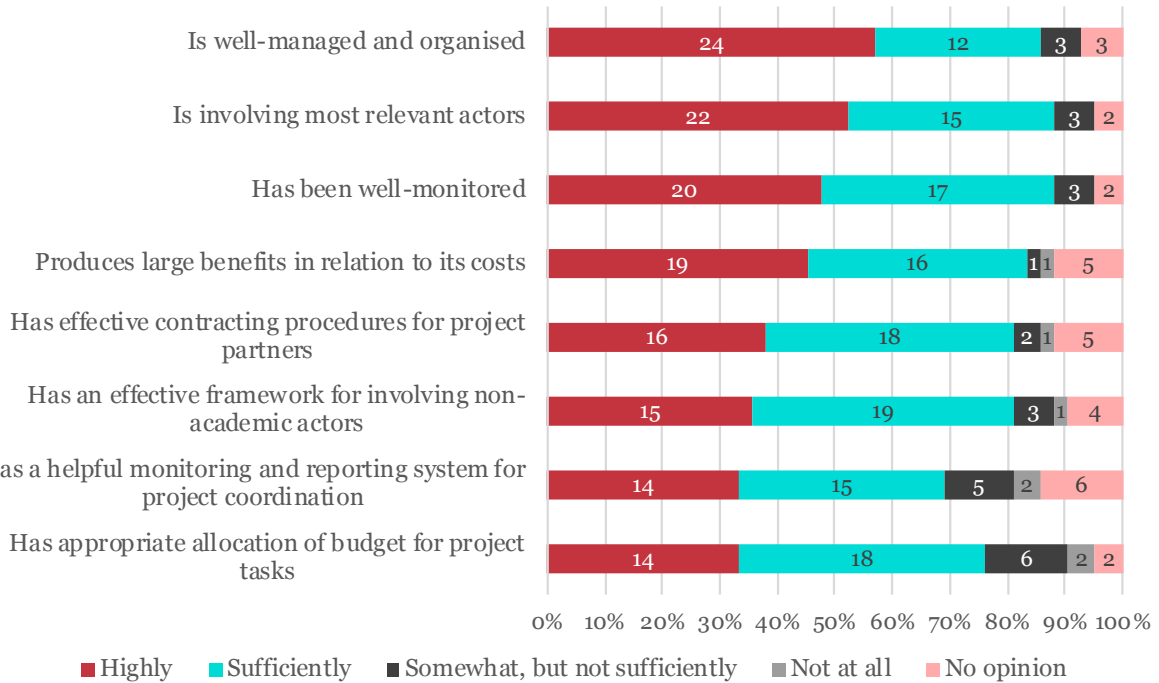


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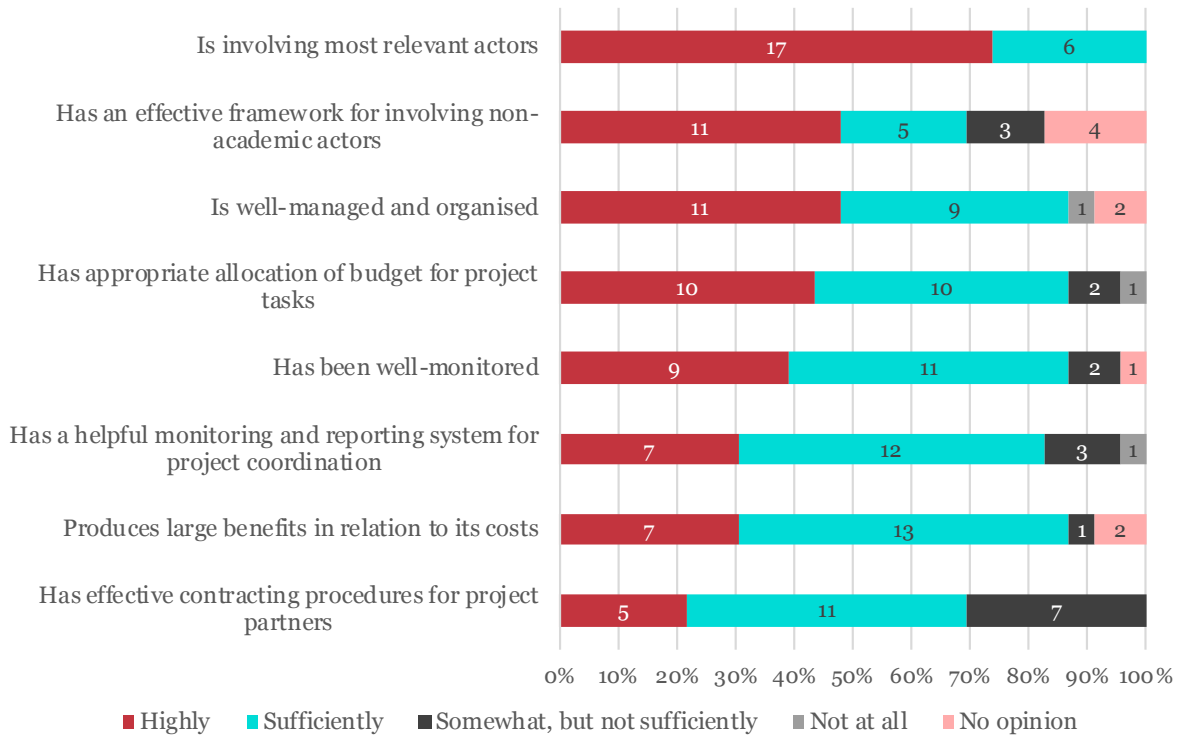
Despite small differences in the number of respondents that consider one category highly or sufficiently efficient than another, overall, the opinions of project coordinators and team members from IHE Delft and from partner institutions have many similarities and therefore they, to a large extent, mirror aggregate results presented above. At least 80% of project coordinators and team members from partner institutions of IHE Delft are highly or sufficiently satisfied with the management and organisation of work in projects, monitoring, contracting procedures and a framework for involving non-academic actors. A greater share of respondents from IHE Delft, namely 73.9% versus 57.1% of respondents from partner institutions of IHE Delft, gave a high rating on involvement of most relevant actors in the projects. A slightly lower number of respondents from partner institutions found the monitoring and reporting system for project coordination helpful and the budget allocation appropriate for project tasks than respondents at IHE Delft: 87% of survey participants from IHE Delft, in contrast to 76.2% of respondents from partner institutions, consider the budget allocation highly or sufficiently appropriate, and 82.6% of survey participants from IHE Delft versus 69% of project coordinators and team members in partner institutions stated that the current monitoring/reporting systems is highly or sufficiently efficient. Among other noticeable differences in responses of two groups is lower appreciation of contracting procedures for project partners by respondents of IHE Delft (30.4% of respondents consider these procedures are not sufficiently effective) and more divided opinions of IHE Delft respondents on effectiveness of framework for involving non-academic actors.

Figure 18 Responses of project coordinators and team members from IHE Delft and from partner institutions on the extent to which the project in which they are/were involved is efficient and well-managed (N=65; N from partner institutions=42; N from IHE Delft=23)

Responses of project coordinators and team members from partner institutions of IHE Delft



Responses of project coordinators and team members from IHE Delft



Technopolis Group: Survey on IHE partnership programme DUPC2

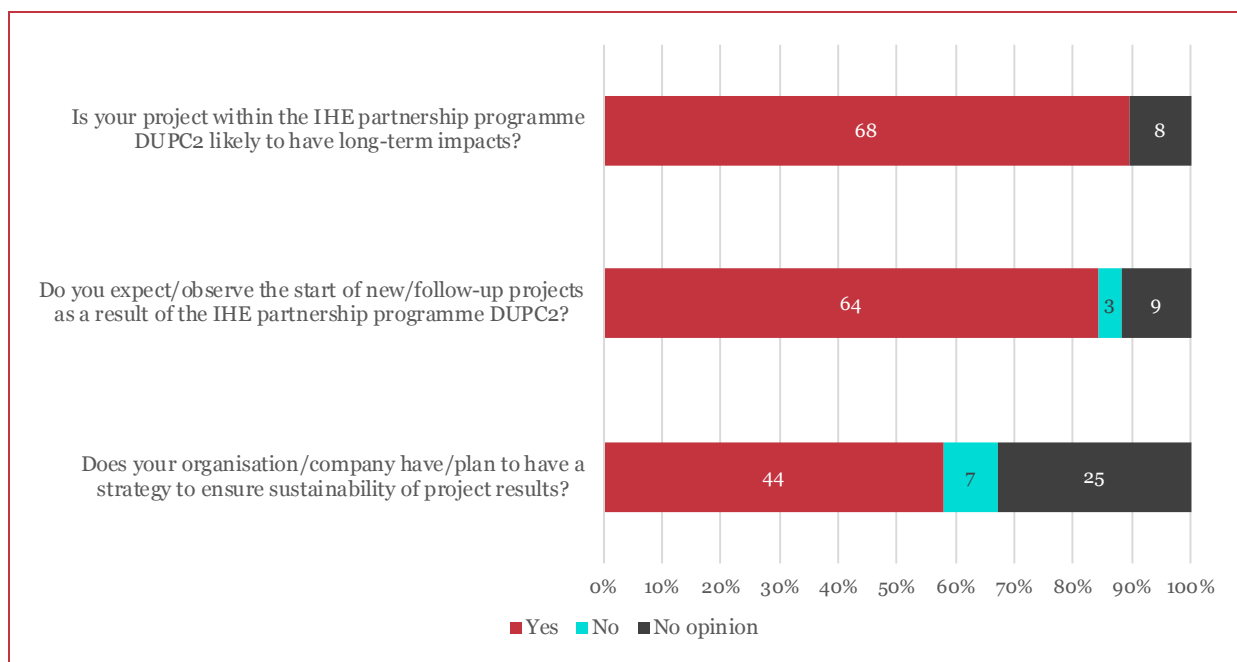
12.6 Sustainability of the DUPC2 programme

According to *Figure 19*, 90% of respondents stated that they expect that the project in which they are/were involved will have long-lasting impacts. Hence, survey participants have a positive perspective on sustainability of project results and on their impact. *Figure 20* shows the comparison of responses between project coordinators and team members from IHE Delft and from partner institutions. Despite that over 80% of respondents in both groups assume that the projects will have long-lasting impact, it is visible that a slightly smaller share of respondents from IHE Delft have an optimistic view.

Around 84% of respondents expect/observe the start of new/follow-up projects as a result of the DUPC2 programme. This highlights that the majority of implemented projects are stimulating or are expected to stimulate new research, education and partnership activities. The project coordinators and team members from partner institutions of IHE Delft have slightly lower expectations, however, overall, there are no large differences in responses between two groups.

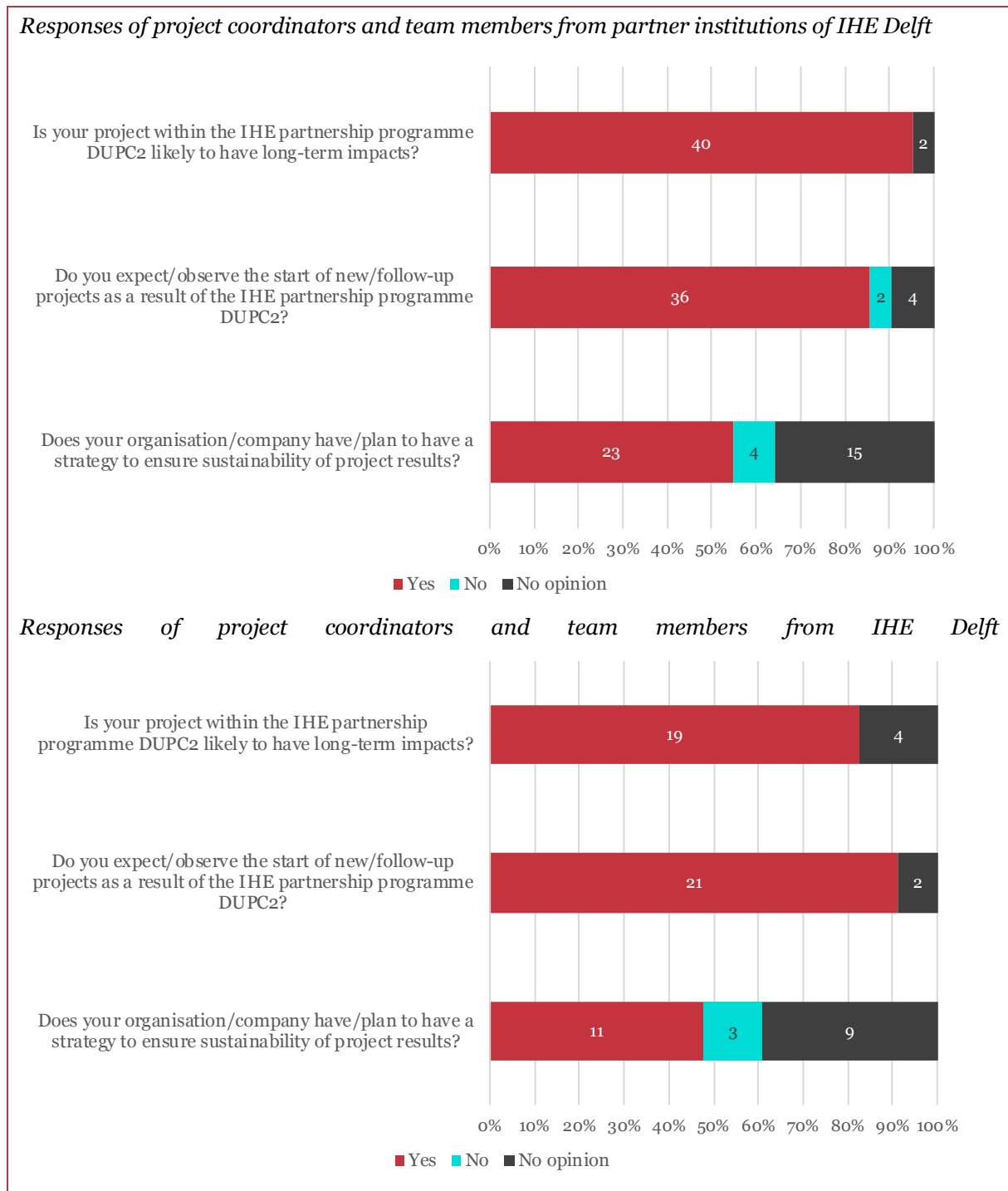
The third question of the survey on sustainability of project results enquired whether organisations/companies that participated in projects have or plan to have a strategy to ensure sustainability of project results. *Figure 19* shows that 57.9% of respondents have/plan to have a strategy, while 9.2% of survey participants do not see the willingness of their organisation/company to contribute to sustainability of project results, and over 30% of respondents have no opinion if their organisation will be designing such strategies. Hence, the potential challenge in sustaining project results is related to the commitment of involved organisations/companies to support the results of the projects. The responses of two groups of respondents on this question are similar, however, a greater share of survey participants from partner institutions of IHE Delft are planning to ensure sustainability of project results (54.8% of respondents in partner institutions versus 47.8% of respondents at IHE Delft). This could be explained by greater ability and willingness of partner institutions to influence the environment in countries where the projects were implemented beyond the scope of the projects.

Figure 19 Responses of survey participants on the extent to which the results of projects in which they are/were involved are sustainable (N=76)



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Figure 20 Responses of project coordinators and team members from IHE Delft and from partner institutions on the extent to which the results of projects in which they are/were involved are sustainable (N=65; N from partner institutions=42; N from IHE Delft=23)



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Those respondents who stated that they have or plan to have a strategy to ensure sustainability of project results were asked to describe their strategies. Among listed strategies, the three approaches could be distinguished. The first approach of organisations focuses on dissemination of knowledge that was acquired during the project. Hence, new workshops, events, educational programmes will be launched, or existing training programmes will be provided. The second approach focuses on upscaling

of current projects or on ambitions to launch follow-up projects. The third approach relies on maintenance of relationships with partners or on extension of the network of stakeholders. Almost equal shares of respondents choose one of above-mentioned strategies and almost 80% of respondents combine or plan to combine several approaches.

“Co-implementation of the project with the local partners, ensuring local ownership, workshops on discussing the way forward, outreach workshops, strengthening of relationships between institutions, guaranteeing the continuity of a number of necessary activities.”

“The examples will be used in other workshops to demonstrate how to implement relevant climate adaptation solutions related to water management.”

“1- transition to a legal independent organization capable of entering into partnership agreements and applying for external funding mechanisms. 2- strengthening the role of network partners to lead research projects and apply for external funded calls. 3- developing new partnerships with local/ regional/ international organizations and institutions for extended future activities. 4- Emphasize the role of the network member institutions on local levels to ensure bilateral and regional cooperation in future activities. 5- follow up continuous cooperation with IHE-Delft as a key historical/future partner.”

“We are engaging with the public entity that is responsible for managing groundwater in the area to take over the responsibilities of continuing the work that has started with support from the university. Funding remains a big challenge but at-least we push.”

“We plan to upscale the results to other small towns and use the lessons learnt to improve implementation.”

“To launch and run simultaneously with the local partners the education portfolio. Currently, it is under development and we will use it as a flag-ship to expand the knowledge. In addition, we create thematic diploma programs in collaboration with the local partners.”

“1) Replicate a part of capacity development activities conducted by the project - knowledge transfer; 2) institutionalize and integrate part of the educational material developed by the project into the university; 3) Seek follow-up phase of the project.”

“We plan to engage non-academic actors who are directly responsible for managing the river basin in which the project will be implemented.”

“First, developing similar project methodology framework for local government; second, developing follow-up proposal.”

“The organisation will continue working with the same group in developing appropriate technology for waste recycling and assist the suppliers to put them in the market. Plus, the manual produced during the project will be used by wash sector to train communities in resource recovery.”

“We are planning for being the center containing the training and monitoring for all desalination projects testing water quality in Aqaba.”

“Being a national water operator, with several systems, it is part of the plans in the company to extend the practice and knowledge to all the systems and operators in the country.”

Among the major factors that influence achievement of project sustainability dominates the lack of financing, as 49 respondents selected it (Figure 21). The lack of human resources and effective, long-term partnerships are seen as important barriers by 25 respondents. The factor that was not selected by any respondent is the lack of local ownership of the project/programme. 13 respondents presented other factors that influence project sustainability, among them 4 survey participants emphasized that projects and implementing institutions should develop clear strategies with strong priorities and embed the commitment/plan on sustainability as part of the project. According to opinions of respondents, the lack of such strategies in implementing institutions and in the design of projects

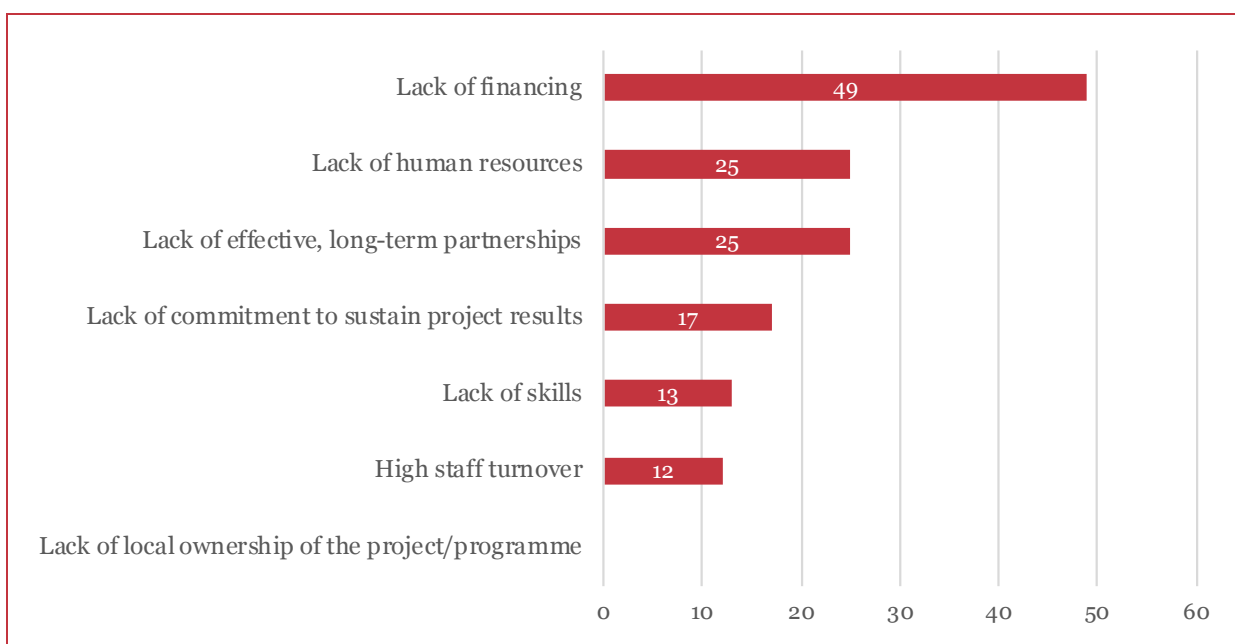
negatively affects the sustainability of project results. In addition, 3 respondents stated that project sustainability strongly depends on political commitment in countries and in institutions. Other interesting comments are presented below:

“Both IHE and our organizations faced unforeseen governance challenges that disrupted implementation. This slowed project results, however, had little negative impact on sustainability in the long term.”

“The change is slow. We go with the flow, and do not want to push partners too much. To reach sustainability we need more time most of all!”

“More security regarding stable longer-term funding and, for instance, timely follow-up opportunities with research funders like NWO-WOTRO are needed.”

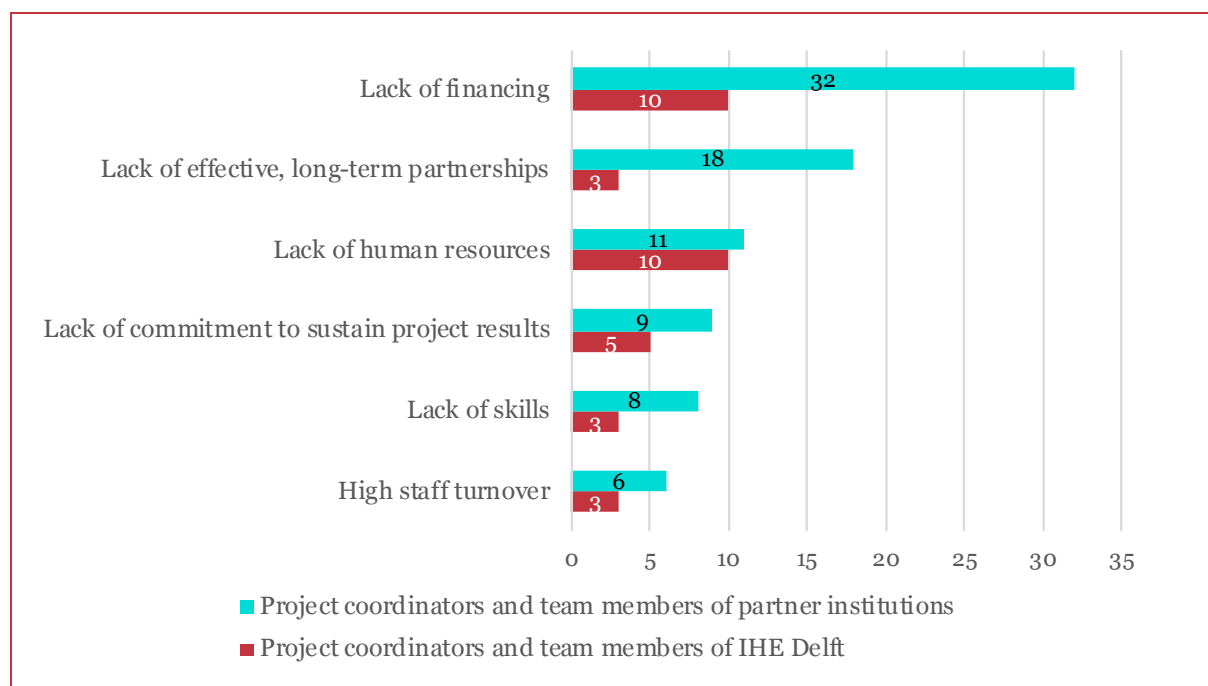
Figure 21 Responses of survey participants on the major factors that influence the achievement of project sustainability (N=74)



Technopolis Group: Survey on IHE partnership programme DUPC2

Figure 22 presents the comparison of responses of project coordinators and team members from IHE Delft and from partner institutions. It is visible that the lack of financing and the lack of human resources are seen as major important factors by a greater number of respondents from IHE Delft, while the bigger share of respondents from partner institutions suggest that the major barriers to sustainability of projects are the lack of financing and the lack of effective, long-term partnerships.

Figure 22 Responses of project coordinators and team members from IHE Delft and from partner institutions on the major factors that influence the achievement of project sustainability (N=61; N from partner institutions=38; N from IHE Delft=23)



Technopolis Group: Survey on IHE partnership programme DUPC2

13 Improvement of projects and of the DUPC2 programme

Among 47 responders who provided their opinions on how the project in which they are/were involved within the DUPC2 programme could be improved, 10 survey participants (21.3%) stated that the availability of additional funding, bigger budget and more secure financing would improve the results of the projects, provide more time for project implementation and improve the overall quality of projects and their management. The second most recurrent response about the areas of improvement is the collaboration with partners in projects, as 9 respondents (19.1%) consider that more partners should be involved in projects, particularly, from the government. In addition, better and more frequent communication with partners could positively influence project results and ensure their sustainability.

The greater availability of time for project implementation and prioritization of work on projects could improve project management/coordination and communication with project members and partners, according to 7 respondents (14.9%). The same number of survey participants consider that more comprehensive, long-term strategies, bigger commitments and presence in countries after the end of projects would have improved the results of projects and ensured their sustainability. 10.6% of respondents would like to simplify and improve reporting procedures and other administrative processes, while 4 respondents (8.5%) stated that the projects experienced the lack of human resources for project implementation. Several quotes of survey respondents are presented below:

“The budget is a bit too tight. Some activities took more human and other resources than expected.”

“If more funding is available there could be more involvement of other key stakeholders in the project.”

“More focus on South-South learning among Southern partners involved in the project and stronger partners in the South with experience in social science research on water are needed.”

“The project could be improved through having a more continuous presence of partners involved... The DUPC2 programme has a very heavy approach to management that is more onerous to, for

example, EU projects or those of comparable research organisations. It is managed more like a project than a research programme.”

“Make the administrative process easier, have a more permanent scheme/strategy to promote more interactive participation of the partners.”

“There were some challenges with the start-up of the project (i.e. contracts and money transfers), so it would be ideal to obtain a budget neutral extension in order to have sufficient time to fulfill all planned activities.”

“1) involve more trainees from the region; 2) allow more visits from IHE Delft Staff to the region; 3) adopt effective project dissemination approach - could be expensive though.”

“It would be good if personnel with a specific knowledge base on the issues addressed by our projects could be permanently based at IHE, to ensure knowledge developed through projects like the one I have been involved in could be shared also with other partners.”

“I think we should improve the overall management of the project (we have a composite team of people, based in different countries...sometimes it is difficult to coordinate it). The training of project coordinators on project management is needed (we are usually trained to be teachers and researchers, not managers).”

“It took a while before partner organizations could find more effective collaboration mechanism and areas. Thus, it would be important to have a longer-term perspective of DUPC programme, in terms of financing, improving synergies of collaborations, and ensuring the sustainability of collaborative projects.”

“In all projects the time required to build and sustain partnerships is underestimated. Also, I would have liked more time to 'build' the project. We are trying to produce results, but are forced to neglect to think and reflect about the project.”

“Less reporting and less stringent requirements from DUPC are needed. Our South-South partners were overwhelmed by the requirements (with English as a second language). We lost a lot of cash simply by double transfers (from Euro to USD then to other currencies of partners). I would say that 10% of our total budget was lost just by reductions in currency transfers. But there was no allowance or compensation for this.”

When respondents were asked to comment on how the DUPC2 programme could be improved, the great variety of responses were collected. Most responses are connected to above-mentioned themes, namely, the lack of financing, human resources, time for project implementation, inefficient administrative procedures and the lack of long-term strategies and partnerships. Several respondents suggested that more collaboration among project staff and across the projects would be beneficial, and more networking, knowledge-sharing events could improve relationships with partners and stimulate sustainability of project results. The training of project staff is needed for better project management and continuous development of skills, in particular, 5 respondents (10%) consider that project members in developing countries need assistance with the financing, reporting and management procedures. However, many answers of respondents are unique, and they shed light on different issues.

“Increase networking or collaboration opportunities between project partners in the South will highly increase the program outputs.”

“Develop new ideas, innovative mechanisms and programmes for supporting and funding of collaborative projects with IHE strategic partners, to ensure sustainability and continuous cooperation on regional levels.”

“Let each department discuss, come up with real integrated proposals, and don't lose so much time and money with internal competition.”

“Do not demand every project to deliver on gender and inclusivity, but design few specific projects on this (and other cross-cutting) theme.”

“The relationship between partners and IHE should be more a peer relationship. Currently the rhetoric is very much IHE as a project leader, with other partners executing, and also other partners needing their capacity to be built. I think this is a very old-fashioned approach and, to some extent, lacks respect for partners. This means that IHE and its partners are not equals.”

“Expanding the programme to allow non-South partners to lead, but the engagement of Southern partners is needed...Part of DUPC should be focused on capacity building and working with Southern partners. But also, recognising that some partners need assistance with project establishment and reporting.”

“The local partners could use some project management support (finances, reporting, contracting, etc.).”

“Strengthening the link with the decision-makers in the countries and finding a way to guarantee a certain level of financial commitment within the local governments. This could start with the organization of dissemination seminars and continue with meetings, always through the local partners, to ensure ownership and motivation.”

“The instruments in place are very much oriented towards academic institutions and sometimes hard to apply for other type of organizations, other types of involvement.”

“I think it would be good to have more contact with the project leaders...To promote more online and face to face events for sharing the outcomes and experiences between projects team.

“DUPC-2 should have joint meetings, bringing together IHE staff members and partner institutions more often. This could help joint assessment of projects and discussions on how to improve mid-long-term sustainability of project results.”

“More equal distribution of DUPC2 project funds between different topics (IHE chairgroups) is needed.”

“Enhance connection between DUPC2 project, for example between R&D and capacity building projects.”

“May be more interaction between different partners and opportunities to collaborate would help the programme to reach its sustainability objectives post DUPC2. May be also a good idea to have webinars on different projects so ensure learning & sharing.”

Appendix F Case studies

F.1 Middle East

F.1.1 Jordan

Project no.	106538	
Project title	Portable microwave based treatment system for on-site faecal sludge treatment for the humanitarian and development WASH sector	
Project leader and partners	<p>IHE Project leader: Tineke Hooijmans, EEWT Department, Sanitary Engineering Chair Group</p> <p>Project partners:</p> <ol style="list-style-type: none"> 1. Private sector, other: Tehnobi, Slovenia 2. Local KI: German Jordanian University (GJU) 3. Local Government: Jordan Ministry of Water and Irrigation/ Water Authority of Jordan 4. Local Government: Miyahuna 	
Project objectives	<p>The objective of the project is to produce a pilot faecal sludge (FS) microwave (MW) based treatment technology that can be rapidly deployed upon the event of an emergency and is effective under challenging physical conditions.</p> <p>The expected outcome is a tested technology, that can be used to treat FS effectively in the context of emergencies. It will increase the local Jordan WASH capacity. The MW system will remain for further use with the GJU.</p>	
Target country/ies, regions, river basins	Middle East (Jordan)	
Start and end date	From 1-2-2017 until 1-9-2018	
Total project budget (Euro)	€388,560 €88,750 PhD student and Microwave contribution by Tehnobi	
DUPC category of activity	DUPC2 themes	DUPC cross-cutting themes
<ul style="list-style-type: none"> • Research and innovation 	<ul style="list-style-type: none"> • Access to clean drinking water and basic sanitation; • Water scarcity and water problems related to the refugee crisis (focus: Middle East); 	<ul style="list-style-type: none"> • Water governance
Alignment with national/regional policy priorities and (inter)national programmes	<p>Jordan's National Water Strategy 2016-2025 specifies that « Jordanians must recognize that there are limits to the country's renewable, affordable traditional available water supply » and that they « must use and reuse water more effectively, efficiently and responsibly». The country aims to implement new policies and projects to augment, conserve, reuse and recycle all available freshwater. This includes greywater reuse but less blackwater reuse unless it is not for drinking purposes.</p> <p>The portable MW treatment system was designed for a use in emergency situations. It is very relevant for refugee camps in Jordan where access to clean water and basic sanitation is limited and populations are very vulnerable to outbreaks of diarrhoeal diseases. Diarrhea, often the product of the consumption of poor quality water in refugee camps, is one of the main causes of morbidity that results in malnutrition. The situation is particularly critical in Jordan, is one of the top 10 water-scarce countries in the world that holds more than 1.4 million refugees (mainly from Syria).</p>	

	<p>As a result overcrowded camps produce a lot of FS and are pushing water systems to breaking point and increasing the spread of waterborn diseases. The portable MW's rapid heating system will be very efficient to kill pathogens of used water and limit contamination.</p> <p>The project is very innovative as research and development on treatment technologies applicable under these conditions is just starting.</p> <p>Project partners were approached by the project leader and consulted on the content of the technical proposal. Representatives of the local Government were involved to ensure alignment with national priorities.</p> <p>The project was also relevant to the German Jordanian University (GJU) who works on biomass and waste management.</p>
<p>(Inter-)national partnerships and collaborations</p>	<p>IHE has selected strong partners for the project.</p> <p>IHE had existing links with the German Jordanian University (GJU). The President of the GJU has studied at IHE Delft. An MOU was signed between both organisations.</p> <p>This was however the first collaboration with the Energy Engineering Department at GJU and according to GJU it should open opportunities for other collaborations in the future.</p> <p>A GJU professor is part of the Committee supervising the work of the PhD student involved in the project.</p> <p>The project contributes to strengthen links between higher education and research institutions and the government.</p>
<p>Demand drivenness and ownership</p>	<p>The GJU and Tehnobiwo were involved in the proposal writing. The local government was consulted to ensure relevance to local priorities. All partners were involved in decision making from the start of the project to ensure strong ownership.</p> <p>The testing location (Jordan Valley) and transfer of the system was decided in consultation with the Water Authority of Jordan (WAJ) and the GJU. This remote area suffers from water scarcity and electricity cuts. It is a good site to test the unit in challenging conditions.</p> <p>The project leader (IHE Delft) organises biweekly Skype meetings with GJU and Tehnobiwo to follow up on progress and development. To include GJU in the Skype meetings has been effective towards local ownership.</p>
<p>Sustainability</p>	<p>The WAJ have been involved from the start of the project. Discussion on possible translation of the projects results have started early as it was necessary to have the authorities on board to be able to have access to different type of sludge to test the treatment system. In Jordan it is not allowed to use sludge water and the WAJ is responsible for water management. Their involvement in the project at an early stage was essential to ensure they understand the technology and the objectives.</p> <p>In the Inception workshop discussions on reuse of treated sludge water were raised as the WAJ was reluctant to authorise the use of the new technology to produce drinking water. However reuse in agriculture and as fuel generation were options confirmed by the Water Authority of Jordan (WAJ).</p> <p>The project has also organised training for employees of the Ministry of Water on acceptance of treatment of sludge components. This was very successful and the Ministry is now supporting the project.</p> <p>Convincing the local policy makers remains however challenging.</p> <p>The project has conducted a number of dissemination activities to enhance local acceptance of the technology:</p> <ul style="list-style-type: none"> • The project was first presented at the 4th Arab Water Week on “Managing water scarcity in the Middle East: A Global Partnership for Water and Development” organised by IHE Delft. • It was later decided to present the system at the H2O SUMMIT, 1st International Water Congress, Rovinj, April 2018, Croatia. <p>It also plans to organise a combined final stakeholder workshop with the partners in</p>

	<p>Jordan once the project is completed.</p> <p>The project has produced 3 publications exposing the technology, one in Jordan and 2 in Germany.</p>
Lessons learned / recommendations	<p>The project is behind schedule because of delays in the design and manufacturing of the MW unit. The improvement of odour problems and optimization of the reactor design have been challenging.</p> <p>The project still faces a number of challenges:</p> <ul style="list-style-type: none"> • It still needs to prove that the technology works • A lot of energy is needed to process the machine. It will need to work with solar energy or with battery storage to make it independent. Solutions for energy need to be cost-effective. • It will need to plan how it can be practically used in overcrowded camps • Public acceptance can be a challenge, the local authorities in the Jordan Valley are not open to the project. For this reason, sites for the deployment of the unit will need to be selected in good communication with the government. <p>The project has been successful in bringing the Water Authority of Jordan on board. This has increased local ownership of the project; it will ensure the project has all the necessary authorisations to test the unit once the pilot system is ready.</p> <p>If the technology works and is adopted by local users the project is likely to have an impact on i/water sanitation and hygiene for refugees in the camps ii/reduce the amount of contaminated sludge waters going into the soil and affecting the quality of water in Jordan (injecting clean water in soil); iii/possible reuse of treated sludge water in agriculture for irrigation.</p>

F.1.2 Jordan and Lebanon

Project no.	AFAS 107050	
Project title	Water Productivity Trainings project (WaPOR) - Ministry of Water and Irrigation (MWI)	
Project leader and partners	Project leader: Jonna van Opstal, IHE Delft	
Project objectives	<p>The objective of this training (stated in the grant letter) was “to provide an introductory training to local stakeholders on using FAO’s Online Water Productivity Database”</p> <p>The water productivity training was planned as a 2-3 day training for awareness raising purposes. It was organized in very short time frame upon request of DGIS.</p> <p>The project is explicitly seen as a first step in a larger effort to initiate local demand and increase capacity.</p>	
Target country/ies, regions, river basins	The Palestinian Territories, Jordan, Yemen (in Jordan), Kenya, Benin, Rwanda, Ghana, Mozambique, Lebanon, and Egypt	
Start and end date	From 22nd March 2017 to 15th July 2017	
Total project budget (Euro)	€ 135,078	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)

<ul style="list-style-type: none"> • Knowledge networking 	<p>and</p> <ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector; • Water scarcity and water problems related to the refugee crisis (focus: Middle East); 	<ul style="list-style-type: none"> • Water governance • Gender/inclusiveness • Climate change
Alignment with national/regional policy priorities and (inter)national programmes	<p>Selected countries are DGIS focus countries.</p> <p>The FAO database WaPOR launched in April 2017 and contains spatial information on water productivity, water consumption, crop yield, and weather conditions for the African continent and Middle East. Its use can be relevant for project activities of a number of stakeholders in the water sector.</p> <p>Interviewees in Jordan and Lebanon confirmed the relevance of the project and their need to have access to data on water productivity in particular satellite images.</p> <p>The project documentation does not include information on relevance to specific national/regional priorities.</p>	
(Inter-)national partnerships and collaborations	<p>The project aimed to invite a variety of stakeholders including ministries of agriculture and water resources, universities and research institutes, UN organizations such as regional FAO offices, farmer organizations, NGO's and private sector, and experts from the local Dutch embassies.</p> <p>Practically it was difficult to only rely IHE networks to identify relevant participants to the trainings. The embassy and local FAO office were asked to assist by providing contacts from their network.</p> <p>Potential for partnership with local universities were investigated. The suggestions from the trainers are as follows: INE (Benin), Egerton (Kenya), JKUAT (Kenya), University of Rwanda (Rwanda), University of Jordan (Jordan), University of Ghana-Centre for Remote Sensing (Ghana)</p>	
Demand drivenness and ownership	<p>The project is not demand driven. It was initiated upon request of the Ministry of Foreign affairs to work on the awareness and potential use of the Wapor database.</p> <p>Although project reports indicate that the training was received with great interest and enthusiasm in all countries, interviews in Jordan with the Ministry of Water and Irrigation showed low ownership and interest to use the knowledge and results from this training.</p> <p>Involving key actors from beneficiary organisations in the design of the proposal would have helped to enhance the project's ownership and better select participants for the trainings.</p>	
Sustainability	<p>Based on interviews conducted in Jordan with trainees from the Ministry of Water and Irrigation (MWI) the project is unlikely to have sustainable results:</p> <ul style="list-style-type: none"> • Among the 4 participants from the MWI, 2 have left the Ministry. • Trainees have indicated the difficulty to access the database without a good internet speed • Trainees have indicated that the FAO database provides poor data for Jordan (low resolution of satellite images) and it is not relevant for them. <p>Participants however affirm that the training was useful to have better understanding of water productivity concepts.</p> <p>Interviewees at the Ministry of Agriculture in Lebanon also underlined a poor selection strategy of participants to the training and low sustainability. Remarks on the resolution of the data were also made in Lebanon however an interviewed trainee from an academic institution indicated that although the resolution is low it is useful and relevant to get a general overview in some agricultural areas.</p>	

	<p>The project’s annual report indicates that the IHE project leader will stay in contact with participants from local governments to enhance sustainability.</p>
<p>Lessons learned / recommendations</p>	<p>The project was implemented under high time pressure leaving little time for anticipation and planning of activities.</p> <p>Difficulties in the selection of participants resulted in more participants from the ministries and academic institutes/universities, whilst less practitioners were invited.</p> <p>Sufficient attention should be given in the selection of participants to trainings. This involves allocating time and efforts to involve beneficiary organisations in the design stage of the project and ensure they provide support in selecting relevant participants according to their functions, gender, level of seniority, etc. And ensure participants attend the full training.</p> <p>For many countries having to use Internet to access the FAO database is an issue and would require making use of additional routers and buying a local data SIM card. Negotiating the use of a portable database with the FAO would have been useful. Without the data the trainees cannot use their new skills.</p> <p>Involving beneficiary organisations from the start of the project would have helped enhance the ownership of the project and therefore its sustainability.</p>

F.1.3 Lebanon

Project no.	AFAS 106536	
Project title	Water Intelligence for the Near East (WIN)	
Project leader and partners	Project leader: Jonna van Opstal, IHE Delft Project partners: <ul style="list-style-type: none"> • Litani River Authority (public agency) • Lebanese Agricultural Research Institute (LARI) • CNRS Center for Remote Sensing • Independent consultant 	
Project objectives	<p>The long term objective of the project is to reduce water scarcity by meeting supply and demand, maximize re-use and cap consumptive use of water.</p> <p>The project had a dual focus with the first one achieving validated water accounts and crop water productivity maps. The second part aimed to conduct training weeks to train local staff to calculate water accounts and water productivity themselves so they can continue the efforts in the coming years and train other staff. At the end there a training for users of the water accounting and productivity data will be organised.</p> <p>Expected change was that the Governing agencies and local universities have more in-house intelligence to allocate green and blue water resources, but also to monitor, report, verify and enforce using satellite data and field observations.</p>	
Target country/ies, regions, river basins	Lebanon: the focus is on the Near East region including the Litani river basin and the Bekaa Valley	
Start and end date	September 2016-April 2018	
Total project budget (Euro)	DUPC2 contribution (Euro): € 249,910 Co-funding (Euro): € 590,000	
DUPC category of activity (select)	DUPC 2 themes (select)	DUPC cross-cutting themes (select)
<ul style="list-style-type: none"> • Education and training • Knowledge sharing 	<ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector • Improved catchment area management • Water scarcity and water problems related to the refugee crisis 	<ul style="list-style-type: none"> • Water governance • Climate change
Alignment with national/regional policy priorities and (inter)national programmes	<p>The project proposal describes the relevance to the national needs, in particular the need for a measurement-reporting-verification system in the Litani River basin to provide information on the current status of the water resources.</p> <p>Government agencies have confirmed that the project is in line with their objectives in terms of water accounting, to help guide the planning and water allocations of the river basin, and anticipate future water scarcity issues of the region in particular in the context of the refugee crisis due to the Syrian conflict.</p>	
(Inter-)national partnerships and collaborations	<p>Most project partners had a role of data provision and participation in the trainings organised by IHE. Research organisations expressed the regret of not being involved in the design and research phase of the project.</p> <p>Project beneficiaries also regretted that there were not more interactions between project participants. The project could have had a stronger role in supporting partnerships in conducting research.</p>	
Demand drivenness and ownership	<p>Local project partners were not involved in the design of the project or of its approach, however ownership of the project was insured through the organisation of an inception workshop gathering all project partners to discuss objectives, problems and concerns. The Ambassador of Holland attended the opening of this workshop to enhance visibility and attendance.</p> <p>Local partners have all expressed the importance of the project for their work. Government agencies link the project to their missions and objectives. They affirm that methods introduced through the project contribute to their efficiency and their objectives to preserve water resources. Partners from research institutions were also very engaged in the project.</p>	
Sustainability	<p>Sustainability of results varies depending on type of partners involved in the project.</p> <p>When the evaluators met public agencies involved in the project these were unable to use the WA+ results for their decision-making in water allocation issues.</p> <p>The technical trainings on water accounting and productivity were well attended and received by participants although it was noted that some participants did not attend the full series. Participants to the trainings from public agencies claimed they are not using the tools and methods introduced in their day-to-day work. Reasons mentioned included computer requirements to set up the model. Some interviewees also mentioned that building capacities in public agencies is a long-term process. Trainees will need time to practice and secure what they have learned.</p> <p>As mentioned in the project's final report the level of understanding needed to continue the work</p>	

	<p>as an expert in water accounting or productivity is not reached yet by participants from public agencies. Some of the interviewed participants to trainings did not have experience of working with GIS and this can be considered as a basic skill that should be mastered by project participants. LRA mentioned that their institution is only starting to use GIS and that training in GIS would be helpful. IHE/DUPC2 would need to do long in-depth training course to ensure sustainability of results in public agencies. As mentioned in the project's final report, this could be done by having a few selected students visit IHE for a few months.</p> <p>Project partners from research organisations such as CNRS or the American University of Beirut are able to apply the model. They have acknowledged the high support from IHE after the training to help them run the software, use and apply the model. The model is now used for research purposes and to inform policy through research results.</p> <p>A final workshop was organised to disseminate results and enhance sustainability. Participants at high-level positions were invited. The Ministry of DG investment attended however others did not attend and sent representatives.</p>
<p>Lessons learned / recommendations</p>	<p>Among the strengths of the project participants highlighted:</p> <p>Hands on exercises and practical exercises during the field days organised in the Bekaa Valley. This was a good way to ensure that training participants could experience and secure what they have learned and demonstrate their understanding of concepts and methods. The final report highlights that this gave the possibility to move away from the computer screen and understand what crop water productivity means in the field. One participant said that this experience gave her the needed insight to connect all the dots and make the material from the training practical. An interviewed trainee mentioned the practical exercises performed to assess plant water needs, to reach higher water productivity, i.e. better production with less water.</p> <p>Beneficiaries acknowledged the work produced by DUPC2. They consider the new methods to measure water productivity and calculate water flow in the region as a success. The model itself is considered as valid in the region.</p> <p>Project beneficiaries, including local researcher are happy to have established relationships with IHE and the scientific community in the Netherlands. They have appreciated IHE's strong expertise and value added.</p> <p>Weaknesses or possible improvements of the project:</p> <p>There is a need for continuity. DUPC2 needs to co-develop a strategy with public agencies to ensure that these institutions are able to use and apply the tools and methods in their own context. Government agencies have expressed the need for post project support and are concerned that without a proper follow up they will not be able to fully benefit from the project.</p> <p>Research organisation considered that the project could have targeted more researchers as they are in a better position to access the software and apply the knowledge acquired. They would have appreciated to be involved from the design stage to know more about the assumptions behind the model and if a model sensitivity analysis was performed. They have highlighted that assumptions made have an impact on decisions with regards to irrigation, thus a peer review on the defined assumptions would have been useful.</p> <p>Involvement of public agencies in the design phase would also have been helpful to measure abilities and needs. A questionnaire to targeted trainees for example would have been helpful to assess level of technical knowledge and subjects to tackle.</p> <p>Researchers have expressed the need for further data dissemination and sharing. Data acquired through the project should have been made accessible to the research community in Lebanon.</p> <p>It is too early to measure long-term impact of the project as it has just ended but public agencies have highlighted that they still don't reach the right target in crop water productivity. In order to be able to reach expected long-term results DUPC2 would need to further invest in public institutions involved in the project.</p>

F.1.4 Palestinian territories

Project no.		
Project title	Enhancing the Water and Environment Masters' Programs at Birzeit University	
Project leader and partners	<ul style="list-style-type: none"> • Project leader: Institute of Environmental and Water Studies (IEWS), Birzeit University (BZU) • Project partner: IHE Delft • Other partners: members of the project's steering committee/advisory group from public and private sectors, academic sector, government and civil society. 	
Project objectives	<p>The overall objective of the project was to improve the quality of <i>two master programs in Water and Environmental Engineering and Sciences offered by the Institute of Environmental and Water Studies (IEWS)/ Birzeit University (BZU)</i>:</p> <ul style="list-style-type: none"> • Master programme of Environmental and Water Engineering a • Master programme of Environmental and Water Sciences <p>Specific objectives are as following:</p> <ul style="list-style-type: none"> • Critically review the teaching material, content, quality, teaching tools, and market relevance on the basis of both local and IHE Delft practices and curricula. • Identify the difference in the outcomes of both Masters' programs, and carefully show the difference between both programs and how it is reflected in the offered courses. • Enhance employability of Graduates • Enhance the programs outreach • Increase number of students enrolled in the Engineering and Sciences Masters' programs 	
Target country/ies, regions, river basins	Palestinian territories	
Start and end date	1 January 2017 to 30 June 2018	
Total project budget (Euro)	<p>DUPC2 contribution (Euro): 69,520</p> <p>Co-funding (Euro): 55,000</p> <ul style="list-style-type: none"> • Birzeit University contributed in kind with working spaces for meetings, stationary, internet and communication this co-funding is estimated at 5k Euro • The master students research (fellowship) is supported from other research projects like the Palestinian-Dutch Academic Cooperation Programme on Water (PADUCO) funded projects mainly, as well as another on-going EU funded project. 	
DUPC category of activity	DUPC2	DUPC cross-cutting themes
<ul style="list-style-type: none"> • Education and training 	<ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector • Improved catchment area 	<ul style="list-style-type: none"> • Water governance • Gender/inclusiveness

	<p>management and safe deltas</p> <ul style="list-style-type: none"> • Access to clean drinking water and basic sanitation • Water scarcity and water related problems related to the refugee crisis in the Middle East • Water diplomacy 	<ul style="list-style-type: none"> • Climate change
<p>Alignment with national/regional policy priorities and (inter)national programmes</p>	<p>IEWS was recognised as a Centre of Excellence in the Palestinian Territories in 2014. For this reason attention is given to its performance in teaching and research. The Palestinian Ministry of Higher Education (MoHE) required that the BZU carefully identifies the difference in the outcomes of its two Masters' programs in <i>Water and Environmental Engineering and Sciences</i>: to better show the difference between both programs and how that is reflected in the offered courses. The MoHE also specified that the programs' curricula were not very well structured and in depth review of the individual courses dependency on each other was lacking.</p> <p>The Institute is at the forefront of research and academic water and environment institutions in the Palestinian Territories. It has trained many of the leading actors in the water sector in the Palestinian Territories. For this reason the project is also relevant to the needs of the entire water sector. To make sure the project is aligned with societal priorities the project was organised around a gender balanced steering committee gathering actors from the MoHE, the Ministry of Agriculture, BZU, national water and agriculture authorities, local municipalities, the private sector (engineering offices), NGOs (USAID) as well as graduates and students of the Engineering and Sciences Masters' programs.</p>	
<p>(Inter-)national partnerships and collaborations</p>	<p>IHE Delft has established a long-term partnership with the IEWS. The relationship started in 1994 when IHE conducted the first training programs in water at BZU. At the time the Palestinian Territories had hardly any water specialists. IEWS is an example of institution that IHE has contributed strengthening over the years with several projects implemented. The water master programs were established in 1997, and Water and Environmental programs in 2007 jointly with IHE Delft through joint development projects (WASCAPAL, Wasteval I & II, Tempus). DUPC1 and DUPC2 have funded a number of joint education and research projects carried-out at BZU (UWIRA, NATSYS, DILCA, GWDEMO).</p> <p>As a result many of the key players in the water sector are Alumni of the IEWS Science and Engineering Masters Programs in Water and Environment and or took part in some of the IHE-BZU joint projects. Examples of Alumni are the Chief operators of all the existing wastewater treatment plants in the West Bank, namely Al-Bireh, Nablus, Jericho, Al Tireh/Ramallah. This has contributed for the Masters programme project to the successful mobilisation of key players in the water sector, including the mobilisation of non-academic partners and NGOs.</p> <p>The project leader was also able to mobilise in the steering committee representatives of three important private sector employers in the water sector for example Dr. Hafez Q. Shaheen who is part of the board of directors of Universal Group for Engineering and Consulting.</p>	
<p>Demand drivenness and ownership</p>	<p>The project was designed by the Institute of Environmental and Water Studies (IEWS), Birzeit University (BZU) in collaboration with IHE Delft with the aim to respond to a number of challenges encountered by the Institute.</p> <p>According to the project leader, in the past years the declining number of students enrolled in the Engineering and Sciences Masters' programs has been an issue of great concern for IEWS as these students are the main clients of the institute and decline in enrolment therefore impacts the sustainability of the institute and its Masters' programs.</p> <p>In September 2016, BZU increased student fees and this resulted in a student strike. This situation urged the project leader to enhance the quality of the Master students</p>	

	<p>with the idea that IEWS can increase its fees if it is providing quality teaching and research.</p> <p>The project leader hopes that via efforts towards local ownership and engagement of key actors in the steering committee this project will be an inspiration and will help raise standard for all programs at BZU. It is too early to verify if this is happening or not.</p> <p>The project leader is intrinsically motivated to achieve the outputs and outcomes of this project. He has personally invested time and mobilised his relationships to ensure the success of the project.</p>
Sustainability	<p>Despite a high resilience to change among some professors at BZU, the project leader was able to convince and engage top management actors at BZU including the BZU Vice President <i>Office for planning</i>, the Dean of Faculty Of Graduate Studies and the Director of IEWS. This should contribute to embedding the projects results in BZU.</p> <p>The project leader is a member of the university academic council, as such its members are well informed about the project activities and objectives. Developed programs material are discussed with the council. Material presented by IHE during the staff and stakeholders workshops held in September 2017 at BZU, has also been shared and discussed with the vice president for academic affairs. The project leader is very confident that the academic council will endorse all the produced material. The output of the project, namely modified curricula and brochure will be utilized by the university public relation department for marketing the programmes widely.</p> <p>The project should contribute to the local recognition of IEWS as a centre of Excellence in water in the Palestinian Territories. The improved courses and programs' structures are envisaged as models for other programs in the Palestinian Territories.</p> <p>The two Water and Environmental Masters' programs were reshaped to better meet the changing market needs, shifting from governmental demand to private sector demand. The participation of the steering committee assured that the goal of formulating the programme objectives is achieved to fulfil societal needs. This focus on employability of graduates has contributed in attracting more students to enrol the programs (20 new students enrolled) and will therefore contribute to financial sustainability of IEWS and its programs.</p>
Lessons learned / recommendations	<p>Lessons learned:</p> <ul style="list-style-type: none"> • IHE long-term partnerships can lead to very positive outcomes. The various IHE and DUPC projects and initiatives with IEWS have contributed to the organisational strengthening of the Institute since 1994 and its recent recognition as a Centre of Excellence. This has also enable a strong relationship built on trust that has enabled DUPC2 to authorise funding for a IEWS lead project. The long term investment of IHE in the Palestinian Territories has contributed to building a strong network of IHE Alumni that now work in the academic, public and private sectors and were successfully mobilised in the project's steering committee. Examples of Alumni are the Chief operators of all the existing wastewater treatment plants in the West Bank, namely Al-Bireh, Nablus, Jericho, Al Tireh/Ramallah. • The choice of a strong project leader, very motivated, with a solid network in the water sector in the Palestinian Territories is key to the success of the project and the sustainability of its results. The strong leadership skills of Dr Nidal Mahmoud have led to a strong ownership of the project among members of the steering committee and support from BZU management despite some resistance to change among professors. The project leader was able to mobilise in the steering committee representatives of three important private sector employers in the water sector for example Dr. Hafez Q. Shaheen who is part of the board of directors of Universal Group for Engineering and Consulting. The recent election of Dr Nidal Mahmoud as a member of BZU Academic Council (responsible for endorsing new academic programs) has helped informing the council about the project's approach which is highly appreciated. • The project has contributed to the introduction of innovative approaches

	<p>for BZU: the introduction of a participatory approach with a steering committee linking the university with society in the development of academic programs designed to serve the needs of society is an innovative approach at BZU. The project leader affirms that this new culture was very appreciated by participants to the steering committee meetings. The project leader has valued their opinion and made sure the steering committee served as an advisory panel. In addition the material developed for the lectures has introduced innovative teaching material based on creative learning using visuals.</p> <ul style="list-style-type: none"> • DUPC's value added to the project is very high. IHE professors have provided technical support, ideas on how to organise the project and enhance the teaching material and feedback on quality of outputs. Moreover IHE brings legitimacy and credibility to the approach and initiative. Without the involvement of IHE/DUPC the project leader affirms he would not have been able to push through the project and obtain support from the University. IHE brings a guarantee of quality to BZU and IEWS' management who were more willing to take the risk of implementing a project that was not fully supported by professors because IHE was involved. Finally DUPC offers financial support to the project, to cover the costs.
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F.2 Africa

F.2.1 Mozambique

Project no.	DUPC/o28/WJD	
Project title	SALINPROVE	
Project leader and main partners	<p>Tibor Stigter, IHE</p> <p>UEM – Dep. of Engineering / CAP (academia)</p> <p>Ara-Sul (governmental partner)</p> <p>AFORAMO (private partner)</p> <p>Other partners: - FIPAG: responsible for the management of all drinking water infrastructures. - INAM: Institute for Meteorology, responsible for climate monitoring and assessment, can provide valuable input and data for the hydrogeological studies. - IIA: Water Research Institute, can participate in the project through the exchange of research knowledge and experience in fields related to the project. - CRA: Water and Sanitation Regulatory Council, an independent regulator of drinking water and sanitation services in urban areas at a national level. - Vitens Evides International: Private partner involved in implementation of water capacity development programs in Mozambique, participates as external observer and advisor and also help make links to the private sector. - ODI: Overseas Development Institute, participates as observer/advisor.</p>	
Project objectives	<p>The project objective is to better understand the dimension and environmental, social and economic impacts of the existing groundwater salinization problems, and developing feasible solutions, both in the present situation and under future climate and socio-economic change.</p> <p>The main challenges this project will address are (i) improving peri-urban and rural water security, (ii) representative monitoring of groundwater salinities and related environmental and socio-economic impacts and (iii) mitigation and adaptation to groundwater salinization and dropping levels, under the current heavy pressure of water demand and future socio-economic and climate changes.</p>	
Target country/ies, regions, river basins	Peri-urban Great Maputo (Mozambique), Tra Vinh province in the Mekong Delta (Vietnam) and Laizhou Bay (China, self-funded)	
Start and end date	Start: 26/09/2016, End: 30/09/2019	
Total project budget (Euro)	DUPC2 contribution (EUR): 636,044 Co-funding (EUR): 76,614	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
Research and innovation	Improved catchment area management and safe deltas; Access to clean drinking water and basic sanitation;	Climate change
Alignment with national/regional policy priorities and (inter)national programmes	The project seems to respond to current needs with regard to groundwater salinization in the coastal areas of Mozambique, although this has been very much neglected in policies and the actual management of water supply (much attention for surface water). High costs are involved in obtaining data and/or establishing a data information system related to groundwater. Although ground water is not very much considered as a national priority, the governmental agency Ara-Sul is drafting policies. Objectives of the project (management and monitoring system) are well aligned with needs and day-to-day business of Ara-Sul.	
(Inter-)national	This project matches research interests of UEM and IHE together with the practical	

<p>partnerships and collaborations</p>	<p>demand of Ara-Sul for improved ground water monitoring tools and models for ground water flow and salt transport.</p> <p>UEM is the only university in MOZ to offer a MSc in water management, although they have lack teaching capacity. Ara-Sul is obviously the main governmental institution in charge of monitoring and management of water resources in the southern Mozambique. AFORAMO is the most active (and largest) association of small-scale informal water suppliers. Other project collaborators are also evident partners.</p> <p>The international dimension of the project (benchmark with Vietnam and China) is an initiative of IHE based on research contacts and interests. Although exchange activities have been implemented and others are foreseen, MOZ partners seem to be focussing mainly on their national context and particular problem issues.</p>
<p>Demand drivenness and ownership</p>	<p>Including governmental organisations was foreseen from the start of the project (Ara-Sul provided feedback on draft proposal), getting on board the private sector was more difficult. A challenge will be how to “translate” research results into guidelines for policy makers and management & monitoring system tools for local water suppliers and private and public sector organisations.</p> <p>Higher management of all participating partners are involved and support the project.</p>
<p>Sustainability</p>	<p>UEM dep. for Engineering and IHE have been long-term partners and already discussed several plans to collaborate on the issue of ground water, prior to this project, but without success.</p> <p>Main beneficiaries of UEM-CAP research are FIPAG/ Ara-Sul/ municipalities/ AFORAMO. The collaboration UEM – Ara-Sul is also very likely to continue (was already established before the start of project). Nonetheless, sustainability of the project results will depend on the applicability of the models and management systems that will be designed/updated through the project and future collaboration on the availability of external or institutional funds.</p>
<p>Lessons learned / recommendations</p>	<p>In this project, the DUPC2 programme clearly strengthens local and international partnerships, combining research and capacity building. Furthermore, it is a driver for meeting, communicating, exchanging and collaborating with other institutions that, although sometimes in the same organisation, do not know each other or would otherwise not collaborate but through the project find an added value in working together.</p> <p>To assure the involvement of local small-scale water suppliers, represented by AFORAMO, and the quality and quantity of their measuring data close monitoring is recommended.</p> <p>The impact of the exchange activities with Vietnam and China is limited so far. It is recommended to intensify practical and focused cross-learning between the 3 case studies within the possibilities of the available budget.</p> <p>No mayor cross-learning with other DUPC2 projects in Mozambique so far. The first national project meeting (planned for 14 and 15 May) is warmly welcomed and it is recommended to continue this effort on an annual basis.</p> <p>Project coordination is mainly done by UEM, without any local project steering committee structure for support. It is recommended to establish such a structure in order to strengthen ownership of project results by other project partners.</p>

<p>Project no.</p>	<p>106475</p>
<p>Project title</p>	<p>SMALL: “Water Supply and Sanitation in Small Towns: the urban rural intersection (SMALL)”</p>
<p>Project leader and partners</p>	<p>Project lead: IHE, Giuliana Ferrero</p> <p>Partners Mozambique: Eduardo Mondlane University (UEM); Collins Ltd (water</p>

	<p>treatment technologies and operation); Administração de Infraestruturas de Abastecimento de Água e Saneamento (AIAS, government service)</p> <p>Partners Uganda: Makerere University (MAK), National Water and Sewage Company (NWSC)</p> <p>Associated partners: Vitens Evidens International (VEI); Unicef Mozambique; Dutch National Institute for Public Health and the Environment (RIVM); Swiss Federal Research Institute (EAWAG)</p>	
Project objectives	<p>In view of the rapid urbanization and population growth, small towns that form the intersection between urban and rural, have slowly started gaining importance in Sub-Saharan Africa. In these towns existing coverage of basic public services in water supply and sanitation is lagging behind.</p> <p>For example, in Mozambique access to piped water is as low as 3% in certain small towns. Furthermore, while sanitary improvements were helping to spearhead new and better forms of urban governance of the industrializing cities in the late 19th and early 20th centuries, urban sanitation (including small towns) recorded little progress within the MDG targets in Africa.</p> <p>In order to meet SDG6 in small towns, and to strengthen the participation of local communities in improving water and sanitation management, it is necessary to take into consideration the specific needs, conditions and capacities of small towns. Therefore, governments of Sub-Saharan Africa, have expressed the need to better understand how small towns develop and how WSS provision can best be organized in order to rationalize the efforts and achieve more sustainable outcomes</p> <p>This research project aims to assess existing models of water and sanitation provision by studying to what extent current infrastructural and management models reflect the specificities of small towns (infrastructural arrangements and socioeconomic dynamics of small settlements) or rather mimic models implemented in large urban centres. In this way the project contributes to developing models that assist (local) governments and service providers in expanding and improving water and sanitation services in small towns, including strategies that guide water safety management, infrastructure development and inclusive and effective community engagement.</p> <p>Since administrative boundaries, and the rationale for defining them, are often accompanied by political priorities, this research engages with academic and policy debates on how administrative boundaries and policy models affect WSS service delivery. This study will further enhance knowledge on the implications of management models and technological choices for the service providers as well as the water users by defining what this means for urban/rural dynamics including how it affects the flows (and quality) of water for different purposes of use, including small-scale irrigation which often forms a crucial livelihood strategy in and around small towns.</p>	
Target country/ies, regions, river basins	<p>Mozambique</p> <p>Uganda</p>	
Start and end date	<p>September 2016 - December 2019</p>	
Total project budget (Euro)	<p>DUPC2 contribution (Euro): 679.030</p> <p>Co-funding (Euro): 328.980</p>	
DUPC category of activity	DUPC2 themes	DUPC cross-cutting themes
Research and innovation	<p>Efficient water management, particularly in the agricultural sector</p> <p>Access to clean drinking water and basic sanitation</p>	<p>Water governance</p> <p>Climate change</p> <p>Gender & diversity</p>
Alignment with	<p>Challenges for water utilities in Africa are large. Large groups of citizens do not (yet)</p>	

national/regional policy priorities and (inter)national programmes	have access to clean drinking water and good sanitation is not provided everywhere as well. Smaller, more rural, towns lag behind the larger cities, and have specific issues. This is acknowledged by international organisations and national governments and water related bodies. National goals for access to clean drinking water and good sanitation cannot be achieved without addressing water supply and sanitation in smaller towns. The project considers national policy frameworks that allow for the private sector to enter the water operations sector both in Uganda as well as in Mozambique.
(Inter-)national partnerships and collaborations	In this project the knowledge of internationally leading research institutes in the fields of water, sanitation and health is combined with the scientific knowledge and capacity of local universities and the implementation experience of local water utility companies. Although there has been contact between the parties in Mozambique and Uganda during project start-up, the project execution so far does not show much interaction between the partners in Uganda and the partners in Mozambique.
Demand drivenness and ownership	<p>The need for improvement of water distribution and sanitation systems in smaller towns in Sub-Saharan Africa is clear. This project tries to underpin the need for a different way of operation for utility companies in smaller towns than in bigger cities, and to address this need. If this is indeed possible the right parties are involved, but so far the project in Uganda is fairly academic in nature. In Mozambique, the project seems to be a good mix between research and practice through the involvement of private (Collins Sistemas de Água Ltd.– private sector in the lead), public (AIAS) and research (UEM-Centro de Biotecnologia) partners.</p> <p>In Mozambique Collins Ltd. and AIAS are “natural partners” (AIAS is the asset owner for sanitation and water supply in small scale and medium-sized towns and has signed lease contracts with private operators in the various towns to run the water systems, amongst others with Collins Ltd.). UEM-Centro de Biotecnologia (replacing the Dep. Of Biology because of non-performance) is a new partner for both Collins and AIAS. Ownership of the result results by Collins Ltd. will depend on the applicability and relevance of the research results.</p>
Sustainability	Indeed the right parties are involved, but whether the results can really be used by the utilities depends on the applicability of the research results.
Lessons learned / recommendations	<p>In this project, the DUPC2 programme clearly strengthens local and international partnerships, combining research and capacity building. Furthermore, it is a driver for meeting, communicating, exchanging and collaborating with other institutions that, although sometimes in the same organisation, do not know each other or would otherwise not collaborate but through the project find an added value in working together.</p> <p>Project partners did participate in the inception workshop at IHE together with Ugandan partners but analysis and proposal for both countries seems to have been developed mainly as a national project plan without too much exchange between both countries. Moreover, the impact of international cooperation is limited so far. Although the project considers exchange activities in the second half of the project, it is recommended to further intensify cross-learning between Uganda and Mozambique and more systematic comparison of the water distribution and sanitation systems between both countries and between small towns and big cities.</p> <p>No mayor cross-learning with other DUPC2 projects so far. The first national project meeting in Mozambique (planned for 14 and 15 May) is warmly welcomed and it is recommended to continue this effort on an annual basis and in other DUPC2 countries as well.</p>

Project no.	106470
Project title	A4 Labs – Arid African Alluvial Aquifers Labs securing water for development
Project leader and main partners	Pieter van der Zaag, IHE

(Mozambique)	OXFAM Mozambique (NGO) Universidade Eduardo Mondlane (Academia) Instituto Superior Politecnico de Gaza (<i>Academia</i>) Other partners: Acacia Water (private sector) Ara Sul (government) Instituto Nacional de Irrigação (government) Servicio Distrital de Actividades Economicas Guijá (government) ADCR (NGO) KULIMA (NGO) IDE (Private sector/NGO)	
Project objectives	<p>A4Labs aims to co-develop, test, share and compare with farmers and partners methodologies to create a reliable and sustainable source of water for agriculture in three semi-arid to arid regions of Sub-Sahara Africa, using water underlying dry river beds and upscale these methodologies for use at river basin scale while maintaining sustainable abstraction limits and minimising negative social and ecological consequences.</p> <p>The project develops experimental sites (“living labs”) where smallholder farmers, practitioners, agricultural extension officers, water engineers, students and private sector actors co-develop new (technological, agronomic, financial, market) approaches of accessing and using shallow groundwater for productive purposes, and evaluate the hydrological, social and economic effects and impacts.</p>	
Target country/ies, regions, river basins	Limpopo River Basin, Mozambique Nile River Basin – Tekeze sub-basin, Ethiopia Limpopo River Basin – Mzingwane sub-basin, Zimbabwe	
Start and end date	September 2016 – September 2019	
Total project budget (Euro)	DUPC2 contribution (EUR) 698,460 Co-funding (EUR): 283,000	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
Research and innovation	Efficient water management, particularly in the agricultural sector	Water governance Gender/inclusiveness Climate change
Alignment with national/regional policy priorities and (inter)national programmes	<p>No national policies that include the topic of securing reliable and sustainable use of water underlying dry riverbeds for agriculture in semi-arid to arid regions in Mozambique. In comparison to Zimbabwe and Ethiopia, where pilot projects and (limited) infrastructure for using water from dry riverbeds already existed, this experimental approach is new for the Mozambican context.</p> <p>The pilot project in Mozambique clearly aligns with local needs, (law framework) strategies and opportunities to combat the negative effects of climate change in order to guarantee local agricultural production. Local research interest in the topic is high and is an added value for curricula and learning activities at both UEM and ISPG.</p>	
(Inter-)national partnerships and	The project put effort in getting new partners on board. Considering the practical focus of the project (“action research”), ISPG was contacted as main project partner, which turns out to be a very relevant and promising choice. OXFAM Mozambique	

collaborations	<p>was approached as project coordinator, drawing on successful earlier collaborations with OXFAM Zimbabwe (project partner for A4-Labs Zimbabwe).</p> <p>UEM has been a long-term partner for IHE.</p> <p>Relevant Ministries are not directly involved in the project, although they are considered as important stakeholders for the dissemination activities in the second part of the project.</p>
Demand drivenness and ownership	<p>The project brings together a large number of different partners. Not all of them show the same level of (high level management) engagement. Therefore, strong ownership of the project results is to be expected from the main and most engaged project partners.</p>
Sustainability	<p>The project objectives are very relevant for semi-arid to arid regions of Sub-Sahara Africa. The main project partners are very active in getting funds for follow-up projects and initiatives.</p> <p>Sustainability of the “practical” project results will depend on the effectiveness and applicability of the systems to access and use shallow groundwater for productive purposes that are developed by the project. At policy level much will depend of the level of interest and engagement from Ministries in the second half of the project.</p> <p>Sustainability of the research results, evaluating the hydrological, social and economic effects and impacts of using shallow groundwater seems to be secured because of the high level of engagement by the academic partners.</p>
Lessons learned / recommendations	<p>Co-learning is institutionalised at the sites, and between the three sites, through careful monitoring and evaluation by farmers and other players, assisted by local students.</p> <p>In this project, the DUPC2 programme clearly strengthens local and international partnerships, combining research and capacity building. Furthermore, it is a driver for meeting, communicating, exchanging and collaborating with other institutions that, although sometimes in the same organisation, do not know each other or would otherwise not collaborate but through the project find an added value in working together.</p> <p>The project brings together a large number of different partners (in Mozambique only 10 already). Furthermore, the project is a pilot exercise. It is recommended to improve communication and reduce as much as possible the level of bureaucracy in project management and procedures by southern coordinating parties in order to facilitate a smooth flow of information, coordinating efforts and project funding for activities.</p> <p>No mayor cross-learning with other DUPC2 projects in Mozambique so far. The first national project meeting (planned for 14 and 15 May) is warmly welcomed and it is recommended to continue this effort on an annually basis.</p> <p>The impact of the exchange activities with Zimbabwe and Ethiopia is limited so far. It is recommended to intensify practical and focused cross-learning between the 3 case studies.</p>

Project no.	106962
Project title	Dengue, water and households: informing suppliers and government officials in small towns
Project leader and partners	<p>Sandra Manuel Department of Archaeology and Anthropology, Eduardo Mondlane University (Academia)</p> <p>Instituto Nacional de Saúde – INS (government)</p> <p>IHE (Academia)</p>

	Collins Ltd. (Private sector) Other partners: Ministry of Health Local community based NGO's (in process of contracting)	
Project objectives	With the aim of understanding the social and water quality dynamics for the outbreaks and spread of dengue in Mozambique, this project has 3 main objectives. Firstly, it aims to explore the interdependence between intermittent water supply, deficient sanitation (specifically solid waste management problems), and dengue. Secondly it will zoom on households on the periphery of Maputo and Pemba cities to identify the family members that are more vulnerable to the disease. Finally, it will document the distinct techniques of water storage and reasons that lead families to continue storing water. It will aim inform and document politics and practice, not only in what concerns the government's treatment of dengue outbreaks, but also regarding water reforms and water supply providers.	
Target country/ies, regions, river basins	Mozambique (Pemba region, Peri-urban Great Maputo)	
Start and end date	August 2017 - May 2019	
Total project budget (Euro)	DUPC2 contribution (EUR) 109.494 Co-funding (EUR) 18.700,00	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
Research and innovation South-south cooperation	Access to clean drinking water and basic sanitation;	Water governance Gender/inclusiveness Climate change
Alignment with national/regional policy priorities and (inter)national programmes	National health care policies and actions are more focussed on malaria, so no national strategies or programmes are drafted for dengue. During the inception meeting, INS representatives concluded that the project is relevant to the health sector of Mozambique. INS argued that health research is missing to understand the reasons that cause the proliferation of mosquito-borne diseases, and how ecological and socio-economic determinants contribute to a greater or lesser occurrence of dengue. INS also stressed that to understand the disease it is necessary to perceive the social part. One of the main objectives therefore is to get dengue included in the national policy agenda. Nonetheless alignment with MoH policies has not been fully achieved in the design/first phase of the project (only "expressed" interest).	
(Inter-)national partnerships and collaborations	<p>UEM-IHE: existing partners, very collaborative (joint seminar sept/oct 2018; joint paper end 2018; MSc IHE to MOZ; joint dissemination activities; joint field research through the project, IHE contributed to the project concept development and inception report, feedback on project reports etc.).</p> <p>UEM-National Health Institute: existing partners, very collaborative (provide facts&figures about dengue in Pemba and Maputo, joint paper planned, dissemination activities, contributed to the project concept development and inception report)</p> <p>UEM-MoH: existing partners, political link, only two meetings so far. High level engagement results difficult. Risk is that their role and contribution will be limited to the last (dissemination) phase as mere receivers instead of providers of input. Alignment with national policies will therefore only be achieved at the end of the project were this ideally should be done at the beginning</p> <p>UEM-Collins Ltd.: new partners, collaborative.</p>	
Demand drivenness	This project matches research interests of both UEM and IHE, although the initial	

<p>and ownership</p>	<p>concept was suggested to UEM by IHE.</p> <p>In the original proposal UNICEF was the third partner. However, due to unavailability from UNICEF and the close research interests between this project and Mozambican National Health Institute (INS), UNICEF was replaced by INS, who show a high level of commitment to the project.</p> <p>The Project is still in process of searching for the most adequate partner that should be a non-government organisation (community-based organization) with expertise to disseminate the information produced in this project through alternative dissemination ways: i.e. community radio, cultural performances, communal artistic gatherings.</p>
<p>Sustainability</p>	<p>The Department of Archaeology and Anthropology is considering a water and culture research cluster, which will surely pursue similar research thus contributing to this project's sustainability. Moreover, the UEM researchers and IHE are considering expanding this project over the two years funded by the DUPC.</p> <p>INS is greatly interested in including collecting blood samples in humans to test for dengue in the areas where this project has been developing social and water quality research. In partnership with UEM, they are considering looking for funds locally and internationally to produce a comprehensive interdisciplinary study of dengue in Mozambique that would include the socio-cultural dimension; the water analysis (two dimensions already included in this project) plus the medical testing.</p>
<p>Lessons learned / recommendations</p>	<p>In this project, the DUPC2 programme clearly strengthens local and international partnerships through successful interdisciplinary research. Furthermore, it is a driver for meeting, communicating, exchanging and collaborating with other institutions that, although sometimes in the same organisation, do not know each other or would otherwise not collaborate but through the project find an added value in working together.</p> <p>No mayor cross-learning with other DUPC2 projects in Mozambique so far. The first national project meeting (planned for 14 and 15 May) is warmly welcomed and it is recommended to continue this effort on an annually basis.</p> <p>The project developed a very informative and attractive website with blogs written by student researchers to disseminate the project (activities and results).</p> <p>The project is an outstanding opportunity for undergraduate students to conduct high quality supervised fieldwork (normally no funds are available so students conduct field work close to Maputo: less variation and interesting topics available, and no high quality supervising), which will improve the quality of their undergraduate thesis and therefore their chances on getting a consecutive MSc.</p> <p>Alignment with MoH policies has not been fully achieved in the design/first phase of the project making this a weak link. It is recommended to intensify and closely monitor dissemination strategies of project results towards policy makers in order to maximise the impact of the project on policy level (and the "translation" of research results into a toolkit/practical guidelines for policy-makers).</p>

F.3 Uganda

Project no.	106961	
Project title	River basin simulation for improved transboundary water management in the Nile: Case study of the Tekezze-Atbara sub-basin	
Project leader and partners	Hydraulics Research Centre (HRC) Sudan, Yasir A. Mohamed, ms. Hana Altom Partners: Ethiopian Institute of Water Resources (Addis Ababa University), IHE Delft	
Project objectives	<p>Three dams were built in the Tekezze-Atbara sub-basin (T-A): Girba (1966) and Atbara Dams Complex (2015) in Sudan, and Tekezze Five (2010) in Ethiopia, while several others are on the drawing board. These storage reservoirs are operated independently, not necessarily because of conflicting interests, but possibly due to lack of information of the added value of coordinated operation of the system. Such uncoordinated operation of water resources systems results in sub-optimal benefit, especially for water scarce region, such as the Nile. Competition over water resources in the Tekezze-Atbara sub-basin (T-A) is increasing to respond to the rising demands for hydropower and irrigation in both Ethiopia and Sudan, and further downstream in Egypt.</p> <p>In this project costs and benefits of coordinated versus non-coordinated operation of the reservoirs system in the T-A sub-basin are evaluated with a river basin simulation model to analyse demands of irrigation, hydropower and environmental flow.</p>	
Target country/ies, regions, river basins	Sudan, Ethiopia (Tekezze-Atbara sub-basin of the Nile)	
Start and end date	1 February 2017-31 January 2019	
Total project budget (Euro)	DUPC2 contribution (Euro): 99.610 Co-funding (Euro): 18.500	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
<ul style="list-style-type: none"> • Research and innovation • South-south cooperation 	<ul style="list-style-type: none"> • Improved catchment area management and safe deltas • Water diplomacy 	<ul style="list-style-type: none"> • Water governance
Alignment with national/regional policy priorities and (inter)national programmes	<p>Several models for the T-A sub-basin have been developed in recent years, both by national and regional organizations, e.g., The NBI-DSS (Decision Support System); the ENTRO-ENPM (Eastern Nile Planning Model), among others. Acceptance of results by stakeholders has always been a challenge. In order to increase acceptance building a river basin simulation model for the T-A sub-basin, by a joint team from the basin, with an agreed model inputs, will enhance chances to concur to model outputs. Policy stakeholders are seriously involved in the project: The Ministry of Water, Irrigation and Electricity, Ethiopia (MoWIE); the Ministry of Water Resources, Irrigation and Electricity, Sudan (MoWRIE); the Embassy of Sudan in Ethiopia; the Embassy of Ethiopia in Sudan and the Ethiopia-Sudan Technical Advisory Committee (ESTAC).</p>	
(Inter-)national partnerships and collaborations	<p>The model is built jointly by researchers from HRC and AAU, as a pre-requisite for trust and confidence building before interpreting model results. Experts from IHE provide guidance and facilitation during project implementation. The Institute for Technology and Resources Management in the Tropics and Subtropics (ITT) at Cologne University of Applied Sciences (Germany) is finalising a film on the international cooperation in the Tekezze Atbara region, funded partly from this project, partly from a project on water diplomacy and partly funded by ITT themselves.</p> <p>Relevant stakeholders at policy level from both countries are participating in stakeholder meetings, including the embassies of Sudan in Ethiopia and of Ethiopia in Sudan.</p> <p>Although the project proposals expresses the expectation that the project methodology can be applied in other parts of the Nile Basin, there are tensions about the use of Nile water, which make such a participative research with Egypt unlikely at the moment.</p>	
Demand drivenness	This project is a south-south cooperation partnership, initiated by the Sudanese	

and ownership	HRC. They sought cooperation with Ethiopian AAU to look for improvement of dam operation across the Ethiopian-Sudanese border. This research set-up was chosen to increase acceptance of the results and increase ownership in both countries. In the project (even now in phase 1 where separate models are developed for the Sudanese part of the system and the Ethiopian part) cooperation is rather intensive (e.g. in choosing software, deciding on design principles) and contacts rather intensive.
Sustainability	<p>Sustainability is addressed fourfold in this project.</p> <p>In the first place there is open communication about the projects and its results: in scientific literature and by way of the project website. This will (at least to some extent) contribute to the accessibility of project results for the scientific community and other interested people after the end of project. In the second place the involvement of users of the model in building of the model will contribute to the use of the model in practice, and therefore to the sustainability of the project results. In the third place the project will strengthen relations between the hydraulic institutes in the two countries, between researchers and between the researchers and the relevant policy makers. This kind of relations often lasts longer than the projects themselves. In the fourth place the researchers in the project gain in experience (that they can use in their further career) and a number of MSc students is educated.</p> <p>The interaction with the regional networks (NBI at policy level and NBCBM as a scientists network), which can also lead to increase of sustainability, seems not very well developed. This can be a point of attention for the future (e.g. presentation at NBI conference, etc.).</p>
Lessons learned / recommendations	<p>This project is a good example where research goes well in hand with policy development. The research process is balanced and takes into account the research capabilities in both countries involved (see e.g. the choice of simulation software). The connection to diplomatic/political level is well organised and involves not only the relevant ministries from both countries, but also the embassies, so that Foreign Affairs in both countries are involved as well.</p> <p>This is a model that could be expanded to/with other countries in the Nile Basin, although this will not be easy when there are already tensions.</p> <p>The present model development is focused on maximising the (economic) benefits of multi dam-management irrigation, electric power, and environmental flow. Environmental impacts are not directly in the model. These may be large in the longer term. It is suggested to discuss taking these into account as well in a possible next stage of the project.</p>

Project no.	106257
Project title	NBCBN-support 2016-2018
Project leader and partners	NBCBN,
Project objectives	NBCBN, the Nile Basin Capacity Building Network was established in 2002 to create links between water professionals from the basin and bring people closer around common research objectives that serve their countries in order to improve cooperation and stimulate joint problem-solving oriented research leading to outputs that go beyond the original horizons of the individual researchers. The Network has always been strongly financed by DGIS/The Netherlands. After an evaluation in 2013 it was advised that NBCBN should be more independent form DGIS and an external advisor helped NBCBN in 2014 with setting up a transition phase, financed by DUPC1. The overall objective by the end of the Transition Phase is for NBCBN to be "a financially sustainable, registered regional Nile Basin network of water professionals firmly rooted in the academic and applied research world with a demand driven research and knowledge agenda with special reference to trans-boundary water related issues and with strong functional relations with its major client NBI-Secretariat - ENTRO-NELSAPCU as well as with relevant national ministries in the Nile Basin."
Target country/ies, regions, river basins	Nile Basin (member countries: Burundi, D.R. Congo, Egypt, Ethiopia, Kenya, Rwanda, South-Sudan, Sudan ,Tanzania and Uganda)
Start and end date	1 January 2016-31 December 2018
Total project budget (Euro)	DUPC2 contribution (Euro): 742.000 Co-funding (Euro): 18.500

DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
<ul style="list-style-type: none"> Knowledge sharing 	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
Alignment with national/regional policy priorities and (inter)national programmes	<p>In this project various activities are undertaken to realise sustainability of a network of professionals on water and water management research and knowledge sharing in the Nile Basin. This is line with the Dutch policy to empower regional organisations to fulfil their mission without continuous support. Many national knowledge institutions participate and see added value, as well as individual members from all Nile countries. NBCBN is a technical network, not political. But the issues are political and international cooperation is key. This has been successful, but must be proven over and again.</p>	
(Inter-)national partnerships and collaborations	<p>NBI, the Nile Basin Initiative, the intergovernmental platform for intercountry cooperation and joint efforts to manage Nile resources, sees NBCBN as a vehicle to bring the international scientific community on the Nile together. NBCBN is less formal, but more exploratory than NBI. NBI cannot do that, because countries should all be on board. There is an ongoing MoU between NBI and NBCBM signed in 2012, as well as cooperation in research projects, education and knowledge transfer. The NBI has no means available to fund research or fund the network. Neither have the national governments in the region.</p> <p>A successful example where NBCBN was able to get external funding is the Nile-Eco-VWU project (Nile Ecosystems Valuation for Wise-Use) funded by CGIAR. When NBCBN became aware of the opportunity a consortium from the various Nile countries was gathered within a few days and a successful proposal written.</p>	
Demand drivenness and ownership	<p>There is a strong sense of ownership for NBCBN in the network hosting organisations (universities) and the network management. Broader ownership is strived for in this project.</p>	
Sustainability	<p>This project is about the sustainability of the network. Until now the funding came from DGIS. In this DUPC2 project steps (including setting up the network as its own legal entity) are taken to make the network sustainable. Among the funding options considered are membership fees, donors (national UNDP offices, GIZ, DfID) and financing of the network from a management overhead from projects. This will not be easy.</p>	
Lessons learned / recommendations	<p>Capacity building networks as NBCBN have a very useful role. As expert networks they are able to organise expertise very quickly. They are not as politicised as formal network from countries. Funding for the overhead costs of such networks is problematic.</p>	

Project no.	106810
Project title	STUUR: Strengthening Water Utility Training Centres in Uganda and Rwanda
Project leader and partners	Klaas Schwartz, Integrated Water Systems and Governance, Water Governance, IHE Delft Partners: Water and Sanitation Corporation (WASAC), Rwanda; National University of Rwanda: Dr. Omari; National Water and Sewerage Corporation (NWSC), Uganda: Dr. Rose Kaggwa; Vitens Evides International (VEI): Ir. Siemen Veenstra; DA Services: Dorothy Kobel
Project objectives	The project seeks to strengthen the training centres of the main water utilities of Rwanda and Uganda in order to address the water supply and sanitation challenges that these two countries are facing. These training centres are the main source for vocational trainings for staff of water utilities throughout Uganda and Rwanda. Courses will be developed and delivered in both Rwanda and Uganda: first supported by international experts, than by NWSC and/or WASAC staff alone. A Knowledge Exchange Platform will be established through which staff of the two water utility training centres (and possibly other utilities) can exchange knowledge, experiences and share content of training courses.
Target country/ies, regions, river basins	Rwanda; Uganda
Start and end date	15 February 2017-15 January 2019

Total project budget (Euro)	DUPC2 contribution (Euro): 100.412 Co-funding (Euro): 90.000	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
<ul style="list-style-type: none"> • Education and training • Knowledge sharing 	<ul style="list-style-type: none"> • Access to clean drinking water and basic sanitation 	<ul style="list-style-type: none"> • Water governance • Climate change
Alignment with national/regional policy priorities and (inter)national programmes	<p>Increasing access to clean drinking water and improving sanitation are important goals of the governments of both Rwanda and Uganda. Water utilities play an important role in this ambition. In order to achieve the ambitions it is therefore important that the water utilities have adequately trained staff. This project seeks to strengthen the training centres of the main water utilities of Rwanda and Uganda as they are the main source for vocational trainings for staff of water utilities.</p> <p>Even though the demand for specialized training services in the region has grown, utilities have struggled to define sustainable strategies for their training centres. Often, the training utilities rely on the capacity and availability of operational staff to act as trainers. These are not necessarily equipped with a set of skills that would allow them to effectively convey knowledge to participants and have no time to develop and improve training material to keep their trainings state of the art) or relevant. Second, the strategies of the utility and its training facilities do not align, putting an extra burden on the budget allocations of the trainings centres that limits their expansion and limits their synergies with the utility (mother company).</p>	
(Inter-)national partnerships and collaborations	<p>In this project utility companies from Uganda and Rwanda participate, supported by IHE, VEI and Rwanda University. In practice however, the project is primarily executed by NWSC (providing all 20 trainers, preparing course material), with an initial teaching role for IHE in one of the six courses and a peer review role in the other 5. IHE has also been hampered by the departure of the project manager, and the long period that was needed to find a successor (starting in June 2018). The role foreseen from WASAC and the National University of Rwanda is not achieved because the training centre of WASAC that was being planned when the project was set-up has (despite clear plans and a designated building) not yet materialised. Finally, shortly after the start of the project VEI withdrew from the project, because of changing priorities (they decided not to reduce their activities in capacity development). This seems to have changed again, now VEI has a strong role in the recently started very large Waterworks project. The project would have had a broader impact if it had been executed as planned, with more interaction between WASAC and NWSC (on training needs and including WASAC staff as trainers) and more input from VEI. With new management capacity at IHE and the role of VEI in Waterworks and a dedicated training session in Rwanda to involve WASAC again and the impact may now be broadened not only to WASAC but to all Waterworks partners in the region.</p>	
Demand drivenness and ownership	<p>NWSC has a strong tradition in providing training services to their own staff (training 850 staff each quarter, at a total of 3000 staff), including the training centre IREC and vocational training in their own, government certified vocational training centre at Ggaba (Kampala). IREC also provides training and consultancy services abroad, e.g. in Bangladesh. They participated in FP7 project WETwin. They see this project as a way to further professionalise their organisation in becoming “the best customer oriented water utility in the world”. This project provides them the impetus to take the time to really develop new courses, with high class foreign input. The project is supported from the highest level and, although international cooperation as intended is not yet fully achieved and IHE support was more limited than planned IREC has taken the project forward and 6 courses are under development. The focus is much on NWSC staff, not so much on WASAC, but IREC is really open to share the trainings.</p> <p>IHE has not taken ownership to such an extent as should because of staffing problems on this project.</p>	
Sustainability	<p>At NWSC the drive to develop and implement this training is rather strong and there is support from the top-level in the organisation. Furthermore there are 20 staff involved as trainers (for each of the topics more than one). This indicates that there is attention for implementation and, on the longer term, sustainability of effects, within NWSC. Transfer to WASAC has not been secured insofar we found during our visit to NWSC, and although the project plan describes the development</p>	

	<p>and implementation of a Knowledge Exchange Platform, this has not yet been realised. Integrating the results of this projects with the Waterworks project may be a good way to increase impact to (or even above) the planned level.</p>
<p>Lessons learned / recommendations</p>	<p>This project focuses on basic skills (Commercial management of water utilities, Utility Management and Leadership, Asset Management, Reducing Non-Revenue Water, Climate Resilient Water Utilities, etc.) necessary for water utility staff. This can be really of added value for water utilities, providing their staff with the skills needed to provide a public service within a commercial surrounding. Good in-house training facilities can provide the necessary sustainability to such training programmes.</p> <p>The role of NWSC/IREC has been very positive in this project: they continued developing courses when support from IHE and VEI was more limited than expected. They have based their courses very much on the NWSC needs, with limited involvement from WASAC. However, cooperation with WASAC after the training has developed is still on the agenda.</p> <p>This project has in its international partnerships developed very differently than planned with the lack of capacity at IHE, the lack of involvement of WASAC (only latent demand, no actual demand) and the retreat of VEI (change of strategy, despite formal participation in this project).</p>

F.4 Worldwide

Project no.	106289	
Project title	Water Diplomacy	
Project leader and partners	IHE Delft (project leader: Zaki Shubber) Partners: WWF SIWI (Stockholm International Water Institute) OSU (Oregon State University) UPEACE University of Khartoum Addis Ababa University	
Project objectives	<p>Water diplomacy is one of the strategic ways in which water problems are addressed worldwide. The Netherlands is profiling itself as a key actor in this area. The water diplomacy activities under DUPC2 cut across the different programme components and include education, training, research activities, as well as joint activities with SIWI and WWF activities (note that WWF activities fall under a separate grant letter and project number)</p> <p>IHE Delft's overall objective in water diplomacy is to have an impact on the ground by enhancing the ability of stakeholders to deal with contentious water issues at all levels. In line with the Institute's Strategy, it is working to achieve by 2020 a recognized academic scholarship and practical reputation in water diplomacy.</p> <ol style="list-style-type: none"> 1. Academic scholarship: IHE Delft's academic capacity to provide education in water diplomacy and develop and contribute cutting-edge and niche knowledge in the field through research (including applied research) and knowledge sharing and networks (e.g. seminars), communicated and publicised. 2. Practical reputation: IHE Delft's ability to provide high quality training and capacity building in water diplomacy and provide high quality practical activities such as advisory services, communicated and publicised. 	
Target country/ies, regions, river basins	n/a	
Start and end date	January 2016 – December 2020	
Total project budget (Euro)	DUPC2 contribution (EUR) 2,500,000 (500,000 p/y incl. WWF 70,000 p/y and research projects 80,000 p/y, which are under separate project numbers)	
DUPC category of activity (select)	DUPC2 themes (select)	DUPC cross-cutting themes (select)
<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Water diplomacy 	<ul style="list-style-type: none"> • Water governance
Alignment with national/regional policy priorities and (inter)national programmes	<p>Under the UNESCO PCCP (From Potential Conflict to Cooperation Potential) programme, IHE Delft established a short course on Water Management in South Africa, with a specialisation in water conflict management (project started in 2008). The current project leader followed that course.</p> <p>This Water Diplomacy project started after the Dutch government highlighted the importance of the theme of water diplomacy. IHE Delft was already working on the Master's programme in water cooperation and diplomacy since 2013. As institute</p>	

	<p>IHE Delft wanted to further develop this theme. After foreign affairs expressed interest, they further developed this programme and strengthened the team. IHE Delft has regular meetings with the ministry about the development of the programme. Whereas IHE Delft looks at the issue from an academic perspective, the ministry's interest is instrumental. Currently their objectives are well aligned.</p> <p>Currently, the Ethiopian, Sudanese and Egyptian governments are in the midst of negotiating an agreement, sorting out water issues, so it is a high priority on the agenda already in these countries. Some of the players involved in these negotiations are alumni of IHE Delft's programmes.</p> <p>IHE Delft has also been involved in Water Diplomacy in India, around a river shared between federal states.</p> <p>The issue is also on the agenda of many donors that fund river basin organisations, for instance donors from UK, Germany, the Netherlands, Norway, Switzerland, US a little bit. There is a network to which the partners of the Water Diplomacy project are connected.</p>
<p>(Inter-)national partnerships and collaborations</p>	<p>IHE Delft sees this project as a global collaboration.</p> <p>Under DUPC1 IHE Delft did some projects together with SIWI. For this project, IHE Delft reached out to the University of Khartoum and Addis Ababa University. The idea is to attract other partners after that.</p> <p>IHE Delft works together with Oregon State University (professor Aaron Wolf), and also with non-project partners Northumbria University, the University of Geneva (with which IHE Delft has a MoU) and the International Water Management Institute (IWMI).</p> <p>IHE Delft also works with (non-formal partner) Clingendael a lot on joint activities, such as a training for the water conflict management specialisation and tailor-made trainings. And they also work together with other projects, such as the Research project on water diplomacy and the media; and other DUPC-programmes with water diplomacy components.</p>
<p>Demand drivenness and ownership</p>	<p>IHE Delft started to develop the project after the Dutch ministry expressed interest in Water Diplomacy. IHE Delft wanted to start a project somewhere and had already a big research project on the Nile, with PhD students from Ethiopia and Sudan (in which these two universities of Addis Ababa and Khartoum and their ministries were involved). These partners had indicated that they would like to develop and strengthen their Master's programmes. They already had an engineering programme and would like to add a specialisation on water diplomacy. The idea was that they would assign one staff member each, who would follow the Master's programme and come back to develop the specialisation. After that they would explore if there is possibility to develop a joint degree. However, after they started in 2013, this is still work in process, as it turned out to be more complicated and risky to develop these programmes and become embedded in the institutions.</p> <p>IHE Delft is strongly committed and soon has four people working on Water Diplomacy. The plan of the project is also to have sufficient amounts of unallocated budget, so that there is room for requests in other regions as well.</p> <p>The ministry strongly advised IHE Delft, it was a partnership, with a different relationship than for other projects. It was based on dialogue, interactive, with a lot of exchange. Sometimes they were a bit pushy on making a vision and an agenda, but this was actually very positive for the project. This was also due to the fact that implementation was not very smooth the first years, and the ministry was not satisfied with progress. In some cases the ministry wanted to achieve certain objectives, for which they needed IHE Delft's support. There have been a few activities where the ministry has been the initiator, such as a Khartoum workshop in March 2016, in which different embassies and EU-delegations came together to collaborate and follow training related to the conflict in Ethiopia/Sudan/Egypt. IHE Delft was glad with this initiative and helped to prepare and conduct the activity.</p>
<p>Sustainability</p>	<p>IHE Delft aims to establish a group that can contribute to the global community of water diplomacy, which it can analyse using different disciplines and try to look for</p>

	<p>solutions. IHE Delft has the advantage that it looks at water diplomacy from many different perspectives.</p> <p>In the South, the strongest relationship is with University of Khartoum. Last November, that university initiated a meeting, for which they also leveraged funds. They want to continue and play a very proactive role. Sudan is not the easiest country to work in, because of restrictions of transferring funds. It makes it more complicated, and IHE Delft has to find ways of working with them.</p> <p>The project has resulted in a spin-off, also funded by DUPC2 as part of the 2018 addendum: the water peace & security initiative started off within this project and has now become a separate project (as part of top-up arrangement, with partners such as the World Resources Institute, International Alert, Wetlands International, The Hague Centre for Strategic Studies, Deltares). The aim of the Water & Peace Summit, conceived as yearly seminar under the Water Diplomacy project, is to create a community, also with students and young alumni. IHE Delft hopes to create a global community that meets once a year.</p> <p>After 2020 IHE Delft will have developed a new group, with a new theme. The main focus was to build up its reputation and name. That is what DUPC allowed them to do. With the staff and activities, there is a good chance it will be sustained. This is also shown by the fact that Rotary International has recommitted funds to specific activities (at the moment 550.000 euros, aside from this project). Those funds are based on the growing reputation and the trust that if they spend private money, it is well spent.</p> <p>IHE Delft is also contributing to policy documents, such as EU documents on water policy. They expect that the more government and other stakeholders will be aware, the more there will be a need to train people and think about these issues. They see ample space for developing sustainably and are going to set objectives for that. They will also try to bring in other partners, such as GIZ. And they have contributed to supporting UNESCO in their water diplomacy activities.</p>
<p>Lessons learned / recommendations</p>	<p>In the beginning, both the ministry and IHE Delft were concerned about the lack of human resources they had. They needed a thematic leader who has substantive expertise to lead this process at the IHE side. Recruiting additional staff at IHE Delft took much more time than expected (three years), because it was difficult to find the right people.</p> <p>Water diplomacy is a complex topic and is interpreted differently by different actors. Questions are: Where do we draw the line between water diplomacy and other areas (such as water governance)? Is it transboundary or also more localised, within domestic context? Internal discussions helped to make the topic smaller.</p> <p>As this project has a slightly different format than other projects, DGIS has had many meetings with IHE Delft, in order to make sure that everything that was developed meets the requirements. DUPC2 management has been present in meetings with government, in which they were very useful and constructive.</p> <p>In several DUPC2 projects there is an element of Water Diplomacy, they consulted this project before writing their proposals, which resulted in constructive discussions with colleagues (for instance the Open Water Diplomacy Lab).</p> <p>One thing was frustrating for the water diplomacy group: a special call for projects on Water Diplomacy never came. If there was a separate call, they could have developed a few proposals. There was, however, the Research for development call (the larger research projects), and various selected projects addressed the WD theme. These are large integrated projects like Kidron-Nar, Open WD Lab, Tekezzé-Atbara etc.</p>

Project no.	107610
Project title	Open CourseWare
Project leader and partners	Project leaders: Erwin Ploeger and Raquel dos Santos de Quaij, Education Bureau, IHE Delft
Project objectives	The project Open CourseWare (OCW) transforms existing educational materials that

	<p>are developed by IHE Delft into free, online courses. The idea to develop online learning materials was based on willingness of the Institute to explore e-learning opportunities and to share available knowledge with the international water sector community. The OCW project aims to promote lifelong learning, attract professionals to strengthen their knowledge and enhance accessibility of high-quality water education in the world. The ultimate goal of the current project is to make all materials of the Institute publicly available.</p> <p>Apart from sharing the knowledge with the water sector community, designed learning materials are also useful for students at IHE Delft Institute. The accessibility of learning materials on the Internet contributes to greater exposure of the Institute, thereby promoting its research, education and capacity building activities.</p> <p>The current project has been building on a previous initiative, namely, the Open Education Resources (OER) project under the DUPC1. Since the inception of OCW, more educational materials have been developed and the copyright issues that were preventing distribution and use of materials under the OER project were solved under the DUPC2. As a result, online materials can be (re)used, (re)shared and tailored by all. However, the courses cannot be used for commercial purposes.</p>		
Target country/ies, regions, river basins	Worldwide		
Start and end date	1 st October 2017 – 31 st December 2020		
Total project budget (Euro)	DUPC2 contribution (Euro): 175.000 Co-funding (Euro): 53,508 Euros (IHE Delft)		
DUPC category of activity	DUPC2 themes	DUPC cross-cutting themes	
<ul style="list-style-type: none"> • Education and training • Research and innovation • Knowledge sharing 	<ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector • Improved catchment area management and safe deltas • Access to clean drinking water and basic sanitation • Water scarcity and water related problems related to the refugee crisis in the Middle East • Water diplomacy 	<ul style="list-style-type: none"> • Water governance • Gender/inclusiveness • Climate change 	
Alignment with national/regional policy priorities and (inter)national programmes	<p>IHE Delft formulated its mission as building on a knowledge network that catalyzes solutions for addressing water challenges. Knowledge is considered essential for improving water management practices, therefore the OCW project is seen as an effective instrument for building capacities in countries that are faced with those challenges. In light of a shortage of high-quality water education in the world, particularly in developing countries, the OCW courses provide opportunities for all people, in particular for professionals in the water sector, to build or to update knowledge on a part time basis at the own pace of a student. All courses can be accessed via online OCW platform in all countries. The variety of educational materials that is available via the platform ensures that anyone can select a course that is relevant for him/her and is helpful for addressing challenges in the water sector that are in line with the national priorities. Such approach ensures relevance of educational materials for people worldwide.</p> <p>All materials that are published on the online OCW platform are aligned with quality procedures of the Institute, therefore they are subject to quality assessment by internal committees of IHE Delft. Each module that is provided under short or long (MSc) courses at the IHE Delft has a potential to become an open course.</p>		
(Inter-)national partnerships and collaborations	<p>The project was designed by IHE Delft; the Institute collaborates with a wide range of partners to promote human and institutional capacity building, to develop educational materials and to build sustainable partnerships. The proposal of the project specified that from 24 OCW courses, 12 should be developed jointly with</p>		

	<p>DUPC partners.</p> <p>The OCW project leaders are reluctant to involve external, academic partners in preparation of educational materials, as it entails legal and financial arrangements, several quality checks and difficulties with updating course materials on the online platform. Based on experience of Mr. Erwin Ploeger and Ms. Raquel dos Santos de Quaij, many external, academic partners are typically unwilling to publish their materials in an open source, as they are considered private intellectual property. However, since the DUPC2 strongly focuses on building sustainable partnerships, recently the OCW project started to involve partners for design of e-learning materials. In addition, the project leaders try to find links with other projects under the DUPC2 to increase collaboration, ensure relevance of educational materials and to expand the portfolio of courses.</p>
<p>Demand drivenness and ownership</p>	<p>The OCW project is responding towards a need of increasing availability of knowledge and education in the water sector, thereby contributing to capacities building in both developing and developed countries. Due to a worldwide scope of the project, it does not focus on addressing needs/demands of particular countries or actors.</p>
<p>Sustainability</p>	<p>Due to absence of direct partners, the sustainability of the current project relies on IHE Delft. IHE Delft is exploring e-learning opportunities, therefore it has recently hired an expert who stimulates the development of e-learning at the Institute. This supports the OCW project and encourages lecturers/researchers to design new online courses. The ultimate goal of the current project is to make all materials of the Institute publicly available. If e-learning will be considered as a strategically important area of development at IHE Delft, more educational materials will be published on the OCW platform. Ms. Raquel dos Santos de Quaij is working at Education Bureau at the IHE Delft, performing education quality control. She is pushing the OCW project higher on the agenda at Education Bureau to achieve a good place of the project in education strategy of the Institute. Hence, the project is gradually getting more support from academic staff and management of the Institute.</p> <p>The greatest challenge in implementation of the project and in achieving its sustainability is to motivate lecturers/researchers at IHE Delft to convert educational materials of the Institute into online courses, as all academic staff have very tight working schedules, and the creation of e-learning courses might take more time than planned. Hence, lecturers/researchers are unwilling to work outside their billable working hours. Mr. Erwin Ploeger and Ms. Raquel dos Santos de Quaij suggest that this issue could be resolved if the work on OCW educational materials will be higher in a priority list of academic staff.</p>
<p>Lessons learned / recommendations</p>	<p>The OCW project is expected to reach its objectives, increasing availability and accessibility of knowledge and water education. Such project is considered to be useful for students, researchers throughout the world, and for development of IHE Delft. According to Mr. Erwin Ploeger and Ms. Raquel dos Santos de Quaij, many students of the Institute are already benefitting from online courses. The project has a potential to reach wide audience, considering that the online platform was visited by 21.427 users in 2016, while between the 1st of October 2017 and the 16th of April 2018 11.127 new users have accessed the webpage of the platform. Since October 2017, around 20.6% of new users have accessed the platform from Western, Northern and Southern Europe, while 66.18% of new users are from Southern, Southeast and Western Asia, Eastern and Western Africa, Northern and South America. It is too early to assess the impact of the project and sustainability of potential partnerships. However, it is evident that the project is contributing to knowledge sharing and knowledge building across the globe.</p> <p>The project leaders are well-aware of the challenges in implementation of the project that are related to motivation of researchers/lecturers to design online courses, time and budgetary constraints. Despite existing challenges, the project is producing outputs, according to the planning. Considering that the design of some educational</p>

	<p>materials takes more time, and consequently budget, than expected, it is advisable to communicate to researchers/lecturers about the flexibility of financial arrangements and to come to an agreement on the amount of time spent for the design of a particular online course to stimulate production of more education materials for the project.</p> <p>During the DUPC2 phase the project leaders have resolved issues that were hampering the formation of partnerships and greater dissemination of educational materials.</p>
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Project no.		
Project title	Supporting Small Islands Developing States (SIDS) to strengthen capacity in the water sector to cope with the effects of climate change (DUPC1 funded activity, getting a new phase under DUPC2)	
Project leader and partners	Project leaders: Maria Kennedy and Erik de Ruyter van Steveninck, IHE Delft	
Project objectives	<p>The current project is a fellowship programme that aims to strengthen the capacity of professionals and decision-makers to improve water management in Small Island Developing States (SIDS), to better address future challenges, such as coping with the effects of climate change. The project is targeting mid-level and senior professionals that occupy responsible positions in the government of SIDS. The students are selected from Official Development Assistance (ODA) SIDS countries, on average, one student per country is chosen for participation in the fellowship programme.</p> <p>The project provides short and long-term (MSc level) programmes. The long-term (18 month) training is offered to 14 students from SIDS countries per programme, while short courses are provided to a larger number of applicants. Students can choose any programme with 23 different specialisations that are provided by IHE Delft.</p>	
Target country/ies, regions, river basins	Worldwide	
Start and end date	2016 – 2018	
Total project budget (Euro)	DUPC1 contribution (Euro): 1,390,737	
DUPC category of activity	DUPC2 themes	DUPC cross-cutting themes
<ul style="list-style-type: none"> • Education and training • Knowledge sharing 	<ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector • Improved catchment area management and safe deltas • Access to clean drinking water and basic sanitation • Water scarcity and water related problems related to the refugee crisis in the Middle East • Water diplomacy 	<ul style="list-style-type: none"> • Water governance • Gender/inclusiveness • Climate change
Alignment with national/regional policy priorities and (inter)national	The SIDS countries are very small, they have limited fresh water resources, a lack of human resources and finance to provide training for people. Municipalities have small administrative power to resolve local problems and launch initiatives, while tourism poses challenges for environmental sustainability. As a result, many SIDS	

<p>programmes</p>	<p>face numerous issues to cope with the climate change and experience a shortage of experts in the water sector. Considering that transportation costs are high for travel between SIDS and beyond them, there is little knowledge exchange and communication. The Ministry of Foreign Affairs of the Netherlands requested IHE Delft to draft a proposal that takes into consideration above-listed challenges. IHE Delft offered to launch the current fellowship programme for dissemination of knowledge and capacity building in SIDS, to bring key water sector professionals from different islands states together for a discussion of common challenges and solutions. Hence, IHE Delft is providing the training and the platform for collaboration and knowledge exchange.</p> <p>To ensure relevance of the SIDS project to address a variety of challenges in countries, the students have an opportunity to choose any programme that they find useful for carrying work in their home country. All applicants are considered on the basis of their previous education in the appropriate field, good command of English for effective learning and communication, and support from their employer. Hence, the choice of a training programme and specialisation is influenced by the decision of an employer.</p> <p>The project leaders, Ms. Maria Kennedy and Mr. Erik de Ruyter van Steveninck, admit that during the first phase (2016-2018) the project presented itself as a simple fellowship programme. Hence, little attention was paid to building of partnerships and discussion of challenges in SIDS. The MSc students had more opportunities to acquaint themselves with other students and organisations in the Netherlands, therefore they are more likely to keep communication after the end of the programme, while students who attended short courses had little opportunity for interaction with other students from SIDS. Since 2018 (the second phase of the project (SIDS2)), the programme will be building a community of practice through organisation of workshops that start discussions on challenges and opportunities in SIDS and aim to strengthen collaboration after the end of the programme. Such workshops are expected to give a new perspective on challenges in SIDS, to build relations among students and other partners, and to provide feedback on the curriculum of the MSc courses to further tailor the courses towards local needs.</p> <p>In addition, during SIDS2 IHE Delft will launch two short courses in the Pacific and Caribbean, offering 20 fellowships in each region. This is intended to further support the networking of professionals between SIDS and to contribute to local knowledge building. Such courses will be organised with various partners, including universities, ministries, research institutes and alumni. Hence, the second phase of the project will include more activities, aiming to maintain relationships with existing students, alumni and partners.</p>
<p>(Inter-)national partnerships and collaborations</p>	<p>The Ministry of Foreign Affairs of the Netherlands is the only partner of the project, as the Ministry selected the participating countries of the project and was involved in the design of the proposal. The implementation of the project relies on IHE Delft, however, the embassies of SIDS countries are cooperating with the Institute in attracting applicants to the fellowship programme. The decision to minimise the number of project partners aimed to simplify the process of project implementation, as the current fellowship programme represents the first step in building relationships in the water sector with the SIDS countries. Thus, to some extent, the project was testing the interest to participate in the fellowship programme in SIDS, the effectiveness of the project, as well as, the potential challenges in cooperation with SIDS.</p> <p>During SIDS2, the organisation of workshops and the launch two short courses in the Pacific and Caribbean will lead to expansion and intensification of partnerships – with both academic and non-academic institutions. More active involvement of embassies and local authorities will be needed to reach a greater number of students in more countries and to improve the balance in the number of students. Currently, in some SIDS countries there are not many applicants who express interest in the fellowship programme, while in Cuba, Trinidad, Tobago and Saint Lucia the situation is the opposite, due to effective advertising of the programme by embassies.</p>
<p>Demand drivenness and ownership</p>	<p>As it was mentioned earlier, SIDS face a challenge in coping with the climate change, and experience a shortage of experts in the water sector. Under the SIDS programme each student chooses a course that he/she considers most relevant. Hence, the</p>

	current project respondents to the demands/needs of island countries. However, due to limited involvement of other stakeholders, such as local authorities, embassies, academic institutions and private sector companies that work in the water sector, the ownership of the programme belongs to IHE Delft.
Sustainability	The completion of short or long-term courses under the SIDS programme is expected to strengthen the capacity of professionals and decision-makers to improve water management. The boost of skills and knowledge of alumni should improve their ability to address future water-related challenges in SIDS. The lack of involvement of local academic institutions, of partnerships and networking events will decrease the potential impact of the programme and prevent the broad dissemination of knowledge.
Lessons learned / recommendations	<p>The SIDS fellowship programme has performed activities that were planned during the first phase of the project. The successfulness of the second phase of the project will be evaluated later. The combination of short and long-term courses at IHE Delft ensures that professionals in the water sector of SIDS countries get a short-term boost of their skills and invest in long-term capacity building through completion of MSc programmes. To improve the quality and effectiveness of education at IHE Delft it is advisable to collect feedback not only from students that participate in MSc programmes, but also from those who complete short term courses. The collection of feedback from alumni would also be useful for analysis of effectiveness, relevance and impact of the SIDS programme.</p> <p>To ensure sustainability of project results and to stimulate the building of networks for dissemination of knowledge in SIDS there is a need to stimulate the sharing of experiences among students and the discussion of common challenges and opportunities in island countries with other stakeholders. The creation of the community of practice at IHE Delft can serve as a useful platform for these purposes. In addition, the launch of the short-term courses in the Pacific and Caribbean regions can be effective in strengthening local networks and in involving important stakeholders of the regions, provided that workshops or events related to addressing challenges in the water sector will be organised. The relationships with alumni, local authorities and other partners should be strengthened to support the creation of lasting partnerships. To a large extent, the SIDS2 phase is expected to address weaknesses of the first phase of the project.</p>

Project no.	106846
Project title	TheWaterChannel
Project leader and partners	<p>Project leader: Ms. Marlies Batterink (Aqua for All) manages the contract as MetaMeta could not be contracted directly by IHE Delft for administrative reasons.</p> <p>Project partners : Ms. Lenneke Knoop and Mr. Abraham Abhishek (MetaMeta Communications)</p>
Project objectives	<p>TheWaterChannel (www.thewaterchannel.tv) was founded in 2009 (DUPC1 project) as a partnership between various organisations, including MetaMeta Communications and IHE-Delft.</p> <p>TheWaterChannel :</p> <ul style="list-style-type: none"> • Is the largest water video portal (2300 water videos) • Is a video production house (+35 Webinars organised since 2011) • Organizes open access webinars • Writes blogs, analyses, and opinion • Produces online dossiers on key topics • Organizes visual communication training

	The activities under this project will: <ol style="list-style-type: none"> 1) Consolidate the core activities of TheWaterChannel, 2) Support it to address new topics that are key issues in water management 3) Provide outreach to DUPC2 programmes by documenting and disseminating stories emanating from the various projects 		
Target country/ies, regions, river basins	Worldwide with stronger focus on the Middle East- North Africa (MENA) region, Bangladesh, The Netherlands, Ethiopia, Kenya, Sudan		
Start and end date	From 11-04-2017 until 31-12-2020		
Total project budget (Euro)	€ 175,000 (exclusive VAT) MetaMeta Communications contributes staff time: 1,5FTE		
DUPC category of activity	DUPC2 themes	DUPC cross-cutting themes	
<ul style="list-style-type: none"> • Knowledge networking and 	<ul style="list-style-type: none"> • Efficient water management, particularly in the agricultural sector; • Improved catchment area management and safe deltas; • Access to clean drinking water and basic sanitation; • Water scarcity and water problems related to the refugee crisis (focus: Middle East); • Water diplomacy 	<ul style="list-style-type: none"> • Water governance • Gender/inclusiveness • Climate change 	
Alignment with policy priorities and (inter)national programmes	<p>The project aimed to respond to the need of water professionals to communicate on global water crises more widely. TheWaterChannel was initiated based on the observation that many videos from conferences etc. and knowledge (reports, tools, etc.) on water were produced and not disseminated.</p> <p>The project started with a Library database with videos and expanded its knowledge sharing activities with the organisation of webinars (including webinars for IHE Alumni) and the production of dossiers on specific topics and issues.</p> <p>The project was tailored to DGIS priorities, in 2016 it has introduce focus on Water diplomacy and Water scarcity and issues related to the refugees crisis in the Middle East.</p>		
(Inter-)national partnerships and collaborations	<p>The videos, webinars and dossiers are produced in collaboration with a variety of stakeholders from over 56 organisations worldwide. This collaboration is formalised and strengthened through due acknowledgement of the stakeholders' participation, for example in branding of the different products (names and logos of stakeholders are displayed in end credits and on webpages).</p> <p>The portal is visited by over 50,000 people monthly from every country in the world and has over 3,120 members. Targeted audience is beyond the water sector but at the moment the portal mainly reaches water professionals worldwide.</p> <p>TheWaterChannel makes use of IHE Delft Alumni database and networks from MetaMeta Communications and other partners to send announcements on Webinars.</p> <p>TheWaterChannel was good outreach figures:</p> <ul style="list-style-type: none"> • Attendance to webinars is high in particular when speakers from IHE Delft 		

	<p>are involved: participation reaches 70-100 people when the average is usually of 30-40 participants.</p> <ul style="list-style-type: none"> • Presence on social media: 14.1k on twitter, 3.1k on Facebook • Videos (240 uploaded/target was 200) <p>TheWaterChannel contributed to the “Arab Water Dialogues” producing a series of dialogues on Water Diplomacy with key informant in the MENA region presenting solutions to water issues including from DUPC2 projects.</p> <p>Learning from organisations that have posted information on the portal contributes to opportunities for partnerships and collaborations.</p>
<p>Demand drivenness and ownership</p>	<p>The stakeholders involved in production and dissemination of videos, Webinars and dossiers take ownership of these products and take it upon themselves to contribute to their online and offline dissemination on the portal.</p>
<p>Sustainability</p>	<p>TheWaterChannel disseminates knowledge that comes out of projects and research and contributes to the use and sustainability of these results.</p> <p>On August 4, 2017, TheWaterChannel team delivered a training on video dissemination at the summer course ‘Visual Methods for Water Communication’ organised by IHE. Several DUPC2 project leaders attended the course and will be able to produce ‘impact videos’ for their projects and disseminate lessons learned that will contribute to sustainability of water projects.</p> <p>TheWaterChannel continued its activities without DUPC funding in 2015-2016 before the project was selected for new funding in 2016. This was done with investments from MetaMeta Communications but was not sustainable on the long term. The project is working on a business model with increased income generated through paid services for video production, webinar organisation, trainings and strategic communications. It will however need funding from its partners to be able to operate as an independent non-for profit organisation. TheWaterChannel has increased its sustainability with contributions from new partners: CAP-NET (UNDP) and Nymphaea. It will continue in this direction and also aims to build partnerships with social entrepreneurship programmes</p>
<p>Lessons learned / recommendations</p>	<p>TheWaterChannel is an information platform and not a communication tool for IHE Delft and Meta Meta Communication. The border is not straightforward as IHE Delft could make an enhanced use of the portal to disseminate knowledge issued from its projects and activities and this would also contribute to the promotion of IHE and DUPC2.</p> <p>The project is working on some technical issues with the website to make it more mobile friendly.</p> <p>The project cannot reach people without internet services; it aims to produce a series of DVDs.</p> <p>Water professionals reached are mainly public sector actors and academics, students are reached through Facebook and some private sector actors are connected via twitter. Stronger efforts could be made to target the private sector.</p> <p>The project’s efforts to ensure its financial sustainability should be continued.</p> <p>DUPC could make a better use of TheWaterChannel to disseminate knowledge on its projects outcomes and to promote learning among its network of partners.</p>

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