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Executive summary

Since 2008 IHE Delft has established a partnership programme with DGIS on water and development, which is referred to as the DUPC programme. Based on a positive evaluation of the second phase of this programme, both organizations have expressed the intention for a new phase of the programme, referred to as DUPC3. This outline proposal summarizes the main directions proposed for DUPC3 and will serve as a starting point to discuss with DGIS the content, approach and structure of the new programme.

In line with the missions of DGIS and IHE Delft, the objective of DUPC3 is to support and catalyze meaningful and lasting transformations to socially inclusive and ecologically sustainable water management practices by strengthening capacities in low- and middle-income countries through joint research, education and knowledge sharing on water. For this reason, DUPC3 aims to foreground challenges related to equity and ecological sustainability and contribute to viable solutions to overcome these challenges within three thematic areas, namely water and health, water for food, and river basins and deltas. These thematic areas are closely aligned with the development priorities of DGIS and IHE Delft. Moreover, progress in addressing these challenges within each of these themes is considered essential for achieving the water-related SDGs.

Working in partnership is an essential approach within the DUPC3 programme. Therefore, based on the previous phases of the DUPC programme, it is proposed to organize the DUPC3 activities within partnerships of diverse kinds of organizations, including academic and non-academic partners such as government agencies, private sector organizations, NGOs and CSOs. These partnerships will carry out projects based on actual challenges faced – and expressed – by actors in the targeted low- and middle-income countries and are expected to deliver tangible outputs. Preferably the projects combine research and education as well as capacity strengthening and knowledge sharing activities to facilitate the dissemination and uptake of research findings.

To further enrich knowledge on water and stimulate learning, it is proposed to bring these different project-based partnerships together in broader (regional) networks centred around the three DUPC3 themes. These networks will focus on joint learning by sharing approaches, experiences and (preliminary) research findings from the different projects as well as interacting with external stakeholders (e.g. organisations from low- and middle-income countries, IHE alumni, Dutch and international organisations, and other networks). In this way, DUPC3 aims to foster ‘coalitions of the willing’ who together work towards achieving impacts that contribute to sustainable and equitable transformations within and among their particular field(s).

In line with the geographical focus of DGIS, DUPC3 will mainly concentrate its activities in three focus regions, namely the Middle-East, the Sahel and the Horn of Africa. Partners from other low- and middle-income countries, especially those with whom IHE has long-standing collaborations, can also participate in DUPC3 activities. Partners from other high-income countries, other than IHE Delft, can only participate and receive restricted funding, in case they have a substantial added-value for implementing the activities.

The DUPC3 programme is envisioned to start early 2022 – with a start-up phase in second half of 2021 - and the requested budget is 46 million euro in total up to the end of 2027.
1. Introducing the DUPC programme

IHE Delft Institute for Water Education is the largest international graduate facility on water education in the world and has as vision a world in which people manage their water and environmental resources sustainably and equitably. To contribute to this envisioned future, IHE Delft focuses on strengthening capacities in the water sector by jointly developing problem-oriented knowledge and providing education and training of water professionals, particularly to those from low- and middle-income countries. In this way IHE Delft aims to make tangible contributions to achieving the UN Sustainable Development Goals (SDGs).

Since 2008 IHE Delft has established a partnership programme for water and development with DGIS, the development cooperation agency of the Dutch Ministry of Foreign Affairs, which is referred to as the DUPC programme. DUPC has inspired, and offered the possibility to pilot, the development of partnerships with organizations in low- and middle-income countries. This has been successful to the extent that working in partnership has become a key principle of IHE Delft. The first phase of DUPC (DUPC1 2008-2018) was instrumental in strengthening water sector capacities through new partnerships and new means of collaborative research and education. DUPC2 (2016 – 2023) further strengthened these partnerships with a focus on societal impact. In particular, DUPC2 focused on stronger local ownership and initiative, increased diversity in collaboration by including other disciplines and involving more non-academic partners, addressing new emerging themes and emphasizing interdisciplinarity by also focusing on social aspects of water issues besides the technical challenges (for more details on DUPC2, see Section 2). The DUPC2 activities are key in contributing to the implementation of the IHE Delft 2018-2023 strategy and the priority regions and outputs of the DGIS (see Section 3) as well as other policies of the Dutch government (see also Annex 1).

DGIS and IHE Delft have expressed the intention for a new (third) phase of the programme, referred to as DUPC3. The implementation of the new phase is envisioned to start early 2022 with several preparatory activities already planned from September 2021 onwards. This new phase will build upon experiences and lessons of previous phases, acknowledging a changing landscape - including the COVID-19 pandemic - and aims to address new and emerging challenges. This outline proposal summarizes the main directions proposed for DUPC3 and will serve as a starting point to discuss with DGIS the content, approach and structure of the DUPC3 programme.

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1 DUPC3 uses the term low- and middle-income countries based on the OECD DAC list to refer to countries – mainly located in Africa, Asia, Latin-America and the Middle East – that face challenges in developing and/or sustaining their economies which often affects their service provision – including of water – to their citizens. By using this term, we do not want to essentialize monetary income over other important aspects of life, such as health, security, wellbeing, or happiness. Nor do we want to assume that the challenges these countries face are similar and therefore the solutions should be alike. Moreover, we realize that the gross national income per capita used by the OECD to define the income level of countries obscures the often considerable inequalities in income between different groups in society (see also Textbox 4). Nevertheless, we choose to use this term in absence of a better term as other commonly used terms – e.g. developing countries, Global South – are also problematic in their own ways.

2 See also Section 14 for the budget reserved for preparatory activities anticipated during the second half of 2021.
2. Preliminary results of DUPC2 and lessons learned

The second phase of the partnership programme for water and development (DUPC2) started in 2016 and will be finalized in 2023\(^3\). The overall objective of DUPC2 is to provide tangible contributions to solving water and development challenges in DUPC focus countries by equipping people, communities and organisations with the relevant capacities, knowledge, skills and tools in partnership with partners from these countries. In terms of content, DUPC2 focuses on efficient water management in the agricultural sector, improved catchment area management and safe deltas, and access to clean drinking water and basic sanitation. Moreover, new themes and topics have been developed like water diplomacy and water accounting. Within these themes the programme aims at stronger synergies between education, research and knowledge sharing activities. DUPC2 also invests in educational innovation and strategies for achieving meaningful and lasting impacts as well as methods to monitor and report these impacts. The DUPC2 programme so far supports over 90 partnership projects involved in education, research and/or knowledge sharing activities with in total over 155 partners, of which about half long-term partners of IHE Delft (see Textbox 1). Around 20 of these projects are led by partners from low- and/or middle-income countries. The projects address actual water-related development challenges in these countries, in particular the Middle East and Northern Africa. Most project partners are knowledge institutions from focus countries, but there is an increasing involvement of civil society, government and private sector partners. The partnerships are also diversified by including social scientists and junior staff members. Various surveys and evaluations show that the DUPC2 programme is highly appreciated by the partner organizations in the regions in which DUPC2 is active and they particularly praise how the programme facilitates knowledge sharing, stimulates problem-oriented research and strengthens the institutional capacity (see Annex 2).

Textbox 1. Preliminary results of DUPC2 4.

- **Quality and accessibility of education increased** e.g. 18+ online courses and 20+ Open Course Ware and other new products like new Professional Trainings (GPDPs), partly in preparation.
- **New/strengthened research and educational themes** e.g. water scarcity Middle East, water productivity, water accounting, water diplomacy, water peace and security, WASH in emergency situations.
- **Locally relevant knowledge and insights developed and applied** e.g. 31 research projects, of which 14 southern led, 8+ regional/thematic learning events.
- **Dissemination and support implementation**, e.g. 8 outreach projects, 200+ research outputs, and 150+ communication outputs for non-academic audiences, Open Access, VIA Water innovation support, 5 implementation top-ups research projects.
- **Collaborating and learning** e.g. 155+ partners in projects, 20+ regional projects, 8+ regional/thematic learning events, support to regional networks like NBCBN and WaterNet and Water Youth Network. 10+ programme webinars.
- **Strengthening capacities** e.g. Small Island Development States (SIDS) and MENA programmes, Iraq and Sudan programmes, The Water Operators Partnership programme (BEWOP), 50+ MSc students involved in projects (most from South), 650+ professionals trained in water management, 60+ institutions use the FAO database to measure water productivity, 4 river basin organizations supported on water management.

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\(^3\) The anticipated start of DUPC3 is early 2022. This implies an overlap between DUPC2 and DUPC3 in the years 2022 and 2023, which allows for a smoother transition as starting up of new activities in partnership take time. The remaining activities in 2022 and 2023 are limited to those part of the DUPC2 2019 addendum and few activities that need additional time due to delays caused by the current COVID-19 pandemic. These activities include among others supporting the open and online education hub; MENA and SIDS programmes; Sahel programme; WaterPiP - the 25% Initiative; Sudan and Iraq capacity strengthening programmes; BEWOP4; and WEF tools. Moreover, DUPC2 will support Water Accounting+ Phase II, Nile Basin Capacity Building network, and water diplomacy activities (see DUPC2 Annual Plan 2021). Capacity Building network, and water diplomacy activities (see DUPC2 Annual Plan 2021). See also www.un-ihe.org/dupc

\(^4\) DUPC2 Annual Progress Report 2019. See also www.un-ihe.org/dupc
The DUPC2 programme over the past years has evolved and adjusted where needed to better address its overall objectives. The recommendations of the 2018 external mid-term review provided important input for this, but also IHE’s new strategy, the new DGIS policies, and suggestions from projects and partners. Areas that received more focus and/or were piloted included inter-sectoral collaborations (like the water, food and energy agenda) and recently activities in the Sahel region. DUPC2 also increasingly supported initiatives led by partner organizations with a more supportive and advisory role for IHE and developed a more explicit knowledge sharing and learning agenda by bringing together key projects and stakeholders on themes and/or in regions. These learning experiences have been valuable input for the design of the new phase, together with the recommendations of the recent external effect evaluation (see Textbox 2). In the remaining part of this outline proposal we will elaborate how we propose to structure DUPC3 based on the successes and achievements of DUPC2 and in follow-up of the recommendations made in the external review processes. Annex 3 gives a detailed overview how DUPC3 aims to address the recommendations of the evaluation of DUPC2.

Textbox 2. Key recommendations of the external DUPC2 effect evaluation5.

On the basis of the effect evaluation, conducted in the last quarter of 2020, the external reviewers gave the following key recommendations to further improve the DUPC programme, including:

- Positioning IHE, DUPC and its partners as key actors in online education in the water sector.
- Embedding support for the development of strong knowledge transfer strategies.
- Expanding support to South led projects.
- Upscaling DUPC2’s cross-learning activities, at national, regional and cross-regional level.
- Strengthening the programme’s monitoring and evaluation system.
- Increasing the capacity at the DUPC management team.
- Strengthening the programme’s position and contribution to water diplomacy by doing more research on this specific topic
- Developing the programme’s contribution to water challenges in the Sahel region

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5 Technopolis Group (2021).
3. Developments at IHE Delft and DGIS

Since DUPC forms the main vehicle of cooperation between DGIS and IHE Delft the programme aims to build on the ambitions and agendas that the two organizations have in common. With the new phase (DUPC3) coming up, it is important to reflect on the future directions of both organizations to align the programme to the shared goals for the coming six and a half year (mid-2021 until 2027).

DGIS focuses its efforts mainly on preventing conflict and instability in unstable regions in order to tackle root causes of poverty, migration, terrorism and climate change. Reducing poverty and social inequality by promoting sustainable and inclusive growth as well as mitigating climate change are high on the agenda. DGIS also strongly supports access to education and gender equality and considers digitalization as a main vehicle to speed-up achieving development goals. In terms of water, emphasis is on climate-proof management and use of water, with a specific focus on (small-scale) agriculture, water supply and sanitation, and improving cooperation and management in river basins and delta areas. The Water Cluster of DGIS (IGG) has recently redefined the specific outputs for their activities to articulate their ambitions and demonstrate their added-value. Textbox 3 lists the outputs that are most relevant for the collaboration with IHE Delft and which will be used for DUPC3 to report progress on (see also Textbox 8 for links with anticipated DUPC3 outputs). DGIS, being part of the Ministry of Foreign Affairs, is also involved in the inter-ministerial collaboration that defined the Netherlands International Water Ambition. This policy document expressed the aim of the Ministries to collaborate in their efforts to achieve their common goals, in particular increasing water security and water safety worldwide.

Textbox 3. Expected programme outputs of the Water Cluster of DGIS (IGG).

- **Advocacy**: Increased knowledge and awareness of all stakeholders on the position of vulnerable groups and the environment in water governance.
- **Innovation**: Innovative interventions that enhance improved water management with reduced inputs like energy.
- **Capacity**: Increased capacity of a wide range of (non-) governmental stakeholders on inclusive and sustainable water management.
- **Knowledge**: Data, lessons learnt, knowledge and analytical tools enable timely and transparent decision making on water resources management.
- **Diplomacy**: Transboundary water management organizations and national institutions have increased capacity on transboundary water management.
- **Cooperation**: International bodies organize major international events on water.

IHE Delft’s main mission is to strengthen the capacity of the water sector in order to stimulate sustainable and inclusive developments and interventions. To support the capacity development efforts, IHE Delft carries out research and offers educational programmes mainly to water sector professionals from low- and middle-income countries. In terms of content, IHE Delft carries out research on a broad range of topics, often in close collaboration with different kinds of partners in various parts of the world. In this research, IHE Delft adopts a problem-orientated approach by

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6 Ministry of Foreign Affairs (2012).  
8 Ministry of Foreign Affairs (2019).  
9 See also https://www.osresultaten.nl/themas  
10 Government of the Netherlands (2019).  
focusing on stakeholder-driven and policy-related research to solve water-related development challenges. In its research IHE Delft closely collaborates with a broad range of water sector organizations, especially in the targeted countries and regions. Historically IHE Delft has had a strong focus on engineering and hydrology. Yet, in the past decades the organization has broadened its disciplinary scope to address problems in a multi- and interdisciplinary manner by including expertise on – among others - ecology, chemistry, law, anthropology, public administration, economy, political sciences, and (human) geography. Also, the topics of research shifted from a focus primarily on flood prevention and water supply and sanitation to also include topics like drought management, sustainable wetland management, hydropower, agriculture, diplomacy, and water justice (see also Section 5 and Annex 1). The DUPC programme has been instrumental for IHE Delft to explore these new, highly-relevant research avenues and to steer the research approaches in more progressive, inclusive and impact-oriented directions.\textsuperscript{13}

Based on its research findings, IHE Delft develops high quality, student-centred and problem-oriented education and training programmes that mainly target early and mid-career professionals from Africa, Asia and Latin-America. As the largest international graduate facility on water, education is for IHE Delft the main vehicle to share knowledge and strengthen capacities.\textsuperscript{14} The education programmes of IHE Delft increasingly incorporate online educations and are regularly developed and offered jointly with partner universities. Moreover, IHE Delft focuses on stimulating life-long learning in the water sector by creating more flexiblity in study modalities, offering career coaching to define tailor-made study trajectories and focusing on strengthening skills to lead transformative processes. All educational material that IHE Delft develops is under creative commons copyright licence and IHE Delft is quickly developing its offerings of OpenCourseWare to ensure education is easily accessible for water sector organizations as well as other education providers on water-related topics. Up to date, IHE Delft has trained more than 23,000 professionals from over 190 countries. IHE Delft also has the ambition to further strengthen its role as an independent broker in the international water sector through critical reflection, advocacy efforts and engagement with the water community worldwide. In the past decade the DUPC programme has played a major role in positioning IHE as a renowned, trustworthy partner for stimulating and supporting the implementation of innovations in the water sector.

In Annex 1 we give a detailed overview on how DUPC3 aims to contribute to the implementation of the various policies and strategies of DGIS as well as IHE Delft.

\textsuperscript{13} IHE Delft (2021), see also Textbox 20 in Annex 1.

\textsuperscript{14} See also the 2020 Delft Agenda for Action resulting from the 6th Symposium on Knowledge and Capacity for the Water Sector: https://www.un-ihe.org/news/developing-water-capacity-2020-delft-agenda-action
4. DUPC3 Theory of Change

Vision

In line with the ambitions of DGIS and IHE Delft, DUPC3 envisions a future in which societies use, share and care for water in ways that contribute to wider societal goals of justice, peace, safety and wellbeing for all\(^{15}\). To achieve this, DUPC3 aspires for a world with equitable and affordable access to water of good quality and improved sanitation services, especially for marginalized (groups of) people and/or communities (see Textbox 4). DUPC3 encourages ecologically sustainable and climate-change-resilient agricultural practices to secure food production, to support rural livelihoods and protect vital ecosystems. DUPC3 foresees societies in which people and infrastructure are protected against water-related disasters, especially in marginalized areas, and in which water-related stresses for people and the ecosystems on which they depend are reduced, now and in the future. DUPC3 advocates accountability and inclusiveness (see Textbox 4) in decision-making and implementation processes in which water forms a source for collaboration rather than of conflict. And finally, DUPC3 values nature-based solutions and smart (digital\(^{16}\)) technologies as well as pragmatic grassroots approaches and efforts of recycling of resources to support transformations to more resilient, equitable and sustainable futures.

Societal challenges\(^{17}\)

Although considerable efforts have been made in the past decade – among others as part of DUPC2\(^{18}\) – research has shown that structural inequities and unsustainable practices are still prevalent in governing and managing water. Competition over natural resources – like water and land – and perverse economic incentives have increased the wealth gap, encouraged unsustainable exploitation of nature and increased pollution and the waste of natural resources\(^{19}\). This ongoing ‘race to the bottom’ is considered a major anthropogenic cause of climate change\(^{20}\). The recent COVID-19 pandemic and its economic implications have exposed even more clearly the vulnerability of especially low- and middle-income countries, and particularly marginalized groups in these societies\(^{21}\) (see also Textbox 4). Moreover, the crisis has emphasized the limits of neoliberal policies and the needs for ecological integrity, yet also raised the hope that greening of our ways of living are possible through cleaner technologies and increased digitalization. Nevertheless, climate change is expected to further exacerbate injustices and ecosystem degradation in the near future as the resilience of impoverished communities and ecosystems to deal with – and adapt to – changes has been compromised while the consequences of climate change will become more evident\(^{22}\). Among others, this means that people and nature will become even more vulnerable to water-related hazards, such as prolonged droughts or increased flooding and climate-accentuated effects of water pollution.

To counter these tragic trends of further marginalization, degradation and exposure to risks, urgent and broad collective action is required\(^{23}\). However, the top-down approaches that are often adopted in development cooperation\(^{24}\) and the widespread assumed hierarchies in knowledge\(^{25}\) still hamper

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\(^{15}\) See Figure 3 for a summary of the Theory of Change.

\(^{16}\) These digital technologies among others may include – among others - modelling tools and software, smart sensors, databases, data analytical tools, decision-support systems.

\(^{17}\) In Section 5 a more detailed problem analysis is given for each DUPC3 thematic area.

\(^{18}\) Technopolis Group (2021), see also Section 2.

\(^{19}\) See among others Bakker (2010); Budds (2013); Budds and Sultana (2013).

\(^{20}\) See among others Jorgenson et al. (2018).

\(^{21}\) See among others OECD (2020); Workie et al. (2020) and Buheji et al. (2020).

\(^{22}\) See among others IPCC (2019a); IPCC (2019b); Aich et al. (2014) and Alfieri et al. (2017).

\(^{23}\) Climate Adaptation Summit 2021, see also https://www.cas2021.com/

\(^{24}\) Van der Velden (2020).

\(^{25}\) This refers to the wide spread assumption that scientific knowledge - and especially knowledge based on natural science, engineering, law and/or economics carried out in higher-income countries - is superior to knowledge produced in other
collaborations on water-related challenges. Despite an increasing number of interesting initiatives, knowledge on water is still largely fragmented and new insights remain regularly within academia, without effective sharing of knowledge and its applications with other relevant or interested actors. This affects the capacities of societies to address the water-related problems and hinders the implementation of promising solutions. This is particularly the case in low- and middle-income countries where water sector organizations have often very limited resources, including staff, to cope with the various and multifaceted problems they face. As result, the unequal distributions in water are hardly challenged and detrimental practices in governing and managing water continue.

Textbox 4. Defining processes of marginalization and inclusiveness.

Marginalization refers to processes that cause some groups in society to have structurally less access to wealth (in the form of rights to resources, employment, and fair incomes), basic services (e.g. health, water, education) and decision making power (e.g. voice, authority) than others, making it more difficult for them to achieve acceptable levels of wellbeing or to fully participate as citizens in economic, political, cultural and/or social activities. How processes of marginalization unfold and with what particular effects is specific to time and place, but in general it is the outcome of intersecting axes of socio-cultural and economic differentiation based on (among others) race, ethnicity, religion, gender, sexual orientation and (dis)ability. Processes of marginalization tend to be anchored in long histories of oppression, exclusion and discrimination, with the effect that resulting differences have become institutionalized and normalized. Marginalization may also refer to specific geographical areas, with some regions receiving structurally less public attention and investments. This for instance shows in levels of public services, infrastructure and environmental protection.

When it comes to water, two specific processes of marginalization deserve special attention. The first is the widespread existence of patriarchal institutions that allow and justify the strong dominance of men in political leadership roles and their control of property. Among others, this shows in patterns of inheritance that make it difficult or impossible for women to inherit land and other resources, making them dependent on male relatives for their survival. Unequal gender relations also become visible in how roles, responsibilities, rights and risks related to water are distributed between men and women in households, as well as in society at large. As a result, and despite the fact that in many societies women are the main users and caretakers of water at family level, they often are side-lined from (formal) decision-making processes on water. Moreover, the water sector is very male-dominated: masculine professional engineering cultures make it difficult for the few women who do manage to enter this sector to succeed.

Colonial occupation – in its various forms and manifestations – has been another (yet partly related) process through which large groups in society have been marginalized mainly by disfranchising them of their citizens’ rights and dispossessing them of their land, water and other resources based on their race, ethnicity and/or geographical location. After independence, many former colonies struggled to prosper as result of the harm inflicted by the colonial authorities as well as continued unequal geopolitical relations. As a result, many former colonies are nowadays still categorized as low- or middle-income countries. The legacy of colonialism continues to mark contemporary patterns of access to and control over water in many of these countries. Through forced relocations and/or racial segregation during colonial occupation uneven development has materialized and nowadays many deprived communities still live in these historically marginalized areas. Also in several former colonies considerable shares of land, water, infrastructure and wealth are still in the hands of the heirs of the colonizers and/or their allies. Moreover, the divide-and-rule-politics of colonial authorities have contributed to ethnic tensions in various countries and/or disputes between riparian states that continues to affect interactions over water. Colonization also has had a large influence on knowledge production as research (including on water) was primarily done by – and aligned with the rationales, needs geographical areas, by other disciplines and/or by non-academic actors. See among others Taylor (2010) and Zwarteveen et al. (2017).

26 See among others the transformation to groundwater sustainability (T2GS) initiative: https://www.t2sgroundwater.org/
27 DUPC3 adopts a broad definition of water sector organizations, see also Textbox 5.
28 This textbox is based on publications by – among others – Mamdani (1996); Kooy and Bakker (2008); Ahlers and Zwarteveen (2009); Nightingale (2011); Tuck and Yang (2012); Mamdani (2014); Sundberg (2014); Patel (2015); Mendez et al., (2016); Zwarteveen (2017); Rap and Jaskolski (2018); Zwarteveen et al. (forthcoming).
and interests of the – colonial scientists. Inequities in access to education and uneven distribution of research facilities and funding opportunities still hampers the much-needed decolonization of knowledge, potentially entrenching the marginalization of former colonies and their citizens.

To achieve transformations to equitable – and therewith more resilient and sustainable – futures these processes of marginalization will need to be countered by deliberately foregrounding and giving specific attention to neglected people and areas. Through inclusive processes – the views, needs and practices of these people around water will need to be foregrounded. DUPC3 defines inclusive processes as processes in which (groups of) marginalized people are actively supported to ensure that their voices are heard, their needs are addressed, their preferred methods and approaches are adopted, their wisdoms and practices are valued, and decision-making processes are structured in such a way that they can influence it to their advantage. This goes a step further than calling for democratic or participatory processes as research has shown that these kinds of processes too often lead to merely incorporating marginalized (groups of) people into existing – often unequal – structures and processes of decision-making. Therefore, inclusive processes emphasize the need for corrective, affirmative actions to genuinely redress historic inequities, also in the processes and structures of decision-making itself. To effectively counter marginalization, these inclusive processes are needed in decision-making and everyday practices as well as in processes of knowledge production and dissemination such as research and education.

Impact pathways

To address the imminent societal challenges, DUPC3 aims to achieving tangible, meaningful and lasting impacts that contribute to larger transformations to more equitable and sustainable futures. DUPC3 defines these impacts as a noticeable change that results from DUPC3 activities that lead to solve a specific problem that requires to be addressed in order to make the envisioned transformations possible. Within this broad definition, DUPC3 identifies the following types of impacts29:

- Instrumental impacts: actions that lead to new policies, decisions, approaches or practices.
- Conceptual impact: actions that lead to identifying new ideas or understandings.
- Relationship-oriented impacts: actions that lead to establishment of new – or strengthening of existing – networks and collaborations.
- Strategic impacts: actions that lead to new ways of framing problems within policy networks.
- Capacity-oriented impacts: actions that lead to new abilities to apply knowledge in a given context.

DUPC3 foresees that these different kinds of impacts together form a pathway to address the imminent water-related challenges. Ultimately instrumental impacts are needed to fundamentally change the way societies share and care for water. In the longer term, DUPC3 would like to contribute to stimulating these different ways of dealing and interacting with water to achieve more equitable and sustainable outcomes. DUPC3 believes that changing these practices requires first of all conceptual impacts in the sense of transformations in the ways we as societies know and understand water. This is based on the idea that different ways of knowing water will lead to different approaches of governing and managing it (and vice versa)30. For instance, if water is only known and measured in economic terms, it will remain difficult to appreciate its other values31. Or if water is only understood as a natural resource, it is difficult to comprehend its societal relations. Or if water is only expressed in legal terms, it is difficult to capture the fugitive behavior of water when it leaks, evaporates or meanders. However, it also requires not to essentialize water32, but rather to place water issues in

29 Adjusted from Wyborn et al. (2018), see also Louder et al. (2021).
30 See Zwarteveen et al. (2017).
31 See among others Savenije and van der Zaag (2020).
32 This refers to the common pitfall of scholars and practitioners to over-focus on their subject – in this case water - and assuming and portraying issues as if their subject is the most central matter that needs to be addressed in society. To not
broader contexts and understand its relations with other processes and development challenges. For example, how water is affected by the increased demand for affordable, clean energy or how it is shaped by larger processes of urbanization and economic liberalization. Moreover, it is crucial to place and understand water issues in the context of broader historical processes of uneven development, marginalization and colonization of knowledge (see also Textbox 4). For this reason, conventional knowledge on water needs to be enriched with learning from different experiences, perspectives and wisdoms to pluralize knowledge on water. To facilitate this, relationship-oriented impacts are needed in the sense of establishing fruitful, energetic coalitions that can identify promising solutions and develop viable progressive strategies for implementation to address water-related challenges in equitable and sustainable ways. These coalitions can passionately yet humbly combine insights from different academic disciplines and genuinely engage with knowhow and understanding from non-scientific partners – including (marginalized groups of) water users themselves – to understand water – in all its forms, functions, values and connections – better. Scientific knowledge alone, or pure technical solutions or ideal policy models, are not going to bring the changes this world needs to deal with the issues at stake. DUPC3 aims to contribute to these processes of enriching water knowledge through facilitating thoughtful deliberations between diverse ranges of actors on concrete and urgent water-related problems. Since the challenges are most acute in low- and middle-income countries, it is especially pertinent that people working in the water sector in these countries are involved in research and jointly explore, develop and test possible solutions. Their active participation in research is especially crucial for tailoring activities and interventions to the local needs and possibility, including building further on ongoing successful initiatives and mobilizing existing, progressive alliances.

However, to change how societies govern and manage their water it requires more than producing new, transdisciplinary insights on water. It calls for organizations and individuals that can rigorously assess this knowledge and implement those solutions that are most relevant and feasible for their situation. To achieve this, research findings of DUPC3 need to be more widely and effectively shared with relevant actors and audiences (see also Textbox 5). Strategic impacts are needed through advocacy efforts to get these new insights, approaches and solutions accepted at various levels of policy making in order to create an enabling environment that allow for the envisioned transformations. Especially because the transitions might require other-than-mainstream rationales or may affect the interests of established elites, nurturing political momentum will be essential. Therefore, alliances with strategic partners are needed at local, national, regional and international level to reach and mobilize influential actors and to create and utilize windows of opportunities. And finally, capacity-oriented impacts are required to ensure that water sector organizations (see also Textbox 5) have the knowledge and capacity to fulfill their roles and responsibilities in managing water in sustainable and inclusive ways. To address the most urgent water-related challenges, it is especially important that people working in the water sector in low- and middle-income countries receive relevant education that nurtures their critical thinking skills and stimulate continued learning to prepare them to act as agents of change. Investments in education and training as well as strengthen capacities ‘on the job’ – for instance through conducting joint research – are therefore essential. By involving universities and other water sector organizations from these countries in translating research findings into curricula will ensure that the educational programmes are relevant and contextualized. Moreover, – where possible – joint delivery of education and training will allow educational programmes to be incorporated in locally offered programmes so that it may reach more people and strengthen the capacities in a cost-effective manner.

33 See also the report of the DUPC2 partnership Survey February 2020 ‘Working in partnership – practices and experiences from your DUPC2-supported project’ in which 43 partners participated to express their ideas on collaboration in diverse teams. The findings of this survey are summarized in Annex 2.

34 See also African Development Institute (2014).
Figure 1 summarizes the consolidated impact pathway that DUPC3 aims to follow to make tangible progress in addressing the most pressing water-related issues in sustainable and equitable ways. The color coding refers to the extent in which DUPC3 can direct and steer the process of achieving the different kinds of impacts (see also Figure 3). The orange colored impacts are considered to fall in the sphere of control of the programme and as such DUPC3 is expected to achieve these impacts in a relative easy and straightforward manner. The green color represents the sphere of influence in the sense that DUPC3 can exert considerable influence but cannot directly control achieving these impacts. The blue color indicates the impacts that fall in within the sphere of interest that DUPC3 aims to ultimately achieve but DUPC3 has limited influence on the process of achieving these impacts.

Figure 1: Summary of DUPC3 impact pathway.

Programme objective and longer-term outcomes

In line with the DUPC3 vision, and building further on the previous phases of DUPC, the overall objective of DUPC3 is to support and catalyze meaningful and lasting transformations to socially inclusive and ecologically sustainable water management practices\textsuperscript{35} in low- and middle-income countries. DUPC3 aims to support and catalyze these transformations by primarily focusing on the impacts that are within the sphere of control of the programme (see also Figure 1). For this reason, DUPC3 will invest its efforts in bringing together partners who will work jointly towards two interrelated longer-term programme outcomes, namely:

- The knowledgebase on water management is improved and enriched to support ecologically sustainable and socially inclusive practices.
- A broad range of water sector organizations (see Textbox 5) have the knowledge, experiences and capacity to facilitate and fulfill their roles and responsibilities for sustainable and inclusive water management practices.

\textsuperscript{35} Even though DUPC3 understands water management and water governance as two different – yet closely related - processes, for the ease of writing we use in this proposal the term water management to refer to both processes. Also, DUPC3 uses a broad definition of water management, not only referring to the measuring, allocation and distribution of water in river basins but including all interventions that require control of and/or care for water flows, such as water supply, sanitation, wastewater treatment, drainage, flood protection, water storage, and restoring aquatic ecosystems.
As mentioned earlier, achieving these outcomes is considered to be only possible through close collaboration and longer-term relationships between a broad range of organizations and individuals who are involved in various ways in managing and governing water. Therefore working in partnership in diverse teams underpins the set-up of the programme and DUPC3 will actively invest in bringing together various kinds of organizations. Textbox 5 gives an overview of the partners DUPC3 aims to involve in the programme. DUPC3 thus considers the relational-oriented impacts as necessary means to achieve the two longer-term programme outcomes mentioned above. It should also be noted that DUPC3 considers policy-makers and their agencies also as partners and will engage with them in various ways. By actively targeting them in knowledge sharing activities and capacity building efforts, DUPC3 will exert its influence to achieve the required strategic impacts needed to foster an enabling environment to support and facilitate the envisioned transformations.

Textbox 5. DUPC3 water sector partner analysis.

To achieve the envisioned transformations a wide range of actors needs to be brought together and mobilized at various levels, broadly referred to as water sector organizations. Among them are organizations directly handling water such as water utilities, irrigation boards, wastewater treatments plants, and water-dependent industries. These organizations will need to change their approaches and practices, so their active engagement is essential to ensure the proposed solutions are viable and supported. Also, NGOs and CSOs that represent water users – in particular marginalized groups such as smallholder farmers, domestic users in slum areas, refugees – are crucial to involve to learn from the experiences and insights of these water users, to ensure their needs are addressed and to share knowledge with grassroots level. In addition, environmental NGOs can play an important role in foregrounding ways to reverse declines in ecological integrity and to halt biodiversity loss.

Relevant ministries – e.g. on water, environment, agriculture, public works, spatial planning, finance – are key to draft and enact policies that support the transformations as well as to align the interventions of their operational units. Close liaison with – and facilitating collaboration between – these ministries is therefore essential to create an enabling environment and identify windows of opportunities to foster change. Besides this ‘horizontal integration’ also other levels of government (e.g. district, municipal) need to be involved as at those levels often the actual interventions take place. As such, the support and commitment of bureaucrats at these lower tiers of government in crucial to achieve lasting and meaningful transformations. Moreover, where established, river basin organizations can play an important role to develop and implement integrated, basin-wide plans for inclusive and sustainable use and allocation of water for people and ecosystems, so their expertise and authority are needed to align the various actions needed to achieve the envisioned transformations. As water often crosses territorial boundaries, transboundary organizations and/or regional platforms to facilitate collaboration over water can also play a key-role in ensuring wider and longer-term perspectives. In addition, private sector organizations involved in water innovations can be useful to roll-out and/or scale up new approaches and technologies.

Research institutes – particular in low- and middle-income countries – are crucial to steer the development of relevant, enlightened knowledge and educational facilities play a major role in dissemination these research findings and strengthening skills for implementing proposed solutions. And finally, international organizations and intergovernmental alliances are important for advocacy and nurturing political will and long-term commitment to support the envisioned transformations.

Building further on the partnerships established under the previous phases of the programme, DUPC3 will aim to involve the above-mentioned organizations in the various DUPC3 activities (see also Section 7 for a detailed description of the target groups and collaborating partners). Especially the activities organized by the DUPC3 learning networks offer a good opportunity to engage with a broad range of organizations at various levels and in different regions.
Programme components and short-term outcomes

To attain the longer-term outcomes, and in line with the impact pathway, DUPC3 aims to mainly focus on clusters of activities that work towards achieving the impacts within the sphere of control of the programme. The clusters of activities are referred to as programme components and four of such components have been identified for DUPC3, namely partnerships and joint learning, research and advocacy, education and training, and institutional strengthening. Figure 2 shows how the different components relate to the impact pathway. These components will be used to structure the programme, allocate budget and monitor progress (see also Sections 6). For each of those components, DUPC3 has defined shorter-term outcomes that the programme aims to achieve, namely:

- **Partnerships and joint learning**: increased, effective and inclusive collaboration and sharing of water knowledge and expertise between diverse kinds of organizations and individuals in low- and middle-income countries.
- **Research and advocacy**: improved and enriched knowledge and insights on water developed, shared and applied that are relevant for organisations and individuals in low- and middle-income countries.
- **Education and training**: improved and easily accessible high quality education available on water that is relevant for organizations and individuals in low- and middle-income countries.
- **Institutional strengthening**: increased capacity of partner organizations in low- and middle-income countries so that they are equipped with the skills, knowledge and facilities to effectively participate in joint research and education on water and/or implement promising solutions in their everyday practice.

![Figure 2: DUPC3 programme component.](image-url)
Programme approach and activities

To work towards the shorter-term programme outcomes, DUPC3 aims to initiate series of projects in which a diverse range of organizations jointly conduct action-oriented research on water and together develop and deliver open education and trainings based on the research findings. To ensure the projects focus on most relevant topics for low- and/or middle-income countries, it is crucial that organizations who experience a specific water-related problem in these countries are – and can be – actively involved in the DUPC3 activities (see also Textbox 5). DUPC3 will identify and carry out research together with them to design suitable and viable approaches and technologies for governing and managing water in equitable and sustainable ways. Moreover, these organizations will be actively involved in disseminating research findings to relevant audiences by jointly developing open education and engaging in meaningful processes of outreach and advocacy focusing on – among others – policy makers at various levels and grassroots organizations. And together with these organizations, DUPC3 will identify which, whose and how capacities need to be strengthened to participate in the DUPC3 activities and/or to implement promising solutions to change how societies deal and interact with water in the longer term. Since in low- and middle-income often considerable gaps exist in terms of wealth and access to resources, including water, DUPC3 will pay specific attention to especially involve (representatives of) marginalized groups and communities in these processes (see also Textbox 4 and Section 7), including identifying, designing and conducting research (e.g. through action-research, living labs, participatory methods, visual methods, collaboration with NGOs and CSOs).

To stimulate critical reflection and to avoid segregation of knowledge, DUPC3 proposes to establish learning networks in which the different project teams participate and share their insights and experiences with other DUPC3 project teams and – when relevant – broader audiences including external stakeholders and peers. By stimulating knowledge sharing and joint learning in these networks, DUPC3 will further enrich the knowledge-base and strengthen capacities of all partners involved in these collaborations. Creating safe spaces within these networks is crucial for sharing ideas and perspectives, learning also from failures and mistakes, expressing needs for strengthening capacities, stimulating life-long learning, and encouraging reflexivity in the thinking and activities of the network. Mutual trust and respect among the different partners are therefore considered essential and requires explicit attention in forming and guiding these networks. Through this joint effort DUPC3 can make an even more meaningful and lasting impact on the water sector and in that way contribute to more socially just and sustainable futures.

Figure 3 summarizes and visualizes the theory of change that informs the content and structure of the proposed DUPC3 programme.

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36 Open education here refers to educational materials that are made easily accessible and freely available, yet for guidance and/or certificates fees might be charged.

37 Inequality in a country can be –among others - indicated with the so-called Gini coefficient, a statistical measure to show the distribution of income or wealth among citizens. A higher Gini coefficient represents a higher inequality. See https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country

38 See among others Acey (2007); Guerrero et al. (2016) and Kemerink et al. (2016).

39 DUPC3 does not aim to establish these networks as formal structures but rather as informal groupings of people who come together on a regular basis share knowledge and insights on specific topics and deliberate on ways to achieve meaningful impacts in their field of study.
Figure 3: Summary of DUFC3 Theory of Change.

Risks and assumptions

For programmes like DUFC3 it is important to clearly identify what is within the sphere of control and steer these items (see also Figures 1 to 3), while recognizing and coping with external risks and uncertainties that might affect the implementation of the programme. The main risks include the duration and extent of the restrictions as result of the COVID-19 pandemic as well as the socio-economic aftermath of the pandemic, both in the Netherlands and the countries where DUFC3 activities will be carried out. Also, the political instability\(^40\) in the countries and regions where DUFC3 focuses on can jeopardize and/or require to adjust the activities in these places. For achieving the ambitious goal of DUFC3 longer-term investments in the countries are needed to establish effective partnerships and address the multifaceted water-related challenges. The policy priorities of DGIS might change and similarly the strategies of IHE Delft might shift, which could affect the support of higher management at DGIS and/or IHE Delft for DUFC in the longer term. Other risks relate to – among others – the willingness of governments and water sector organizations in low and/or middle-

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\(^{40}\) DUFC3 recognizes that this political instability is not just an internal affair of these countries and/or regions but often strongly influenced and/or triggered by wider geopolitical relations and structural inequities and injustices at larger spatial scales.
income countries to collaborate, continuity in staffing of partner organizations and their capacity to manage projects\textsuperscript{41}, and commitment and workload of the people involved in the DUPC3 activities.

Even though this theory of change is informed by extensive experience (among others within earlier phases of DUPC), consultations with peers and partners and based on insights from literature, several assumptions have been made in this rationale. For instance, the assumption that there is sufficient political will and momentum to support the transformations to inclusive and sustainable futures. As it involves changing relations of power there might be resistance from established elites that benefit from the current status-quo. Also the proposed impact pathway for DUPC3 is based on several assumptions, for instance that diversity in collaborations will lead to diversity in insights and enriched knowledge, and that ultimately this will ‘trickle down’ and translate – through education and strengthening capacities – to changes in practices. Moreover, the approach of the programme is largely based on the premise that organizations and individuals are willing and able to work in genuinely inclusive ways, reflect on their own learning and contribute to the wider activities of the programme, in particular the learning networks. On a practical level, the set-up of the programme is based on the assumption that a sufficient number of high-quality proposals for projects will be submitted that fulfill the assessment criteria (see Section 9) and that the budget can be allocated as proposed (see Section 14). Being aware of these assumptions – and carefully monitoring them and adjusting the approach if needed – will be an important mechanism to steer the directions of DUPC3 in order to achieve meaningful and lasting impacts (see also Section 11).

\textsuperscript{41} This will be partly addressed as part of this programme by offering skills training to partners on project management (see Section 10) though also relates to constraints beyond our sphere of influence, for instance limited human resources at partner organizations in terms of support staff (e.g. HRM, finance, contract management) or - due to strict foreign currency policies – constraints in transferring funding to organizations in other countries. These circumstances might make it difficult for some partner organization to manage projects effectively and establish (consortium) agreements with partner organizations.
5. Thematic focus of the Programme

A distinctive feature of DUPC3, and in line with the programme’s ambition to contribute to transformations to socially just and sustainable futures, is the strong emphasis on equity and ecological sustainability in water-related interventions. Foregrounding these two issues entails that the DUPC3 activities ultimately aim to solve the water-related challenges of (historically) marginalized groups in society and contribute to restoring degraded ecosystems on which these groups often depend for their livelihood. This can be through actions that directly benefit such groups and/or ecosystems or through water-related activities that aid society as a whole. It can also include activities that limit the water-related harm (e.g. over-abstraction, pollution) done by other parties or giving support to governments of low- and/or middle-income countries to strengthen their position to address water-related matters that play at larger spatial scales (e.g. transboundary, international). However, what it in all these cases entails is that DUPC3 will carefully scrutinize the implications of its activities and not support actions that lead to (knowable) processes of (further) marginalization or unsustainable use of water in any form. As such, the two central elements - equity and ecological sustainability - will guide the programme activities within different thematic areas. Three broad thematic areas are initially proposed for DUPC3, namely water and health, water for food, and river basins and deltas. These thematic areas are closely aligned with the development priorities of DGIS and the research lines of IHE Delft (see Table 1). Moreover, progress in addressing the challenges within each of these themes is considered essential for achieving the water-related SDGs and closely relate to the main challenges identified in the DUPC3 focus regions in relation to water management (see Section 8).

Table 1. DUPC3 themes in relation to the DGIS and IHE priority themes.

<table>
<thead>
<tr>
<th>DUPC3 Themes</th>
<th>DGIS-IGG water-related priorities42</th>
<th>IHE Delft research lines43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and health</td>
<td>All users, including the most marginalized, have access to sufficient drinking water of good quality and sanitation.</td>
<td>Safe drinking water and sanitation</td>
</tr>
<tr>
<td>Water for food</td>
<td>Water is used and managed efficiently and sustainably and water pollution is reduced in agriculture.</td>
<td>Water, food and energy security</td>
</tr>
<tr>
<td>River basins and deltas</td>
<td>Formal and informal institutions responsible for water management are fit for purpose.</td>
<td>Water related hazards and climate change</td>
</tr>
<tr>
<td></td>
<td>- Water security plans, policies and strategies are implemented.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Improved water-related conflict resolution mechanisms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- International agreed monitoring and reporting about water and incorporation of water in other policy fields like climate, energy and food.</td>
<td></td>
</tr>
</tbody>
</table>

43 IHE Delft (2021), see also www.un-ihe.org/research. The IHE research themes in italic can be considered cross-cutting themes, yet for the purpose of clarity they are placed in the row that links most explicit with the DGIS water-related priorities. Currently the research lines of IHE Delft are being redefined as part of an external assessment coordinated by SENSE – the Research School for Socio-Economic and Natural Sciences of the Environment. Annex 1 gives an overview of the proposed research lines and priorities that IHE Delft identified for the period 2021-2027 as well as the initial feedback from the accreditation process.
The proposed thematic areas are described in the following sub-sections, including initial issues and topics that potentially could be pursued within each theme. In line with the DUPC3 ambition to contribute to meaningful and lasting impacts, within each theme the focus will be on developing new ideas or understandings that contribute to viable pathways towards the envisioned transformations. For this reason, in each theme emphasis will be given to research that leads to integrated approaches and solutions that are considered appropriate and affordable in the local context. Moreover, those promising approaches and solutions need to be scalable to make wider uptake viable and resilient to future (climate) changes (see also Textbox 6). It should be noted that research activities across the themes will also be actively supported by DUPC3 (see also Section 6).

Textbox 6. Defining DUPC3 as climate action.

The Development Assistance Committee of the OECD has defined markers for climate change actions. They distinguish between actions that focus on climate change mitigation and actions that focus on climate change adaptation. Programmes can be marked as principal when climate change is fundamental in the design of or the motivation for the activity or can be marked as significant when climate change is explicitly stated but it is not the fundamental driver or motivation for undertaking the activity.

Based on a self-assessment of this DUPC3 proposal, the programme could be marked as significant both in terms of climate change mitigation as well as climate change adaptation. By foregrounding ecological sustainability as central element in the DUPC3 activities, the programme focusses its research and education on addressing root causes of climate change. For instance, by investing in research on agro-ecosystems and sustainable management of wetlands, DUPC3 contributes to the protection and enhancement of sinks and reservoir of greenhouse gases. Moreover, by investing in research on cleaner production for water supply, recycling of (nutrient-rich) water for agriculture, and water-related low-carbon energy production, DUPC3 aims to contribute to lower emissions.

DUPC3’s contribution to climate change adaptation is primarily achieved by foregrounding questions of equity through gearing the programme towards improving the position of marginalized groups in society. Those groups are often most vulnerable as structural poverty undermines their resilience to cope with climate (and other) change(s). This will help to identify the climate-change related risks of these groups, create awareness and contribute to developing approaches and technologies that addresses their water-related needs, now and in the future. In particular, DUPC3 aims to invest in research on, and strengthen the capacities in, climate-change resilient smallholder agriculture as well as smart technologies and approaches to use water wisely and secure access to water for different purposes. Moreover, DUPC3 aims to contribute to the development of integrated, adaptive river basin and delta plans in low- and middle-income countries that take into account climate-change related hazards such as droughts and/or floods. In this way the programme contributes, directly and indirectly, to strengthen the resilience of societies, and in particular marginalized groups, to be prepared for and adapt to climate change.

Water and health

Despite efforts of governments, water utilities and NGOs during the past decades, large parts of the world’s population still lack access to sufficient water of good quality and have no, or very limited, access to sanitation services. This still causes millions of deaths annually of which the majority are children below the age of five years. Fast processes of urbanization pose further challenges as more and more people live in rapidly expanding urban and peri-urban areas in low-income countries where water supply networks are precarious, sewerage is often non-existent and spaces for toilets and safe
disposal of waste are difficult to find. At the same time, in depopulated rural areas provision of reliable and affordable water and sanitation services becomes even more challenging in the absence of an ‘economy of scale’. Moreover, poor drainage and improvised water storage both in urban and rural areas increase rates of water-borne diseases, while insufficient and intermitted water supply and inadequate sanitation can increase the spreading of other contagious diseases, such as COVID-19, as people cannot adhere to basic hygiene measures\(^{47}\). In addition, the COVID-19 pandemic has emphasized again that human-livestock interactions increase the chance for zoonotic diseases like COVID-19, which puts especially densely populated (peri-urban) slum areas at risk as water sources are often shared\(^{48}\). At the same time, in rural areas geogenic sources of pollution (e.g. fluoride, arsenic contaminants) cause regularly health problems for people relying on groundwater sources in the absence of adequate treatment facilities\(^{49}\). Despite the overwhelming evidence for the urgent need for adequate water and sanitation services, many governments in low- and middle-income countries have been urged to reduce public expenditures as part of neoliberal reforms, which has negatively affected the development and maintenance of water infrastructure especially in marginalized areas\(^{50}\).

On top of that, climate change causes in various regions prolonged droughts with as result that people face regular water shortages even for domestic purposes. This creates anxiety and tension in society, particular in view of pessimistic future scenarios\(^{51}\). For instance, the still ongoing humanitarian crisis in the Middle East creates specific challenges of providing water and sanitation services in highly complex emergency situations to refugees, yet also causes anxiety among the citizens of the countries that take up refugees on how this might affect their access to already scare water\(^{52}\). These multiple and often interlinked issues led in many countries to huge inequities in terms of health risks that people are exposed, with especially already marginalized groups being most affected, including (female) slum dwellers, refugees and underprivileged households.

To counter these developments, this theme will focus on developing pathways to improve and scale-up the provision of adequate, affordable and inclusive water and sanitation services, particularly to marginalized groups and/or areas. Emphasis will be given to viable integrated approaches, nature-based solutions and/or inventive (digital) technologies that facilitate sustainable, reliable and safe provision of water and sanitation considering the specific institutional settings in the targeted areas. Where relevant, ‘life-cycle’\(^{53}\) approaches may be used to critically assess the implications of promising solutions for society and the environment. In the calls for proposals under this theme DUPC3 will – among others – welcome projects that focus on advancing and supporting the implementing of nature-based solutions for water and wastewater treatment and explorer – and critically assess – the possibilities of stimulating circular economies of associated natural resources\(^{54}\). Also, project initiatives that will further explore the possibilities for desalination technologies and how this technology can become a viable and environmentally sustainable solution for supplying water to low-income households in water scarce regions will fit under this theme. Other possible topics associated with this theme include the (further) development and implementation of smart approaches and (digital) technologies for inclusive, reliable supply of safe water and sanitation – in particular in complex environments such as slums and/or refugee camps – as well as developing and testing of

\(^{47}\) See among others Ekumah et al. (2020) and WHO (2020).

\(^{48}\) See among others Mazet (2009) and Alemayehu et al. (2021). These and other scholars call for an ‘One Health’ approach, which is an inter- and transdisciplinary approach that aims to achieve optimal health outcomes by recognizing the interconnection between people, animals, plants and their shared environment.

\(^{49}\) See among others Demelash et al. (2019) and Bretzler et al. (2019).

\(^{50}\) See among others Ndikumana and Pickbourn (2017) and Galvin (2014).

\(^{51}\) See among others IPCC (2019b).

\(^{52}\) See among others Jaafar et al. (2019; Hussein (2020) and Baylouny and Klingseis (2018).

\(^{53}\) Life-cycle approaches can be used to better insight in the impacts of a product – for instance a technology or a piece of infrastructure – during its entire life cycle to assess the various impacts and trade-offs of that product on a variety of environmental and social aspects, such as the quality of water, water consumption, livelihoods, public health, pollution emissions, and raw materials (Peña et al., 2020).

\(^{54}\) See among others Voulvoulis (2018); Masi et al. (2018) and Malik et al. (2015).
approaches and measures to reduce pollution from human and animal excrement in densely populated areas. These themes may also include projects that will explore how water can serve as a low-cost proxy for spreading of COVID-19 and other (new) contagious diseases in low-income countries to inform remedial actions.

To support the transformations to more sustainable and inclusive provisions of water and sanitation services, DUPC3 anticipates as part of this theme to also invest in identifying and studying innovative, realistic and progressive instruments for financing these innovations considering various service provision modalities (e.g. public/private, centralized/decentralized, on-site/off-site) and being inspired by the notion of circular economies. Also, project proposals are welcomed that focus on designing effective and integrated strategies for the development, operation and maintenance of water infrastructure, including exploring required legal and institutional arrangements and identifying implementation protocols (e.g. safety plans for water and sanitation) and/or engage with and critically reflect on hygiene initiatives. In particular, efforts will be made to support projects that stimulate effective knowledge exchange and collaboration between water service providers in low- and/or middle-income countries, for instance among water utilities (e.g. DUPC2 BEWOP – water operator partnerships) and among organizations involved in water supply and sanitation in humanitarian settings. The aim of these collaborations is to encourage joint learning – especially between organizations in the focus regions – and to strengthen the coordination among and the resilience of these organizations where needed.

Water for food

Farmers engaged in small- and medium-scale agriculture in low- and/or middle-income countries are producing the largest part of food needed to feed the increasing population in the world. Moreover, these forms of agriculture provide vital income to millions of households, particularly in often marginalized rural areas and including large numbers of female-headed households. Past policy interventions have encouraged many of these farmers to start cultivating commercial crops for (inter)national markets, often shifting to monoculture. In many places these changes went hand in hand with overexploitation of water sources, land tenure insecurity, increased use of fertilizers and exposure to market volatility. In other parts of the world, smallholder farmers particularly have been largely neglected and/or land and water resources have been accumulated in the hands of a few larger (foreign-owned or state-supported) agribusinesses. In both situations it causes insecurity for farming households and often lead to further degradation of biodiversity and vital ecosystems – such as wetlands and forests – through increased pollution from fertilizers and pesticides and/or encroachment on nature in search for land and water in attempts to secure income from agriculture. This is despite the fact that these ecosystems are often crucial sources to complement the livelihoods of food-insecure households. Also, climate change poses further challenges for many farmers engaged in small- and medium-scale agriculture because they often lack access to adequate

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55 DUPC3 recognizes that the size of the farms and their produce – and thus what qualifies as small- and/or medium-scale – might differ per country and per agricultural activity. Nevertheless, DUPC3 finds it important to use these categories to distinguish these farms from large-scale agribusinesses.

56 See among others Samberg et al. (2016) and Lowder et al. (2015).

57 See among others Jongerden et al. (2019) and Mosely et al. (2014).

58 DUPC3 uses the smallholder farmers to refer to actors involved in small-scale agriculture, which may include farmers who own small pieces of land for growing crops, herding livestock and/or aquaculture mainly for their own subsistence, but also might include small-scale agribusiness that supply their produce to markets, especially in years of surplus. It also may include pastoralists, tenants or agricultural labourers who do not own land themselves but are involved the above-mentioned activities or people who rely for the livelihood primarily on other goods produced by ecosystems.


60 See among others Tickner et al. (2020) and IPBES (2018).

61 See among others Rebelo et al. (2010).
infrastructure and technologies for storing and controlling flows of water. This limits their possibilities to respond to prolonged droughts and irregular precipitation patterns and may lead to salinity of their soils, affecting crop yields and/or reliable supply of water for their cattle. As a consequence of all these uncertainties, especially smallholder farmers are extremely vulnerable for other disturbances, like the COVID-19 pandemic that led – among others – to the closure of the large majority of farmers markets worldwide.

Having learnt from the negative impacts of unsustainable agricultural practices on society and ecosystems, this theme will focus on identifying, testing and implementing pathways to more sustainable and climate-change-resilient irrigation practices and agro-ecosystem for growing crops, herding livestock and conserving biodiversity and ecosystem services. In the calls for proposals under this theme DUPC3 will – among others – welcome projects that aim to develop nature-based solutions to climate-proof smallholder agriculture (e.g. through sand storage dams, recharge of aquifers, rainwater harvesting) and further explore the possibilities for reuse of (nutrient-rich or saline) water for agriculture and critically assess how this affects human health and receiving aquifers and ecosystems. DUPC3 will also encourage project initiatives that study and stimulate regenerative – including re-appreciation of traditional – agriculture practices to increase water storage in the root zones and improve soil fertility and therewith improve crop yields in the longer term and restore ecosystems. Moreover, DUPC3 has the ambition to further develop, test and make available (remote-sensed) tools and technologies that will help small- and medium-scale agribusinesses to monitor and increase their on-farm water productivity (e.g. DUPC2 WaterPip, drip irrigation). DUPC3 would like to explore how remote sensed technologies can be used as progressive tools to monitor and interrogate the water use and water pollution by larger scale agribusinesses as part of efforts to achieve fair and/or sustainable water management practices. Under this theme, DUPC3 will also encourage partners to study and critically assess possible trade-offs and synergies between water for agriculture and low-carbon energy production (e.g. decentralized low-head hydropower, biofuels, resource recovery, solar panels) in attempts to secure both food production and energy supply to farming households.

To support the envisioned transformations in agriculture, DUPC3 anticipates as part of this theme to also invest in identifying and studying innovative, progressive instruments for financing in order to make sustainable farming practices accessible and affordable for (collectives of) farmers engaged in small- to medium-scale agriculture. This may include studies on the relevance and applicability of including these types of farms in circular economies. Moreover, DUPC3 welcomes projects that engage with farmer-led processes that stimulate inventive ways of establishing sustainable irrigation practices at grassroots level. The research done under this theme may also engage with developing viable integrated and inclusive implementation strategies, including identifying required institutional arrangements and policy interventions to support, protect and improve the water management of small- and medium-scale agriculture, particularly in the context of ongoing land and water grabs and globalized food chains. In this way DUPC3 aims to achieve meaningful and lasting impacts for inclusive and sustainable agricultural practices.

Rivers basins and deltas

In river basins flows of water from different sources and qualities come together and are abstracted, used and returned for different purposes, such as for domestic use, agriculture, industries, and hydropower. It is at this level that synergies can be explored and strategic choices can be made to

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62 See among others Kotir (2011) and Kemerink at al. (2016).
63 See among others Nchanji et al. (2021) and Ceballos et al. (2020). See also https://flows.hypotheses.org/5557
64 See also https://viceversaonline.nl/2021/02/23/bijt-niet-in-het-land-dat-je-voedt/
65 For instance, assessing the increase of antibiotic resistance as result of wastewater reuse.
66 See among others Singh and Singh (2017).
foster ecological sustainable and equitable practices of managing water and to ensure inclusive governance processes. Yet it is also where difficult trade-offs need to be negotiated, where historical uneven development has materialized\(^{67}\), and where regularly conflicts over water are imminent\(^{68}\). As a result of climate change, governments need to be prepared to deal with climate extremes, which increasingly requires both infrastructure against flooding as well as infrastructure for water storage to cope with prolonged droughts\(^{69}\). Particularly in fast urbanizing deltas the pressures are felt to provide water, food and electricity to the growing population, yet also protect them against flooding due to sea-level rise, land subsidence\(^{70}\) and/or coastal erosion\(^{71}\). In most river basins over-abstraction and/or widespread water pollution by industries, settlements and agriculture affects the goods and services of aquatic ecosystems, including water retention and purification and the absorption of greenhouse gases. In coastal areas salinization of water regularly further deteriorates the quality of water and threatens the health of aquatic ecosystems, especially in places where aquifers are overexploited. Many low- and middle-income countries have little data available on the status of their water resources and insufficient capacity to monitor withdrawals and water quality parameters, which makes it difficult to manage water\(^{72}\). The invisibility of groundwater makes it notoriously difficult to monitor and regulate its abstractions\(^{73}\). In places where water sources are shared between different countries additional challenges are often encountered to align policies, approaches and interests, sometimes resulting in disputes over water\(^{74}\).

To respond to these multifaceted challenges, this theme will engage with identifying, testing and implementing pathways to more secure, equitable and ecologically sustainable governance and management of river basins and delta regions, including coastal areas. In the calls for proposals under this theme DUPC3 will – among others – welcome projects that study the hydro-socio interactions, trade-offs and possible synergies between different flows of water in a river basin\(^{75}\) with a specific focus on securing water also for domestic use, subsistence farming and ecosystems. This may also include collaborations with and/or measures for stimulating private sector organizations (e.g. industries, mining companies, agribusinesses) to increase their water efficiency, reduce their pollution of water sources and/or avoid degradation and destruction of natural ecosystems such as wetlands. Moreover, DUPC3 aims invest in smart (remote sensed) ways of assessing, monitoring and forecasting the quantity and quality of water sources – particularly in data scarce regions (e.g. DUPC2 WA+) – and explore how these technologies and approaches can be used as progressive tools to redress injustices in and/or unsustainable uses of water. This theme will also support the further development and testing of smart ways of monitoring and assessing groundwater levels and the water quality of aquifers in collaboration with IGRAC (see Textbox 7), including interactions with other water bodies and in particular identify ways to reduce saltwater intrusion. As part of this theme, DUPC3 also aims to focus on protecting people and infrastructure against climate extremes such as floods and droughts by investigating (mainly\(^{76}\)) nature-based solutions for storage and/or drainage of water, particularly in marginalized parts of urban environments, as well as smart technologies for forecasting such events and informed risk management. Moreover, DUPC3 will encourage partners to initiate projects that

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\(^{67}\) See among others Swatuk (2008); Budds (2013); Budds and Sultana (2013).

\(^{68}\) See among others De Stefano et al. (2017).

\(^{69}\) See among others Güneralp et al. (2015); Brida at al. (2013) and Ward et al. (2020).

\(^{70}\) See among others Bucx et al. (2015).

\(^{71}\) See among others Hzami et al. (2021).

\(^{72}\) See among others Walker et al. (2016); Tourian et al. (2013) and World Bank (2018).

\(^{73}\) See among others Molle and Closas (2020) and Taylor et al. (2009)

\(^{74}\) See among others De Stefano et al. (2017) and Zeitounat al. (2014).

\(^{75}\) With this DUPC3 refers to flows of water for different purposes (e.g. for urban development, industries, hydropower, agriculture) as well as flows of different types of water (e.g. surface run-off, shallow aquifers, deep groundwater, wastewater flows, sewer flows, river flows).

\(^{76}\) Where these nature-based solutions are not feasible or not adequate, research and education on conventional infrastructures can also be considered within DUPC3 projects as long as the implications for ecosystems are made explicit and addressed as much as possible with nature-friendly adjustments to the infrastructure.
study the possibilities for restoration of aquatic ecosystems – in particular based on promising grassroots initiatives for sharing and caring for water sources – to protect biodiversity as well as safeguard the goods and services that these ecosystems provide.

As part of this theme, DUPC3 aims to make efforts to further develop the knowledge-base on root causes of different kinds of water conflicts in domestic as well as in transboundary basins and identify opportunities and approaches for managing these conflicts through collaborative action. In this, DUPC3 would like to give specific attention to water quality issues, conflicts arising from competing demands for water for food and the production of hydropower and – in collaboration with IGRAC (see Textbox 7) – disputes on groundwater management. Based on initiatives started under DUPC2, the programme will encourage partners to develop, test and disseminate effective tools for water diplomacy. In particular, DUPC3 will encourage diversity in the approaches for water conflict resolution for instance by engaging with existing promising approaches in target regions and developing methods for inclusive management of water conflicts. Moreover, DUPC3 aims to invest in developing integrated and viable (adaptive) planning and implementation strategies for sustainable and equitable management and governance of river basins and delta areas, to achieve meaningful and lasting impacts. In this, DUPC3 would like to focus on challenges, trade-offs and contingencies that come with implementing such complex, multifaceted strategies and work towards developing multi-policy approaches.

Textbox 7. Collaboration with IGRAC under DUPC3.

The International Groundwater Resources Assessment Centre (IGRAC) is a UNESCO centre that works under auspices of WMO and is supported by the Government of The Netherlands. IGRAC specialises in regional- and transboundary-level assessment and monitoring of groundwater resources particularly in low- and middle-income countries, with a focus on managed aquifer recharge and groundwater governance.

IHE Delft and IGRAC are both member of the UNESCO water family and as such committed to the agenda of the Intergovernmental Hydrology Programme (IHP) of UNESCO. IHE Delft and IGRAC have expressed their wish to strengthen their collaboration on groundwater-related topics, in particular on groundwater governance, information and knowledge sharing on groundwater sources, and water diplomacy on shared aquifers. To facilitate this collaboration, a consortium agreement will be established between IHE Delft and IGRAC to ensure autonomy as well as accountability of each organization. It is anticipated that IGRAC will participate in the relevant DUPC3 learning networks as well as several groundwater-related projects. IGRAC’s will also receive funding from DUPC3 to carry out activities in line with its mission (see Section 14). Annex 4 provides more details on the proposed activities and outputs of IGRAC in the coming six years as well as the budget reserved for IGRAC.
6. Programme approach and structure

As elaborated in the theory of change, to realise the envisioned transformation to inclusive and sustainable water management practices, collective action is needed. Therefore, working in partnership is considered an essential approach within the DUPC programme. Based on positive experiences in the previous phases of the DUPC programme, it is proposed to establish (or strengthen existing) partnerships of diverse kinds of organizations active in the field of water. These partnerships will carry out activities within DUPC3 projects that are based on actual challenges faced – and expressed – by actors in the targeted low- and/or middle-income countries within one of the thematic areas. The partners are expected to jointly deliver tangible outputs that contribute to achieving the anticipated results of the different components of the programme (see Textbox 8). Preferably these partnerships contribute to several programme components and as such combine research and education as well as capacity strengthening activities to facilitate the dissemination and uptake of research findings. For more details on the kind of envisioned projects, see Section 9.

Textbox 8. Expected results, outputs and targets of DUPC3 and link with DGIS outputs

<table>
<thead>
<tr>
<th>Component: Partnerships and joint learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong>: increased, effective and inclusive collaboration and sharing of water knowledge and expertise between diverse kinds of organizations and individuals in low- and middle-income countries.</td>
</tr>
<tr>
<td><strong>Outputs and targets</strong>: programme network established (target: 1); thematic networks established (target: 3); regional networks established in focus regions (target: 3); various kinds of partners involved and reached (target: 450+); DUPC3 annual conferences organized (target: 5); thematic seminars organized (target: 50+); regional events organized (target: 40+); reports and publications on implementation science for development (target: 30+, see Textbox 9); reports that reflect on SDGs and/or advice on new development goals (target: 5+); amount of co-funding (cash, in-kind) generated for DUPC3 teams (target: 10+ million Euro).</td>
</tr>
</tbody>
</table>

**Contribution of above outputs to programme outputs of DGIS-IGG Water Cluster:**

<table>
<thead>
<tr>
<th>DGIS output</th>
<th>Description</th>
<th>Target (cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy</td>
<td>Increased knowledge and awareness of all stakeholders on the position of vulnerable groups and the environment in water governance</td>
<td>450+ stakeholders</td>
</tr>
<tr>
<td>Cooperation</td>
<td>International bodies organize major international events on water</td>
<td>5+ events</td>
</tr>
</tbody>
</table>

Component: Research and advocacy

**Outcome**: improved and enriched knowledge and insights on water developed, shared and applied that are relevant for organisations and individuals in low- and middle-income countries.

**Outputs and targets**: open-access research publications [e.g. journal publications, conference presentations] (target: 250+); open-source research applications [e.g. databases, software, technologies, protocols, toolkits, strategies] (target: 50+); policy outreach events and/or policy briefs (target: 50+); communication outputs for non-academic audiences (e.g. reports, news items, blogs, podcasts, documentaries) (target: 125+); excellent students in focus regions awarded, trained and received public attention (target: 18+); DUPC3 research activities sustained beyond project duration in low- and middle-...
income countries (target: 10+); research collaborations with other donor programmes through matching funds (target: 10+).

**Contribution of above outputs programme outputs of DGIS-IGG Water Cluster:**

<table>
<thead>
<tr>
<th>DGIS output</th>
<th>Description</th>
<th>Target (cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Data, lessons learnt, knowledge and analytical tools enable timely and transparent decision making on water resources management</td>
<td>250+ publications</td>
</tr>
<tr>
<td>Innovation</td>
<td>Innovative interventions that enhance improved water management with reduced inputs like energy</td>
<td>50+ applications</td>
</tr>
</tbody>
</table>

**Component: Education and training**

*Outcome:* improved and easily accessible high quality education available on water that is relevant for organizations in low- and middle-income countries.

*Outputs and targets:* courses updated with research findings at partner organisations in low- and middle-income countries (target: 50+); courses updated with research findings at IHE Delft (target: 30+); online courses developed and offered (target: 20+); online materials (e.g. recorded lecture series, glossaries, podcasts, documentaries) developed to be used in educational offerings (target: 50+); Open Course Ware courses developed (target: 30+); new GPDPs developed (target: 4+); DUPC3 education activities sustained beyond project duration in low- and middle-income countries (target: 5+); collaborations with other donor programmes on education through matching funds (target: 5+).

**Component: Institutional strengthening**

*Outcome:* increased capacity of partner organizations in low- and middle-income countries so that they are equipped with the skills, knowledge and facilities to effectively participate in joint research and education on water and/or implement promising solutions in their everyday practice.

*Outputs and targets:* early career professionals in low- and middle-income countries that obtained an MSc degree (target: 180+); professionals in low- and middle-income countries trained on water related topics (target: 450+); capacity of river basin organizations involved in transboundary negotiations strengthened on diplomacy (target: 10+); governance and autonomy of existing formal networks on water strengthened (e.g. WaterNet, NBCBN-RE) (target: 2+); alumni seminars organized (target: 30+); organizations supported in strengthening their institutional capacity (e.g. skills for project acquisition, management and/or implementation; upgrading of work facilities) (target: 25+); DUPC3 institutional strengthening activities sustained beyond project duration in low- and middle-income countries (target: 5+); collaborations with other donor programmes on institutional strengthening through matching funds (target: 5+).

**Contribution above outputs to programme outputs of DGIS-IGG Water Cluster**

<table>
<thead>
<tr>
<th>DGIS output</th>
<th>Description</th>
<th>Target (cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>Increased capacity of a wide range of (non-)governmental stakeholders on inclusive and sustainable water management</td>
<td>630+ trained people</td>
</tr>
<tr>
<td>Diplomacy</td>
<td>Transboundary water management organizations and national institutions have increased capacity on transboundary water management</td>
<td>10+ trained organizations</td>
</tr>
</tbody>
</table>

Based on positive evaluations of experiments carried out under DUPC2, we propose to bring these different project-based partnerships together three thematic learning networks centred around the DUPC3 themes described in Section 5. The purpose of this is to avoid fragmentation of knowledge, to stimulate critical reflection on research findings and to facilitate cross-fertilization of approaches, methods and applications. These networks will therefore focus on joint learning from the different projects and bring larger groups of people together who have affinity with and/or expertise on a
similar theme. In this way, DUPC3 aims to foster ‘coalitions of the willing’ who together work towards achieving impacts that contribute to sustainable and equitable transformations within their particular field. To foster this integrated and forward-looking perspective, a joint theory of change will be developed by each thematic learning network on how their projects together aim to achieve this impact. The thematic learning networks will form the main vehicle for joint learning on how to achieve the envisioned impact within their specific theme. For this purpose, the thematic learning networks are expected to organize quarterly (online) gatherings to e.g. formulate and monitor their theory of change; share and discuss different approaches for research, education, capacity building and collaboration; disseminate and discuss (preliminary) research findings; exchange learning experiences; and identify opportunities for further collaboration. The thematic learning networks will also organize several events (e.g. seminars, special sessions during conferences) to share new knowledge with external audiences.

Also, at programme level a learning network will be established, which focuses on understanding how programmes like DUPC can more effectively contribute to lasting transformations to inclusive and sustainable futures. This learning network will work on the basis of the theory of change formulated at programme level and will document and monitor the impact of the programme as a whole (see also Section 11). In particular this learning network will pay attention to more process-oriented issues related to guiding, monitoring and achieving meaningful transformations in society. These efforts are geared towards critical and contextual analysis of possible, promising pathways towards transformations by focusing on different aspects of – what some refer to as – implementation science for development. Textbox 9 gives an overview of the different issues that are anticipated to be addressed at programme level. The findings of these engagements will form an important source of inspiration for defining the future strategies of IHE Delft and partner organizations (see also Section 12).

At programme level, activities will also be organized that will bring the three thematic learning networks together to identify and study the socio-hydrological linkages between different flows of water in society and place water interventions in a broader development context. Among others, DUPC3 will support projects across the different themes and organize activities to stimulate cross-sectoral collaborations. A main vehicle for this will be the annual DUPC3 (online) conference in which knowledge and insights on the thematic areas will be actively brought together and space will be provided to explore and discuss trade-offs and synergies in managing and governing water for different purposes. These thematically integrated activities are considered key in bringing progressive change in how we know, deal and interact with water and identify viable pathways towards the envisioned transformations. The explicit ambition of DUPC3 is to mobilize this collective knowledge to critically reflect on the current water-related SDGs and to actively contribute through advocacy efforts to the formulation of new, progressive and meaningful development goals for 2030 and beyond (see also Textbox 18).

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78 This thematic theories of changes will be informed by and align with the theory of change – including the impact pathway – defined for the programme as a whole (see Section 4). Workshops will be organized to facilitate this process.

79 This conference will be organized annually from 2023 onwards.
Textbox 9. Focus areas of joint learning at programme level to increase programme impact

DUPC3 recognizes that working towards transformations to more inclusive and sustainable futures is a complex and delicate process full of uncertainties, drawbacks and surprises. The proposed DUPC3 impact pathway for the programme is a well-informed hypothesis on how this processes could be guided and potentially achieved, yet remains based on several assumptions and will be affected by various contingencies (see also Section 4). Therefore, DUPC3 aims to explicitly learn more on how programmes like DUPC can achieve impacts that contribute to meaningful and lasting transformations. For this reason – and building further on efforts made under DUPC2 – DUPC3 will invest in studying the following aspects of implementation science for development at programme level:

**Learn to transform:**

- Develop and test promising impact and implementation pathways to stimulate and guide transformations in society (target: 2+ open access research publications; 5+ communication outputs for non-academic audiences).
- Identifying effective and innovative ways to assess, document and communicate achieved impacts at project and programme level (target: 1+ open access research publications; 1+ open-source research applications (e.g. strategy); 5+ communication outputs for non-academic audiences).
- Exploring ways to effectively influence policy making processes based on research insights through advocacy efforts (target: 2+ open access research publications; 5+ communication outputs for non-academic audiences).
- Identifying ways to effectively influence policy making processes based on research insights through advocacy efforts (target: 2+ open access research publications; 5+ communication outputs for non-academic audiences).

**Learn to learn together:**

- Identifying ways to nurture and deal with diversity in partnerships and stimulate reflexivity and joint learning in such diverse teams (target: 1+ open-source research applications (e.g. strategy); 5+ communication outputs for non-academic audiences).
- Exploring possibilities to meaningfully engage with private sector organizations and establish mutual beneficial collaborations with them (target: 1+ open-source research applications (e.g. strategy); 1+ communication outputs for non-academic audiences).
- Exploring methods of reporting and evaluation which stimulate and support joint learning (target: 1+ open-source research applications (e.g. strategy).
- Exploring digital innovations that allow for effective and creative virtual collaborations in water-related development projects (target: 1+ communication outputs for non-academic audiences).

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80 The outputs and targets mentioned in this Textbox are also included in Textbox 8 under the heading “reports and publications on implementation science for development”.

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7. Defining the partnerships and networks

Primary target groups

In line with the objective to strengthen the water sector in low- and middle-income countries, the main target group that DUPC3 aims to reach is a wide range of organizations involved in managing water in these countries (see also Textbox 5). In particular, DUPC3 will focus on water organizations in geographical regions that are prioritized by DGIS (see Section 8). As such, the majority of the partners involved in the DUPC3 learning networks and projects are expected to come from water sector organizations in countries from these regions. Water sector organizations from other low- and middle-income countries can also participate in the activities in case they can contribute to and/or benefit from such participation. These partners will preferably come from other low- and/or middle-income countries and regions with whom IHE has long-standing collaborations, in particular southern Africa, south-east Asia, the small island states and Colombia. For IHE Delft maintaining these collaborations in these regions is important and builds on the conviction that long-term engagements are needed to achieve the envisioned change. Partners from high-income countries – other than IHE Delft – can only participate in the DUPC3 projects in case their added-value can be made explicit. By limiting the involvement of organizations from high-income countries DUPC3 aims to redress geographical inequities in knowledge production and ownership as well as in educational opportunities (see also Textbox 4).

Given the specific expertise of IHE Delft on academic research and post-graduate education, the main focus will be on strengthening the middle- and higher-management of these water sector organizations. Nevertheless, by focusing on collaborative practice-oriented research on actual challenges (see also Section 9) DUPC3 will also engage with – and be relevant for – lower-management, including operators, technicians and field officers. Where possible, collaboration will be sought with organizations and initiatives that focus on vocational training and/or community engagement (e.g. through farmer field schools, cross-visits, participatory mapping).

At the individual level, DUPC3 will encourage especially well-qualified female staff members of the partner organizations to participate in – and benefit from – the activities of the learning networks and the associated DUPC3 projects. In this way DUPC3 aims to redress gender imbalances in the water sector that are still prevalent by supporting their careers and in the longer term contribute to less masculine and more inclusive working cultures within water sector organizations (see Textbox 10). Moreover, supporting women to be prominently involved in and/or lead the research and education of DUPC3 activities (see Section 9) may contribute to invigorating new approaches, insights and solutions needed to achieve the envisioned transformations and/or that might be particularly focus on addressing the challenges that women face in relation to water. In addition, DUPC3 will encourage the participation of well-qualified individuals from marginalized groups in the low- and middle-income countries to participate in and benefit from DUPC3 activities. These may include people who are marginalized or discriminated based on their race, ethnicity, religion, class, caste, sexual orientation, (dis)ability and/or other forms of social differentiation. Also their involvement is aimed at redressing structural inequities in society through affirmative action as well as with the hope that this will contribute to developing knowledge on water that is particular relevant for addressing their specific needs (see also Textbox 4). Moreover, special attention will be given to include and protect researcher-at-risk, which are scientists who as result of political marginalization in their home countries are constraint in carrying out independent, critical research on controversial water related topics.

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81 DUPC3 however recognizes that identifying these individuals might be sensitive and complicated and therefore will implement this aspiration only if feasible and beneficial for the intended target group.
Textbox 10. Defining DUPC3 as gender equality action.

The Development Assistance Committee of the OECD has defined gender equality policy markers to qualitatively track the financial flows in development aid that target gender equality and women’s rights. A programmes can be marked as principal when gender equality is the main objective and fundamental in the design and expected outcomes. When gender equality is deliberately mainstreamed in a programme but not the principal reason for undertaking the programme, the programme can be marked as significant.

Based on a self-assessment of this DUPC3 proposal, the programme could be marked as significant in contributing to gender equality and women’s right as the premises of the programme builds on a water-related (intersectional) gender analysis (see Textbox 4) that has informed the objectives and the set-up of the programme. By foregrounding questions of equity - in particular in relation to women’s needs and rights - as a central element in the DUPC3 research and education, gender is mainstreamed throughout the programme. Moreover, DUPC3 explicitly aims to support the careers of women and stimulate inclusive, safe working cultures in the water sector. Indicators and targets have been defined to monitor the progress of the programme in relation to these objectives (see Annex 8). Based on the outputs of the programme, DUPC3 also aims to critically reflect from a water perspective on the SDGs - including SDG5 on gender equality – and through advocacy efforts actively contribute to the formulation of new development goals (see also Section 12).

DUPC3 will also actively invest in given opportunities to early-career scientists and young professionals active in the water sector. Specific activities will be organized for these junior staff members of partner organizations to strengthen their capacities and their career will be supported by providing opportunities for leading DUPC3 activities (see also Sections 9 and 10). Another important target groups for DUPC3 are IHE alumni. They will be invited to participate in the learning networks and will be involved in other DUPC3 activities in various ways and capacities (see Textbox 11). Also, colleagues from partner organizations – including IHE Delft – who are not directly involved in DUPC3 funded projects will be encouraged to join several events organized by the learning networks and as such participate in learning processes. In this way, DUPC3 aims to deliberately stimulate the development of genuine learning organizations and as such strengthen capacity from within.

Textbox 11. Involvement of IHE alumni in DUPC3.

Special attention will be paid to involving IHE alumni in the DUPC3 activities and as such support the IHE Alumni Agenda. In the past six decades IHE Delft has built up a large alumni community in Africa, the Middle East, Latin America, and Asia. These alumni are often in key positions and as such have detailed insights in the water challenges of their countries and/or regions. Their involvement could therefore provide more comprehensive perspectives on water issues and they can play an important role in achieving lasting impacts in their home countries as ‘agents of change’. The IHE Delft alumni network will – among others - be mobilized to identify water-related challenges and priorities in their home countries, assess DUPC3 project proposals, facilitate networking, collaborate in DUPC3 projects, and to evaluate project outputs, in particular courses and trainings (including tracer surveys). IHE alumni will be actively encouraged to participate in (public) events of the (regional) learning networks to foster collaboration, nurture an active alumni community and support the life-long learning of IHE alumni (see also Section 10).

Collaborating partners

To stimulate joint learning on impact-oriented programmes like DUPC and to create an international platform for advocacy to stimulate the envisioned transformations, it is pertinent to nurture an active learning network at programme level that engages key players in the water sector. To start with, DGIS and the Dutch Embassies in the countries in which DUPC3 will be invited to participate in the activities

82 OECD (2016).
of this learning network. Moreover, DUPC3 will seek regular interaction with DGIS and/or Embassies to share (proactively and on request) approaches, activities, insights and results of DUPC3, seek their support in advocacy efforts and stimulate joint learning through deliberations. Also, officials of relevant government agencies in the countries that DUPC3 will be invited to participate in the learning networks at programme level. Their involvement is considered crucial for endorsement of promising approaches and solutions developed with support of DUPC3, play a key role in scaling-up developments beyond the DUPC3 programme, and more generally create an enabling environment for the envisioned transformations.

In addition, DUPC3 aims to actively involve strategic partners in the learning networks, in particular UNESCO – and its large network of National Committees, Water Centres and Water Chairs – as well as partners such as Oxfam Novib, WWF, VEI International, UNEP, UNICEF, GWP, GWOPA, FAO, IPCC, Nuffic, regional development banks, Surf International and various Dutch universities. Learning jointly with them, building on their existing systems, networks and initiatives, and collaborating in advocacy efforts will allow DUPC3 to reach a broader and more sustainable impact. DUPC3 will also explore new collaborations with partners and alliances that would benefit to the programme.

DUPC3 will also strive for synergies and collaboration with other DGIS funded programmes (e.g. WaterWorX, Blue Green and Inclusive Programme, Blue Deal, Water Peace and Security) and other (donor) programmes (e.g. NWO, EC Framework programmes, EC Green Deal programme, Bill and Melinda Gates Foundation, NORFACE-Belmont Forum, Nuffic-OKP). DUPC3 will especially aim to focus on relevant activities and urgent issues that are not - or to a lesser extent - supported by these other programmes to increase the added-value of DUPC3. Moreover, DUPC3 will attempt to align its activities to complementary programmes, for instance WaterWorX and Blue Deal that focus – among others – more on vocational training of technical staff of water utilities and river basin organizations. Through these mutual beneficial collaborations DUPC3 aims to increase the overall impact of the programme by fostering equitable and sustainable development. Of particular note here is the ambition of DUPC3 to collaborate with the Capacity Development Initiative under the UN-Water Global Acceleration Framework (GAF). This demand-driven initiative is co-led by UNESCO and UN DESA and aims – like DUPC3 – to support countries to strengthen the capacities of their water sector. Besides supporting the objectives of this initiative, being involved will also allow IHE Delft and DUPC3 partner organizations to get connected to high-level officials of UN agencies, which will facilitate advocacy efforts, particularly in relation to the influencing the formulation of the new (water-related) sustainable development goals (see also Section 12).

Proposed DUPC3 learning networks

DUPC3 aims to bring these different partners together in various – yet connected – learning networks to facilitate joint learning and knowledge sharing. Figure 4 shows a sketch of the different kinds of learning networks that DUPC3 aims to nurture. It is expected to at least establish and support one learning network at programme level, three thematic learning networks, and three regional networks in the DUPC3 focus regions. Other (sub)networks are expected to develop organically depending on the linkages in terms of content and approaches of the specific projects, which will to large extent be identified based on calls for proposals. Among others, DUPC3 anticipates sub-networks on topics like groundwater (in collaboration with IGRAC), water diplomacy, urban water management, implementation science for development, and on innovation in education.

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83 We are aware of the time constraints of staff members working at the Ministry and Embassies that might limit the possibilities for interaction and participation. Depending on staff availability and synergies in planned activities, these interactions can be more or less extensive.
Ways of nurturing diversity in collaboration

Structuring the programme around partnerships between different organizations – both within DUPC3 projects as well as in the learning networks – comes with the responsibility to guide these collaborations. The partnerships are meant to be supportive to the impacts the learning networks and project teams aim to achieve. Therefore, the partnerships need to be based on complementarity and mutual trust and respect among partners to create safe spaces for reflexivity by sharing progress as well as setbacks and constraints. Based on initial research done on impact strategies as part of DUPC2, we believe that only through such genuine processes of caring engagements, meaningful and lasting impacts can be achieved. Nevertheless, DUPC3 recognizes that this is not necessarily easy or self-evident, especially as hierarchies in science as well as in everyday practice have historically materialized, shaping the relations among those involved in DUPC3. Therefore, to facilitate such collaborations, DUPC3 has identified basic principles for collaboration meant to guide the interactions in the learning networks and project teams in order to create inclusive and conducive working cultures (see Textbox 12).

DUPC3 recognizes that diversity, and therewith often plurality in perspectives and wisdoms, is often useful to address multifaceted water-related problems in socially inclusive and sustainable ways. Therefore, in line with the partnerships established under DUPC2, the partners participating in the DUPC3 projects and thematic learning networks are as diverse as possible in terms of type of organizations (see also Textbox 5). Moreover, the partnerships need to include scientists from different disciplinary backgrounds to ensure multi- and interdisciplinary approaches and insights, with an emphasis of bringing knowledge together from engineering, natural sciences and social sciences. We do however also recognize that for some – often more political or social sensitive – topics it is sometimes more effective to work with likeminded and/or more familiar partners. In these cases, sub-networks can be created to work on specific projects as long as these partners have a sound strategy to share their findings and outputs with the larger networks, and beyond.


To increase the chances of achieving the envisioned impacts and contribute to wider transformations, DUPC3 encourages empathy and reflexivity by stipulating the following principles to guide the collaboration within DUPC3 partnerships and create inclusive and conducive working cultures:

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84 See Hermans et al. (2021).
Partnerships have a broad problem-orientation and aspire to help solve problems as experienced by those that they collaborate or otherwise engage with.

Partnerships adopt a practice-based approach, implying that their research and activities are empirically anchored in the actions and doings of water actors.

Partnerships actively encourage and nurture diversity by creating safe spaces for collaboration based on mutual trust and respect and by appreciating different ways of knowing – e.g. defining, interpreting, assessing, valuing and evaluating – water.

Partnerships adopt a transdisciplinary process by actively engaging non-academic actors and in this way contribute to pluralizing water sciences by engaging with different water wisdoms, experiences and perspectives.

Partnerships actively embrace inter-and multidisciplinary processes, methods and approaches, particularly encouraging collaborations and cross-fertilizations between social sciences, natural sciences and engineering.

Partnerships encourage active involvement of scholars from low- and middle-income countries and give space to their ideas, perspectives and approaches as well as stimulate their ownership of project outputs to actively contribute to the decolonization of (water) science.

Partnerships remain critical, which means that they explicitly interrogate existing societal orders and processes of change or development in terms of their equity, sustainability, inclusivity and peacefulness.
8. DUPC3 focus regions

In line with the geographical focus of DGIS, DUPC3 will mainly concentrate its activities in three focus regions, namely the Middle-East, the Sahel and the Horn of Africa (see Textbox 13). These regions are considered politically less stable as results of vicious circles between historical inequities, structural poverty and degradation of natural resources, often worsened by climate change and potentially creating breeding ground for terrorism. These dynamics often also affect the possibilities for people and organizations to address and collaborate on – often highly political – water-related issues. Yet, it is well documented that collaborations over water could bring people and nations together and therefore contribute to prosperity of geographical regions. The larger DUPC3 projects that will be initiated therefore need to have an explicit focus on and/or added value for socially inclusive, sustainable and practically viable water developments in these regions. Political instability often also affects education programmes at universities and migration might cause brain-drain. Therefore, special attention will be given to train water sector professionals in these countries and strengthen the institutional capacity of organizations involved in managing and governing water.

Textbox 13 indicates past efforts in DUPC in these regions and the kind of projects we – among others – anticipate to support under DUPC3 based on initial topics emerging in these regions within the DUPC3 thematic areas. These initial topics are identified on the basis of ongoing DUPC2 activities in these regions as well as consultations with the DUPC2 regional committee members and other key-informants. At the start of DUPC3, more elaborate assessments will be made of the specific water-related challenges in each of the focus regions, including mapping (anticipated changes in) water-related regional and/or national strategies, policies and programmes as well as exploring more in-depth linkages with the multi-year country strategies of the Dutch Embassies in these regions (for an overview of these strategies, see Annex 5). Potentially DUPC3 might also identify ‘hotspots’ (e.g. specific river basins, deltas or cities that experience urgent and multifaceted water challenges) in these regions in which it will concentrate part of its efforts in an interdisciplinary manner and/or set-up longer-term ‘living labs’ in specific locations to get in-depth insights in water-related trends and developments. This approach is considered a promising way to achieve concrete impacts on the ground and to put research and innovation to the service of the (water) needs and demands of local communities.

The instability in these regions also potentially affects the capacity to implement project activities and sometimes hampers the possibilities for (regional or national) collaboration. We therefore aim to connect organizations in these focus regions with partners in other countries and regions – through the different learning networks (see Section 6) – so that collaborations can be enhanced and capacities can be strengthened. With this DUPC3 recognizes that, depending on the situation, sometimes collaboration at national or regional level is so political sensitive that involvement of organizations from other countries and/or regions can smoothen the interactions and/or legitimize the collaboration. In these collaborations, particular attention will be given to establishing conducive relations between water sector professionals from neighbouring countries – even if beyond the

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85 See among others Wolf (1999) and Sehring and Diebold (2012).
86 Among the key-informants are staff members of IHE Delft, selected partner organizations and DGIS.
87 These assessments will be done through a survey among partner organizations and alumni in the targeted countries and where needed complemented with desk-studies of available documents and publications.
88 It goes without saying that safety of staff members of IHE Delft and partner organizations is our first priority at all times. DUPC3 will therefore follow the travel advice of the Dutch Ministry of Foreign Affairs to determine whether people can travel to specific areas to carry out DUPC3 activities. Moreover, working in conflict areas also requires additional attention for research ethics, so DUPC3 will also invest in developing guidelines and training staff members on this (see also Textbox 17).
priority countries or regions — and countries with whom IHE Delft has longstanding relations (see Section 7).

Textbox 13. Proposed approaches and activities in each DUPC3 focus region.

**Middle-East (priority countries: Egypt, Iraq, Jordan, Palestine, Yemen)**
In this region DUPC2 mainly focused on joint research and education related to water for food (e.g. water productivity, climate-change proof agro-ecosystem approaches), water and health (e.g. WASH in emergency situations, desalination, reuse of water) and river basins and deltas (e.g. water accounting, water diplomacy, drought management). In addition, an institutional strengthening programme is implemented in which 100+ persons from the region will be trained (MENA). For DUPC3 we anticipate projects in the same themes yet we aim to focus more explicitly on equity and environmental sustainability as well as diversifying the collaborations. Even though capacity strengthening activities might still be required, we aim to shift the focus more towards joint research and education. DUPC3 also aims to collaborate in this region with local initiatives like the WE4F hub.

**Horn of Africa (priority countries: Ethiopia, Kenya, Somali, South Sudan, Sudan, Uganda)**
IHE has a long tradition of working in the Nile riparian countries in this region. As such DUPC2 supported several projects and activities in these countries in particularly to foster regional collaboration over water (e.g. NBCBN-RE). In addition, DUPC2 invested in Sudan to support the transition government to address water related challenges through joint research and institutional strengthening. For DUPC3 we suggest to mainly focus on the themes of water for food (e.g. water productivity, climate-change proofing of smallholder farming, agro-ecosystem approaches) and river basins and deltas (e.g. water diplomacy, water accounting, drought and flood management, wetlands management). We also aim to invest in building networks and strengthening organizations in countries in this region in which IHE Delft has not yet worked intensively, in particular Somali and South Sudan.

**Sahel (initial priority countries: Burkina Faso, Mali, Niger, Nigeria)**
This region was not a specific focus region under DUPC2, yet since 2021 initial activities have been started up to explore possible collaborations. IHE Delft does not have extensive network of partners in this region and language barriers potentially challenge the collaboration. For these reasons the initial focus of DUPC3 would be on establishing partnerships in the region and identifying priority areas for joint research and education. The initial idea is to mainly focus on water security in particular for agriculture (e.g. water productivity, nature-based solutions for climate-change proofing smallholder irrigation) and water and health (e.g. water supply and sanitation in marginalized urban areas, addressing geogenic sources of pollution). Potentially DUPC3 will also engage with (transboundary) river basins to strengthen cooperation, including on drought and flood management. In addition, DUPC3 will focus on strengthening capacities in this region by offering a tailor-made educational programme on water (possibly in French) for staff members of relevant water sector organizations.
Table 2 gives an overview of the types of projects we aim to initiate under DUPC3 including indications for the budget, duration, the kind of activities and the number of partners that are expected to be involved.

Table 2. Types of DUPC3 projects.

<table>
<thead>
<tr>
<th>Type of project</th>
<th>Budget</th>
<th>Duration</th>
<th>Activities</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-scale projects</td>
<td>1 to 1.5 million euro</td>
<td>3 – 5 years</td>
<td>Combination of research, education and/or institutional strengthening activities</td>
<td>6 - 12</td>
</tr>
<tr>
<td>Medium-scale projects</td>
<td>80 to 200 keuro</td>
<td>1 – 2 years</td>
<td>Single or combined activities (research, education, institutional strengthening)</td>
<td>2 - 6</td>
</tr>
<tr>
<td>Small-scale projects</td>
<td>20 to 80 keuro</td>
<td>0.5 – 1.5 year</td>
<td>Single activities (research, education)</td>
<td>1 - 3</td>
</tr>
</tbody>
</table>

The large-scale projects will focus on a particular topic within one of the DUPC3 thematic areas and combine research with education and/or capacity strengthening activities. In this way research findings can be easier incorporated in new and meaningful education and the capacity of partners and other organizations can be strengthened where needed to effectively participate in the project activities as well as implement promising solutions that identified by the research. Typically, these larger projects include the following elements:

- Empirical-based interdisciplinary research done preferably by (female) early-career researchers under the guidance of senior scientists and in close collaborations with the other partners (e.g. government agencies, private companies, NGOs, CSOs) that aim to solve concrete and context-specific water challenges. The research activities may produce a wide variety of outputs, including scientific publications, software, databases, policy guidelines, protocols, and technologies.
- Joint development of (online, open) educational products (e.g. trainings, courses, webinars, GPDP, multi-media materials) based on the research findings that will be offered by different partners and/or embedded in existing programmes.
- Activities to actively disseminate research findings within and beyond their own learning network(s), including sharing insights with other potential beneficiaries (e.g. operational management units, private sector organizations, NGOs, communities) as well as (regional) policy outreach and advocacy activities, to increase the envisioned impact of the projects.
- If deemed necessary, the training of staff members of partners and other organizations on specific topics, approaches or skills to effectively participate in the project activities and/or to implement promising solutions. This may include clusters of students from targeted organizations in the focus regions who enrol in (partly tailor-made) Master or GPDP programmes to strengthen the regional capacity and nurture an alumni network. It

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89 DUPC3 will in principle not support highly disciplinary and/or theoretical research. Analytical studies can be included if they inform the identification, design and/or assessment of tangible research outputs within the scope of the project that can be taken up or implemented by organizations that face specific water-related challenges (see also Textbox 12).
90 This may include supporting the research phase of MSc and PhD students from low- and middle-income countries, with a strong preference for (female) candidates from the DUPC3 focus regions.
91 Graduate Professional Diploma Programme.
92 The language to be used will depend on the audience and where useful project teams may consider multilingual communication products.
93 Similar to the DUPC2 SIDS and MENA programmes, in which young professionals enrol in existing MSc (or potentially also GPDP) programmes with additional educational activities to strengthen knowledge and skills and collaborate on (MSc
potentially also includes limited investments in equipment, facilities\textsuperscript{95} and/or managerial support to partner organizations needed to effectively participate in the projects and learning networks.

These larger scale projects will primarily be identified based on competitive calls for proposals (see Textbox 14) and based on evaluations of (external) reviewers, a process that is led by the DUPC committee (see Section 13 for more details). In exceptional cases, where it is obvious that only a few partners have the expertise to carry out specific projects, these partners will be asked to jointly develop a proposal. These proposals will be evaluated by the DUPC3 management team on the same criteria used for the competitive proposals and proposed to the DUPC committee for approval.

**Textbox 14. DUPC3 Calls for proposals.**

Based on positive experiences in DUPC2, calls for proposals will be launched to identify promising high-quality projects that fit within the scope and the philosophy of DUPC3. These calls will allow DUPC3 to select the most exciting project ideas and giving the opportunities to the most energetic partnerships. In order to steer the directions of the programme and allow to respond to new developments, several rounds of calls for proposals will be launched throughout the duration of the programme for the various the type of projects within each of the DUPC3 thematic areas (see also Annex 6).

The calls for proposal will have clear criteria to assess the incoming proposal. These criteria may vary per call and might change over time, yet will aim to capture the unique elements of the DUPC3 programme, in particular:

- Carrying out impact-oriented, interdisciplinary, empirical research that foregrounds questions of equity and ecological sustainability within (or across) the DUPC3 themes.
- Combing research with high-quality open education and relevant and effective capacity strengthening activities.
- Focusing on concrete and context-specific water-related challenges that are relevant for the DUPC3 focus regions.
- Collaborating in promising partnerships of diverse partners that embrace genuinely inclusive ways of engagement with emphasis on joint learning and critical reflection.

Even though competition can be good to stimulate excellency, DUPC3 emphasizes the merit of collaboration and collective efforts in research and education. DUPC3 will therefore also invest in networking and bringing partners together on themes and in regions and initiate activities to foster collaboration among colleagues. Moreover, calls for proposals might lead to over-ambitious project proposals, so in assessing project proposals DUPC3 will carefully consider the feasibility of projects and during the inception phase successful project teams will be guided in developing realistic project plans.

Project teams need to demonstrate in their proposal that their project addresses actual challenges faced – and expressed – by actors in the targeted low- and/or middle-income countries and that these actors are as much as possible involved in the project activities (e.g. through action-oriented research, living labs, participatory methods) and become (co-)owners of the project deliverables. Moreover, they need to show how their projects have added value for, build further on, or engage with other development initiatives funded by DGIS – in particular DUPC2 – or other donor programmes. Project teams will also need to provide co-funding (cash or in-kind) for the activities they intend to implement. Preference will be given to project proposals led by organizations from low- and/or middle-income countries, particularly from the DUPC3 focus regions. However, these larger projects require extensive

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\textsuperscript{95} Facilities to carry out research (e.g. laboratory consumables, equipment) and education (e.g. lecture equipment, technologies and materials) as well as to manage these projects (e.g. software, internet connectivity).
project management capacity and therefore might be challenging to lead for partners in low- and middle-income countries.

Successful project teams of large-scale projects will enter in an inception phase of two months in which they have time to establish rapport, respond to feedback from the review process and to further detail the planned activities to ensure the project is realistic and viable. Towards the end of the project duration, top-up funding is available for project teams and/or learning networks that are specifically successful in making meaningful impact. This may include project teams who have a proof of concept of approaches or technologies that they aim to further demonstrate and explore the marketability, but might also include small amounts of co-funding for project teams that have secured funding elsewhere to sustain the activities and collaborations beyond the project duration.

The DUPC3 medium-scale projects will differ in focus and objectives, but are typically considered needed to support the overall DUPC3 objectives and/or support the implementation of the larger projects. Among others, they may include:

- Partnership projects that either combine research and education or focus a single activity. In terms of content these projects may focus on the thematic areas defined for DUPC3 or address new, emerging issues.
- Projects that are continuations of successful partnership projects initiated and/or networks supported during DUPC2. Among others, we anticipate to further support the WaterNet network in Southern Africa and the NBCBN-RE network in the Nile basin to help them strengthening their governance and (financial) sustainability. Moreover, DUPC3 will explore opportunities to further support and strengthen water youth networks and possibly other relevant networks that focus on water. Annex 7 gives an initial overview of the DUPC2 projects and activities that DUPC3 considers to continue to support.
- Projects that focus on implementation science for development and aim at increasing the impact of the DUPC3 programmes as a whole (see Textbox 9 for suggested issues and topics) and/or engage with and reflect on the SDGs and new to be formulated development goals.
- Projects that focus on innovation in education (e.g. novel educational approaches for open/online education, development and training on new didactical approaches).

The medium-scale projects will be identified based on calls for proposals, yet we also anticipate projects that are initiated based on requests from partners and/or DGIS as well as on initiative of the DUPC3 committee or DUPC3 management team. For the partnership research and/or education medium-scale projects, strong preference will be given to projects that focus on collaborations specifically between organizations in low- and middle-income countries and/or projects led by organizations from these countries (see also Section 14). The role of IHE Delft will be limited in these projects. As much as possible the medium-scale projects and collaborations will be linked to, and participate in, the relevant learning networks.

DUPC3 also aims to launch calls for proposals for small-scale projects that focus on a single activity and are led by – preferably female – early career scientists from low- and middle-income countries.

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96 DGIS has communicated to IHE Delft that the DGIS funding for the next phase of WaterNet will be channelled through DUPC3. DGIS, WaterNet and IHE Delft need to discuss and define in more detail which outputs and targets are expected from WaterNet as well as the budget allocated to WaterNet to carry out the activities. During the start-up of the DUPC3 programme IHE Delft and WaterNet need to establish a consortium agreement that ensures the autonomy as well as the accountability of both organizations.

97 Under DUPC2 these kinds of projects were referred to as South-South research collaboration projects. However, since a considerable part of the DUPC focus countries are not located in the southern hemisphere we prefer to refer to projects among partners from low- and/or middle-income countries (see also Footnote 1).

98 Specific criteria will be defined for this category of scientists related among other to their age, current position and year of graduation (MSC and/or PhD degree). Besides gender, where possible, priority will be given to applicants from marginalized groups in the societies of these countries (e.g. based on race, ethnicity, class, caste). See also Textbox 4 and footnote 81.
These research or education projects are meant to strengthen the capacity of the individuals involved and advance their career opportunities.

Table 3 gives an overview of the estimated number of projects that are expected to be imitated with support of DUPC3 (see also Annex 8). The actual numbers might vary depending on the response on the various calls for proposals. The activities marked with an asterisk (*) are anticipated to be largely led and implemented by organizations from low- and/or middle-income countries (see also Section 14).

Table 3. Expected number of projects to be initiated under DUPC3.

<table>
<thead>
<tr>
<th>Type of project</th>
<th>Kind of activities</th>
<th>Number of projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-scale projects</td>
<td>Combined</td>
<td>16+</td>
</tr>
<tr>
<td>Medium-scale projects</td>
<td>Research and/or education*</td>
<td>28+</td>
</tr>
<tr>
<td></td>
<td>Research on emerging themes</td>
<td>6+</td>
</tr>
<tr>
<td></td>
<td>Impact and implementation science</td>
<td>8+</td>
</tr>
<tr>
<td></td>
<td>Innovation of education</td>
<td>10+</td>
</tr>
<tr>
<td></td>
<td>Support to existing networks</td>
<td>2+</td>
</tr>
<tr>
<td>Small-scale projects</td>
<td>Research*</td>
<td>25+</td>
</tr>
<tr>
<td></td>
<td>Education*</td>
<td>15+</td>
</tr>
<tr>
<td><strong>Total number of DUPC3-led projects</strong> (^{99})</td>
<td></td>
<td><strong>110+</strong></td>
</tr>
<tr>
<td>Other projects</td>
<td>Spin-off projects</td>
<td>20+</td>
</tr>
<tr>
<td></td>
<td>Matching fund projects</td>
<td>20+</td>
</tr>
<tr>
<td><strong>Total number of projects related to DUPC3</strong></td>
<td></td>
<td><strong>150+</strong></td>
</tr>
</tbody>
</table>

\(^{99}\) As comparison, DUPC2 has currently 90+ partnership projects (see Section 2) in addition to several other individual projects and activities.
At programme level activities will be carried out that aim to support the project teams and learning networks, both on content as well as in terms of process. In particular, attention will be paid to guiding the projects and networks in nurturing and dealing with diversity in their partnership and encouraging reflexivity (see also Textbox 12) as well as developing methods for achieving, documenting and communicating meaningful societal impact (see also Textbox 9). Moreover, thematic and regional learning networks will receive practical support in organizing the joint activities of their networks, including planning of the quarterly seminars and communicating outcomes and achievements to broader audiences. Where needed, project teams and learning networks will also be assisted in facilitating online collaboration (e.g. investments in effective communication and online education platforms, collaborative virtual working spaces, access to high performance computing facilities, ICT support, improve digital infrastructure of partner organizations).

The annual (online) DUPC3 conference will also be organized at programme level. This important event will bring all project teams and learning networks together and as such is considered a main platform to present and discuss progress, approaches and insights across the different thematic fields. Moreover, this interactive conference will focus each year on a common challenge that DUPC3 projects encounter in aiming to achieve meaningful and lasting impact and working towards more equitable and sustainable futures. Textbox 9 gives a list of anticipated implementation issues that potentially might be deliberated during the DUPC3 annual conference. By exchanging experiences and approaches between the networks as well as inviting key experts to update the conference participants on the latest insights, DUPC3 aims to further increase the overall impact of the programme. In 2025 DUPC3 annual conference will be organized in combination with the 7th International Capacity Development symposium that is organized by IHE Delft and partners every five years. This will allow for an even broader audience to reflect on the findings and impacts of the DUPC3 programme and stimulate discussions on inclusive and innovative ways of strengthening capacities in the field of water. DUPC3 also aims to contribute to the 2023 UN Water summit, which is considered a key event to reflect on the water-related SDGs and define future actions needed and is co-organised by the governments of Tajikistan and The Netherlands.

Education is the main vehicle through which IHE Delft share knowledge on water and strengthens capacities in low- and middle-income countries. Innovation in education and continuous learning are considered important instruments to facilitate this process. As such – and based on DUPC2 efforts – activities to support the development and implementation of novel educational approaches and programmes will be included in DUPC3 and support will be given to the implementation and further development of the education strategies of IHE Delft and partner organizations. Quality, relevance and accessibility (through open education) will form the main pillars of DUPC3 educational products. For this purpose, DUPC3 will closely collaborate with the IHE programme committees, the Education Bureau and the online learning group – and similar bodies at partner organizations – to ensure that educational activities carried out by the learning networks are supported, quality assurance is upheld, and as much as possible embedded in existing educational programmes. In particular, DUPC3 aims to capture and further develop the new, creative methods for online and blended forms of education from the rich experience IHE Delft and partner organizations obtained during the lockdown measures in response to the COVID-19 pandemic. For instance, augmented reality will be explored to develop virtual games and virtual lab trainings to support online education and also virtual field visits might aid the learning experience of students. Moreover, DUPC3 will support – and learn from the experience with – the implementation of the new Masters programmes of IHE Delft that will be offered from mid-2022 onward. These programmes offer students the possibility to tailor the education that they follow to their personal learning goals in terms of the water-related knowledge and skills they wish to acquire in combination with exposing students to interdisciplinary approaches.
and perspectives. In addition, these new programmes focus on developing transferable skills, such as integral awareness, intellectual openness, critical thinking, self-regulated learning, and inclusive collaboration in diverse teams.

To further support the water careers of IHE alumni and to strengthen the capacity of the organizations they work for, DUPC3 will further develop the life-long learning initiative that started under DUPC2. This initiative focuses on positioning the IHE alumni as agents of change and equip them with the knowledge, skills and networks to initiate and lead the envisioned transformations in water management practices. Among others, DUPC3 will support and collaborate with the IHE Delft alumni associations in the various countries and regions to nurture an active alumni community and strengthen the relations. Moreover, DUPC3 aims to continue and further improve the (certified) life-long learning programme consisting of a number of (online, regional) workshops on DUPC3 thematic areas as well as more general skills trainings (e.g. proposal writing, project management, science communication, inclusive leadership, facilitating institutional change, entrepreneurship). The content of these courses will – among others – be identified through training needs assessments among alumni. Partner organizations will also be offered to participate in (some of) these skills development trainings in addition to courses on didactics skills (e.g. online teaching, curriculum development, university teaching qualification, research ethics)\textsuperscript{100}. In addition, DUPC3 aims to launch student competitions for students from low- and middle-income countries – in particular from the DUPC3 focus regions – to stimulate excellence in MSc research and support the career of post-graduate students through additional training, supporting start-ups and by receiving international public attention\textsuperscript{101}.

To anticipate new developments and to keep a longer-term perspective, budget will be reserved at programme level to fund activities on new, emerging themes and topics, including on request of DGIS and Dutch Embassies. DGIS already indicated that with these funds they would like DUPC3 to continue to support the institutional capacity building programme for small island states (DUPC2 SIDS programme). Moreover, budget will be available as matching funds for initiatives funded elsewhere\textsuperscript{102} that align with the objectives of DUPC3 and as such have the potential to maximize the added value of DUPC3 (e.g. co-funding of EC, UNESCO-IHP or other projects and programmes). This budget will be allocated in close consultation with IHE Delft’s liaison office and rectorate. With this we aim to increase the overall impact of development aid and collaborate with other donor organizations who share similar ambitions. Attention will also be paid to develop business opportunities, to stimulate and support project teams and partners to implement and/or scale-up innovations through start-ups or other spin-off activities.

Communicating programme and project findings, outputs and applications to a broader audience is key to the success of DUPC3. To facilitate this DUPC3 will develop a comprehensive communication strategy and invest in innovative methods for science communication to ensure our messages reach different audiences. Special attention will be given to disseminating programme outcomes to relevant policy-makers – both at national and international level – as well as potential beneficiaries of the programme such as water utilities, river basin organizations and/or grassroots organizations. Among others, DUPC3 will further enrich the interactive website, will collaborate with The Water Channel to organize public seminars, and will make use of multi- and social media (e.g. documentaries, blogs, podcasts, tweets) to share outputs and actively communicate programme activities, achievements and impacts. Where relevant, these communication products will be multilingual. Moreover, all DUPC3 products (e.g. journal publications, educational materials, digital applications) will be (made) available to society through open access and/or open source. In addition, DUPC3 will explore

\textsuperscript{100}Some of these trainings might also be relevant for, and will therefore be offered to, IHE staff members, in particular those on inclusive leadership, (science) communication, research ethics and online teaching.

\textsuperscript{101}Similar to the Middle-East student competition led by the American University in Beirut as part of DUPC2.

\textsuperscript{102}In case this funding comes from Dutch government agencies extra caution will be paid to ensure these matching funds are used for different, clearly defined activities and/or outputs.
collaboration with initiatives of various (Dutch) universities to facilitate open science and data repository (e.g. 4TU.ResearchData) as well as with UNESCO as part of their efforts in relation to the citizen’s science global partnership.\(^{103}\)

In all its activities DUPC3 will consider its carbon footprint and reduce the negative environmental implications by greening the DUPC3 activities as much as possible (see Textbox 15).

**Textbox 15. Greening the DUPC3 activities.**

The Dutch government has committed itself to a reduction of greenhouse gas emissions by at least 40% by 2030 compared to 1990 and EC has recently raised the ambition for the Europe to reduce the emission with 55% by 2030.\(^{104}\). In the same line, IHE Delft is committed to contribute to mitigate climate change and has set-up an internal task force on greening the IHE activities. This group has already taken action by reducing the energy footprint of the student houses, introducing coffee mugs, reducing and sorting of waste, joining the World Meat-Free Week, and raising awareness on the impacts of flying among staff and students and encouraging other transport options. The task-force is currently developing a more elaborate strategy, including compensation of carbon footprint of flights.

The COVID-19 pandemic has caused many challenges for IHE Delft and its partners and forced us to make major adjustments of our operations. Yet, it has offered a great opportunity to experience and experiment with how we can work differently. Among others, it has taught us that we can continue working well together with our partners even if we cannot meet regularly face-to-face, that we can organize excellent and well-attended virtual conferences and events, that we can deliver good quality education and trainings online, and that we can conduct fieldwork remotely. We also noticed that virtual collaborations – even though access to internet is not evident for everyone – sometimes led to less hierarchal interactions among partners and therefore allowed for more diverse voices to be heard.\(^{105}\)

DUPC2 has been instrumental in supporting the above-mentioned developments and is actively involved in learning from – and trying to maintain - the positive changes triggered by the COVID-19 pandemic. DUPC3 also aims to further contribute to greening the activities of IHE Delft and its partners and among others will focus on:

- Foregrounding ecological sustainability as a central topic within each DUPC3 research theme and with that contribute to the development of approaches and technologies that reduce emissions of greenhouse gases.
- Further supporting the development of online education and trainings, including strengthening the capacity and facilities of our partner organizations in low- and middle-income countries to deliver online education and investing in developing effective didactical approaches for online teaching.
- Stimulating teleconferences and other online alternatives for face-to-face project meetings, conference and other events. Among others, this will include increasing the connectivity from our partners in low- and middle-income countries (e.g. explore possibilities with SURF's international network, small investments in internet access), investing in tools for virtual collaboration (e.g. online collaborative platforms and working space) and actively sharing promising approaches for online collaboration and research.
- Critically assessing incoming project proposals on the above-mentioned items and appraise proposals that have a clear greening strategy for their activities. Proposals that include large numbers of flights will not be approved and in principle DUPC3 will not fund flights within Europe.

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\(^{103}\) See also [http://citizenscienceglobal.org/index.html](http://citizenscienceglobal.org/index.html)

\(^{104}\) See [https://ec.europa.eu/clima/policies/strategies/2030_en](https://ec.europa.eu/clima/policies/strategies/2030_en)

\(^{105}\) DUPC2 surveys among partners on 'DUPC support during corona’ (March and July 2020).
11. Monitoring and evaluation of the programme

Monitoring and evaluation of the DUPC3 programme serves four different – yet closely interrelated – goals, namely:

1. Capturing and documenting the impact of the programme.
2. Stimulating and facilitating joint learning in the programme.
3. Steering the directions of the programme.
4. Fulfilling the formal reporting obligations towards DGIS.

As such, during the start-up of the programme DUPC3 will develop and set-up an extensive yet practical monitoring and evaluation system that addresses these four goals. The theory of change defined for the DUPC3 programme (see Section 4) will form the basis of this system and will be complemented with a condensed logical framework. This logical framework will specify and document the main outputs and activities, to define and measure the targets based on tangible means of verification, and to identify and monitor risks and assumptions (see Annex 8 for a draft of the proposed logical framework). These targets and indicators will be aligned as much as possible with DGIS-IGG water-related results framework indicators. Where possible, the indicators and targets will be defined in quantitative terms, yet – based on experience in DUPC2106 – we propose to also use qualitative methods such as story-telling, diaries and visual methods (e.g. photographs, video-clips). These qualitative methods can capture more rich insights, including also explicitly learning from what did not work and why. As such, DUPC3 aims to strive to ‘count-what-can-be-counted’ and ‘talk’ about the rest through stories of change that capture meaningful outcomes and emerging impacts107. DUPC3 will call in support of partners with expertise with documenting impact and joint learning – e.g. OxfamNovib and DGIS – to further fine-tune the theory of change and assist with further developing the monitoring and evaluation system.

Particular attention will be given to capturing and documenting the overall impact of the programme. This will not be an easy, straightforward task as evaluating the impacts of water-related research on policy and practice is inherently challenging as impacts can take a variety of forms, occur over protracted timeframes, emerge in non-linear ways and often involve subtle and hard-to-track changes108. In an attempt to facilitate the process, DUPC3 has defined various types of impacts that the programme aims to achieve (see Section 4). While conceptual and capacity-oriented impacts are expected to be relatively easy to achieve and monitor within the various DUPC3 projects, capturing the other impacts will be more delicate and more likely to require concerted efforts at programme level. Even though these impacts might require a longer period to become evident, already in the timeframe of the DUPC3 programme we intent to achieve and capture some initial signs of these envisioned impacts. In Textbox 16 an overview is given of possible impact indicators to document these impacts (see also Annex 8). A complicating factor for measuring these impacts is establishing a sensible baseline to use for monitoring progress as the situation differs per place, is constantly changing and is shaped by multiple processes. Potentially the external end evaluation of DUPC2 (see Section 3 and Annex 3) as well as the detailed societal challenges that will be identified for each larger-scale projects might serve as the most appropriate references for this purpose. This issue of defining a baseline for monitoring the DUPC3 impacts will be further explored when the monitoring and evaluation framework will be developed.

106 See Hermans et al. (2021).
107 See also Louder et al. (2021)
108 See among others Louder et al. (2021)
Textbox 16. Capturing the impacts of DUPC3.

*Envisioned longer-term impact of programme:* transformations to socially inclusive and ecological sustainable water management practices.

**Proposed instrumental impact indicators:**
- Equitable and affordable access to water of good quality and/or improved sanitation services for marginalized communities (target: 5+ documented cases).
- Ecological sustainable and climate-resilient agriculture that contributes to securing food production, supporting rural livelihoods and protecting vital ecosystems (target: 5+ documented cases).
- Protection of people and infrastructure in marginalized areas against water-related disasters by reducing the water-related stresses for people and ecosystems (target: 5+ documented cases).
- Decisions made and implemented in river basins and delta areas through inclusive processes that stimulate collaboration over water and reduces conflicts among actors (target: 5+ documented cases).

**Proposed strategic impact indicators:**
- Structural inequities and ecologically unsustainable practices are considered main issues in framing water-related problems within policy networks (target: 5+ documented cases).
- Addressing structural inequities and ecologically unsustainable practices becomes a main focus in the formulation of the new water-related development goals (target: 5+ reports or minutes of meetings).

**Proposed relationship-oriented impact indicators:**
- Collaborative initiatives on water research and/or education that embrace diversity among partners and nurture plurality in understanding of and engaging with water (target: 10+ alliances and networks).

To ensure programme activities are aligned with the overall ambitions of the programme, coherent and interrelated theories of change and logical frameworks will be developed for the thematic learning networks and the large- and medium-scale projects (see Figure 5). These documents will be actively used to guide the activities and monitor and evaluate progress of the different elements of the programme. To facilitate this integrated processes, DUPC3 will explore online tools and formats that allow for efficient, effective and collaborative efforts for monitoring impact and progress at the various levels of the programme. Obviously, the requirements for – and timing of – reporting set by DGIS (including IATI) will be taken fully into account in this process. In addition, DUPC3 aims to publish summaries of the progress report with main findings and results that is appealing and informative for government agencies, water sector organizations and Dutch Embassies in the countries in which DUPC3 is active.
The quality assurance of the outputs delivered by the DUPC3 project teams is carried out in several ways depending on the kind of output. For some outputs external processes are in place and will be followed. For instance, research publications will go through a peer-review process handled by the journal in which the research will be published. Also, the quality control of educational products will follow the policies of the organizations that will deliver the education, which normally includes review and approval of the curricula by a programme committee, evaluations by students and/or peers, sometimes followed up by tracer surveys. For other outputs, quality assurance mechanisms will be established specifically for DUPC3. For instance, the publications for non-academic audiences and the policy briefs will be (periodically) screened by the DUPC3 management team and for larger events DUPC3 will develop questionnaires to receive feedback from participants and evaluate the quality of the event. In addition, DUPC3 will conduct regular surveys to – among others – assess the quality of the engagements in learning networks and monitor the joint learning process (see also Annex 8). To ensure the quality and appropriateness of the processes related to DUPC3 activities, the programme will pay ample attention to ethics, see Textbox 17.

Textbox 17. Special note on ethics.

DUPC3 aspires to be a flagship programme when it comes to upholding high ethical standards. Through leading by example, DUPC3 hopes to inspire others to follow suit in carefully and considerately reflecting on how manners and practices affect others (see also Textbox 12). At all times, the programme will follow the code of conduct of IHE Delft as well as the institute’s regulation on academic integrity to avoid undesired behaviour or fraudulent practices within DUPC3 activities. In addition, DUPC3 will invest in developing guiding documents and organize activities to help project teams and learning networks to create safe working environments and engage in inclusive and conducive manners with each other. Moreover, DUPC3 will further detail research ethics protocols on how to carry out non-exploitative research and avoid ethics dumping, particularly with the view on conducting research in lower-income countries and politically instable regions. DUPC3 will take inspiration from other donor programmes who aim to achieve similar standards, like EC, NWO and NORFACE-Belmont Forum.

Based on progress made and lessons learnt at the various levels of the programme, DUPC3 will develop annual plans to specify the proposed activities for the upcoming year. For each year DUPC3 will define specific activities, specify calls for proposals and identify fields of attention that the
programme will particularly focus on in the next period, which together will be referred to as DUPC3 accents. Identifying these accents in the annual plans supports the phased implementation of the programme and facilitates an adaptive management approach that is needed to achieve the overall DUPC3 objectives. Especially the phasing of the calls for proposals (see Textbox 14) and the reservation of top-up funding for successful projects (see Section 14) gives space to steer the programme. The annual plans will be submitted to DGIS for approval and form an important moment to discuss with DGIS the directions of the programme and align it where needed with other developments or initiatives. DUPC3 project teams will also be asked to develop annual plans to guide their activities and inform the overall plan at programme level. The DUPC3 Committee will provide constructive feedback on these annual plans and will consider for approval any major changes in the planned activities and/or budget allocations.

The external mid-term and end-term evaluations of DUPC3 are considered important moments of learning and an important way to measure and tangibly document the impact of the programme. The external reviews will – among others – give insight on the relevance, effectiveness, coherence and sustainability of the programme, and where needed possible changes will be made based on the findings of the reviews. The external evaluation will be initiated and supervised by DGIS and supported by the DUPC3 Management Team (see also Section 13). The findings will be shared and discussed with the various bodies involved in the governance and management of DUPC3 as well as the partners involved in the implementation of the programme.
Beyond DUPC3: Outlook 2030

DUPC is a longer-term partnership programme for water and development between DGIS, IHE Delft and its partners. Considerable progress has been made in the previous phases to develop relevant knowledge and tools to solve water-related challenges and to strengthen capacities in the water sector. Also this proposed new phase will contribute to these general aims of the programme. Yet, as the world is rapidly changing, also the content, focus and approach of each phase of DUPC is changing to ensure the programme remains relevant and progressive.

The proposed objective of the third phase of the programme is ambitious, to support and catalyse meaningful and lasting transformations to socially inclusive and ecological sustainable water management practices. The means to achieve this – through improving and enriching the knowledgebase on water and strengthening capacities to apply this knowledge – require longer-term commitments to materialize. It is therefore important that DUPC looks ahead and considers the position and role of the programme beyond the duration of this new phase. Textbox 18 provides an outlook of where DUPC aims to be in 2030.

Textbox 18. DUPC outlook 2030.

In 2030 DUPC aims to have achieved tangible outcomes in terms of places and cases in which water is managed in socially inclusive and ecological sustainable manners (see also Textbox 16). Moreover, by 2030 DUPC expects an initial yet noticeable increase in adoption of these changed practices by organization outside the DUPC partnership as well as in other countries and/or regions that DUPC3 will focus on. In 2030 DUPC also anticipates that the ways of collaboration promoted by DUPC, in diverse partnerships and inclusive manners, has become a more common practice in research and education on water. As a result, knowledges on water-related development challenges are increasingly based on inter- and transdisciplinary approaches and especially organizations from low- and middle-income countries play a bigger role in knowledge production as well as determining the solutions to address issues in their own countries and/or regions.

Based on the experiences and insights of DUPC3, the programme has by 2030 contributed to the formulation of new, progressive strategies for IHE Delft and partner organizations. These strategies will strengthen the position of the organizations as renowned brokers of relevant knowledge that guide the envisioned transformations, particularly in low- and middle-income countries. These new strategies will include a longer-term and forward looking joint research agenda for the different regions in which IHE Delft and partner organizations work. Moreover, these strategies will detail how the organizations remain key vehicles through which capacities in the water sector are strengthened and continuously updated through offering relevant, high-quality open education and training on water. In this, DUPC foresees a stronger focus on life-long learning to position IHE alumni as agents of change for their organizations and countries and equip them with the knowledge, skills and networks to initiate and lead the envisioned transformations. By focusing on inclusivity in the DUPC collaborations, the programme hoped to have inspired IHE Delft and partner organizations to nurture genuine inclusive, conducive and safe working cultures. By 2030 DUPC has also supported DGIS in achieving its current programme objectives and informed their future strategies for development cooperation on water as well as the water-related aspects of the multi-year country strategies of the Dutch Embassies.

By 2030 the DUPC programme has contributed to achieve the SDGs in the DUPC3 focus regions, in particularly through the SDG6 acceleration framework. The programme has also contributed to a critically reflection on the current SDG’s and actively participated in the formulation of progressive and meaningful new development goals for 2030 and beyond. In particular, DUPC will strive to emphasize the interrelatedness of water and development in formulating and achieving the new development goals through integrated approaches and interdisciplinary methods. In this way, DUPC aims to overcome the fragmentation among - and in some cases

109 And as such contribute to the call for decolonizing (water) sciences (see also Textbox 5 and Textbox 12).
the contestations between - the current SDGs that hampers the implementation. In addition, DUPC will strive for the new development goals to focus on actual efforts on the ground and alignment with national plans, so that the goals become more meaningful in achieving tangible change in addition to being an important international monitoring and reporting system. Lastly, DUPC will advocate to use the international commitment to new development goals as an opportunity to transform - rather than reproduce - the geopolitical relations and economic structures that are at the roots of uneven development.

In 2030 DUPC aims to have entered its fourth phase in which it is anticipated to focus on further catalysing the envisioned transformations by – among others – further strengthening in a systematic manner the capacities of water sector organizations to implement promising solutions. In a world in which water may become even more scarce and capricious, it is foreseen that an even a broader range of organizations need to be trained on water management issues and more firm collaborations need to be established with other sectors. By 2030, other regions might become hotspots in terms of water and development related challenges, while DUPC will also aims to continue to invest in nurturing long-term relations in regions where it has developed strong partnerships and field labs. In its efforts, DUPC will pay particular attention to prepare and support water organizations to tangibly contribute to achieving the new development goals. Continuing improving and enriching the knowledgebase on water-related development issues also remains important in the fourth phase of DUPC to address the changing circumstances and configurations under which the transformations need to be realized and to remain prepared for future challenges. It is foreseen that by 2030 water-related research is largely open in the sense of freely and easily accessible, assessable and usable, and DUPC will continue to actively contribute to further stimulate this development.
13. Governance and management of the programme

DUPC3 requires a governance and management structure that facilitates the inclusive and collaborative approach adopted by the programme and ensures that the programme can succeed in its ambitions. Figure 6 provides an overview of the proposed structure.

The main body that will steer the directions and coordinate the implementation of the DUPC3 programme will be the DUPC3 committee\(^{110}\). This executive committee consists of the DUPC3 coordinator, the programme support officer and six other members. These members are academic staff members from IHE Delft and partner organizations. Each committee member will be coordinating a specific part of the DUPC3 programme, such as guiding one of the thematic learning networks or supporting activities initiated at programme level to support the envisioned transformations (see Textbox 9). As such, the DUPC3 committee will closely collaborate with the learning networks and the project teams and supervise their progress and directions. The DUPC committee will also launch calls for proposals, identify opportunities for collaboration, approve project proposals, and develop annual plans. The DUPC3 committee will meet (virtually) at least four times a year to monitor and discuss progress and to develop and/or adjust plans.

![Figure 6: Proposed governance and management structure for DUPC3](image)

The DUPC3 coordinator will act as the chair of the DUPC committee. She will carry the overall responsibility of the programme and have the final decision-making powers in the DUPC3 committee. Moreover, the DUPC3 coordinator will liaison with DGIS and the IHE rectorate on a regular basis and fulfil the formal reporting obligations. She will also be in contact with other relevant bodies, inside and outside IHE Delft\(^{111}\), to align the directions of the programme as much as possible to other initiatives and ongoing processes. The DUPC3 coordinator is a senior academic staff member of IHE Delft and

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\(^{110}\) DUPC2 also has a DUPC committee that combines providing strategic advice to the DUPC2 management team as well as (limited) involvement in implementing activities. Based on our experiences with DUPC2, we propose for DUPC3 to split these two tasks by establishing a DUPC committee that has more responsibility in steering and proactively guiding the implementation of the programme, and a DUPC3 sounding board that gives strategic advice on the directions of the programme.

\(^{111}\) This may include among others the Academic Board, Chair Groups, the Education Bureau, the Programme Committees, and similar bodies at partner organizations.
will be appointed and appraised by the IHE rectorate. The DUPC3 programme support officer will act as the deputy coordinator.

Diversity in the composition of the DUPC committee is considered as highly important. As such, in selecting the other committee members academic backgrounds, gender and country of origin of potential members will be considered. At least two members of the DUPC3 committee will come from partner organizations in the DUPC3 focus regions. The DUPC3 coordinator, in close consultation with the IHE rectorate, will identify members for the DUPC3 committee.

A DUPC3 sounding board will be established to provide strategic advice to the DUPC3 committee on a regular basis. This board will consist of eight senior staff members of different partner organizations that participate in the DUPC3 programme. The members of the sounding board will be carefully selected to ensure that together they cover the broadness of the DUPC3 programme in terms of content and have expertise on the followed approach of joint learning. Moreover, the members of the sounding board will be selected based on their access to networks that are considered crucial to increase the impacts of the DUPC3 programme. In particular, efforts will be made to include staff members from organizations in the DUPC3 focus regions and staff members of non-academic organizations\(^\text{112}\) in the sounding board. The ambition of gender balance in the sounding board will also inform the selection of the members. The sounding board will (virtually) meet at least once a year with the DUPC3 committee and provide at least twice a year written feedback on the progress and directions of the DUPC3 programme.

The day-to-day management of DUPC3 will be in the hands of the DUPC3 management team. The team will consist of the DUPC3 programme coordinator (0.5 fte), a (senior) programme support officer (1 fte), a learning and communication expert (1 fte) and an administrative programme assistant (1 fte). Together they will provide support to the different DUPC3 bodies for the identification of projects, smooth implementation of the planned activities, monitor and report progress and prepare plans and budgets at programme level, and liaison with relevant organizations. They are also responsible for the programme-wide events such as the annual DUPC3 conference and communicate outputs and impacts at programme level. In their daily tasks the DUPC3 management team will be assisted by the IHE Delft support units\(^\text{113}\), in particular by a liaison officer, an e-learning coordinator, a senior project controller, a contract management coordinator, and an IT expert.

Where deemed useful, task-forces will be established at regional level to support the different DUPC3 bodies in implementing their activities. These task-forces are especially anticipated in the DUPC3 focus regions. The task-forces will consist of more junior, early-career staff members of partner organizations who can be involved in activities like organizing regional events, facilitating joint learning, liaison with potential new partners, and documenting and communicating regional impacts of the programme. Besides providing support to the implementation of the programme, the task-forces are also considered as important learning and (regional/international) network opportunities for these staff members and as such contribute to strengthening capacities in the focus regions.

\(^{112}\) Organizations like government agencies, water utilities, river basin organizations, private sector organizations, NGOs and/or CSOs (see also Textbox 5).

\(^{113}\) The salary costs of these IHE staff members will in principle not be charged on the DUPC3 programme as their tasks are considered as overhead costs. Where additional support is needed that goes beyond the regular tasks of these colleagues, limited time writing on DUPC3 will be allowed.
14. Proposed DUPC3 budget allocations, targets and rules

The requested budget to carry out the various DUPC3 activities is 46 million euro in total\textsuperscript{114}. Table 4 gives an overview of how DUPC3 proposes to allocate the funding to the different activities and Annex 9 gives a more detailed overview of the estimated budget allocations per programme component. These allocations are preliminary and may change once the proposal is developed in more detail and/or during the implementation of the programme depending on the responses to calls for proposals and in anticipation to new developments. Shifts in budget allocations on the budget lines will be proposed with justifications in the annual plans and if needed will be discussed with DGIS prior to submission of these plans.

DUPC3 has set the following criteria and targets for budget allocation to activities and partners:

- At least 60% of total budget of DUPC3 will be spend on activities in, or activities directly relevant for, the DUPC3 focus regions.
- At least 40% of the budget of large-scale combined projects is allocated to organizations in low- and/or middle-income countries.
- About 20% of total budget of DUPC3 is reserved for medium and small-scale research and/or education projects led by and/or focusing on collaboration between organizations in low- and/or middle-income countries\textsuperscript{115}.
  - At least 75% of the budget of these projects is allocated to organizations in these regions.
- Not more than 8% of the total budget will be spend on governing and managing the programme.
- In total the DUPC3 project teams are expected to jointly generate at least 10 million euro to co-fund DUPC3 activities through cash or in-kind contributions.
  - Partners from low- and/or middle-income countries in large- and/or medium-scale projects co-fund (in cash or kind) at least 25% of their DUPC3 budget allocation.
  - Partners from high-income countries in large- and/or medium-scale projects - other than IHE Delft – will in principle only get their out-of-pocket costs reimbursed and their time investment will be considered as co-funding. In exceptional cases – e.g. clear added-value or specific expertise of partner - these partners can get up to a maximum of 50% of their time reimbursed.

\textsuperscript{114} This total requested budget - and the activities and outputs associated with it – is based on the assumption that IHE Delft does not need to make a reservation for VAT for activities carried out by partner organizations outside Europe. IHE Delft is currently exploring how this can be arranged in consultation with DGIS. In case it is not feasible to find a suitable solution for the VAT issue, the activities that DUPC3 can support will significantly be affected and hence the outputs and targets need to be reduced accordingly.

\textsuperscript{115} These projects are indicated with an asterisk (*) in Table 4. The total budget for these projects culminate to more than 8.5 million euro, which is approximately four times more than the budget spend under DUPC2 on these kinds of projects.
Table 4: Proposed budget allocation for DUPC activities.

<table>
<thead>
<tr>
<th>DUPC3 Budget (2022-2027)</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target</td>
</tr>
<tr>
<td><strong>Water and Health</strong></td>
<td></td>
</tr>
<tr>
<td>Large-scale projects</td>
<td>4</td>
</tr>
<tr>
<td>Medium-scale projects*</td>
<td>8</td>
</tr>
<tr>
<td>Small-scale projects*</td>
<td>12</td>
</tr>
<tr>
<td>Top-up funding</td>
<td>3</td>
</tr>
<tr>
<td>Matching funds</td>
<td>8</td>
</tr>
<tr>
<td><strong>Water and Food</strong></td>
<td></td>
</tr>
<tr>
<td>Large-scale projects</td>
<td>6</td>
</tr>
<tr>
<td>Medium-scale projects*</td>
<td>10</td>
</tr>
<tr>
<td>Small-scale projects*</td>
<td>14</td>
</tr>
<tr>
<td>Top-up funding</td>
<td>4</td>
</tr>
<tr>
<td>Matching funds</td>
<td>10</td>
</tr>
<tr>
<td><strong>River Basins and Deltas</strong></td>
<td></td>
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<tr>
<td>Large-scale projects</td>
<td>6</td>
</tr>
<tr>
<td>IGRAC (budget per year, including VAT)</td>
<td>6</td>
</tr>
<tr>
<td>Medium-scale projects*</td>
<td>10</td>
</tr>
<tr>
<td>Small-scale projects*</td>
<td>14</td>
</tr>
<tr>
<td>Top-up funding</td>
<td>4</td>
</tr>
<tr>
<td>Matching funds</td>
<td>10</td>
</tr>
<tr>
<td><strong>Programme level activities</strong></td>
<td></td>
</tr>
<tr>
<td>Medium-scale projects</td>
<td></td>
</tr>
<tr>
<td>Impact - implementation science</td>
<td>4</td>
</tr>
<tr>
<td>Integrative research across thematic areas</td>
<td>4</td>
</tr>
<tr>
<td>Emerging themes (including DGIS priorities)</td>
<td>7</td>
</tr>
<tr>
<td>SIDS programme (lumpsum per year from 2024 onwards)</td>
<td>4</td>
</tr>
<tr>
<td>Innovation in education (lumpsums per initiative)</td>
<td>10</td>
</tr>
<tr>
<td>Institutional support to existing networks (lumpsum per year)*</td>
<td>6</td>
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<tr>
<td>Alumni life-long learning programme (lumpsum per year)</td>
<td>6</td>
</tr>
<tr>
<td>Skills training partners and facilities (lumpsum per year)</td>
<td>6</td>
</tr>
<tr>
<td>Student competitions (lumpsum per competition)*</td>
<td>6</td>
</tr>
<tr>
<td>Annual DUPC3 Symposium (per year)</td>
<td>6</td>
</tr>
<tr>
<td>Joint activities of and support to learning networks (per year)</td>
<td>6</td>
</tr>
<tr>
<td>Communication and outreach (per year)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Sub-total:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Programme management and governance</strong></td>
<td></td>
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<tr>
<td>Management</td>
<td></td>
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<tr>
<td>Management team (per year)</td>
<td>6</td>
</tr>
<tr>
<td>Governing - DUPC3 Committee &amp; Sounding Board (per year)</td>
<td>6</td>
</tr>
<tr>
<td>Monitoring and evaluation (per year)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
</tr>
</tbody>
</table>
It is difficult at this stage to further detail the budget of the programme as it depends on the budgets of the projects that will be approved under the calls for proposals. Nevertheless, based on experiences with DUPC2 and the ambition to actively steer in minimizing certain costs, Table 5 gives an initial overview of the expected distribution of budget over the various cost items.

<table>
<thead>
<tr>
<th>Cost items</th>
<th>Percentage of total budget</th>
<th>Total amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHE Delft salaries</td>
<td>Circa 40%</td>
<td>Circa € 18.4 million</td>
</tr>
<tr>
<td>Partner salaries</td>
<td>Circa 20%</td>
<td>Circa € 9.2 million</td>
</tr>
<tr>
<td>Travel (including DSA and fieldwork)</td>
<td>Max. 15%</td>
<td>Max. € 6.9 million</td>
</tr>
<tr>
<td>Fellowships</td>
<td>Max. 5%</td>
<td>Max. € 2.3 million</td>
</tr>
<tr>
<td>Equipment</td>
<td>Max. 5%</td>
<td>Max. € 2.3 million</td>
</tr>
<tr>
<td>Other out-of-pocket costs116</td>
<td>Circa 15%</td>
<td>Circa € 6.9 million</td>
</tr>
</tbody>
</table>

To steer the project budgets, clear budgeting rules will be established for project teams including the following:

- **Time reimbursement and tariffs:**
  - IHE Delft will be reimbursed for the actual - documented - time input. The proposed tariffs are based on the agreement with DGIS for DUPC2 in 2019117. The proposed tariffs have been corrected to reflect changes in the collective labour agreements in the past two years. Annex 10 gives an overview of the proposed tariffs to be used for DUPC3. Potentially these tariffs will be reviewed in consultation with DGIS during the implementation of DUPC3 to correct for further changes in the collective labour agreement.
  - Partners will be reimbursed for their actual - documented - time input. Their tariffs will be based on the regular cost-recovery tariffs they apply with a maximum of the daily tariffs agreed with DGIS for DUPC2. For partners that do not work with a tariff structure, DUPC3 will set standard tariffs based on a revision of the tariff list used under DUPC2.

- **Travel costs:**
  - DUPC3 will only refund second-class fares based on actual ticket prices. DUPC3 will carefully scrutinize project proposals to not include frequent, unnecessary travel. Instead, DUPC3 will encourage and support alternative ways of collaboration and where reasonable, request staff to opt for other modes of transport (see also Textbox 15).
  - For car transport DUPC3 will follow the guidelines of the organizations. In case not available, DUPC3 will reimburse fuel receipts that can be reasonably associated with the car trip.
  - Daily Subsistence Allowances (DSA) for staff members of IHE Delft will be split in an amount for accommodation and an amount for other costs (e.g. meals, petty expenses). For the accommodation the actual costs of lodging (e.g. hotel, hostel, B&B) will be compensated. The remaining DSA will be based on the place-specific daily tariffs set by the Dutch government118.
  - For DSA paid to staff members of partner organizations, DUPC3 will follow the guidelines of these organizations with a maximum of DSA tariffs as would be reimbursed to IHE Delft staff.
  - For stays in the Netherlands a deviating rule will be applied, namely costs of lodging of maximum €90 euro per night, excluding breakfast and taxes (Tourist, VAT) plus a DSA of

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116 The costs include among others venue costs, conference fees, consumable, permits, insurances, audit fees, software licenses.
118 See https://zoek.officielebekendmakingen.nl/stcrt-2019-52732.html
65 euro per day for other costs. This is based on the IHE Delft Manual for claiming expenses that is in place since 1 April 2018.

- During longer-term fieldwork actual costs for lodging will be reimbursed only unless there is clear evidence that other costs of living are considerably higher than in place of residence.

- Other costs:
  - Other out-of-pocket costs will only be reimbursed based on actual costs upon submission of receipts and in line with the agreed budget.
  - Costs for equipment will be allowed up to 5% of the project budget and purchasing large equipment will not be encouraged. The costs for equipment will only be reimbursed based on actual costs upon submission of receipts and in line with the agreed budget.

Table 6 gives an estimation of the expected budget allocation per year, which is further specified in a budget per year and per activity in Annex 9. For the second half of 2021 a small amount of funding is allocated from the management and governance budget line to start-up the programme, see Textbox 19. More accurate and detailed budgets will be made as part of the annual plans that will be prepared for the programme.

**Table 6: Expected budget allocation per year.**

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual budget (in euro)</td>
<td>250,000</td>
<td>5,640,000</td>
<td>7,975,000</td>
<td>9,160,000</td>
<td>9,565,000</td>
<td>8,610,000</td>
<td>4,800,000</td>
</tr>
</tbody>
</table>

**Textbox 19. Workplan 2021.**

Upon signing of the grant agreement with DGIS, IHE Delft plans from September 2021 onwards to carry out preparatory activities in order to have the programme running fully and smoothly early 2022. The planned activities for 2021 include amongst others:

- Appointing and/or recruiting the DUPC3 management team.
- Setting up the DUPC3 committee and sounding board.
- Developing the monitoring and evaluation framework.
- Developing guidelines on ethics and collaboration.
- Conducting desk-study to fine-tune priorities in each DUPC3 focus region (see Section 8).
- Preparing and launching first call for large-scale projects (see Section 9).
- Preparing communication tools and DUPC3 website.
- Developing detailed annual plan for 2022.
References


IPCC – Intergovernmental Panel on Climate Change (2019b) Special Report: Global warming of 1.5 degree Celsius. https://www.ipcc.ch/sr15/


Annex 1: DUPC3 contribution to DGIS and IHE Delft policies and strategies

Based on the proposed directions of the programme as described in this proposal, DUPC3 is expected to make major contributions to the Dutch policies on international cooperation developed and promoted by DGIS as well as the key strategies of IHE Delft. This annex will highlight the main contributions of DUPC3 to these agendas to demonstrate the added-value of DUPC3 to achieving the objectives both organizations.

DGIS Policies

A leading policy document of the Dutch Ministry of Foreign Affairs is the 2018 policy on foreign trade and development cooperation entitled “Investing in Global Prospects, For the World, For the Netherlands”\(^\text{119}\). This policy promotes four closely connected objectives, namely preventing conflict and instability; reducing poverty and social inequality; promoting sustainable and inclusive growth and climate action worldwide including stimulating circular economies; and enhancing the Netherlands’ international earning capacity. A cross-cutting policy goal is to advance gender equality by improving the position of women and girls. The geographical focus of development cooperation under this policy shifted to unstable regions in order to tackle root causes of poverty, migration, terrorism and climate change. In various ways DUPC3 aims to contribute to the implementation of this policy, including:

- DUPC3 will focus on activities in - and relevant for - unstable regions, in particular the Sahel, the Horn of Africa and the Middle East.
- Social justice and ecological sustainability will be central elements in DUPC3 research and education activities.
- DUPC3 will contribute to research that aims to green our ways of living and address challenges caused by climate change, including exploring possibilities for recycling of resources and stimulating circular economies.
- DUPC3 will support the careers of early-career and/or female professionals by giving priority to their participation in DUPC3 activities and connecting them to partner organizations in the learning networks.
- DUPC3 will take advantage of the opportunities offered by digitalisation to stimulate sustainable and inclusive growth, among others by focusing on online education and supporting the (further) development of remoted-sensing technologies and applications (e.g. water accounting, WaPOR databases for water productivity).
- DUPC3 will involve private sector organizations in projects and learning networks and will investigate how collaborations between private sector and academia can be best facilitated.

Another important policy is the inter-ministerial collaboration on water as articulated in the Netherlands International Water Ambition\(^\text{120}\) published in 2019. This policy aims to contribute to achieving the common goals of the Dutch ministries and government agencies that deal with water. In particular, this policy calls for the need to increase the security and safety of more than a hundred million people worldwide that are exposed to water-related risks. The NIWA is a means of deploying Dutch water-related international policy instruments more coherently and create a platform for collaboration between public, private, social and knowledge partners. DUPC3 will contribute, among others, in the following ways to the different NIWA strategies:

\(^{119}\) Ministry of Foreign Affairs (2018).
\(^{120}\) Government of the Netherlands (2019).
NIWA strategy ‘Strengthening local realization power’: DUPC3 will work in partnership to co-create knowledge and solutions for water challenges with organizations in the focus regions and contribute to strengthening human and institutional resources in these countries.

NIWA strategy ‘Supporting integrated approach to water safety and water security’: DUPC3 will focus interdisciplinary education and research that aim to develop, test and disseminate knowledge and promising solutions that contribute to achieving the water-related SDG’s. This includes also research themes relevant for, and in collaboration with, the Dutch water sector, such as use of remote sensing in agriculture, delta management, and urban green-blue infrastructure.

NIWA strategy ‘Deploying the Netherlands as a Center of Excellence’: DUPC3 collaborates with key Dutch and international partners (e.g. WUR, TU Delft, UvA, WWF, OxfamNovib, VEI International, IGRAC, UNESCO). Moreover, DUPC3 will study within the learning networks how programmes like DUPC3 can accelerate making meaningful and lasting impacts and critically reflect on the role of international cooperation on water.

The Ministry of Foreign Affairs has also published in 2019 a policy note to respond to the rapid development of digital technology and its impacts on all long-term goals of development cooperation, referred to as the Digital Agenda for BHOS policy. This agenda aims to achieve the DGIS goals faster and more effectively by responding to the opportunities and threats presented the rapid digitalization of the world. DUPC3 contributes in several ways to the objective of this agenda, including:

- Supporting the development of integrated digital approaches to solve food, water and climate related challenges based on open data and open-source satellite technologies and software, particularly in Africa and the Middle-East.
- DUPC3 aims to develop more knowledge on – including root causes and early signs - and develop effective approaches for water conflict management and diplomacy and in that way contribute to increased water security, especially in unstable DUPC3 focus regions. Specific attention will be paid to finding synergies between water for food and energy production.
- DUPC3 aims to strengthening collaboration with civil society organizations and grassroots initiatives and will jointly explore how digital innovations can support them in their efforts to advocate for social justice and sustainability.
- DUPC3 will invest in the development, testing and dissemination of smart digital technologies that will support humanitarian aid interventions on water supply and sanitation in refugee camps.
- DUPC3 will contribute to improved access to education on water by focusing on the development of good quality online and open education. In capacity strengthening activities DUPC3 will give priority to young and/or female water professionals.

IHE Delft Strategies

IHE Delft 2018-2023 Strategy document articulates the vision of IHE Delft as a world free of poverty and injustice, in which people manage their water and environmental resources sustainably and equitably, with as mission to work in partnership to strengthen capacity in the water sector to achieve global sustainable development. The strategy document further highlights the key ambitions of the organization on education, research and innovation and institutional strengthening. On education IHE Delft aims to focus on developing jointly with partner universities high quality, student-centred and...
relevant educational products by increasingly incorporating online education and stimulating life-long learning in the water sector by offering flexible and tailor-made study modalities. DUPC3 will contribute to these objectives - among others - through:

- Establishing and supporting active learning networks in which partner organizations and IHE Delft alumni jointly learn on key thematic areas, particularly in the DUPC3 focus regions.
- Embedding educational and training activities more strongly in larger-scale DUPC3 projects to ensure that research findings can be easier incorporated in new and meaningful education.
- Supporting the development of online (open) courses and trainings and supporting partner organizations in achieving their online learning ambitions.

Related to research the 2018-2023 strategy document indicates that IHE Delft aims to develop holistic innovative approaches and generate solutions that contribute to the water-related SDGs. The research efforts will focus on improving, testing and documenting evidence of the applicability and societal impact of promising approaches and solutions for water development challenges. For this purpose, IHE Delft adopts an interdisciplinary and problem-orientated research approach and focuses on stakeholder-driven and policy-related research. DUPC3 will contribute in various ways to implement this research strategy - among others - by focusing on:

- Problem-oriented research, anchored in empirical studies and focused on effective and viable solutions, that aim to achieve meaningful and lasting impacts.
- Interdisciplinary research and development of integrated approaches and technologies that are ready for implementation, including cross-sectoral issues such as water for food and energy.
- Transdisciplinary research approach where knowledge and promising solutions are developed, tested and disseminated together with the organization in low- and middle-income countries that encounter the actual problems.
- Engage in meaningful processes of policy outreach and advocacy to stimulate evidence-based policy making.

In addition, DUPC3 will also support the development and implementation of the new strategic directions of IHE Delft for 2021-2027 that are currently formulated, see Textbox 20.

Textbox 20. Proposed strategic research agenda IHE Delft 2021-2027.

Currently an external assessment is ongoing of the research carried out by IHE Delft. This process is coordinated by SENSE – the Research School for Socio-Economic and Natural Sciences of the Environment – and for this purpose IHE Delft has written a self-reflection report including a proposed strategic research agenda for the coming years (2021-2027). In this report three broad principles have been defined to guide the strategic directions of the research carried out by IHE Delft, namely:

1. The explicit appreciation of, and support for, inter-and transdisciplinary approaches to co-producing knowledge or co-testing solutions with societal partners, and a continued commitment to Open Science. Joint learning about inter-and transdisciplinarity will receive more attention.
2. Encouraging scientific plurality and actively promoting comparisons and discussions between different theories, methods, definitions, and epistemologies. This is based on the recognition that there are different ways of doing science, and different ways of defining, interpreting, assessing, valuing and evaluating water.
3. An explicit problem-orientation and the promotion of research methodologies (participatory action research; Living Labs; citizen science) that help increase the problem solving potential of research, and actively promote mutual learning between all involved.

The self-reflection report also identifies institute-wide research activities for the upcoming years that will take place in addition to the – sometimes more disciplinary-oriented – research that happens within the academic departments. These institute-wide research activities will focus on following four broad overarching societal challenges:

- Water, wellbeing, sanitation and health
In addition, three cross-cutting themes are defined to guide the institute-wide research activities:
- Governance and diplomacy
- Water, society and development
- Digital Innovation and Knowledge Systems

The above proposed strategic research agenda of IHE Delft very closely aligns with the objectives and ambitions of DUPC3. At the moment the assessment report by the SENSE external reviewers is not yet published, yet initial feedback from the reviewers has been given during a briefing at the end of the visitation. Among others, this feedback included encouraging IHE Delft to more explicitly pay attention to decolonization and intersectional inclusion by focusing on joint learning and critical reflection on the research approaches, methods and findings. The reviewers also suggest developing a more system approach for achieving impact on the ground and more explicitly the linkages between the research and the SDGs and/or larger transformative processes. These recommendations fit well with the DUPC3 focus and approach and we will carefully follow the further developments. Where needed, the DUPC3 programme will be adjusted in order to support the implementation of the 2021-2027 strategic research agenda and/or to continue to steer the progressive research directions of IHE Delft.

On strengthening institutional capacity the 2018-2023 strategy document highlights that IHE Delft will work in partnership with partners towards co-creation of knowledge and its applications. Moreover, it articulates the IHE Delft ambition to be perceived as an independent broker in the international water sector through critical reflection, engagement and an active role in the water community. DUPC3 will contribute – amongst others – to this strategy by:

- Strengthen and diversifying existing partnerships and developing new partnerships to jointly carry out research and education projects and to stimulate reflexivity and learning within the collaborations.
- Support organizations in the DUPC3 focus regions in strengthening their capacity through education on water and training on management skills and improving their research, education and management facilities.
- Engage with key partners in the DUPC3 focus regions, including Dutch Embassies and collaborate with other development initiatives as well as key international actors in the water sector.
- Conduct independent and critical research on impact- and development-oriented research as share findings through education and within the learning networks.
Annex 2: Added-value of DUPC2 for partner organizations

The value of DUPC as partnership programme on water and development for partner organizations in low- and middle-income countries is monitored through regular (anonymous) surveys and documented in various reports. This annex gives a short overview of some of the findings of these surveys.

During the mid-term external review of DUPC2 in 2018 a survey (n=85) was conducted in which staff members of partner organizations that participate in DUPC2 projects were asked to what extent the programme was relevant in terms of meeting needs in the water sector as well as the needs of their organisation. Moreover, they were asked whether the programme supported them in building partnerships and to what extent the programme was perceived as complementary to other programmes that support the water sector. More than two-third of the respondents indicated that they consider their DUPC2 project as highly relevant for all these aspects. One of the respondents elaborated by stating that: “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 fulfil 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.”

A survey (n=43) carried out by the DUPC Management team in the beginning of 2020 to better understand the functioning of partnerships in DUPC supported projects showed that the partnerships bring great value to the project and the partners involved. On the question what the main added-value value of the DUPC2 partnership is for themselves and their organisation, the most common answers of respondents included: “my organisations capacities are being strengthened”, “we get improved access to international networks and knowledge”, “our knowledge and/or innovations get disseminated”, “we get opportunities for influencing policies at local levels”, and “we can play a more active role in societal debates”.

In this same survey partner organizations also reflected on dealing and nurturing diversity in the DUPC2 partnerships. According to the respondents the main added value indicated of a diverse partnership was the opportunity and ability to learn from each other when working with diverse partners (84%). Diverse partnerships also helped in achieving project objectives (67%) and impact on the ground (67%). As one key partner from Southern Africa explained: “societal issues require interventions that involve several actors, the more you involve all parties the better you run a chance to solve the problem even beyond the life time of the DUPC project”. However, diversity in project partnerships also brings challenges and in particular adequate communication between partners was the most common challenge. Nevertheless, most partnerships have found a way to overcome this and to establish positive relationships as the following testimonies exemplify:

“We developed a unique bond across team members. Every time we met we were able to make very significant progress and develop powerful ideas. The challenge was to keep the momentum once we all got back to our respective countries and/or responsibilities”

(Academic partner from Southern Africa)

“Joint field visits… are very useful to understand the different perspectives of participants.”

(Private sector partner organization from The Netherlands)

123 Report DUPC2 partnership Survey ‘February 2020’ ‘Working in partnership – practices and experiences from your DUPC2-supported project’.
“Partnerships are more likely to succeed when the target groups in different locations face the same problems, but the way of solving them differs.”
(Academic partner from Southern Africa)

“In our DUPC project somehow an atmosphere of a converging sense of purpose and a shared fascination of what we were up to emerged, which went along with a lot of humour and camaraderie. This was, in my view, for many a stimulating environment to pursue our objectives, even if they proved challenging to achieve.”
(Staff member from IHE Delft)

“We managed to develop a good working relation between different professional groups that were not used to work together before the project. We also foster collaboration between people with different national and disciplinary background in a context were national and disciplinary boundaries are still highly influential and strong.”
(Staff member from IHE Delft)

The survey (n=117) done among partner organizations as part of the external end evaluation of DUPC2 carried out towards the end 2020 – and published early 2021124 – largely confirms the findings of the previous survey. The external reviewers highlight that the organisations involved in DUPC2 activities are particularly positive about DUPC2 contributions to regional and international knowledge exchange, the stimulation of problem-oriented research and strengthening of organisations in low- and middle-income countries. An impressive 90% of the survey respondents consider the programme as relevant both for their organisation as well as addressing local and/or regional problems and priorities. Moreover, the respondents consider the increasingly local involvement and ownership of the DUPC2 activities as an indicator of success of the programme. The DUPC2 partners also were strongly positive about the achievements and expected outcomes of the DUPC2 projects they were involved. The external reviewers conclude that the majority of the projects they reviewed in more depth address the main local concerns, needs and priorities of the water sector in the target country and/or region.

Annex 3: Uptake recommendations DUPC2 effect evaluation in DUPC3

Table 7 presents the recommendations of the DUPC2 effect evaluation that took place in January 2021 (Technopolis Group, 2021), and how these have been incorporated in this DUPC3 proposal.

<table>
<thead>
<tr>
<th>DUPC2 recommendations</th>
<th>Uptake in DUPC3 proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation 1: Position IHE, DUPC and its partners as key actors in online education in the water sector:</td>
<td>Online education remains an important focus in DUPC3 (see Sections 4, 6, 9 and 10). The lessons learned of DUPC2 will be taken up by the IHE eLearning team and will be input for the strategy on online education (under development). Also partner organizations will be assisted in developing strategies for online education. These strategies will inform the detailed DUPC3 activities related to online education. This will include development of methods for blended learning, innovative and creative didactical tools and approaches for online education, approaches to facilitate and support collaboration between regions, and find practical solutions to overcome challenges in online education (see also Section 10).</td>
</tr>
<tr>
<td>- Identify lessons learnt on online education and training, including the past year Covid-19 experiences.</td>
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<tr>
<td>- Make use of these lessons learnt in the on-going development of a strategy for online education.</td>
<td></td>
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<tr>
<td>- Promote blended approaches (physical education combined with online) when possible.</td>
<td></td>
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<tr>
<td>- Develop innovative tools and approaches that help engage learners and promote inter-regional exchanges.</td>
<td></td>
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<tr>
<td>Recommendation 2: Embed support for the development of strong knowledge transfer strategies:</td>
<td>Knowledge sharing and joint learning is a central element of DUPC3 (see Sections 4, 6 and 7) and projects combine research, education and institutional strengthening activities to increase the uptake of research findings (Section 9). Also, the inclusion of a longer inception phase will be taken up in the design of calls for proposals to allow more time for building a (project) partnership, including involving communities and water sector organizations. Where relevant, multilingual outputs will be supported (see Section 10).</td>
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<tr>
<td>- Allocate sufficient human and financial resources in the programme management to develop practical guidelines or trainings for project leaders and their partners, translate project results in other languages than English where relevant, and disseminate project results at the community level when relevant to project objectives.</td>
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<tr>
<td>- Include a longer inception phase to identify and involve users of project results from the start, and formulate project outcomes jointly.</td>
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<tr>
<td>Recommendation 3: Expand support to South led projects:</td>
<td>To further stimulate initiatives led by and between organizations in low- and/or middle-income countries, DUPC3 has nearly quadrupled the budget allocation compared to DUPC2 for supporting these kinds of projects (Sections 9 and 14). To support this DUPC3 will offer training and cross-project learning related to how to design and managing partnership projects (Sections 7, 9 and 10).</td>
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<tr>
<td>- Expand calls for South led projects to the other DUPC2 programme components (not just research and innovation).</td>
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<tr>
<td>- Reflect on how to further support Southern partners in strengthening their capacities in designing and implementing effective projects.</td>
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<tr>
<td>Recommendation 4: Upscale DUPC2’s cross-learning activities, at national, regional and cross-regional level</td>
<td>Knowledge sharing and joint learning are a central element of DUPC3, with the learning networks (structured around themes and/or regions) and their activities and events as main modalities to facilitate these exchanges (see Sections 4 and 9). The role of the regional committee members will be more active and prominent in DUPC3, divided into a representation in the DUPC3 committee and a DUPC3 sounding board (Section 13). Monitoring and evaluation will become an integral part of these</td>
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<tr>
<td>- Promote cross-learning as an important aspect of strengthening and revitalising global partnerships.</td>
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<tr>
<td>- Consider involving the Regional Committee members in promoting cross-learning activities.</td>
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<tr>
<td>Recommendation 5: Strengthen the programme’s monitoring and evaluation system</td>
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<tr>
<td>Enhance the visibility of and participation to knowledge sharing and learning activities organised by DUPC2 management.</td>
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<tr>
<td>Make better use of monitoring and evaluation findings for learning purposes.</td>
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<tr>
<td>The Theory of Change has been updated (Section 4, Figure 3) and guides DUPC3’s monitoring, evaluation and learning (see also recommendation 4). DUPC3 does not have cross-cutting themes, but has core elements (inclusiveness, ecological sustainability) that will guide the DUPC3 activities and projects (see Sections 4 and 5). These core elements will be leading in the selection of projects, the steering of the programme and actively monitored (e.g. see impact indicators in Section 11). For the full proposal we will also study the OECD-DAC markers and consider whether they are worthwhile to include.</td>
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<tr>
<th>Recommendation 6: Increase the capacity of the DUPC management team</th>
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<tr>
<td>Consider employing an additional professional within the DUPC management team, even on a part-time basis, who will support: communication of programme results, knowledge transfer, and use of monitoring and evaluation findings for learning purposes.</td>
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<tr>
<td>For the communication of the programme and the facilitation of the learning networks an additional position is taken up for a learning and communication expert (1 fte) (see Section 11).</td>
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<tr>
<th>Recommendation 7: Strengthen the programme’s position and contribution to Water Diplomacy by doing more research on this specific topic</th>
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<tbody>
<tr>
<td>Reflect on the programme’s position and role in relation to the broader institutional ambitions and activities on Water Diplomacy and how it can support further thematic research in collaboration with partner institutions.</td>
</tr>
<tr>
<td>Consider teaming up with academic partners in the South and international partners when these are better positioned to take up certain roles (e.g. the Embassies, the Stockholm International Water Institute, World Bank) especially in the water-scarce country regions.</td>
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<tr>
<td>The water diplomacy theme, given its importance for IHE and the Ministry, will remain an explicit activity in DUPC3 (see Section 5, as part of the river basins and deltas theme). In particular, DUPC3 aims to make the research component stronger in addition to supporting education and training activities. Diversifying the content and collaborations is encouraged and emphasis is given to teaming up with partners with partners in the DUPC3 focus regions.</td>
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<tr>
<th>Recommendation 8: Develop the programme’s contribution to water challenges in the Sahel region</th>
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<tbody>
<tr>
<td>Develop innovative approaches to further develop DUPC2’s work in the region.</td>
</tr>
<tr>
<td>Consider teaming up with international partners that have experience of working in French speaking countries in the Sahel region (e.g. the UN agencies, the EU, the World Bank/Cooperation in International Waters in Africa, etc.)</td>
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<tr>
<td>The Sahel is one of the focus regions of DUPC3 in line with DGIS policy (see Section 8). In DUPC2 a first pilot programme has started to explore needs and possibilities in this region, which also includes an identification of possible partners and initiatives to team up with. This pilot will provide important input to define the activities of DUPC3 in this region, which will be further detailed during the start-up of DUPC3 (Section 8 and Annex 7).</td>
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Annex 4: Proposed activities and outputs of IGRAC under DUPC3

IGRAC, the International Groundwater Resources Assessment Centre, facilitates and promotes international sharing of information and knowledge required for sustainable groundwater resources development and management worldwide. IGRAC (www.un-igrac.org) focuses particularly on regional aquifer assessment, groundwater monitoring and information & knowledge management in low- and middle-income countries. IGRAC is a UNESCO centre, it works also under auspices of WMO and is supported by the Government of The Netherlands. As the UNESCO global groundwater centre, IGRAC contributes to implementation of the UNESCO International Hydrological Programme (IHP) in close cooperation with IHP Secretariat (https://groundwaterportal.net). UNESCO-IHP IX (2022-2029) is almost prepared, and some of the drafted IHP Priority Actions (PA) and associated (likewise SDGs) with the activities suggested below. Between 2022 and 2027, IGRAC is aiming to implement the following activities and deliver the listed outputs125 with DUPC3 funds:

1) Intensify global advocacy, awareness raising and capacity building to provide a stronger contribution to solving groundwater related societal and environmental issues. Expected outputs include among others:
   - Policy outreach events and/or policy briefs (e.g. advocacy with UN-Water members and partners based on presentations, policy briefs, reports), linked to IHP Priority Area 5.1 (target: 20+).
   - Thematic seminars organized on role of groundwater and its services in context of broader societal and environmental issues, linked to IHP Priority Area 5 outreach & communication (target: 5).
   - Professionals in low- and middle-income countries trained on groundwater (e.g. through regional projects and tailor-made trainings) (target: 80+ professionals).
   - Supporting tools and services, such as serious games, catalogues, reviews (target: 5+).

2) Improving groundwater research/assessment as basis for sound policy, management and governance. In the coming six years, while continuing to serve transboundary aquifer assessment activities, IGRAC will put more effort in assessment of groundwater quality and in preparation of thematic maps, in particular in DUPC focal areas. Expected products and services are, among others:
   - Regional/transboundary aquifer assessments (including e.g. maps, reports, conference presentations/publications, newsletters, collaboration mechanism) and the services provided (e.g. methodology, guidance, database, collaborative environment, dissemination) as a part of UNESCO ISARM activities and SDG 6.5.2, linked to IHP PA 4.4 (see also https://isarm.org) (target: 15+).
   - Regional groundwater quality assessments, including content contributions to reports and maps preparation in the framework of UN World Water Quality Assessment and SDG 6.3, and the services provided (e.g. coordination, portal, databases, dissemination, see also https://groundwater-quality.org/), linked to IHP PA 4.5 (targets: 5+).
   - UNESCO WHYMAP programme and other thematic assessments (e.g. maps, reports, presentations/publications, see also https://groundwaterportal.net/project/whymap) including country-level cooperation for improving global knowledge base (GGIS) SDG 6.4.2. (target: 5+).
   - Country-level cooperation for improving global knowledge base (GGIS), linked to IHP PA 3.3. (target: 10+ collaborations).

125 The IGRAC outputs that contribute directly to the outputs of the programme of the DGIS (IGG) Water Cluster are underlined, see also Textboxes 3 and 8.
3) Strengthening groundwater monitoring to respond adequately on climate change and human interventions. Groundwater assessment is not complete- and no predictions can be made without an analysis of historical measurements (change in time). Activities are carried out in close cooperation with WMO Hydrologic and Water Resources programme. Expected outputs include among others:

- **National/regional capacity building trainings on groundwater monitoring, SDG 6.6.1 and SDG13** (target: 50+ professionals trained)
- Participation in international WMO-led networks/programmes (e.g. GCOS, HydroSoS, GTN-H) (target: 10+)
- Improving/enlarging GGMN content and interpretation, linked to IHP PA 1.7 (target: 50+ unique users)
- Collaboration with national monitoring programmes, linked to IHP PA 1.9 (target: 20+ countries)
- Contribution to regional/global monitoring projects, linked to IHP PA 1.10 (e.g. Copernicus, Grace) (target: 10+ reports, presentations, newsletters, or similar).

4) Improve the Centre in terms of strategic partnership, increasing institutional strength and technological effectiveness. Together with IHE-Delft strengthen collaboration with core partners and in particular those contributing to- or important for the DUPC3 programme. These activities make also crucial link between SDG6 and SDG17. Expected outputs include among others:

- Strengthen collaboration with IHE Delft and DUPC3 partners especially on groundwater governance, information and knowledge sharing on groundwater sources, and water diplomacy on shared aquifers, through:
  - Courses updated with research findings (target: 10+).
  - Open access joint research publications (target: 10+).
- Strategic Partnership activities (UNESCO Regional offices and Centra, WWAP, WMO, IAH, UN Water, WWQA Groundwater Quality partners, etc.) by developing joint activities and/or common products (e.g. publications, events, campaigns, etc.) with strategic partners (target: 30+).
- Developing and maintaining Global Groundwater Information System in close cooperation with partners; linked to IHP AP 1.7 (target: 40 partners/users).
- Communication outputs for non-academic audiences, linked to IHP PA 5 Outreach and Communication (e.g. news items, portals, video, social media) (target: 30+).
Table 8 presents an initial review of the multi-year country strategies of Dutch Embassies for the targeted countries in the three DUPC3 focus regions, namely the Middle-East, the Horn of Africa and the Sahel.

<table>
<thead>
<tr>
<th>Region</th>
<th>Additional information from multi-year country strategies</th>
<th>Main objective of the Dutch deployment in the period 2019-2022</th>
<th>Main themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East</td>
<td></td>
<td>Security and rule of law, Food security, Private sector development, Sexual and reproductive health and rights, Women’s rights and gender equality, Reception in their region and migration, Humanitarian support, Water, Strengthening civil society</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>Stimulating the cultural sector, strengthening economic relations, critical dialogue with the government, cooperation with the EU.</td>
<td>Support sustainable development, including water and agriculture.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Iraq</td>
<td>Preventing violence and war, supporting organizations for minorities, creating employment.</td>
<td>Grants for companies that contribute to the reconstruction, including in the energy, water or agricultural sector.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Jordan</td>
<td>Work together and consult with EU and NATO organizations to tackle terrorism.</td>
<td>Reception of refugees, education, economic growth, improving agriculture.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Palestine</td>
<td>Supporting human rights organizations, climate change.</td>
<td>Two-state solution, social democratic development.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Yemen</td>
<td>Embassy temporarily closed due to civil war.</td>
<td>Security and stabilization of the country, sustainable development, social development, extra attention to vulnerable groups.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Horn of Africa</td>
<td></td>
<td>Security, migration, foreign trade, economic development.</td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td></td>
<td>Reception of refugees in the region.</td>
<td>x x x x</td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td>Promote sustainable trade and investment, combat poverty, conflict, migration and inequality, climate change, human rights and gender equality.</td>
<td>x x x</td>
</tr>
<tr>
<td>South Sudan</td>
<td></td>
<td>Building peace and the rule of law, reconciliation and human rights, food and water.</td>
<td>x x x</td>
</tr>
</tbody>
</table>

Annex 5: Overview of multi-year country strategies of the Dutch Embassies in DUPC3 focus regions
<table>
<thead>
<tr>
<th>Country</th>
<th>Main objective of the Dutch deployment in the period 2019-2022</th>
<th>Additional information from multi-year country strategies</th>
<th>Main themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudan</td>
<td>Additional information from multi-year country strategies</td>
<td>Stability and democracy, rule of law, sustainable trade, food security, water and climate</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td>Also focus on the Great Lakes region (Uganda, DR Congo, Burundi, Rwanda)</td>
<td>Stability and democracy, rule of law, sustainable trade, food security, water and climate</td>
<td></td>
</tr>
<tr>
<td>Sahel</td>
<td>Rule of law, sustainable trade, development, food security, water and climate, support civil society organizations, young people and women become empowered.</td>
<td>Rule of law, sustainable trade, development, food security, water and climate</td>
<td></td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>New embassy, program is under development.</td>
<td>Rule of law, sustainable trade, development, food security, water and climate</td>
<td></td>
</tr>
<tr>
<td>Niger</td>
<td>Preventing poverty, violent conflict, radicalization and climate change, cooperating with UN, GS Sahel, Alliance Sahel.</td>
<td>Education and employment for young people (especially girls), food security, water management, good governance and rule of law, security and migration.</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>Multi-year plan not available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex 6: Planning of DUPC3 calls for proposals

Table 9 gives an overview of the calls for proposals DUPC3 intends to launch, including the anticipated date for publishing the call, the number of weeks given to prepare and submit the proposals and the targeted number of projects to be approved. Depending on the number and quality of the incoming proposals, the actual number of projects that will be approved under each call may differ. As part of the annual planning cycle, the DUPC3 management team will review this schedule and might propose changes in the envisioned calls and the allocated budgets per call.

As mentioned in Section 9, DUPC3 may also identify projects and activities through other means than calls for proposals, for instance through consultations with DGIS, IHE staff members and/or partner organizations.

Table 9. Planned calls for proposals.

<table>
<thead>
<tr>
<th>Launch of call</th>
<th>Type of projects</th>
<th>Thematic area</th>
<th>Number of projects</th>
<th>Time to prepare proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 2021</td>
<td>Large-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 10 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>May 2022</td>
<td>Medium-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 8 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Sep 2022</td>
<td>Small-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Oct 2022</td>
<td>Large-scale projects</td>
<td>Water and health</td>
<td>1</td>
<td>Circa 10 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>May 2023</td>
<td>Medium-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 8 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Sep 2023</td>
<td>Small-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>May 2024</td>
<td>Medium-scale projects</td>
<td>Water and health</td>
<td>2</td>
<td>Circa 8 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sep 2024</td>
<td>Small-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sep 2025</td>
<td>Small-scale projects</td>
<td>Water and health</td>
<td>3</td>
<td>Circa 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water for food</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rivers and deltas</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Annex 7: Overview of DUPC2 activities carried over to DUPC3

Table 10 gives an overview of DUPC2 activities and how DUPC3 proposes to continue with these activities in the new phase. This overview only includes DUPC2 activities and projects that were not initiated based on calls for proposal, but that are explicitly mentioned in DUPC2 annual plans and/or addenda.

Table 10. Overview of DUPC2 activities carried over to DUPC3.

<table>
<thead>
<tr>
<th>Current activities DUPC2</th>
<th>Expected end date</th>
<th>Proposed activities DUPC3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DUPC2 Annual Plan 2020</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water diplomacy (incl. WWF and SIWI) - SIWI collaboration stopped, continues in different form. - WWF collaboration evaluated and adjusted.</td>
<td>1-7-2022</td>
<td>Topic remains important within river basins and delta theme of DUPC3 and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase. Role WWF will be assessed by the team.</td>
</tr>
<tr>
<td>Knowledge sharing with DGIS, EKNs and other parties.</td>
<td>31-12-2023</td>
<td>Activity remains and will be embedded in learning networks.</td>
</tr>
<tr>
<td>Water Accounting Plus Phase II 2020-2022.</td>
<td>31-12-2022</td>
<td>Topic remains important within river basins and delta theme of DUPC3 and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>Water, Peace Security (new phase continues under separate contract with DGIS).</td>
<td>30-6-2022</td>
<td>Topic linked to water diplomacy topic within river basins and delta theme of DUPC3, synergies will be sought with WPS project.</td>
</tr>
<tr>
<td>Nile Basin Capacity Building network (NBCBN) Support (currently second phase is in preparation)</td>
<td>31-6-2022 (second phase 31-12-2023)</td>
<td>Support to NBCBN will remain, focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>WaterNet Secretariat support (phase 2)</td>
<td>31-12-2021</td>
<td>Support WaterNet will remain and funding for WaterNet Phase V will be channeled through DUPC3. Activities, outputs and budget will be defined during development of DUPC3 full proposal.</td>
</tr>
<tr>
<td>Boosting Effectiveness of Water Operators’ Partnerships (BEWOP3)</td>
<td>31-12-2021</td>
<td>Topic remains important within water and health theme of DUPC3 and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>Water Youth Network</td>
<td>30-09-2021</td>
<td>Collaboration further explored and possibly extended to other youth networks.</td>
</tr>
<tr>
<td>The Water Channel (second phase in preparation)</td>
<td>1-12-2020 (second phase mid-2023)</td>
<td>Collaboration will most likely be extended.</td>
</tr>
<tr>
<td>OpenCourseWare</td>
<td></td>
<td>Will be embedded in activities and projects in different DUPC3 themes as well as the activities on innovation in education at programme level.</td>
</tr>
<tr>
<td>Spatial Data Infrastructure</td>
<td></td>
<td>Will not be continued. DUPC3 will explore collaboration with initiatives of (Dutch) universities on open science and data repository (e.g. 4TU.ResearchData) as well as</td>
</tr>
<tr>
<td>Topic</td>
<td>Start/End</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Student competition</td>
<td></td>
<td>Six student competitions included for DUPC3 focus regions.</td>
</tr>
<tr>
<td>DUPC2 Impact initiative</td>
<td></td>
<td>Topic remains highly important, embedded in activities of learning network at programme level and coordinated by a DUPC3 committee member.</td>
</tr>
<tr>
<td>DUPC2 inclusiveness initiative</td>
<td></td>
<td>Topic remains highly important, embedded in research themes and activities of learning network at programme level and coordinated by a DUPC3 committee member.</td>
</tr>
<tr>
<td><strong>Addendum 2019</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25% Water productivity improvement in practice (Water-PIP) (top-up phase 1)</td>
<td>31-12-2022</td>
<td>Topic remains important within water and food theme of DUPC3 and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>Boosting Effectiveness of Water Operators’ Partnerships (BEWOP4)</td>
<td>31-12-2023</td>
<td>Topic remains important within water and health theme of DUPC3 and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>Supporting capacity development in Small Island Development States (SIDS3)</td>
<td>31-12-2023</td>
<td>Activity remains yet slightly reduced compared to DUPC2, will fall under DGIS priority activities.</td>
</tr>
<tr>
<td>Supporting capacity development in the MENA region to cope with water scarcity (MENA)</td>
<td>31-12-2023</td>
<td>Activity remains important, embedded in DUPC3 themes and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase.</td>
</tr>
<tr>
<td>Iraq – Supporting integrated and sustainable water management in Iraq through capacity development and research</td>
<td>31-08-2023</td>
<td>Country and activity remains important, embedded in DUPC3 themes and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase, most likely embedded in more on regional approach.</td>
</tr>
<tr>
<td>Sudan – Supporting water management in the new Sudan through capacity strengthening and applied research</td>
<td>31-12-2022</td>
<td>Country and activity remains important, embedded in DUPC3 themes and as such projects are anticipated. Specific focus and activities will be defined at the end of DUPC2 phase, most likely embedded in more on regional approach.</td>
</tr>
<tr>
<td><strong>In preparation (Annual Plan 2021)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity strengthening Sahel region</td>
<td>In preparation</td>
<td>Region will become one of the main focus region for DUPC3. Activity will remain important, embedded in DUPC3 themes and as such projects are anticipated.</td>
</tr>
<tr>
<td>Pilot of an online life-long learning programme for alumni</td>
<td>In preparation</td>
<td>Activities will remain important and will be further elaborated under DUPC3.</td>
</tr>
</tbody>
</table>
Annex 8: Proposed logical framework for DUPC3

The underlined DUPC3 outputs and targets in this logical framework contribute directly to the outputs of the programme of the DGIS (IGG) Water Cluster.

**Overarching objective:** Support and catalyse meaningful and lasting transformations to socially inclusive and ecological sustainable water management practices by strengthening capacities in low- and middle-income countries through joint research, education and knowledge sharing on water.

**Assumptions:** diversity in collaborations will lead to enriched knowledge which will translate in changed practices.

**Inputs:** e.g. DUPC2 experiences, DUPC2 partnerships, water-related needs and challenges low- and middle-income countries, DGIS policies, IHE strategies, DGIS funding.

**Risks:** e.g. COVID-19 pandemic, political instability in focus countries and regions, policy changes of DGIS and/or IHE Delft, willingness, commitment and ability of partners to participate.

<table>
<thead>
<tr>
<th>Longer-term programme outcomes resulting from all components</th>
<th>Impact indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The knowledgebase on water management is improved and enriched to support ecologically sustainable and socially inclusive practices.</td>
<td>• Equitable and affordable access to water of good quality and/or improved sanitation services for marginalized communities (target: 5+ documented cases).</td>
</tr>
<tr>
<td>• A broad range of water sector organizations (see Textbox 5) have the knowledge, experiences and capacity to facilitate and fulfil their roles and responsibilities for sustainable and inclusive water management practices.</td>
<td>• Ecological sustainable and climate-resilient agriculture that contributes to securing food production, supporting rural livelihoods and protecting vital ecosystems (target: 5+ documented cases).</td>
</tr>
<tr>
<td></td>
<td>• Protection of people and infrastructure in marginalized areas against water-related disasters by reducing the water-related stresses for people and ecosystems (target: 5+ documented cases).</td>
</tr>
<tr>
<td></td>
<td>• Decisions made and implemented in river basins and delta areas through inclusive processes that stimulate collaboration over water and reduces conflicts among actors (target: 5+ documented cases).</td>
</tr>
<tr>
<td></td>
<td>• Structural inequities and ecologically unsustainable practices are considered main issues in framing water-related problems within policy networks (target: 5+ documented cases).</td>
</tr>
<tr>
<td></td>
<td>• Addressing structural inequities and ecologically unsustainable practices becomes a main focus in the formulation of the new water-related development goals (target: 5+ reports and minutes of meetings).</td>
</tr>
<tr>
<td></td>
<td>• Collaborative initiatives on water research and/or education that embrace diversity among partners and nurture plurality in understanding of and engaging with water (target: 10+ alliances and networks).</td>
</tr>
</tbody>
</table>
**Component ‘Partnerships and joint learning’**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Activities</th>
<th>Outputs</th>
<th>Indicators</th>
<th>Means of verification</th>
</tr>
</thead>
</table>
| Increased, effective and inclusive collaboration and sharing of knowledge and expertise between diverse kinds of organizations and individuals in low- and middle-income countries. | - Establish, facilitate and support learning networks.  
- Organize annual DUPC3 conferences.  
- Organize thematic seminars and regional events.  
- Documenting and sharing experiences and approaches on impact, learning and working in partnership.  
- Engage in activities to reflect on the SDGs and/or provide input for defining future development goals.  
- Manage programme and monitor progress and collaboration. | - Programme network established (target: 1).  
- Thematic networks established (target: 3).  
- Regional networks established in focus regions (target: 3).  
- Various kinds of partners involved and reached (target: 450+).  
- DUPC3 annual conferences organized (target 5).  
- Thematic seminars organized (target 50+).  
- Regional events organized (target: 40+).  
- Reports and publications on implementation science for development (target: 30+, see Textbox 9)  
- Reports that reflect on SDGs and/or advice on new development goals (target: 5+)  
- Co-funding (cash, in-kind) generated for DUPC3 teams (target: 10+ million Euro). | - Result indicators  
- 75% of participants highly value the learning networks and associated events.  
- 90% of participants mentioned knowledge sharing has increased because of the set-up of learning networks.  
- 75% of participants indicate knowledge shared within learning networks and events is important in their projects and/or daily work.  
- 75% of participants indicate that they share the knowledge shared within learning networks and events within their broader professional network.  
- 100% of the individuals feeling safe and respected in partnerships and network. | - Annual surveys on perception of individuals on collaboration and knowledge sharing in projects and learning networks. |

**Process indicators**

- At least 40% of partners involved in projects and/or learning networks are non-academic partners (e.g. government agencies, river basin organizations, private sector, NGOs, CSOs).  
- At least 80% of partners in projects and/or learning networks are from low- and middle-income countries.  
- At least 50% of partners in projects and/or learning networks come from the DUPC3 focus regions.  
- At least 60% of the budget is spend on activities in or directly relevant for DUPC3 focus regions.  
- At least 40% of the individuals participating in the learning networks and/or projects are women.  
- At least 40% of the individuals participating in the learning networks are early-career professionals.  
- At least 40% of projects are led by organizations in low- and/or middle-income countries.  
- At least 40% of projects are led by women.  
- 100% of the individuals feeling safe and respected in partnerships and network. | - DUPC3 project proposals  
- DUPC3 partnership database.  
- DUPC3 programme and project progress and financial reports.  
- DUPC3 website.  
- Conference and seminar proceedings. |
## Component ‘Research and advocacy’

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Activities</th>
<th>Outputs</th>
<th>Indicators</th>
<th>Means of verification</th>
</tr>
</thead>
</table>
| Improved and enriched knowledge and insights on water developed, shared and applied that are relevant for organisations and individuals in low- and middle-income countries. | Initiate and support projects that include research activities:  - Large-scale combined projects (# 16+)  126  - Medium-scale research projects (# 18+)  - Medium-scale research projects on emerging themes (# 6+)  - Small-scale research projects (# 25+)  - Matching funds projects (#10+)  
Other activities:  - Disseminate knowledge to external audiences (e.g. policy makers, water sector organizations, grassroots organizations, communities). | - Open-access research publications (e.g. journal publications, conference presentations) (target: 250+).  
- Open-source research applications (e.g. databases, software, technologies, protocols, toolkits) (target: 50+).  
- Communication outputs for non-academic audiences (e.g. news items, blogs, podcasts, documentaries) (target: 125+).  
- DUPC3 research activities sustained beyond project duration in low- and/or middle-income countries (target: 10).  
- Research collaborations with other donor programmes through matching funds (target: 10). | **Result indicators**  
- 80% of projects have developed knowledge and insights that is taken up by organisation in low- and middle-income countries.  
- 25% of projects contributed to revised or new policies in low- and middle-income countries.  
**Process indicators**  
- 80% of projects have included the end-users in their project design.  
- 75% of medium- and/or small-scale research projects are led by and implemented with primarily organizations in low- and middle-income countries.  
- 50% of small-scale research projects are led by (female) early career scientists.  
- 90% of journal publications are co-authored by scholars from low- or middle-income countries.  
- 20% of journal publications are co-authored by non-academics from low- or middle-income countries.  
- 50% of the journal publications have scholars from low- or middle-income countries as first author. | - Annual surveys on use of knowledge by (partner) organisation in low- and middle income countries  
- DUPC3 project progress reports.  
- DUPC3 project websites.  
- Project inception workshop reports  
- DUPC3 project proposals  
- DUPC3 project progress reports  
- DUPC3 project websites  
- Journal databases.  
- DUPC3 project and partner database |

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126 The large-scale combined projects combine research, education and/or institutional strengthening activities and as such appear in the different components of this logical framework. For more details on the kinds and expected number of DUPC3 projects, see Section 9.
## Component ‘Education and Training’

<table>
<thead>
<tr>
<th>Result</th>
<th>Activities</th>
<th>Outputs</th>
<th>Indicators</th>
<th>Means of verification</th>
</tr>
</thead>
</table>
| Improved and easily accessible high quality education available on water that is relevant for organizations and individuals in low- and middle-income countries. | Initiate and support projects that include education activities:  
- Large-scale combined projects (# 16+).  
- Medium-scale education projects (# 10+).  
- Medium-scale projects on innovation of education (# 10+).  
- Small-scale education projects (# 15+).  
- Matching funds projects (# 5+).  
Other activities:  
- Provide support to the development and implementation of education strategies of IHE Delft and partner organizations. | Courses updated with research findings at partner organisations in low- and middle-income countries (target: 50+).  
- Courses updated with research findings at IHE Delft (target: 30+).  
- Online courses developed and offered (target: 20+).  
- Online materials (e.g. recorded lecture series, glossaries, podcasts, documentaries) developed to be used in educational offerings (target: 50+).  
- Open Course Ware courses developed (target: 30+).  
- New GPDPs developed (target: 4+).  
- DUPC3 education activities sustained beyond project duration in low- and middle-income countries (target: 5+).  
- Collaborations with other donor programmes on education through matching funds (target: 5+). | **Result indicators**  
- 90% of open education products developed and offered are evaluated as relevant by participants from low- and middle-income countries  
- 70% of open education products developed is offered by partners in low- and middle-income countries  
- 25% of growth in visitors to IHE Open Education platform.  
- 50% of growth in visitors from low- and/or middle-income countries to IHE Open Education platform.  

**Process indicators**  
- 50% of medium- and/or small-scale education projects involve water sectors organizations in low- and middle-income countries in the development of the curriculum.  
- 80% of medium- and/or small-scale education projects involve universities in low- and middle-income countries in the development and delivery of education.  
- 75% of medium- and/or small-scale education projects are led by and implemented with primarily organizations in low- and middle-income countries.  
- 50% of smaller-scale education projects are led by (female) early career scientists. | - Evaluation reports of courses  
- Yearly statistics from IHE Open Education platform  
- Interviews with participants and partners in low- and middle-income countries on participating in and value of online products  
- DUPC3 project proposals.  
- DUPC3 project progress reports.  
- DUPC3 project and partner database.  
- DUPC3 Project websites.  
- Curricula of IHE Delft.  
- Curricula of partner organizations.  
- Visitors record of OpenCourseWare platform. |
**Component ‘Institutional strengthening’**

<table>
<thead>
<tr>
<th>Result</th>
<th>Activities</th>
<th>Outputs</th>
<th>Indicators</th>
<th>Means of verification</th>
</tr>
</thead>
</table>
| Increased capacity of partner organizations in low- and middle-income countries so that they are equipped with the skills, knowledge and facilities to effectively participate in joint research and education and/or implement promising solutions in their everyday practice. | Initiate and support projects that include institutional strengthening activities:  
- Large-scale combined projects (# 16+).  
- Medium-scale institutional strengthening projects (# 2+).  
- Matching funds projects (# 5+).  
Other activities:  
- Life-long learning programme for IHE alumni.  
- Skills trainings for partner organizations.  
- Student competitions (# 6). | - Early-career professionals in low- and middle-income countries that obtained an MSc degree (target: 180+).  
- Professionals in low- and middle-income countries trained on water related topics (target: 450+).  
- Capacity of river basin organizations involved in transboundary negotiations strengthened on diplomacy (target: 10+).  
- Governance and autonomy of existing formal networks on water strengthened (e.g. WaterNet, NBCBN-RE) (target: 2+).  
- Alumni seminars organized (target: 30+).  
- Organizations supported in strengthening their institutional capacity (e.g. skills for project acquisition, management and/or implementation; upgrading of work facilities) (target: 30+).  
- Excellent students in focus regions awarded, trained and received public attention (target: 18+).  
- DUPC3 institutional strengthening activities sustained beyond project duration in low- and middle-income countries (target: 5+).  
- Collaborations with other donor programmes on institutional strengthening through matching funds (target: 5+). | Result indicators  
- 80% of trained professional indicate that they use the acquired knowledge and skills in their professional life.  
- 50% of partner organizations indicate that their institutional capacity is strengthened.  
- 40% of partner organizations indicate that they changed their practices based on new insights or skills obtained through DUPC3 efforts. | - Annual surveys on application of knowledge by trained professionals  
- Case studies on applied knowledge  
- Interviews with trained professionals |
| | | Process indicators | | - DUPC3 project progress reports.  
- DUPC3 Project websites.  
- Student record databases.  
- Alumni tracer surveys. |
Annex 9: Proposed budget allocation for DUPC3

Table 11 gives an overview of the proposed budget for DUPC3 with an indication of the distribution of the funding over the different programme components. The actual distribution of the funds will be depend on the project proposal submitted and approved in response to the calls for proposals under DUPC3. Table 12 gives an overview of the estimated budget per year, which will be further fine-tuned in the annual plans that will be submitted to DGIS for approval.

**Table 11. Proposed detailed budget for DUPC3 with estimated budget allocations per programme component.**

<table>
<thead>
<tr>
<th>DUPC3 Budget (2021-2027)</th>
<th>Budget</th>
<th>Budget distribution per result component</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Target</td>
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<tr>
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<td></td>
<td></td>
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<tr>
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<td>8</td>
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<tr>
<td>Small-scale projects</td>
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<tr>
<td>Matching funds</td>
<td>8</td>
<td>50,000</td>
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<tr>
<td>Water and Food</td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
<td>Medium-scale projects</td>
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<td>140,000</td>
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<tr>
<td>Small-scale projects</td>
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<tr>
<td>Top-up funding</td>
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<td>200,000</td>
</tr>
<tr>
<td>Matching funds</td>
<td>10</td>
<td>50,000</td>
</tr>
<tr>
<td>River Basins and Deltas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large-scale projects</td>
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</tr>
<tr>
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<tr>
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<tr>
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<td>50,000</td>
</tr>
<tr>
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<tr>
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<tr>
<td>Programme level activities</td>
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<td>2,100,000</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------</td>
<td>-----------</td>
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<tr>
<td>Medium-scale projects</td>
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<td></td>
</tr>
<tr>
<td>Impact - implementation science</td>
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<tr>
<td>Integrative research across thematic areas</td>
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<td>140,000</td>
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<tr>
<td>Emerging themes (including DGIS priorities)</td>
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<td>140,000</td>
</tr>
<tr>
<td>SIDS programme (lumpsum per year from 2024 onwards)</td>
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</tr>
<tr>
<td>Innovation in education (lumpsums per initiative)</td>
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</tr>
<tr>
<td>Institutional support to existing networks (lumpsum per year)*</td>
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<td>450,000</td>
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<tr>
<td>Alumni life-long learning programme (lumpsum per year)</td>
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<tr>
<td>Skills training partners and facilities (lumpsum per year)</td>
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<td>Management team (per year)</td>
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</tr>
<tr>
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<td>Total:</td>
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Table 12. Proposed detailed budget for DUPC3 with estimated budget allocations per year.

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<th>Budget</th>
<th>Estimated budget distribution per year</th>
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</thead>
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<tr>
<td></td>
<td>Target</td>
<td>Average budget</td>
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<td>Large-scale projects</td>
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<tr>
<td>Medium-scale projects*</td>
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<tr>
<td>Small-scale projects*</td>
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<tr>
<td>Top-up funding</td>
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<tr>
<td>Matching funds</td>
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<td>1,250,000</td>
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<tr>
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<td>10</td>
<td>140,000</td>
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<tr>
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<tr>
<td><strong>River Basins and Deltas</strong></td>
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<td>Large-scale projects</td>
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<tr>
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<td>Matching funds</td>
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<tr>
<td><strong>Programme level activities</strong></td>
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<tr>
<td>Impact - implementation science</td>
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<td>140,000</td>
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<tr>
<td>Integrative research across thematic areas</td>
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<tr>
<td>Innovation in education (lumpsum per initiative)</td>
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<tr>
<td>Institutional support to existing networks (lumpsum per year)*</td>
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<td>450,000</td>
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</table>

<p>| Total                     | 7,720,000 | 0 | 970,000 | 1,445,000 | 1,630,000 | 1,675,000 | 1,450,000 | 550,000 | 800,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |</p>
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<tbody>
<tr>
<td>Alumni life-long learning programme (lumpsum per year)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Skills training partners and facilities (lumpsum per year)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student competitions (lumpsum per competition)*</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>100,000</td>
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<td>100,000</td>
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<td>100,000</td>
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<td>600,000</td>
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<td>100,000</td>
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<td>100,000</td>
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<tr>
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<td>8,110,000</td>
<td>4,550,000</td>
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<td>500,000</td>
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<td>100,000</td>
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</tr>
<tr>
<td>Monitoring and evaluation (per year)</td>
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<tr>
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<td>7,975,000</td>
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<td>8,610,000</td>
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Sub-total: 43,000,000 0 5,140,000 7,475,000 8,660,000 9,065,000 8,110,000 4,550,000

Total: 46,000,000 250,000 5,640,000 7,975,000 9,160,000 9,565,000 8,610,000 4,800,000
Annex 10: IHE Delft tariffs for DUPC

Table 13 gives an overview of the proposed IHE Delft tariffs to be used for DUPC3. Potentially these tariffs will be reviewed in consultation with DGIS during the implementation of DUPC3 to correct for changes in the collective labour agreement.

Table 13. IHE Delft DUPC tariffs.

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<th>Fee</th>
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