



Financing the Water, Energy and Food Nexus

A comprehensive review of Financing Mechanisms for the WEF Nexus



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About

Nexus Regional Dialogues Programme Phase II

Building on the results of Phase I, the Nexus Regional Dialogues Programme Phase II aims to institutionalise the WEF Nexus approach in national and regional governance structures and investment decisions and to engage the public and private investors for WEF Nexus projects.

Vision: Inclusive water, energy and food security on the path to a climate resilient and resource efficient future for all.

Implementing organisation: Regional Environmental Centre for Central Asia (CAREC); Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ); Global Water Partnership Southern Africa (GWP-SA)

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Beneficiary countries: Central Asia; Latin America and the Caribbean (LAC); Middle East and North Africa (MENA); Niger Basin; Southern Africa

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GIZ

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The commissioning parties and cooperation partners all place their trust in GIZ, and we work with them to generate ideas for political, social and economic change, to develop these into concrete plans and to implement them. As a public-benefit federal enterprise in international cooperation with a focus on sustainability, we represent German and European values. Together with our partners in national governments worldwide and cooperation partners from the worlds of business, research and civil society, we work flexibly to deliver effective solutions that offer people better prospects and sustainably improve their living conditions.

RES4Africa Foundation

Born in 2012, RES4Africa (Renewable Energy Solutions for Africa) is a Foundation that works in support of Africa's just energy transition in order to achieve the SDG7, ensuring access to affordable, reliable, sustainable and modern energy for all. It functions as a bridge between Europe and Africa: gathering a network of members from all over the clean energy sector from both continents and high-level international partnerships, we ensure constant dialogue between the most relevant energy stakeholders willing to mobilise investments in clean energy technologies.

We envision the sustainable transformation of Africa's electricity systems to ensure reliable and affordable electricity access for all, enabling the continent to achieve its full, resilient, inclusive and sustainable development.

We work towards creating favourable conditions for scaling up investments in clean energy technologies to accelerate Africa's just energy transition and transformation.

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Acronyms

ADB	Asian Development Bank	IFU	Investment Fund for Developing Countries/ Investeringsfonden for Udviklingslande
AEF	Access to Energy Fund		
AfDB	African Development Bank		
AHA	Irrigated Agricultural Development	KPI	Key Performance Indicator
AMCOW	African Ministers' Council on Water	LDC	Least Developed Countries
AWF	African Water Facility	MDB	Multilateral Development Bank
BDB	Bilateral Development Bank	MENA	Middle East and North Africa
BIO	Belgian Investment Company for Developing countries/ Belgische Investeringsmaatschappij voor Ontwikkelingslanden	MEA	Multilateral Environmental Agreement
		NB	Niger Basin
BMZ	German Federal Ministry of Economic Cooperation and Development/ Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung	NDA	National Designated Authorities
		NDB	National Development Bank
		NDC	National Determined Contributions
		NDF	Nordic Development Fund
		OPIC	Overseas Private Investment Corporation
BOAD	West African Development Bank / Banque Ouest Africain de Développement	PPP	Public Private Partnerships
		PMERSA-MTZ	Project to Enhance Food in Maradi, Tahoua and Zinder Regions
CFM	Climate Fund Managers	PUE	Productive use of energy
CI1 / CI2	Climate Investor One / Two	RIH	Regional Innovation Hubs
DFCD	Dutch Fund for Climate Development	SDG	Sustainable Development Goal
		SGP	The Small Grant Programme
DFI	Development Finance Institutions	Sida	Swedish International Development Cooperation Agency
DREAM	Distributed Renewable Energy-Agriculture Modalities		
		SIDS	Small Island Developing States
EU	European Union	SOFID	Sociedade para O Financiamento do Desenvolvimento
EIB	European Investment Bank		
ESCO	Energy Service Company	SSA	Sub-Saharan Africa
FM	Financing Mechanism	SNV	Netherlands Development Organisation/ Stichting Nederlandse Vrijwilligers
FMO	Dutch Entrepreneurial Development Bank / Financierings-Maatschappij voor Ontwikkelingslanden		
		TA	Technical Assistance
GAFSP	Global Agriculture & Food Security Program	TEA	Transforming Energy Access
		USAID	U.S. Agency for International Development
GCF	Green Climate Fund		
GHG	Greenhouse Gases		
GIZ	German Agency for International Cooperation/ Deutsche Gesellschaft für Internationale Zusammenarbeit	UNFCCC	United Nation Framework Convention on Climate Change
		WEF	Water Energy and Food
		WE4F	Water and Energy for Food
GNA	Good Nature Agro	WWF-NL	World Wide Fund for Nature Netherlands
IFC	International Finance Corporation		

Executive Summary

In the near future, expanding populations and economies in Africa and the Middle East will add stress on the current infrastructure and supply systems of countries, leading to a surge in demand for essential resources such as water, food and energy. It is estimated that by 2030 Africa's water consumption will increase by 283% compared to 2005 levels, food demand by 60% compared to 2015 levels, and electricity demand by 70% compared to 2016 levels. One of the biggest challenges of this era will be to enable growth while decoupling it from the use of natural resources. In this sense, the synergy among the water, energy and food sectors appears pivotal to guaranteeing sustainable and just development. The Water-Energy-Food (WEF) Nexus approach addresses this complex issue by promoting an integrated perspective to foster multi-sectoral cooperation at project, policy and institution levels.

The interlinkages captured by the WEF Nexus offer a ground-breaking approach to increasing access to clean energy combined with water and food. As such, the WEF Nexus can reveal approaches as well as business models that look at how water, energy and food can be connected to respond to essential development needs, increasing economic productive capacities and driving socio-economic welfare while reducing trade-offs, sustaining an efficient and sustainable use of limited natural resources and supporting local communities to cope with climate change's adverse events.

Also due to the growing number of emergencies linked to climate change's devastating effects, in the last decade, supporting mechanisms and financing tools to promote projects and initiatives aiming to strengthen sustainable resources management have rapidly increased.

But fragmentation of financing instruments made their navigation and access more complex, as they highly vary in terms of types of funding provided, target groups, geographies of action, amount of funds or scales of financeable activities. Further complexity emerges when considering mechanisms specifically adapted to finance WEF-Nexus-oriented initiatives. As the concept has been only recently consolidated, most of the available funding is addressed to either water, energy or food projects rather than towards integrated Nexus initiatives.

This analysis aims at shedding light on the multifaceted universe of financing mechanisms available, with a particular focus on two geographic areas: the Niger Basin region and the Middle East and North Africa Region (MENA).

The analysis has four main objectives:

- Provide a review of international, national and regional financial supporting mechanisms for public and private actors susceptible to promoting the realisation of Water Energy and Food projects.
- Present a mapping of the existing financing institutions with their core characteristics.
- Suggest a shortlist of financial supporting mechanisms adapted for various applicants and project sizes.
- Report challenges and best practices and provide recommendations on the funding of Water Energy and Food projects based on the observation of the financial support environment.

To this end, 71 financing mechanisms have been included in the analysis; the review shows that most of the mechanisms operate through 5 types of support: debt, equity, grants, risk mitigation instruments, and technical assistance. They can be divided into two macro-categories: public funds (such as public entities, development banks and international financing institutions) and private funds (such as investment funds and crowdfunding platforms). The other side of the same medal is represented by the type of organisations that can apply to these financing opportunities, namely i) private sector organisations, ii) public sector entities and iii) grassroots organisations. The analysis has been carried out by confronting the 71 mechanisms against 7 key criteria: i) eligibility criteria, ii) type of funding, iii) facility size, iv) ticket size offered, v) geographic scope, vi) stage of the project supported, and vii) sector of action.

Among the reviewed financing instruments grants and concessional loans are the most common types of funding offered, respectively with 56% of mechanisms for the first category and 41% for the second one, followed by Technical Assistance (TA) and equity mechanisms, which are offered by one third of all funds.

When it comes to available ticket size, the distribution is quite homogeneous among categories classified on a logarithmic scale. A slight majority of funds provide tickets between \$ 100 k and \$ 1 M or between \$ 1 M and \$ 10 M (both slightly above 40%), while less than 30% of funds provide tickets of less than \$ 100 k or more than \$ 10 M.

Bearing in mind that the analysis adopts a non-exclusive approach (funds can be counted twice if they cover one or more categories), the absolute majority of mechanisms (91%) are active in the sub-Saharan region, while for the targeted regions of the study, it is possible to observe that 75% of funds cover the Niger Basin area, about 60% the North Africa area and about 50% the Middle East region.

One of the main objectives of the analysis is to determine if currently available funding mechanisms could be considered “WEF-oriented”. Even if rarely explicitly mentioned, some funds have tools to support integrated WEF projects. Indeed, the review reveals that around 40% of the analysed financing instruments are WEF-related considering that they fund specific technologies such as applications for the agri-productive use of energy that are specifically oriented towards the agriculture sector but largely take into account the water and energy impacts. When considering the three sectors separately, the analysis shows that mechanisms funding energy projects are predominant (77%), with food and water respectively at 65% and 53%.

The statistics of the financing mechanisms provide an overarching picture of the plethora of facilities available, but to add value to the analysis and deep-dive into the water-energy-food concept the analysis moved forward to generate a shortlist of 9 funds that answer specifically to the following general criteria:

- Financing mechanisms supporting projects in the three dimensions of the Water, Energy and Food Nexus.
- Financing mechanisms supporting projects in multiple countries of the targeted regions of the analysis.
- Financing mechanisms offering grants or concessional loans with below-market interest rates.

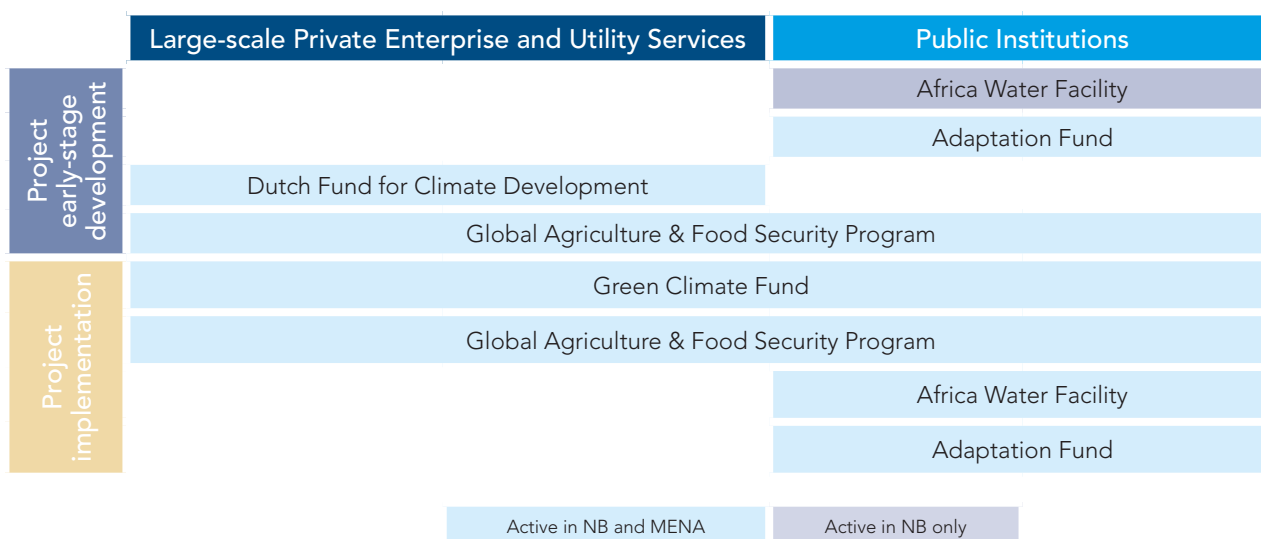
The shortlisted institutions have also undergone a review of their project portfolios and a sensitivity analysis of the geographic scope and the sectors of action. By applying the above-mentioned criteria, the following list of funds was obtained:

- Adaptation Fund (AF)
- African Water Facility (AWF)
- Global Agriculture and Food Security Program (GAFSP)
- Green Climate Fund (GCF)
- Dutch Fund for Climate and Development (DFCD)
- Water Energy for Food (WE4F)
- Africa Enterprise Challenge Fund (AECF)
- Powering Renewable Energy Opportunities (PREO)
- Small Grant Programme (SGP)

The analysis shows that these mechanisms have a strong potential to support WEF initiatives in the Niger Basin Region and the MENA Region, because of their explicit propensity to support WEF-related activities. The funds were then classified by region of activities, stage of projects supported and eligible entities.



Shortlisted funds supporting grassroots organisation and SME



Shortlisted funds supporting large-scale private companies and public institutions

Despite the considerable number of funds that can support water-energy-food initiatives and projects, the analysis brings to light the limitations surrounding a full-fledged implementation of this approach. WEF projects are often mistakenly perceived as small-scale applications, whereas large-scale examples exist (e.g. the Kandadji Dam project), an aspect that contributes to the marginal importance that the so-called “nexus element” seems to have within funding institutions. Therefore, funding institutions tend to give limited space and resources to the nexus concept, as its implementation would require funds to put in place more diverse expertise and dedicated team to evaluate and monitor integrated projects. The lack of data on available best practices further contributes to the slow development of these “niche” projects that, on the other hand, have potential to help communities cope with the effects of climate change.

Considering future challenges, it is clear that actions are needed to foster the WEF development both at the implementation and institutional levels. Stimulating the coordination among the stakeholders moving on the water-energy-food map would foster the creation of a favourable environment for investments and the deployment of WEF technologies and solutions. Enhancing the synergy among the three sectors is indeed pivotal both at institutional and project levels. To this end four main streams of action are identified:

- Favour coordination between all players of the WEF Nexus. Coordination should be promoted between local institutions creating a favourable environment and financing mechanisms to support investment and deployment of WEF Nexus solutions and projects. Funding institutions could also further collaborate to share their expertise. The DREAM initiative in Ethiopia is a successful example of multi-stakeholder collaboration.
- Promote WEF-specific funding pillars/windows within existing financing mechanisms or one-stop-shop mechanisms to reduce fragmentation of funding while facilitating channel financing from different sectors to integrated and high-impactful projects.
- Support sectorial financing mechanisms that are active in at least one of the three sectors to adopt WEF nexus approaches, strategies, targets, KPIs and create multi-sectoral expert teams to evaluate and oversee integrated projects effectively.
- Raise awareness of the potential of the Nexus and promote adoption of high-impact or larger-scale Nexus projects, either by scaling up small-medium scale activities or by working with public institutions and utility-scale companies to develop infrastructure plans integrating Nexus approaches. Advocating for the high-impact potential of Nexus projects and their replicability could facilitate the implication of multiple actors, thus favouring the sharing of expertise between sectors.

In this framework, advocacy activities appear as one of the most immediate available options to bring the dialogue around the nexus forward. Advocating for the expansion of nexus activities should be carried out at all levels, to foster more and more involvement across governments and financial institutions to adopt this approach.

In order to attract more attention from policymakers and institutions to further invest resources in the water-energy-food approach, a systematisation of WEF knowledge and best available practices could help to raise awareness of the Nexus potential and promote the adoption of high-impact and large-scale projects.

These actions should be taken simultaneously as a coordinated effort of project developers, governments and funding institutions to mainstream the water-energy-food nexus as one of the tools to address climate change and its effects.

Introduction



1.1 The Water Energy and Food Nexus

How was the concept of water-energy-food nexus conceived? The answer lies in recent history: in 2009, United Nations Secretary-General Ban Ki-Moon addressed global financial institutions to put water security at the centre of the discussion in the yearly World Economic Forum. This led to the release of the report “The Water-Energy-Food-Climate Nexus”, a cornerstone which underlined the crucial interconnections of these elements and their relevance in shaping the global economy’s future.

Positioning the Water-Energy-Food Nexus (WEF) within the UN Agendas of sustainable development was, in part, driven by the action of financial institutions that supported the shift from “state-oriented” steps towards the nexus issue to a more integrated approach to the global economy¹.

But what did state-of-the-art look like before conceptualising the nexus? Most of the sustainable development programs in the 90’ revolved around integrated water resources management (IWRM). As this approach started to be considered too “water-centric”, and it was becoming evident the need to pay more attention to the interconnections among water, energy and food in a more complex framework,

the introduction of the nexus concept² became necessary. The call for new approaches also emerged when, in the same years, growing industrial demands for energy raised concerns about its implications on water security and the environment³.

However, the discussion around the nexus approach seemed not to include, and it struggles to do it also at present, the role of finance in the “making of nexus”: in the rare occasions when finance is mentioned across literature, it’s related to the financial commitments that nexus solutions require⁴. Despite that, financial markets have somehow shaped our notion of nexus from the nineties. While government aid was dropping rapidly regarding assistance for water, development capital gathered on financial markets grew remarkably by the end of the decade at around 500% with respect to aid assistance⁵.

This study aims to move a step forward towards understanding the role of financing mechanisms within the nexus “universe”, as not only do they address the needs of project developers and support investment, but they contribute to shaping the nexus depending on their vision and mission.

1.2 Scope of the analysis

RES4Africa Foundation is collaborating with the Nexus Regional Dialogues Programme (NRDP) Phase II, funded by the European Union (EU) and the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche

Gesellschaft für internationale Zusammenarbeit (GIZ), to mainstream the Water-Energy-Food Nexus approaches through increased investor awareness, capacity building, concrete projects and expansion of knowledge management.

¹ Jeremy J. Schmidta, Nathaniel Matthews, *From state to system: Financialization and the water-energy-food-climate nexus*, 2018

² Benson D., Gain A., Rouillard J., *Water governance in a comparative perspective from IWRM to a “nexus approach”*, 2015

³ Flkenmark M., Lundqvist J., *Towards water security: political determination and human adaptation*, 2009

⁴ Dodds F., Bartram J., *The water, energy, food and climate nexus: challenges and an agenda for action*, 2016

⁵ Briscoe J., *The changing face of water infrastructure financing in developing countries*, 1999

This analysis focuses on the challenges of financing the Water Energy and Food Nexus. It proposes a review of the international financing instrument environment and deep dive into WEF-oriented funds in the Middle East, North Africa and Niger Basin regions. The review aims to help identify opportunities in financing WEF Nexus projects and support the mobilisation of funding for high-impact integrated activities. The analysis has four main objectives:

- Provide a review of international, national and regional financial supporting mechanisms for public and private actors susceptible to promoting the realisation of Water Energy and Food projects.
- Present a mapping of the existing financing institutions with their core characteristics.
- Suggest a shortlist of financial supporting mechanisms adapted for various applicants and project sizes.
- Report challenges, best practices and provide recommendations on the funding of Water Energy and Food projects based on the observation of the financial support environment.

To achieve those objectives, the analysis first focuses on reviewing the state-of-the-art practices in Development Finance Institutions (DFIs), displaying their main levers of action

such as grants, concessional finance, debt, equity and technical assistance, reviewing the structure of project financing and introducing common forms of financing institutions. Then, it works with a database of 71 financial institutions active in renewables and energy access, water and sanitation, agribusiness and food security, infrastructures, climate change adaptation and mitigation, and ecosystems preservation. The financing institutions are classified according to criteria resulting from the analysis of DFI state-of-the-art practices.

The database is first used for high-level data analysis of the funds available to support the financing of the WEF Nexus. The data are then used to map financing mechanisms according to the eligible entities for financial support, the type of funding, the ticket size offered by the institutions, the geographical scope of action, and the sectors of activity. The database is then used to shortlist WEF Nexus financing mechanisms supporting projects in the Niger Basin and MENA regions. The shortlisting first focused on funds with declared interests and impacts in the three dimensions of the Water, Energy and Food Nexus dimensions. Then, it reviewed sector-specific financing instruments to identify their potential in financing the Nexus. Finally, the shortlisted funds were presented in a two-pages analysis. Their review resulted in a series of recommendations.



02 / **State of the art and methodology**



2.1 Financing sources, instruments and providers

There exist several financing schemes that can be put in place to fund water-energy-food related solutions, each one with peculiar characteristics that make it more suitable for specific categories of initiatives. Indeed, integrated projects can provide multiple benefits at both collective and individual levels (energy savings, environmental protection, reduced inefficiency, etc.); however, the investment required may constitute a tremendous obstacle to their implementation. There needs to be more information on the

different financial sources that promoters of WEF-related projects can adopt. To provide an overall view of existing possibilities and to assist in decision-making, some of the main financial instruments that can be used have been detailed in the following paragraphs.

In particular, it is possible to indicate **five major financing types** typically employed in financing sustainable measures: debt, equity, grants, risk mitigation instruments and technical assistance (Figure 1).



Figure 1

Depending on the degree of advancement of the financial sector development in a particular country, there are many examples of financial

instruments or products applicable to WEF projects that combine one or more financing types or attributes, as outlined in Table 1.

Financial products/instruments	Definition
Direct Loan	Direct Loan is one of the most common financing instruments, covering both private and public initiatives and all scales of projects. With strict regulations on indebtedness capacity, public entities might have more difficulty accessing loans, similarly to private entities with limited credit history (i.e., start-ups, new-born companies, etc.).
Blended Loans	Blended loans represent the mix between development finance funds (subsidised loans) and funds raised on the capital market. Through this instrument, developing countries could scale up to commercial financing and channel financing toward investments for development impact.
Crowd-financing	Crowd-financing is funding a project by raising small amounts of money from many individuals via an internet-based platform. The types of funding offered through crowd-financing include donations, reward-based donations, debt (lending) and equity.
Performance-Based Financing	The Performance-Based Financing (PBF) approach rests on incentives to providers based on their achievement of agreed-upon, measurable performance targets. In financing EE projects, the PBF mechanism typically involves an Energy Service Company (ESCO), which uses the income from the cost savings to repay the project costs. The ESCO gets paid only when the project achieves predicted energy savings. Two types of contracts exist based on funding and risk allocation arrangements among ESCO, end-user and financing institutions (Shared Savings or Guaranteed Savings Model).
Bulk-procurement (Aggregation)	Bulk procurement utilises aggregate demand to reduce project implementation costs and risks. It provides economies of scale enabling suppliers (or manufacturers) to reduce prices.
Securitization	The process by which a company gathers different financial assets/debt to form a consolidated financial instrument to be sold to investors. In return, investors receive interest payments.
Climate or Green Bonds	Green bonds are a type of fixed-income instrument (i.e. loan) specifically earmarked to raise money for climate and environmental projects. The credit rating of these tools is usually associated with the rating of the issuing entity.

Table 1: Examples of Financial Products or Instruments

The types mentioned above of financial products or instruments are offered through different financial entities, which can be international or national. The monetary providers can be grouped into different categories

according to the nature of the funds (public or private) that they offer. The following chart represents, in a simplified manner, the possible funds' distribution channels.

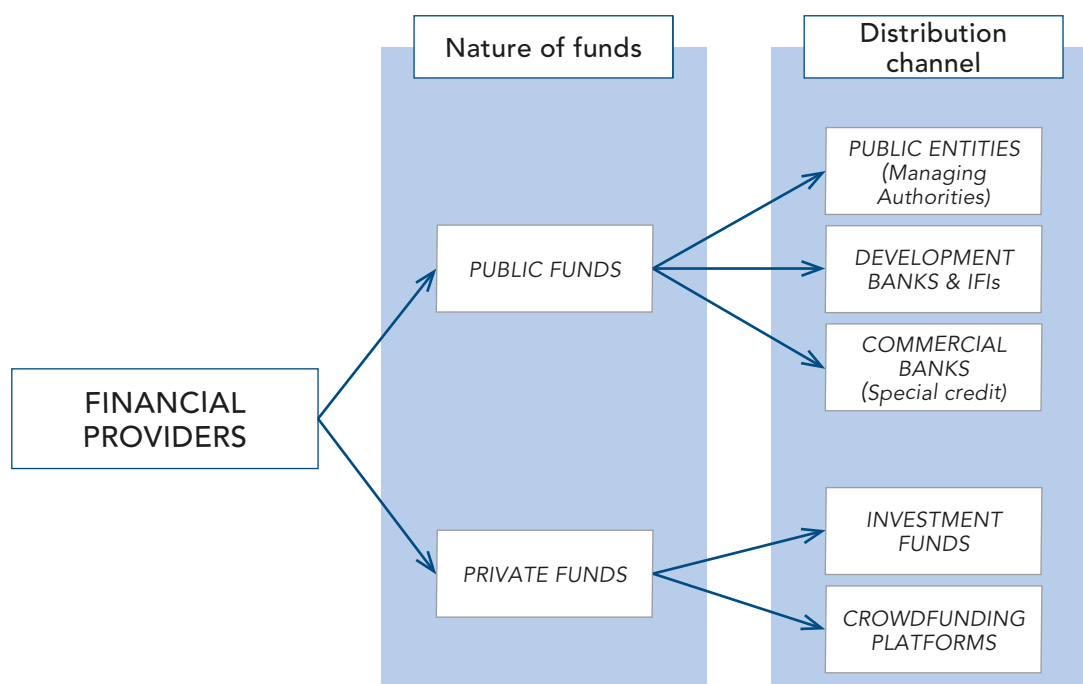


Figure 2: Type of Financial Providers

It is possible to describe each of the distribution channels mentioned above in more detail. Below is some additional information about the private and public financial providers aligned to the reported scheme:

- Banking institutions usually refer to commercial banks, cooperative banks, leasing institutions or credit unions offering loans or leases for investments. **Commercial banks** are the most diffuse financial institutions that accept deposits, offer checking account services, do business, personal, and mortgage loans, and offer basic financial products like certificates of deposit and savings accounts to individuals and small businesses.
- **National Development Banks (NDBs) and Bilateral or Multilateral Development Banks (Bi-MDB):** provide financing (equity, loans, guarantees, grants) and professional advising

(i.e., technical assistance) for economic development. Such institutions cooperate with other international organisations and other financial entities to further provide technical assistance for projects and economic growth. Generally, bilateral institutions are independent institutions which tend to create a partnership between two entities with lower financial capacity and more targeted interventions. Multilateral banks are international financial institutions established by more than one country and are subject to international law. These institutions finance projects in support of the private and public sectors mainly through equity investments, long-term loans and guarantees. MDBs can also act as a link of cooperation among governments. They normally have more financial capacity than bilateral development banks. Some examples of Bilateral Institutions

are Swedfund, IFU, BIO, SOFID, OPIC, while Multilateral Institutions are AfDB, ADB, EIB, IFC.

- **Microfinance Institutions (MFIs):** offer financing to individuals and small businesses that lack access to conventional banking and are generally a financial partner of choice for providing loans to households and small businesses. The size of the loans provided by an MFI is smaller than those granted by traditional banks (also for 100\$ or less), and they are usually characterised by a short term (one year or less). For this reason, these are called microcredit. Typically, microfinance institutions are less exposed to risks, as being concerned by the negative impacts on their communities ensures their attention to environmental and social risks¹.
- **Non-banking Financial Institutions (NBFIs):** NBFIs facilitate alternative financial services, such as risk pooling, money transmitting, and consumer credits. Examples of NBFIs include insurance firms, venture capitalists, currency exchanges, some MFIs, and pawn shops. NBFIs provide services that are not necessarily suited to banks and generally specialise in financial servicing of targeted sectors or groups². NBFIs are financial institutions that do not have a full banking licence or that are not supervised by a national or international banking regulatory agency. NBFIs can provide multiple alternatives to transform an economy's savings into capital investment.
- **Institutional investors, Private Equity Funds, or Pension Funds** utilise collective investment schemes (capital pooling). An Institutional investor has to be intended as a company or organisation that invests money on behalf of other people; mutual funds are examples. Most of the global assets of Institutional investors are allocated to middle-income economies with well-developed investment environments with a relatively low-risk profile and predictable returns. These investing opportunities represent, therefore, an opportunity for private companies to gather financial resources from third-party investors interested in relatively safe returns. Private Equity Fund investments are attractive to developing economies because they can be an alternative to company self-financing and obtaining funds from banks (through issuing debt securities or shares to investors).
- **Energy Service Companies (ESCOs):** an ESCO is a commercial business that provides a broad range of energy solutions. For example, ESCOs guarantee energy savings or the provision of energy service at a lower cost; the remuneration of ESCOs is directly tied to the energy savings achieved; therefore, a certain risk is acceptable by the ESCO. Insurance Companies provide risk mitigation instruments to customers that, in return, pay for risk premiums, which insurance companies can then reinvest in suitable investments. One of the most diffuse instruments is related to weather-related disaster prevention, as it is one of the most recurrent and usable insurance types. The continuous occurrence of natural disasters and climate change consequences makes these companies particularly interesting³.
- **Guarantee Institutions** provide credit risk guarantees (i.e., a certain percentage of the loan) to a financing institution (e.g., a bank) or directly to the company/project sponsor. The guarantee might supplement or fully replace the missing collateral and enable the bank to grant the loan. The guarantee normally doesn't cover more than 80% of the bank loan; 20% of the risk remains with the lender. The company remains liable for the loan.
- **Crowdfunding Entities / Platforms:** entities established and solely authorised to provide crowd-investing services. Crowdfunding is a financing practice that involves collecting money from a large number of private investors

¹ IFC, Micro Finance Institutions Assessment Tool, 2011

² The World Bank, Nonbanking Financial Institution, 2012

³ Joint Research Centre, Energy Service Companies (ESCOs)

via online platforms to fund specific projects. There exist different types of crowdfunding, for example, equity and lending. Crowdfunding can play a significant role in developing Water-Energy-Food projects, as entire communities could benefit from shared investments.

- **Utilities** provide particular utility products or services (e.g., electricity, gas, water) to

end-customers, with whom it enters into a binding agreement for a specific amount or duration of product/service delivery. Utilities are able to offer products such as on-bill financing and debt/loan products.

Table 2 presents an overview of provided financial products or instruments by the potential source, as listed above.

Providers of financial instruments	Debt, Loans, Lease	Equity	Grants	Guarantees	Blended Loans	Crowd-financing	Performance-based Financing	Bulk-procurement (Aggregation)	Securitization	Green Bonds	Insurance
Banking Institutions	✓						✓			✓	
National Development Banks (NDBs)	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Bilateral or Multilateral Development Banks	✓	✓	✓	✓	✓		✓			✓	
Microfinance Institutions (MFIs)	✓							✓			
Non-banking Financial Institutions	✓	✓						✓			✓
Private Equity Funds	✓	✓					✓	✓	✓		
Pension Funds	✓									✓	
Energy Service Companies (ESCOs)	✓						✓	✓			
Insurance Companies											✓
Guarantee Institutions			✓								
Crowdfunding Entities / Platforms						✓					
Utility	✓										

Table 2: Overview of financial products and their providers

2.2 Methodology

In order to identify and explore most suitable financing mechanisms for WEF Nexus projects, an analysis was conducted in successive steps:

- Classification of financial mechanisms based on seven main categories of selection criteria.
- Shortlist of funds (through primary and secondary analysis) active with potential impact on the three dimensions of the nexus based on the type of possible applicants and their needs.
- Interviews with financing mechanisms providers to assess their vision, strategy and initiatives on the nexus.
- Detailed analysis of shortlisted mechanisms to assess their nexus potential.
- Identification of challenges, best practices, and key action areas for creating an enabling financing environment for WEF nexus projects.

2.2.1 Financing instrument characteristics and classification

The first step of the analysis involved identifying the core characteristics defining the scope of action of financial supporting mechanisms. Financial mechanisms have thus been classified into seven categories:

- 1) Eligible entities for financial support
- 2) Type of funding
- 3) Facility size
- 4) Ticket size offered
- 5) Geographic scope
- 6) Stage of the project supported
- 7) Sector of action

Each category is subdivided into sub-criteria. The classification uses a non-exclusive approach. Therefore, matching a sub-criterion does not exclude matching another sub-criterion in the same category. For example, this approach implies that being active in the Niger Basin region (Category "Geographic Scope", sub-criterion "Niger Basin") does not exclude the same fund from having activities in the MENA region (Category "Geographic Scope", sub-criterion "MENA").

Eligible Entities

The eligible entities selection category refers to the type of applicants that the funding

institutions want to support. While some financial supporting mechanisms have specific guidelines for the entities they target (for example making the difference between regional or national governments), the classification of this analysis keeps a high-level separation with three classes of beneficiaries:

- **Private Sector:** this category includes most private actors with a for-profit business model, covering small, medium and utility scale enterprises. Smallholder farmers' or community-led initiatives are excluded from this category and fall in the grassroots organisation category, even if the project has a for-profit business model.
- **Public Sector:** This category covers all state-related entities or governments applying for financial support. It typically covers national and regional governments, ministries or national agencies. Small-scale community-level authorities will fall in the grassroots organisation category.
- **Grassroots organisation:** This last category covers all non-profit organisations such as international, national and local NGOs as well as small-scale community-led, for-profit or non-profit initiatives like smallholder cooperatives. Less represented non-profit organisations such as research institutes also fall into this category.

Due to the non-exclusive approach of the classification, financing institutions can fall into more than one category. It is notably the case for institution financing public-private partnerships.

Type of funding

The type of funding covers all financial support, monetary or not, provided by financial supporting mechanisms. The sub-categories of financing types are aligned on the five classes of supporting instruments identified in the financial source analysis (see Financing sources, instruments and providers). For the analysis, however, financing in debt is separated between concessional loans and classic senior debt.

- **Technical assistance:** this classification includes all types of non-monetary assistance. It covers technical support for projects, investment mobilisation support, capacity building or networking services.
- **Grants:** this covers all direct monetary incentives without repayment.
- **Debt:** for this classification, debt provided by conventional lending institutions was considered separately from concessional loans offered by multilateral finance institutions.
- **Equity:** the equity categorisation gathers private equity investors and venture capitalists investing in companies developing Water, Energy or Food related technologies.
- **Loan:** this category refers above all to concessional finance, i.e. loans with below-market interest rates.
- **Guarantee and Risk Mitigation Instruments:** this category mostly covers instruments designed by financing institutions to support the activities of other financing institutions. The guarantee or risk mitigation institutions offer their services to other financing mechanisms which directly support development projects. It typically concerns loan and equity guarantees.

Facility size

Facility size is indicative of the expected level of impact of the projects supported by the institution. Indeed, bigger facilities have more

flexibility in financing large scale projects with high impact. It also gives information about the type of partners and applicants researched by the funding institutions. Facility sizes were classified according to a logarithmic scale:

- < \$ 10 M
- \$ 10 M < X < \$ 100 M
- \$ 100 M < X \$ 1000 M
- > \$ 1000 M

Ticket size

Ticket sizes provide essential information to pair a project with the adequate fund efficiently. The ticket size intervals were selected to match the various needs of potential applicants based on the phase of the developed project, the type and the size of the applying entity. Furthermore, the funds identified for this analysis had an even distribution in those intervals.

- < \$ 0.1 M
- \$ 0.1 M < X < \$ 1 M
- \$ 1 M < X < \$ 10 M
- \$ 10 M < X < \$ 100 M
- > \$ 100 M

Geographic scope

The scope of this study is limited to financing mechanisms active in the MENA and Niger Basin regions. Consequently, the database of funds created for this study only included institutions active in at least one of the in-scope countries. However, to separate funds active in multiple countries of NB or MENA from funds active in specific countries, country-specific funds were classified in the "other" category. In contrast, institutions working in 50% or more of the countries of a targeted region were considered representative of the region.

- **Niger Basin:** It concerns all the funds active in more than 50% of the nine countries of the Niger Basin Authorities, Benin, Burkina Faso, Cameroon, Chad, Ivory Coast, Guinea, Mali, Niger and Nigeria.
- **Sub-Saharan Africa excluding NB:** As previously mentioned, financing mechanisms

focusing on Sub-Saharan Africa and active in selected Niger Basin countries will fall into this category if their activities cover less than four NBA countries.

- **North Africa:** For financing instruments available in Algeria, Egypt, Libya, Morocco and Tunisia.
- **Middle East:** This section concerns funding institutions active in more than 50% of Middle Eastern countries, Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, West Bank and Gaza and Yemen.
- **Other:** This section includes funds that are active globally or both in one of the targeted regions and an out-of-scope region. Since the classification is non-exclusive, a financing institution operating in one of the targeted regions (i.e. NB and MENA) and in a non-priority zone will appear in both categories.

While this analysis focuses on the entire MENA region, North Africa and the Middle East appear separately to differentiate funds that work with the African continent in general but not in the Middle East and the funds that operate in the entire MENA region but not in Sub-Saharan Africa.

Stage of the project supported

Financial institutions often specialise in supporting specific activities corresponding to different project stages. Identifying which stage fund providers invest in is essential in efficiently matching financing institutions and project developers. While the pool of financed activities is diverse and dependent on the entity looking for investment, this study summarises them in two phases, aggregating activities of similar nature across grassroots organisations, public actors and private actors.

- **Early stage and development:** This stage includes technical assistance and capacity-building activities, market and feasibility studies, fund mobilisation or R&D programmes when relevant.

- **Project implementation:** This phase corresponds to the operation phase. It covers pilots or activity launching, single projects for NGOs or SMEs, infrastructure construction, and the scaling up of activities or operations and maintenance.
- **Other:** This section covers unclassified support. A recurrent example would be equity investors following the company they invest in through their activities.

Sectors of action

The analysis presents financial supporting mechanisms active through all the Water, Energy and Food Nexus dimensions. Therefore, funds are classified into three dimensions. One fund can match multiple sectors of the Nexus. However, on the one hand, having activities in several dimensions does not imply having an integrated approach to its activities. On the other hand, some sector-specific funds might have funded nexus projects in specific cases while only having criteria for one area of impact.

A lot of energy-focused funds finance productive uses of energy (PUE). This approach often has ties with the Water, Energy and Food Nexus. After interviews with several funding institutions' representatives and under the condition of reviewing the projects financed by PUE funds, it was decided to classify PUE funds as active in the three dimensions. A similar observation applies to climate change mitigation and adaptation funds which finance projects across all three aspects of the Nexus. The sectors of action considered in the analysis are:

- **Water,**
- **Energy,**
- **Food,**
- **Climate Change**
- **Other:** this category covers funds active in one or more of the above categories while also having out-of-scope activities. Due to the non-exclusive approach, funds in the «other» category will appear in one or more of the nexus classifications.

2.2.2 Primary analysis: classification of mechanisms

Due to the variety of actors and projects supported by financing mechanisms, assessing a mechanism's qualities and shortcomings will depend on the targeted applicants and the type of project supported. Therefore, the shortlisting of the mechanisms relies on a classification of the applicants by type, small- and medium-scale private actors, public and private utility-scale projects and grassroots organisations. Additionally, the classification distinguishes applicants by project phase, early-stage development and implementation-stage projects. The output of the primary analysis is a shortlist of financing mechanisms that will be further reviewed through the secondary analysis, adapted for the six combinations of applicants and project stages.

Overarching criteria

The database of identified funds, used as a base for the selection of the best-suited institutions for Nexus projects, contained a variety of financing mechanisms active in all the dimensions of the Nexus, in different regions of the world or specific sub-region of the Niger Basin and MENA. Therefore, a first

set of three overarching criteria was applied to pre-select funds more relevant for the targeted regions and the Nexus. Hence, only the financing mechanisms presenting the following characteristics were considered for the detailed analysis:

- Financing mechanisms supporting projects in the three dimensions of the Water, Energy and Food Nexus.
- Financing mechanisms supporting projects in multiple countries of the targeted regions of the analysis.
- Financing mechanisms offering grants or concessional loans with below-market interest rates.

Class-specific criteria

Each applicant-project phase combination, referred to as a class or a cluster, is represented by a selected set of criteria. They correspond to financing mechanisms characteristics matching the needs and capacities of each class. Financing mechanisms corresponding to a specific class' criteria were shortlisted for that class.

Cluster/ Class	Eligible entities	Ticket Size	Overarching			
Small and medium enterprise	Private Sector	Less than \$ 1 M	Support early-stage development	Active in Niger Basin and/or MENA	Support Water and Energy and Food	Offer grant and/or concessional finance
Grassroots Organisation	Grassroots Organisation	Less than \$ 1 M				
Large-scale private enterprise and utility services	Public or Private Sector	Less than \$ 10 M				
Public Institutions	Public Sector	Less than \$ 10 M				

Table 3: Selection criteria for early-stage financing mechanisms

It should be noted that the database used to index and select the fund had non-exclusive criteria. In practice, it means that a fund corresponding to a specific class could also fit the criteria of another cluster. This approach had the following implications for the selection criteria:

- **Eligible entities:** financing mechanisms could target more than one sort of eligible entity.
- **Ticket size:** all selected financing mechanisms offered at least ticket sizes corresponding to the defined threshold (less than \$ 1 M, more/less

than \$ 10 M) but could also propose different ticket sizes. It is, for example, relevant for public institutions' early-stage support for which both tickets lesser and higher than \$ 10 million can be of interest.

- **Type of funding:** The selected financing mechanisms could also offer different types of support, most notably technical assistance, grants, conventional debt or guarantees.

Cluster/ Class	Eligible entities	Ticket Size	Overarching			
Small and medium enterprise	Private Sector	Less than \$ 1million	Support project implementation	Active in Niger Basin and/or MENA	Support Water and Energy and Food	Offer grant and/or concessional finance
Grassroots Organisation	Grassroots Organisation	Less than \$ 1million				
Large-scale private enterprise and utility services	Public or Private Sector	More than \$ 10million				
Public Institutions	Public Sector	More than \$ 10million				

Table 4: Selection criteria for implementation phase financing mechanisms

The shortlisted funds underwent a first selection stage based on a qualitative analysis aimed at removing generalist, large-scale development funds for which water, energy or food projects were not central activities.

Stakeholders Interviews

After completing the primary analysis, the funds' representatives were contacted for a series of interviews. The selected stakeholders were representatives of the shortlisted funds. The interviews were organised around three axes:

- The awareness of the interviewed financing institutions on the Water, Energy and Food Nexus and their willingness to use and develop the approach.

- The perceived benefits and challenges in developing WEF Nexus projects from a funding institution perspective.
- The vision of the WEF Nexus and possible path of improvement for the implementation of integrated projects.

Nonetheless, the interviews were used as a preliminary step for the secondary analysis. The interviews yielded two major outcomes:

- An overview of the perception of the Water, Energy and Food Nexus approach in selected funding institutions and an understanding of their vision for the future of the concept.
- Blind spots and biases to address in a secondary analysis.

2.2.3 Secondary analysis: context-specific review

The shortlist of funds resulting from the primary analysis was subjected to a second set of criteria to assess the adequacy of the shortlisted fund.

The secondary analysis relied on two pillars/activities:

- Review of the shortlisted institutions' projects portfolio.

- Sensitivity analysis of the geographic scope and the sectors of action.

This second set of criteria resulted in a final shortlist of nine funds whose activities were detailed in a two-pages analysis in section 4.

Sensitivity analysis

After selecting a list of funds according to the previously explained criteria, the funds were subjected to a preliminary analysis to identify potential bias. Then, a sensitivity analysis was conducted to review the remaining financial supporting mechanisms which were not initially shortlisted. The analysis mainly focused on addressing two potential biases:

- **Geographic scope:** in order to select funds active in the highest number of countries, funds active in less than half of the countries of a region of interest were removed from the first shortlist. Thus, a second analysis was conducted to ensure that no country-specific fund with excellent characteristics in the other criteria had been overlooked. However, no relevant financing mechanisms emerged from this second review. Therefore, this analysis is not further detailed in section 3 "Analysis".
- **Focus on the water- and food-oriented funds:** The shortlisted funds presented a strong representation of energy-oriented funds with ramifications in water management and food security. Therefore, a specific analysis was conducted to review the funds focusing on water or food to assess their potential.

- **Productive use of energy funds:** the interviews highlighted that Water, Energy and Food Nexus was sometimes considered a natural evolution of PUE. Additionally, the shortlist of funds from the primary analysis had a majority of energy-oriented institutions. Therefore, a secondary analysis was performed on energy funds to assess their potential.

Two-page analysis

While each shortlisted fund had demonstrated experience in funding projects with impacts in all Nexus dimensions, a second in-depth analysis was conducted to assess the expertise in integrating multiple aspects of the WEF Nexus in a single project. This second analysis broadened the scope of the reviewed funds and added initially overlooked financing mechanisms to the final shortlist.

All the shortlisted funds went through a last in-depth review, and their activities and characteristics were presented in two-pager studies. The funds' descriptions summarise the institution's objective and rationale, a breakdown of its activities and their ties with the nexus, and a focus on relevant projects emphasising their experience with the integrated WEF approach.

03 / Analysis



3.1 Global review of the financial mechanism environment for the Nexus

The first step of the analysis consisted in identifying the core characteristics of financial supporting mechanisms. Financial mechanisms have thus been classified according to seven categories subdivided into sub-criteria. The following section presents a mapping of the database of funds used in the analysis according to the different categories. This mapping answers the first two objectives of the study being:

- Provide a review of international, national and regional Financial Supporting Mechanisms for public and private actors susceptible to promoting the realisation of Water, Energy and Food projects.

- Present a mapping of the existing financing institutions with their core characteristics.

The initial database covered 71 financial mechanisms, of which 66 were kept for analysis. Due to the non-exclusive nature of the classification, the financial mechanisms can match multiple criteria in one category (i.e. a fund can be active in the water and energy area of action). Therefore, the sum of all funds analysed can be more than the sample size - of **66 funds**. The aggregate of the shares of total financing mechanisms can be greater than 100%.

Type of funding

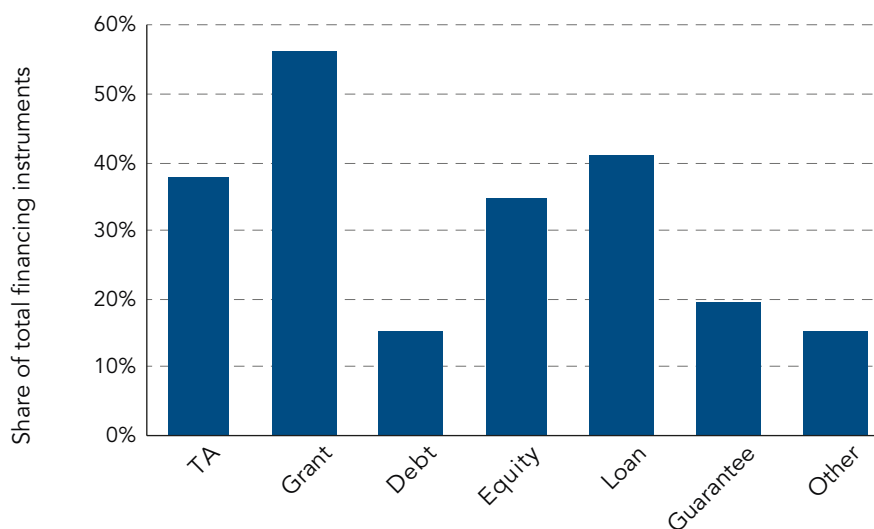


Figure 3: Number of financing mechanisms per type of financial supports

Grants and concessional loans were the two most common types of funding offered by financing institutions, with 56% of funds providing grants and 41% loans. Technical assistance and equity were also common, with 38% and 35% of funds, respectively, offering

those services. In this analysis, concessional loan (loan) and debt financing were accounted for separately to differentiate support with interest rates inferior to the market rate from market-competitive debt financing.

Ticket size

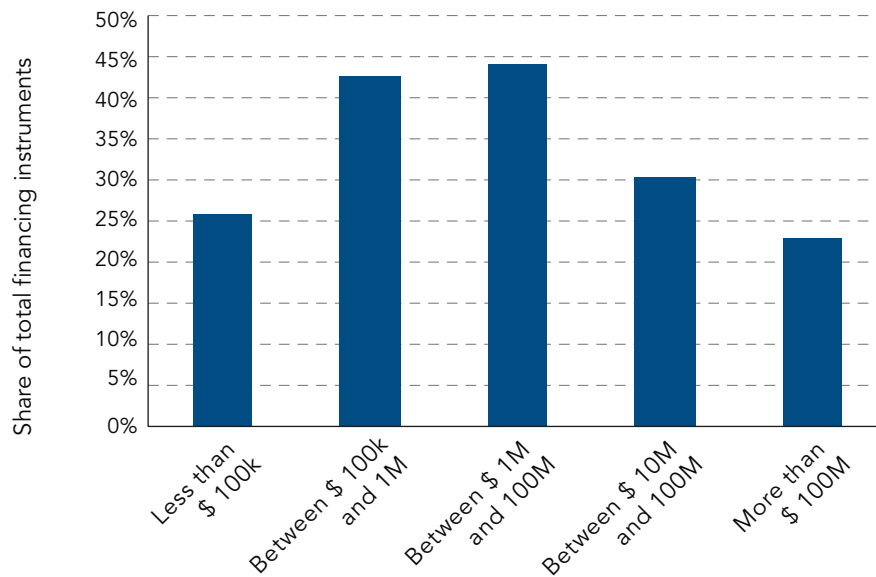


Figure 4: Number of financing mechanisms per Ticket size

Ticket sizes were classified using a logarithmic scale in the database. This classification was selected to match the needs of different applicant types based on their size, their organisation, the type of projects implemented and the amount

of funding they could handle. This classification resulted in a relatively even distribution of funds, with the highest number of funds offering ticket sizes between \$ 100k and \$ 1 M - 42.5% - and \$ 1M and \$ 10 M - 44%.

Geographic Scope

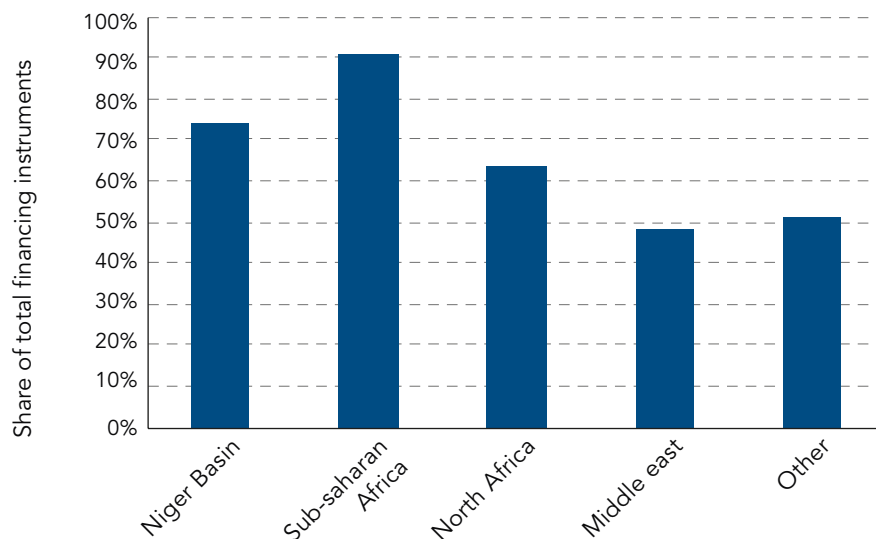


Figure 5: Number of financing mechanisms per region of interest

The funds included in the database were selected based on their activities in the target regions of the project, Niger Basin (NB), Middle

East and North Africa (MENA). However, most funds work with a broader geographic scope, such as OECD DAC countries or Sub-Saharan

Africa (SSA). Therefore, most funds selected for their activities in one of the targeted regions were also active in other countries. Financing mechanisms active in SSA being the most represented in the database - 91% - can thus be

explained with the non-exclusive classification approach. Indeed, a significant share of funds active in the NB was also active in Sub-Saharan Africa and was classified in both categories - Niger Basin and SSA without NB.

Sectors of action

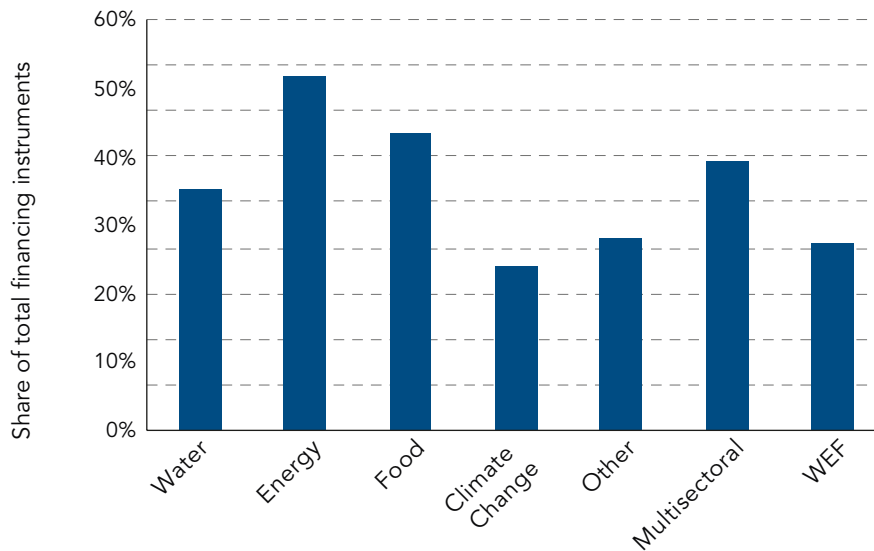


Figure 6: Number of financing mechanisms per sectors of action

The database contained funds active in all areas of the WEF Nexus. The most represented sector is energy, with 77% of financing mechanisms supporting energy projects, followed by food and agriculture - 65% - and water - 53%. The prominence of energy funds can partly be explained by the perceived role of the dimension in fighting the climate crisis. Despite only representing a fraction of all the existing financing mechanisms, the analysis of the funds in the database highlighted the perception of a tight association between energy transition and climate change mitigation and adaptation. While also essential for climate change mitigation, the agriculture and water sectors appeared to be less associated with mitigation and more with climate change adaptation. The database also listed climate change funds due to the close ties with water, energy and food stakes. Concerning multisectoral funds, 59% of the selected financing mechanisms declared being active in more than one sector and 41% in all

three dimensions of the Nexus. However, as further developed in the secondary analysis, those thresholds represent the lower boundary of funds active in multiple sectors. Indeed, the classification of financing mechanisms in the database was based on declared interests in financing and impacting all three dimensions of the Nexus. However, several funds could support WEF-integrated projects while only expressing open interests in one or two dimensions of the Nexus. Furthermore, sector-specific financing mechanisms such as energy for impact and PUE funds often come close to the definition of WEF funds and could sometimes be included in this category. Similarly, agri-business-oriented financing institutions sometimes will support projects with an impact on energy and water while only reporting the impact on the agriculture sector. Those categories of funds were subjected to a secondary analysis to understand their impact on the Nexus better.

Funding by sectors of action

The following table clusters the available ticket size in function of the sectors of action of the funds represented in the database.

The repartition of ticket sizes for each area of action taken individually is similar to the average repartition of ticket sizes, with the majority of the funds falling in the \$ 100k to \$ 1 million and \$ 1 M to \$ 10 M categories.

Consequently, the less than \$ 100k and \$ 10 M to \$ 100 M segments are the following most represented categories. While the Water and Energy, Water and Food, and Energy and Food combination have a too limited number of representations to be relevant, the WEF, Other and Climate change sectors of action provide valuable information.

		Ticket Size (\$)				
		Less than \$ 100k	\$ 100k to \$ 1 M	\$ 1 M to \$ 10 M	\$ 10 M to \$ 100 M	More than \$ 100 M
Areas of action	Water	19,70%	28,79%	27,27%	19,70%	9,09%
	Energy	22,73%	31,82%	31,82%	21,21%	7,58%
	Food	24,24%	37,88%	30,30%	18,18%	7,58%
	Climate Change	4,55%	13,64%	15,15%	10,61%	3,03%
	Other	3,03%	15,15%	24,24%	18,18%	6,06%
	Water and Energy	0,00%	0,00%	3,03%	1,52%	1,52%
	Water and Food	0,00%	3,03%	4,55%	3,03%	0,00%
	Energy and Food	1,52%	3,03%	3,03%	1,52%	0,00%
	Water, Energy and Food	19,70%	25,76%	18,18%	12,12%	6,06%

Table 5: Share of financing mechanisms by Ticket size and sectors of action

Indeed, the ticket size repartition for funds working in all three WEF Nexus sectors is centred on the \$ 100k to \$ 1 M category with even distribution between the less than \$ 100k and \$ 1 M to \$ 10 M segments. On the other hand, financing mechanisms oriented towards Climate change and other sectors - such as infrastructure - have ticket sizes centred between \$ 1 M and \$ 10 M. Therefore, funds focusing on climate change and other sectors

skew the repartition of ticket size compared to WEF financing mechanisms which are the core interest of the analysis. Furthermore, the fact that funds active in the three dimensions of the Nexus have lower ticket sizes on average could be indicative of the perception of WEF projects as being primarily small-scale. This perception was also highlighted during the financing institutions' stakeholder interviews.

3.2 Results of primary analysis

A further objective of the analysis was to define a shortlist of financial supporting mechanisms adapted for various applicants and project sizes. Therefore, funds were selected in the database according to criteria representative of specific classes of applicants and project phases. All

the shortlisted funds show ties with all three dimensions of the Nexus, are active in at least one of the targeted regions - Niger Basin, Middle East and North Africa - and offer either grants or concessional finance.

	Grassroots organisation	Small and Medium Enterprise
All project phases		Access to Energy Fund FMO
	Africa Enterprise Challenge Fund	
	Water and Energy for Food	
	Powering Renewable Energy Opportunities	
	GEF / SGP Small Grant Programme	

Table 6: Selected funds after the primary analysis for Grassroots organisations and SME

The shortlisted funds are presented according to the type of applicants they target and the project phase they support. The financing mechanisms selected for small and medium

enterprises and grassroots organisations were the same for early and project implementation stages and were thus represented in the same table.

	Large-scale Private Enterprise and Utility Services	Public Institutions
Project early-stage development		Africa Water Facility
		Adaptation Fund
	Energy Transition Accelerator Financing	
	PIDG Technical assistance & DevCo	
Project implementation	Emerging Africa Infrastructure Fund	
	Green Climate Fund	
	Energy Transition Accelerator Financing	
		Africa Water Facility
	Adaptation Fund	

Table 7: Selected funds after the primary analysis for large-scale enterprises and utilities

The funds shortlisted after the primary research was subjected to further analysis to better assess their potential in financing Nexus projects. Furthermore, secondary research was

performed on funds active in specific sectors of the Nexus to identify overlooked financing mechanisms.

3.3 Stakeholders' interviews

After completing the primary analysis, fund representatives were contacted for a series of interviews. The selected stakeholders were representatives of seven shortlisted funds. The interviews were organised around three axes: i. the awareness of the interviewed financing institutions on the Water, Energy and Food Nexus and their willingness to use and develop

the approach; ii. the perceived benefits and challenges in developing WEF Nexus projects from a funding institution perspective; iii. the vision of the WEF Nexus and possible path of improvement for the implementation of integrated projects. Due to the limited number of answers, no data analysis of the answer could be performed. Nonetheless, the interviews were

used as a preliminary step for the secondary analysis. Reviewing the list of funds of the primary analysis through the prism of collected answers notably highlighted certain biases which were addressed in the second step of the analysis.

Awareness and willingness to develop the Water, Energy and Food Nexus

Among interviewed stakeholders, all demonstrated a strong knowledge of the Water, Energy and Food Nexus. All the interviewed institutions could provide examples of WEF Nexus projects or technologies they had supported. Additionally, the vision of integrated approaches generally exceeded the Water-Energy-Food Nexus and extended to health, education or gender aspects.

However, most of the funds also proved to have similar views on the Nexus. The first recurring perception, or bias, concerned the size of the projects. Indeed, the most cited WEF technologies were small-scale irrigation systems, off-grid cold storage technologies or clean cooking. Larger-scale projects, such as water sanitation or irrigation dams, were less commonly mentioned. On that aspect, the Green Climate Fund was an exception and demonstrated a complete vision of all scales of Nexus projects. The second common bias highlighted in the interviews was the prominence of energy-centred technologies in the perception of financing institutions. Energy-centric financing mechanisms did either consider the WEF Nexus approach as a natural evolution of the energy for productive use (PUE) concept or as a subclass of PUE.

Concerning the integration of WEF Nexus projects in their financing strategy, the interviewed funds did not use specific KPIs for Water, Energy and Food integrated projects. While not integrating WEF KPIs, the Green Climate Fund still appeared as an exception by presenting complete documents on synergies and trade-offs between their sectors of action, including water, energy and food. However, all the interviewed funds integrated WEF projects into their portfolio, revealing a phenomenon of implicit incorporation of Nexus projects due

to their recognised benefit. On the other hand, interviewees mentioned multiple reasons for not specifically integrating WEF KPIs in their assessment methodology. Commonly cited rationales were the need to stick to the donors' desired target, the need to remain close to the community need as a priority, or the ability to stay flexible. The last point was particularly relevant for energy funds considering that energy should remain an enabler for all activities.

Perceived benefits and challenges

While the benefits in terms of the impacts of an integrated approach were explicitly recognised, the interviewed funding stakeholders also highlighted certain limitations in assessing and implementing Nexus projects from a funding institution perspective.

The benefits highlighted by the interviewees primarily concerned the outcomes and long-term sustainability of integrated projects. Energy-oriented funds viewed the ability of WEF Nexus projects to influence the demand side of electricity access very positively. Indeed, ensuring sufficient electricity demand is regularly mentioned as a challenge for mini-grids development in rural areas. Furthermore, WEF Nexus projects share PUE's advantage of supporting income-generating activities, thus improving the long-term sustainability of projects. Moreover, energy-oriented funds, which see energy as a catalyst for the development of further activities, integrating food and water outcomes into a project offers better guarantees for impact. It also removes the risk of finding a distinct source of funding to develop the activities enabled by energy infrastructure development.

On the other hand, interviewees highlighted several perceived challenges in supporting Water, Energy and Food integrated initiatives. The core perceived barrier to WEF Nexus project implementation is the need for integrated teams with multi-sectoral expertise. All interviewees brought up this limitation, which has ramifications for a project's lifespan. Indeed, having expertise in multiple sectors can be a significant barrier to funding applicants from civil society or pose

organisational challenges to public stakeholders having to coordinate between different ministries or offices. Furthermore, development finance needs alignment with the local context and the political vision. However, the Nexus approach is a relatively recent vision. Thus, the lack of experience with integrated approaches complicates the coordination between local and international actors. WEF Nexus projects also require more numerous and diverse teams for funding institutions to assess the quality of applications and evaluate the impact after the implementation. This assessment has significant consequences on the financing of the Nexus. First, while having the potential to be large-scale projects, donors tend to focus on the small-scale side of the WEF Nexus. Therefore, it might be harder to mobilise teams with multiple experts on projects perceived as small-scale activities. Furthermore, as revealed in Table 7, funds active in the three dimensions of the Nexus tend to have smaller ticket sizes, and thus fundings, than other funds such as climate change or infrastructure financing mechanisms. Hence, WEF funds probably have less flexibility to develop multi-expert teams. Finally, donors also tend to have specific sectors they want to influence and sometimes lack the ability to assess the benefit of having an integrated approach to impact their area of interest.

Path for improvement:

The possible paths for better integration of the Water, Energy and Food Nexus were naturally aligned with the previously detailed perceived limitations. Thus, the recommendations for

developing integrated approaches focused on how to best incorporate multiple experts at all stages of project funding.

First, interviewees highlighted the need for initial training of local, regional and national stakeholders to develop a long-term vision covering and connecting all aspects and stakes of the Nexus. Having an initial integrated strategy facilitates the involvement of Nexus actors or multiple sectoral actors cooperating on Nexus projects. Then the interviewed fund suggested the possibility of developing multi-stakeholder teams, or for large-scale funds, to build different teams based on the application to best suit each project's requirements. The Green Climate Fund notably implements this last method with demonstrated success. However, not all financing mechanisms have the financial capacity to build cross-sectorial teams. On the contrary, the WEF Nexus funds listed in the database used for this review had lower funding than other categories of financing mechanisms. Additionally, WEF Nexus technologies are often implemented in smaller-scale projects, further preventing the mobilisation of multi-expert teams. The need for cross-sectorial projects could be the opportunity for funding harmonisation and collaboration between financing institutions, as demonstrated by the Distributed Renewable Energy-Agriculture Modalities (DREAM) conducted between energy and agriculture institutions. Finally, financing institutions also advocated for sensitising donors to the benefits of integrated approaches in answering the needs of vulnerable communities.

3.4 Results of secondary analysis

A sensitivity analysis was performed to review potentially overlooked sectoral and country-specific funds. Furthermore, the sensitivity analysis was also extended to assess the integrated vision of shortlisted financial institutions.

The initial selection of funds relied on self-declared activities or impacts in all sectors of the Water, Energy and Food Nexus. Therefore, a global analysis of the shortlisted funds' portfolio was conducted to assess the ability of the funds to impact and integrate all the

dimensions of the WEF Nexus in single projects. Additionally, the portfolio analysis was used to identify methodology biases to be addressed in a sensitivity analysis. The initial review of the funded projects highlighted three axes of

fine-tuning for the research: the geographical scope, the WEF Nexus integration of energy for impact funds, and the underrepresentation of water and food financing mechanisms.

3.4.1 Energy for impact

While the primary analysis only considered funds declaring impact on all three dimensions of the Nexus, the initial shortlist of funding institutions contained a significant amount of energy for productive use and energy for impact funds. Indeed, those funds view energy as an enabler for other activities. As such, they often include non-energy KPIs in their desired impacts. However, the analysis of the energy for impact funds' portfolios highlighted limitations in assessing a direct link of consequence between the financed activities and the desired results.

Therefore, a second analysis was performed using the same selection criteria as the primary analysis except for the "*sectors of action*" criteria. In this second analysis, all energy-centred funds were considered regardless of their declared interest in other dimensions of the Water, Energy and Food Nexus. A cross-comparison with initially selected energy for productive use funds was conducted to assess the potential of this category of financing mechanisms in supporting the Nexus funding.

This analysis highlighted the multiple ties between energy for impact and the Water, Energy and Food Nexus. The most distant from the WEF Nexus approach would rely on the high-level perception that access to electricity would act as an enabler and naturally allow for further development in other sectors. Other financing mechanisms would come closer to the definition of Nexus by including technologies such as efficient cookstoves or productive uses of electricity in their strategies. PUE funds required more in-depth reviews to assess their ties to the WEF Nexus. Indeed, while PUE can be perceived as an overarching category of small-scale Water, Energy and Food

Nexus technologies, PUE-oriented financing mechanisms sometimes still lack the ability to assess the impact of and support WEF projects. Thorough reviews of their portfolio and the target impact of their theory of change yielded relevant information on their ability to develop integrated WEF projects.

For example, while focusing on productive uses of electricity, the Powering Renewable Energy Opportunities (PREO) programme could demonstrate its extensive expertise in financing the Nexus. Indeed, PREO's core activities cover the entire market of PUE. However, the fund has significant experience in the Water, Energy and Food Nexus, having funded multiple solar irrigation projects, mini-grids for agriculture, agriculture mechanisation initiatives and technologies powering the food processing value chain in rural areas. In addition to its financial support, the programme acts as a knowledge hub and a platform to build bridges between relevant actors and stakeholders of the PUE value. The hub notably includes activities on agri-processing, pumps and irrigation, cold storage and farming.

Finally, despite neither considering WEF KPIs nor PUE in their main activities, some openly energy-centred financing instruments still integrated Nexus components in specific projects. Some energy-centred financing institutions integrated WEF projects due to the implicit ability of energy access to enable further activities. On the other hand, other financing instruments opted for active support in the Nexus. They joined multi-stakeholder WEF projects to share their expertise with water- and food-oriented funds, acknowledging their limited expertise in the other dimensions of the Nexus. In the meantime they recognise

the interest of integrated approaches in making energy access more sustainable. Those funds were not selected in the final shortlist due to their punctual implication with the WEF Nexus. However, this approach demonstrates strong potential in implementing WEF-integrated activities, and it is further developed in the recommendations.

Final selection

The analysis of the energy for impact, PUE and energy infrastructure-oriented funds highlighted their role in supporting the WEF Nexus by developing energy as a catalyst for other Nexus activities. On the other hand, energy-oriented funds also have limitations

in funding WEF activities, notably by limiting the number of business models they support. Furthermore, and as highlighted during stakeholders' interviews, energy-oriented financing mechanisms, as most sector-specific funds, work primarily with energy specialists and thus sometimes lack the expertise to support complex WEF Nexus projects.

However, due to the significance of PUE financing mechanisms in supporting specific classes of WEF Nexus projects, the Powering Renewable Energy Opportunities (PREO) was included in the analysis as a representative of energy-oriented financing mechanisms. PREO was in fact selected for its significant experience in supporting WEF-oriented PUE technologies.

3.4.2 Water- and food-oriented funds

While the primary analysis only considers funds declaring impact on all three dimensions of the Nexus, the in-depth review of the shortlisted mechanisms revealed a strong inclination towards energy funds with ramifications in the water and agriculture sectors. Therefore, a second analysis was performed according to the same selection criteria as in the primary analysis but only covering funds active specifically in water and food security. This methodology was applied to overcome a potential energy bias in the Nexus approach analysis.

A total of eight new funds emerged from this sensitivity analysis. While five did not show experience with Nexus-oriented projects, three funds demonstrated interesting characteristics and were thus selected for further analysis.

Dutch fund for Climate Development

The Dutch Fund for Climate Development (DFCD) is a climate-oriented fund managed by a consortium composed of Climate Fund Managers (CFM), the World Wide Fund for Nature Netherlands (WWF-NL), the Netherlands Development Organisation (SNV) and the Dutch Entrepreneurial Development Bank (FMO). It works exclusively with private companies with more than € 6M in total assets value to whom it

provides technical assistance, grants, debt and equity financing.

DFCD's primary focus is to enable private sector investments in climate change mitigation and adaptation projects. Its sectors of action include climate-resilient water systems, water management and freshwater ecosystems, forestry and climate-smart agriculture. It delivers its funding via investment windows. The current windows are the Land Use Facility, focused on agriculture and ecosystems, and the Water Facility, managed by one of DFCD consortium partners, Climate Fund Managers.

Nexus Integration

Each of the current DFCD windows is Nexus-related and covers one of its dimensions. While they aim for a sector-specific target, the windows also offer openings for Nexus projects within those windows with the possibility of financing climate-resilient land use projects within the water-oriented window or climate-resilient water supply and sanitation within the Land Use Facility. While the energy dimension is never explicitly mentioned in any of the two facilities or the sector of activity, it is implicitly mentioned as an enabler for agriculture and water resource management.

Climate Fund Managers: Climate Investor Two

Climate Fund Managers (CFM) is an institution offering and catalysing a mix of public-sector funding, private investment and development finance institutions (DFI) commitment. It offers technical assistance as well as debt or equity in the form of blended finance to support activities with different levels of risk and maturity. Relying on funds from different sources allows CFM to assist various projects from the early stage to implementation.

CFM's primary focus is to contribute to mitigating climate change and building resilience in climate-vulnerable areas. It delivers its funding via different investment windows. Climate Investor One was oriented towards renewable energy with a specific focus on onshore and near-shore wind power, solar photovoltaic and run-of-river hydropower. Climate Investor 2 is CFM's second window. It is co-organised with the Dutch Fund for Climate Development (DFCD). CI2 focuses on water sanitation, ocean management and water infrastructures.

Nexus Integration

Each CFM window so far focused on one area of the Nexus with a seemingly mono-sectoral approach. However, Nexus projects match the global scope and objectives of CFM. Additionally, all windows so far offered space for Nexus opportunities, for example, funding for run-of-river hydropower in CI1 or solar-powered desalination plants for CI2. Despite those openings towards a more integrated approach, CFM still mostly operates with a sectoral approach. Additionally, CFM currently does not propose specific windows for cross-cutting projects.

Global Agriculture & Food Security Program

The Global Agriculture and Food Security Program (GAFSP) was launched in 2007-2008 by the G20 to respond to the food price crisis. It is a multilateral financing institution which received over \$ 2B in funding from private and public sector actors from eleven countries, as well as the Bill & Melinda Gates Foundation. The GAFSP offers technical assistance, grants

concessional finance or blended loans to public and private actors, as well as smaller grants for community-led projects.

The GAFSP is a food-oriented climate funding institution active in promoting climate-resilient and sustainable agricultural practices. It supports government, agribusinesses and smallholder farmers' cooperatives to design and implement projects in the food value chain. It notably includes action to raise agricultural productivity, link farmers to markets, and improve livelihoods and resilience to climate change. The program has three focus areas within the agriculture sector, climate change, COVID response and Cross-Cutting Themes.

Nexus Integration

While focusing on agriculture-related impacts, the GAFSP works across the entire food value chain and thus offers several opportunities for integrated, multi-sectoral projects. Reviewing previously implemented projects highlights their experience in financing projects with different variations of Water, Energy and Food combinations as long as the funded initiatives offer a final, significant impact on the food value chain. Even though the GAFSP does not mention WEF Nexus as part of its activities, it has funded integrated Water, Energy and Food projects.

Final selection

The analysis of water- and agriculture-oriented funds has highlighted the role of specific funds in this category in financing the WEF Nexus. Three funds demonstrating significant expertise in supporting Water, Energy and Food integrated projects were identified. While only having water- and agriculture-specific financing windows, the review of the facilities' activities revealed implicit yet relevant opportunities to integrate energy components in the financed projects.

The Global Agriculture and Food Security Program (GAFSP) and the Dutch Fund for Climate Development (DFCD) were thus shortlisted for the final analysis. While demonstrating WEF Nexus ties, Climate Fund Manager (CFM) was not selected in the final shortlist to avoid duplicates with the DFCD, as the water facility of the DFCD is managed in partnership with the CFM.

3.4.3 Sector-specific financing instruments analysis

The sensitivity analysis has been conducted to explore potential bias on three variables: the geographical scope; the WEF Nexus integration of energy for impact funds; and the underrepresentation of water and food financing mechanisms. The geographic scope analysis confirmed the decision of only selecting region-wide active financing institutions for the detailed analysis, as no funds emerged from the geographic sensitivity analysis. The review of initially not selected energy-for-impact funds highlighted the limitation in assessing those institutions' impact on the Nexus. Further research on water- and food-oriented institutions revealed two new funds with WEF Nexus experience and highlighted a potential energy bias.

Energy for impact funds

The analysis of various energy-for-impact funds highlighted the difficulty in addressing the difference between funds indirectly integrating water or food aspects in their activities and those actively implementing Water, Energy and Food Nexus projects. The role of energy as an enabler for developing activities and businesses questions the separation between direct and indirect impacts. This undefined differentiation has several implications for the financing of the WEF Nexus.

First, some funds will claim impacts on water or food KPIs while focusing on funding energy-oriented projects. On the other hand, other institutions will not mention a direct interest in the Nexus but will participate in financing WEF projects. For this analysis, only funds claiming

and demonstrating direct interest in the Nexus were selected in the final shortlist.

Water- and Food-oriented funds

The review of the Dutch Fund for Climate Development, Climate Fund Managers, Climate Investor Two, and the Global Agriculture and Food Security Program highlighted differences in the way energy funds, on the one hand, and water, agriculture and climate funds, on the other, related to integrated approaches. Agriculture and Water funds tend to research projects presenting KPIs specific to their action area. However, funding institutions do not necessarily expand on the inputs or impact enablers eligible for funding due to their sheer variety. Nonetheless, these inputs can be sector-specific (ex.: specific crops or fertilisers for agriculture) or suited for integrated technologies (ex.: solar irrigation always for agriculture).

On the other hand, energy funds frequently look for projects with an energy-for-impact vision. For those institutions, energy enables further activities and is not a final objective. They thus sometimes include non-energy KPIs in their project assessment. Furthermore, financial mechanisms supporting PUE projects will mention specific Water, Energy and Food Nexus technologies in their funding priorities. Therefore, energy funds seem to present explicit ties to the Nexus approach, whereas Water and Agriculture funds have an implicit interest in the methodology.

Main financing institutions in the MENA Region

Donors in MENA include bilateral donors, multilateral development banks and multilateral climate funds. European countries, and in particular France and Germany, are major donors to the region, supporting both single countries and regional programmes. Many donors, including the EU, France, Germany, the Netherlands, Sweden and Japanese governments, also channel their support to sustainable development through the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), and multilateral climate funds. Several initiatives are financed by the Islamic Development Bank which is engaged in climate change actions, and also by co-financing projects with other institutions.

Active funds in the Middle East

Within the funds analysed in this paper, 47% of the financing mechanisms cover at least one of the countries of the Middle East area. Among these mechanisms, the Water and Energy for Food Fund coverage of the MENA region in 2021 entailed the support of 16 enterprises that were able to mobilize more than 4 million \$ in investments for projects aiming at fostering WEF – related projects with some of the estimated impacts being 248.000 tons of food produced and 5.6 M kWh saved.

For example, the WE4F supported the AbuErdan company: the aim of the innovator is to create an app to serve the Base-of-Pyramid customers in the value chain of the poultry industry. The app's objective is to support poultry farming and the technical assistance provided has been functional to explore potential business models for the company, add new services to the app and develop a beta version.

Alvatech is another company in Jordan that has received assistance within the WE4F Fund: the company operates in the field of water treatment technologies powered by solar energy to be used in water-scarce and saline areas. Alvatech was able to raise more than \$ 800.000 in equity. Below, a detailed and non-exhaustive list of available funds:

- GEF / SGP Small Grant Programme
- SEFA - Sustainable Energy Fund for Africa
- Climate Investor One (Climate Fund Managers (CFM))
- ASAP - Adaptation for Smallholder Agriculture Programme
- ASAP+ - Adaptation for Smallholder Agriculture Programme +
- CIF-TAF (Technical Assistance Facility)
- CIF-DPSP (Dedicated Private Sector Programs)
- CIF - Clean Technologies
- Nordic Development Fund (NDF)
- Adaptation Fund
- Emerging Africa Infrastructure Fund
- DevCo
- PIDG-TA
- Arab Fund for Economic and Social Development (AFESD)
- Catalyst MENA Clean Energy Fund (CMCF)
- responsAbility
- Trine
- Ecoligo Investment
- Green Climate Fund
- Conservation, Food and Health Foundation
- Agri-Business Capital Fund

- Climate Investor two (Climate Fund Managers (CFM)
- Access to Energy Fund FMO
- French Facility for Global Environment
- OPEC Grants
- OPEC Public Sector Lending
- OPEC Private Sector & Trade Finance
- Energy Transition Accelerator Financing
- Dutch Fund for Climate and Development
- EmPower Her
- Water and Energy for Food

Active funds in North Africa

Within the funds analysed in this paper, 62% of the financing mechanisms cover at least one of the countries of North Africa area.

To name an example, among the funds that were short-listed in this publication, the African Water Facility disbursed for projects taking place in North Africa more than \$ 20 M, since its inception in 2006, with nine projects approved. Among the others the Project for the establishment of the National Water Information System (SINEAU) in Tunisia. This initiative was financed with approximately \$ 1.5 M by the fund, for a total value of the project of about \$ 3.5 M. The objective of the project is to improve the management of water resources and agricultural soils in irrigated areas by adopting an advanced monitoring system. The final outcome is to establish a well-functioning national information system to inform decision-makers operating in natural resource management. Below, a detailed and non-exhaustive list of available funds:

- GEF / SGP Small Grant Programme
- Africa 50 - Project Development
- Africa 50 - Project Finance
- SEFA - Sustainable Energy Fund for Africa
- Climate Investor One (Climate Fund Managers (CFM)
- ASAP - Adaptation for Smallholder Agriculture Programme
- ASAP+ - Adaptation for Smallholder Agriculture Programme +
- CIF-TAF (Technical Assistance Facility)
- CIF-DPSP (Dedicated Private Sector Programs)
- CIF - Clean Technologies
- Nordic Development Fund (NDF)
- Adaptation Fund
- PIDA-PAP 2
- Emerging Africa Infrastructure Fund
- DevCo
- PIDG-TA
- Arab Fund for Economic and Social Development (AFESD)
- Catalyst MENA Clean Energy Fund (CMCF)
- responsAbility
- Trine
- Ecoligo Investment
- Africa Adaptation Acceleration Program
- ACCF's Demand Driven Window
- The ACCF Third Call for Proposals (CFP3)
- African Guarantee Fund for Small and Medium-sized Enterprises
- Africa Water Facility
- Boost Africa: Empowering Young African Entrepreneurs
- Canada - African Development Bank Climate Fund
- Green Climate Fund
- Rural Water Supply & Sanitation Initiative
- Conservation, Food and Health Foundation
- Agri-Business Capital Fund
- Climate Investor two (Climate Fund Managers (CFM)
- Access to Energy Fund FMO
- French Facility for Global Environment
- OPEC Grants
- OPEC Public Sector Lending
- OPEC Private Sector & Trade Finance
- Energy Transition Accelerator Financing
- Dutch Fund for Climate and Development
- Water and Energy for Food

Main financing institutions in the Niger Basin Region

For the NB region there is not much data available on WEF funded projects, however it is possible to identify funds disbursed for “climate finance” purposes which most of the times include initiatives in the WEF sector. Just to give an idea, the majority (57%) of public international climate finance was provided by Multilateral Development Banks. Approximately 35% came from bilateral sources, and the remaining 8% from climate funds. Of the MDBs, the WB provided in 2013–2018 the largest share of finance, followed by AfDB.

Other MDBs providing funding included the European Investment Bank, the International Finance Corporation and the Islamic Development Bank. Bilateral providers of climate finance to the region in the same period were France, the European Union and Germany, with the United States of America, Japan and Norway also providing funding.

Different funding channels were used by ECOWAS countries. Some countries, namely Côte d’Ivoire, the Gambia, Guinea, Guinea-Bissau, the Niger and Sierra Leone, received over 80% of their climate finance from multilateral sources, while Cabo Verde, Ghana, Liberia and Mali received the majority of their climate finance from bilateral sources.

International public climate finance was provided primarily using debt instruments (70%), of which 81% was concessional debt. The remainder (30%) was provided through grants (global average is 18%). Equity plays a negligible role in climate finance for the ECOWAS region.

Active funds in the Niger Basin Region

Within the funds analysed in this paper, 72% of the financing mechanisms cover at least one of the countries of the Niger Basin Region.

In order to provide a few examples of activities carried out by the selected funds, in 2021, the Green Climate Fund alone disbursed \$ 2.9 B globally, divided between its two streams of action, i) project preparation and ii) readiness. In particular, Africa benefitted from the GCF in the amount of \$ 66.56 M in Readiness – National Adaptation Plans (NAPs), 60.73 in Readiness – Non-National Adaptation Plans and \$ 12.66 M in project preparation. All the countries in the Niger Basin have received funding from the GCF in 2021, for both project preparation and readiness.

The African Enterprise Challenge Facility (AECF) holds a portfolio of projects for 70 companies in West Africa alone, with a total amount of \$ 42.98 M: \$ 23.8 M in Nigeria, \$ 10.4 M in Ghana, \$ 10.3 M in Mali, \$ 3.7 M in Burkina Faso, \$ 2.3 M in Ivory Coast and \$ 0.2 M in Senegal. Below, a detailed and non-exhaustive list of available funds.

- GEF / SGP Small Grant Programme
- Africa 50 - Project Development
- Africa 50 - Project Finance
- SEFA - Sustainable Energy Fund for Africa
- Climate Investor One (Climate Fund Managers (CFM))










- ASAP - Adaptation for Smallholder Agriculture Programme
- ASAP+ - Adaptation for Smallholder Agriculture Programme +
- CIF-TAF (Technical Assistance Facility)
- CIF-DPSP (Dedicated Private Sector Programs)
- Nordic Development Fund (NDF)
- Adaptation Fund
- PIDA-PAP 2
- Guarantco
- Emerging Africa Infrastructure Fund
- InfraCo Africa
- DevCo
- PIDG-TA
- responsAbility
- Persistent Energy
- Trine
- Ecoligo Investment
- Africa Adaptation Acceleration Program
- ACCF's Demand Driven Window
- The ACCF Third Call for Proposals (CFP3)
- African Guarantee Fund for Small and Medium-sized Enterprises
- Africa Water Facility
- Boost Africa: Empowering Young African Entrepreneurs
- Canada - African Development Bank Climate Fund
- Desert to Power Initiative
- Global Agriculture & Food Security Program
- Green Climate Fund
- Rural Water Supply & Sanitation Initiative
- Conservation, Food and Health Foundation
- Call for expressions of interest: Managing organization (hub) for responsible artificial intelligence in agriculture and food systems in Africa
- Agri-Business Capital Fund
- Climate Investor two (Climate Fund Managers (CFM))
- Renewable Energy and Adaptation to Climate Change
- AECF Agribusiness
- Access to Energy Fund FMO
- French Facility for Global Environment
- OPEC Grants
- OPEC Public Sector Lending
- OPEC Private Sector & Trade Finance
- Energy Transition Accelerator Financing
- Powering Renewable Energy Opportunities
- Dutch Fund for Climate and Development
- EmPower Her
- Water and Energy for Food

04 / Shortlisted financing mechanisms

The final objective of the review of the context of financial mechanisms was to present a shortlist of Water, Energy and Food oriented funds susceptible to support projects in the Niger Basin and the Middle East and North Africa. The selection process was implemented in three phases. First, a database of 71 financing mechanisms was established by reviewing climate finance opportunities. Then, the first group of funds was shortlisted based on their sectors of action, ticket sizes, and targeted applicants. Finally, the analysis was extended to sector-specific funds to assess their potential in financing the Nexus. The cross-comparison of financing mechanisms from the initial and second shortlist enabled a final selection keeping only the most relevant. The box below provides an overview of the selected funds. A deep dive into each one of the funds is provided in the following section that presents a two-page analysis of each of the shortlisted funds.



4.1 Selected financing mechanisms overview

	 ADAPTATION FUND	 African Water Facility	 GAFSP global agriculture & food security program
Mission	The Adaptation Fund finances projects and programmes that help vulnerable communities in developing countries adapt to climate change. Initiatives are based on country needs, views and priorities	Support improved development, equitable and sustainable management of water resources in Africa for poverty alleviation, socio-economic development, regional cooperation	GAFSP aims to improve food and nutrition security and build the sustainability of agriculture and food systems, providing financial and technical resources to projects along the food chain, from 'farm to table'
Active since	2010	2004	2008
Scope of work	It works with countries through implementing local entities	It works with public institutions and NGOs	It works with governments and large scale enterprises for people support
Type of funding	It provides grants and TA from \$ 100 k and \$ 15 M	It provides grants and TA from \$ 50 k to \$ 5 M	It provides grants, concessional finance and TA up to \$ 50 M
Geographic scope	Niger Basin and MENA	Niger Basin and North Africa	Niger Basin
Target sector	Climate change adaptation	Sustainable use of water for energy and food security	Food security and resilient food supply chain
	 GREEN CLIMATE FUND		 WATER and ENERGY for FOOD
Mission	Support developing countries raise and realize their Nationally Determined Contributions (NDC) ambitions towards low-emissions, climate-resilient pathways	Enable private sector investment in projects aimed at climate adaptation and mitigation in developing countries	Scaling groundbreaking water-energy-food innovations to impact food security, gender, and poverty reduction in an environmentally-sustainable way
Active since	2015	2019	2019
Scope of work	It implements projects through selected national authorities	It works with private actors with a turnover of 6M\$	It works with innovators adopting a for-profit business model
Type of funding	It provides grants, debts, loans, guarantees, equity from \$ 100 k to \$ 250 M	It provides grants, debts, equity and TA	It provides grants and TA from \$ 25 k to \$ 200 k
Geographic scope	Niger Basin and MENA	Niger Basin and MENA	Niger Basin and MENA
Target sector	Climate change adaptation and mitigation	Soil use, water resources, climate change resilience	Sustainable food security for water and energy resources
		 Powering Renewable Energy Opportunities	 The GEF Small Grants Programme 30 YEARS
Mission	Catalyse Africa's private sector to empower rural and marginalised communities	Stimulate partnerships, innovation and learning to address the needs and improve the livelihoods of sub-Saharan African communities	Provide financial and technical support to projects that conserve and restore the environment while enhancing people's well-being and livelihoods
Active since	2008	2020	1992
Scope of work	It works with entrepreneurs active in the fields of agriculture and energy	It works with private actors and NGOs, in particular with start-ups working in the field of productive use of energy	It works especially with community projects to protect the environment
Type of funding	It provides grants, loans at 0% interest and guarantees from \$ 15 k to \$1.5M	It provides grants and TA up to \$ 1 M	It provides grants up to \$ 50 k
Geographic scope	Niger Basin and MENA	Niger Basin	Niger Basin and MENA
Target sector	Renewable energy and agribusiness	Productive use of energy	Climate change resilient communities and environment protection



ADAPTATION FUND

4.1.1 Adaptation Fund

Active since 2010

Targets public actors

Works with countries notably through national or regional implementing entities

Provides grants and TA

Ticket size: \$ 100 k to \$ 15 M

Has committed \$ 923.5 M in programme and projects

Active in NB, MENA and other regions

Area of action: Climate adaptation

Creation and rationale of the fund

The fund was launched in 2010 with the aim of financing initiatives in the field of climate change adaptation projects/programmes in developing countries according to the Kyoto Protocol: funds are made available on country-specific needs and for activities that boost local vulnerable communities' capacity to implement actions that improve their resilience to climate change.

The fund covers a wide range of sectors with direct implications on climate change: coastal zone management, disaster risk reduction and early warning systems, ecosystem-based adaptation, rural and urban development, together with more WEF-related sectors such as agriculture (typically includes drought-resilient seeds, climate-resilient technologies or irrigation system, water management and all scale of projects, from household level

water collector to harvesting water solution, to ecosystem-based adaptation). The fund also addresses multi-sectoral projects, in line with the awareness that adaptation solutions are as multisectoral as climate change impacts.

Up to 2022, the Adaptation Fund has been able to land more than 130 projects across 100 countries with a direct impact on more than 36 million people. The Adaptation Fund impacts can be summarised as follows:

- Reduction in the vulnerability of communities and increased adaptive capacity of communities to respond to the effects of climate change.
- Strengthened policies that integrate climate resilience strategies into local and national plans.
- Increased ecosystem resilience in response to climate change-induced stresses.

Activity Breakdown

The Fund operates through 4 different funding channels:

- **Action**, to concretely implement projects and programmes based on countries' national strategies and priorities identified
- **Innovation**, to scale up innovative practices or technologies that have proven to be successful

as adaptation tools, or to fund innovative solutions that need acceleration to be tested as a pilot.

- **Learning and sharing** to capitalise on lessons learned internally at the Fund and externally for the Fund's partners.
- **Cross-cutting initiatives** to mainstream gender policies, capacity building and synergies

with other climate finance channels across programmes.

The adaptation fund offers various types of grants for different purposes:

- **Project/Programme funding**, for which the fund has cumulatively disbursed over \$ 830 M since its inception, with almost one third of the amount in Africa and Middle East. The leading 3 topics were agriculture, food security and water management once again proving the relevance of the WEF Nexus approach.
- **Innovation grant** from 250 k to 500 k: since the fund's inception, 3 grants of approximately 250 k were allocated to national institutions and organisations.

- Learning grants up to 150 k, created in 2019, which has already funded two initiatives in Africa for the creation of platforms to improve knowledge management and sharing.
- Readiness, TA, and scale up grant from 10 k to 150 k, established in 2014 grants were allocated for an approximate amount of \$ 1.6 M, mainly in Africa.

The budget allocation is in line with the general aim of the fund; therefore, the largest amount of funds were channelled for initiatives categorised as “increased adaptive capacity within relevant development and natural resource sectors”, followed by initiatives aiming at “increasing ecosystem resilience in response to climate change”.

Focus project: *Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Implementing Innovative Projects in Water and Agriculture in Support of Adaptation to Climate Change*

Location: Jordan

Ticket Size: \$ 9.3 M

The Government of Jordan received a grant of approximately \$ 9.3 M to implement a programme aimed at “Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Implementing Innovative Projects in Water and Agriculture in Support of Adaptation to Climate Change”. The national entity entitled to the implementation of the project is the Ministry of Planning and Cooperation (Mopic).

The main objective of the project is the optimization of wastewater usage in the region of Wadi Mousa, in the south of Jordan, to enhance the adaptation capacity of local communities by reducing the use of

freshwater for agricultural purposes. Indeed, Jordan’s water availability has been under stress because of over-abstraction in the past decades, and the country remains one of the world’s most vulnerable places to water stress.

The project integrates agriculture water management, agriculture and food security issues as it aims at: reusing wastewater for the production of fodder, redistribution of endangered plant species and enhanced beekeeping capacities for honey production, replacement of old irrigation systems and maximisation of irrigated area through solid desalination and introduction of permaculture concepts.

4.1.2 Africa Enterprise Challenge Fund



Active since 2008

Targets private actors and grassroots organisations

Notably supports start-ups and entrepreneurs working in agriculture and energy

Provides grants, zero interest loans, guarantees and working capital

Ticket size \$ 15 k - \$ 1.5 M

Facility size of \$ 221 M Invested

Renewable energy and Agribusiness

Active in the Niger Basin and other Sub-Saharan countries

Creation and rationale of the fund

The Africa Enterprise Challenge Fund (AECF) was founded at the initiative of the Commission for Africa to launch an African-based, African-focused challenge fund. It formally started operating in 2008 at the World Economic Forum in Cape Town with initial funding from the governments of the United Kingdom and the Netherlands. The AECF is a non-profit development organisation supporting agribusiness and renewable energy private sector projects in Sub-Saharan Africa.

The AECF bases its activities on two sectors of action, agribusiness and renewable energy, for which the fund opens regional, sector-specific windows. AECF agribusiness activities tend

to focus on uni-sectoral technologies such as innovative crop production, agricultural inputs development, and livestock or animal health products. However, the fund will soon open windows for the blue economy, thus opening its activities to new water and food projects. On the other hand, the activities related to the renewable energy sector are more open to potential integrated approaches. Indeed, the renewable energy unit has specific activities related to financing technologies for climate-smart agriculture in addition to other WEF-oriented productive use of energy projects.

Activity Breakdown

The Africa Enterprise Challenge Fund offers different fundings adapted to the needs of the selected companies. It provides small grants for companies in an early stage of development to help mitigate the risk of their activities and offers working capital facilities and guarantees for growing businesses. When the legislation allows it, it can also provide zero-interest loans. The ticket sizes are also adapted to the investee's needs and stage of activities.

Concerning the awarded funds, 59% of the \$ 221 M facility goes to agribusiness

activities. Agribusinesses account for 53% of the supported companies, and Renewable Energy for 46%. The remaining 1 % of the supported companies are sector agnostics. In terms of region, the Niger Basin Authority (NBA) countries are spread between the two least funded regions, West Africa with \$ 43 M in total investment and Central Africa with \$ 5.1 M in total investment. The region with the highest amount of investments is East Africa with \$ 118 M, followed by Southern Africa with \$ 55 M.

In the NBA countries, Nigerian companies have received \$ 3.2 M shared between 12 companies, all active in the agribusiness area, and Malian companies have received \$ 494 k for two agribusiness entities and \$ 545 k for 11 renewable energy companies. AECF has supported one agribusiness company in each Ivory Coast and Cameroon with total funding

of \$ 930 thousand and \$ 46 k, respectively. Finally, the 13 companies financed in Burkina Faso, all active in the renewable energy sector, managed to install the 4th highest clean energy capacity of all countries supported by the AECF with the initial help of \$ 1.1 M. AECF has not supported companies in the other NBA countries so far.

Focus projects: *Futurepump and Liquid Lever Ltd.*

Futurepump Localisation: Multiple Sub-Saharan countries

Ticket size: unavailable

Liquid Lever Ltd Localisation: Kenya

Ticket size: \$ 0,36 M

Futurepump and Liquid Lever Ltd are two companies providing irrigation solutions for agriculture. However, the two companies supported by AECF developed different technologies powered by different sources and rely on different business models. They demonstrate the variety of integrated WEF Nexus solutions for a given impact.

Futurepump develops and manufactures solar-powered pumping systems for smallholder farmers, thus supporting their agricultural productivity and resilience to climate-related incidents. With AECF's support, the company could grow its activities to new markets, notably in NBA countries and reach more than 4,500 smallholder farmers. Futurepump's business model is the manufacturing of its product. The company selects partners to distribute its pumps to the final clients on the field.

Liquid Lever Ltd targets similar beneficiaries for similar impacts. With the help of a \$ 360 k investment from AECF, Liquid Lever has designed and produced gravity-fed drip irrigation systems. This solution does not require a pump and, thus, no additional energy source. Liquid Lever Ltd's business model includes partnering with microfinance institutions and community-based finance to facilitate the purchase of its irrigation kits.

The two companies have an integrated approach to water resources management for agriculture. Their approach differs the most when it comes to energy. Futurepump relies on clean and renewable energy with solar-powered pumps, whereas Liquid Lever Ltd adopted gravity-powered systems.

4.1.3 African Water Facility



- | Active since 2004
- | Ticket Size \$ 50 k - \$ 5 M
- | Provides grants and TA
- | Targets public actors, NGOs and public-private partnerships
- | *Specialised in working with public institutions developing innovative water projects*
- | Facility size \$ 184 M
- | Africa including Niger Basin, North Africa
- | Water Innovation to support project increasing Water, Energy and Food Security

Creation and rationale of the fund

The African Water Facility was launched in 2004 under the African Ministers' Council on Water's (AMCOW) initiative. Its mission is to mainstream finance to develop water activities in Africa.

While its mission focuses on water-related projects, the AWF keeps a very open vision of water uses and includes targets on water availability for agriculture and energy. Thus, the facility defines its final goal as *"supporting projects designed to increase water, energy and food security to promote socio-economic growth"*.

To achieve its vision of having water for drinking, hygiene, sanitation, and ecosystem but also industry, agriculture, energy, transport and tourism for all by 2025, the AWF has selected three main areas of activities, project preparation, water knowledge and water governance. During its almost 16 years of operations, the facility has notably improved access to drinking water, helped to install water sanitation systems and increased food

security by providing water for agriculture, for example, with improved surface run-off water management. The AWF also works on climate change adaptation and its effects on water resources. Therefore, the AWF also aims to remove barriers to adopting climate-smart and climate-resilient water solutions. Furthermore, it supports projects susceptible to reducing GHG emissions, either with projects of restoration of ecosystems or through the promotion of renewable energies.

The AfDB is the entity managing the AWF. Since its operations beginning in 2006, the AWF has mobilised \$ 184 M in funding from 13 different countries, including four African countries - Algeria, Burkina Faso, Nigeria and Senegal - as well as the European Commission and three institutions, the AfDB, the NDF and the Bill & Melinda Gates foundation. Those funds allowed the AWF to develop a portfolio of 117 projects in 52 countries across the continent.

Activity Breakdown

The African Water Facility provides grants and technical assistance to NGOs, government and PPP for the early development of projects. Under its Strategy 2017 - 2025, the AWF has chosen three strategic areas of activities: i)

project preparation, ii) catalytic investments and iii) investment promotion.

Project preparation is historically the premier activity of the facility, which still allocates 75%

of its budget to this pillar of action. This area of intervention consists primarily of feasibility studies and project design to enable the involvement of other actors and favour investment mobilisation for the two other strategic activities. Since 2017, the AWF also allocates 15% of its funding to small catalytic investments to cover viability gap funding or to replicate innovative business models. Those investments typically cover

water sanitation and irrigation for smallholder farmers or small-scale hydropower. Finally, the AWF allocates the remaining 10% of its budget to make the sector more attractive to private investors and operators by raising their awareness of investment opportunities and bridging the knowledge gap of public actors on risk mitigation measures available for water-related projects.

Project Focus: *Developing rainwater to reduce poverty and tackle drought in Cameroon*

Location: Cameroon

Ticket size \$ 1.3 M

In 2016, the African Water Facility supported the Government of Cameroon with a € 1.3 M grant for a study on the use of rainwater to reduce water poverty in the northern regions of the country.

Indeed, while Cameroon possesses extensive water resources, the North and Far North regions are much more susceptible to drought. In these regions, the agricultural outputs heavily rely on precipitation and are, thus, much more vulnerable to climate change. Additionally, habitants of the area often have to walk several kilometres to reach the closest water source. To face the risk to food security and access to water in the region,

the Government of Cameroon has requested financial help from the AWF to analyse the mobilisation of rainwater to reduce water poverty in the region.

The focus of the project is to explore the potential of hydro-agricultural dams in the area and help with the early-stage development for the implementation of hydro-agricultural infrastructures. The project analysed fifteen sites and reduced the list to the five locations with the most potential. After identifying the five sites, the project included the preparation of tenders for the realisation of the dams on those sites.

4.1.4 Dutch Fund for Climate Development



Active since 2019

Targets private actors

Specifically works with medium-scale private innovators developing water- and agribusinesses

Provides grants, TA, debt and equity

Facility size € 160 M

Active in MENA and Niger Basin

Land Use, Water and climate-smart livelihoods

Creation and rationale of the fund

The Dutch Fund for Climate Development (DFCD) is a climate-oriented fund managed by a consortium composed of Climate Fund Managers (CFM), the World Wide Fund for Nature Netherlands (WWF-NL), the Netherlands Development Organisation (SNV) and the Dutch Entrepreneurial Development Bank (FMO). It was launched in November 2019 and benefited from a € 160 M budget from the Dutch government for the 2019-2022 period. It works exclusively with private companies with more than € 6 million in total assets value to whom it provides technical assistance, grants, debt and equity financing. The DFCD supports projects in all OECD DAC Least Developed Countries and dedicates a share of its funding to Netherlands development cooperation priority countries.

DFCD's primary focus is to enable private sector investments in climate change mitigation and adaptation projects. Aware of the lack of funding for adaptation and the trend of primarily financing mitigation projects, the DFCD has committed to invest at least 50% of its funding in adaptation projects. Its sectors of action include climate-resilient water systems, water management and freshwater ecosystems, forestry and climate-smart agriculture. Its objective is to support climate-resilient economic growth by improving the well-being and economic prospects of underserved communities while protecting ecosystems and water resources. The DFCD was launched as a consortium to favour partnerships and serve as an example for developing partnerships between actors with multiple expertise.

Activity Breakdown

The Dutch Fund for Climate Development delivers its funding via investment windows or facilities. The current windows are the Origination Facility, the Land Use Facility, and the Water Facility. The Origination Facility is managed by the WWF-NL and SNV and is the early-stage window of the DFCD. This facility focuses on identifying new projects in one

of DFCD's thematic sectors and supporting the project through its primary development by funding feasibility studies and delivering technical assistance. Its objective is to feed the pipeline of viable projects for DFCD's implementation windows.

The Land Use Facility and the Water Facility are the two operational financing windows of

the DFCD. The Land Use Facility is managed by the FMO and provides grants, equity and debt financing to support the growth of land-use-oriented companies. It also benefits from FMO's network to finance post-implementation technical assistance for communities. The Land Use Facility targeted outcomes include climate-resilient food security, water supply and sanitation. The facility has a total budget of € 55 M to be distributed between 25 projects.

The Water Facility is managed by Climate Fund Managers, one of DFCD's consortium partners. For that specific window, the facility will be integrated within CFM's second window for investment, Climate Investor Two. To achieve its objectives of improved well-being and livelihood through climate-resilient water

supply and sanitation, the Water Facility will provide development grants, equity for the construction of infrastructure and operational debt. The facility aims at allocating its € 75 M budget to 30 projects.

Each of the current DFCD windows is Nexus-related and covers one of its dimensions. While they aim for a sector-specific target, the windows also offer openings for Nexus projects within those windows with the possibility of financing climate-resilient land use projects within the water-oriented window or climate-resilient water supply and sanitation within the Land Use Facility. While the energy dimension is never explicitly mentioned in any of the two facilities or the sector of activity, it is implicitly mentioned as an enabler for agriculture and water resource management.

Project Focus: *Safi Sana Mali Ltd*

Location: Mali

Ticket Size: € 301,432

Safi Sana Mali Ltd has received a € 301,432 grant from DFCD and Technical Assistance from SNV to develop an investment plan for a faecal sludge and industrial wastewater treatment plant in Bamako, Mali. Safi Sana Mali Ltd business model is to transform human and organic waste into valuable products to be sold to different customers. The list notably includes electricity for public utility, water for irrigation, bio-fertiliser for agriculture, fuel for efficient cookstoves and biogas.

The DFCD grant objective is to support the development of a new plant in Bamako. This

plant will convert 20% of its input into compost and fertiliser by mixing it with food waste and other bio-waste in a digester. The remaining 80% will be used to produce electricity. The plant is designed to treat 300 tons of sludge and wastewater every day.

The project will directly improve the livelihood of 340.000 people who will obtain sanitation. Additionally, it will supply cheaper and reliable electricity to neighbouring businesses and industries and provide fertiliser and high-nutrient compost to local agriculture to improve their yields.

4.1.5 Global Agriculture & Food Security Program



Active since 2008

Targets public and private actors and grassroots organisations

Notably works directly with the government or large-scale companies working with smallholder farmers

Provides grants, TA and concessional loans

Ticket size: up to \$ 50 M

\$ 2 B facility size

Food security and climate-resilient food value chain

Active in Low-income countries including in the Niger Basin

Creation and rationale of the fund

The Global Agriculture and Food Security Program (GAFSP) was launched in 2007-2008 by the G20 to respond to the food price crisis. It is a multilateral financing institution which received over \$ 2 B in funding from private and public sector actors from eleven countries, as well as the Bill & Melinda Gates Foundation. The GAFSP offers technical assistance, grants concessional finance or blended loans to public and private actors, as well as smaller grants for community-led projects. The GAFSP supports projects in low-income countries and has financed programmes in multiple Niger Basin countries.

The GAFSP is a food-oriented climate funding institution promoting climate-resilient and

sustainable agricultural practices. It was founded with the vision that climate change disproportionately affects the most food-insecure population and that agriculture can and must be part of the solution to the climate crisis. It supports government, agribusinesses and smallholder farmers' cooperatives to design and implement projects in the entire food value chain. It notably includes action to raise agricultural productivity, link farmers to markets, and improve livelihoods and resilience to climate change. The program has three focus areas within the agriculture sector, climate change, COVID response and Cross-Cutting Themes.

Nexus Integration

The GAFSP works primarily with public sector institutions which received 77% of the programme's total funding, while 21% went to private sector developers. The remaining 2% was allocated to support 14,376 producer organisations. The programme has helped 16 million people and smallholder farmers in rural

areas. The funding notably enabled irrigation systems for nearly 550 thousand hectares, supported new technologies to increase the agriculture yield on 467 thousand hectares, and provided direct nutrition services and products to more than 4 million people.

The Global Agriculture and Food Security Program offers its funding through different windows for applications or calls for proposals. It has opened and closed six calls from 2010 to 2021, organised to respond to the specific context of each period. The 2021 call for proposals was notably centred around COVID-19 response efforts.

The GAFSP has opened its seventh call for proposals in 2022. It will focus on accelerating food system resilience in the face of global conflict, climate change and the consequences of the COVID-19 crisis. The funds are open for country-led projects and should support medium- and long-term national agriculture and food security strategies. The call for proposals aims to support projects involving multiple partners to support coordination

in resources management and optimise the resulting impacts. The GAFSP Steering Committee expects to deliver \$ 175 M in funding to the applying countries during this funding window.

While focusing on agriculture-related impacts, the GAFSP works across the entire food value chain and thus offers several opportunities for integrated, multi-sectoral projects. Reviewing previously implemented projects highlights their experience in financing projects with different variations of Water, Energy and Food combinations as long as the funded initiatives offer a final, significant impact on the food value chain. Even though the GAFSP does not mention WEF Nexus as part of its activities, it has funded integrated Water, Energy and Food projects.

Project Focus: Maradi, Tahoua and Zinder Regions Water Mobilisation Project

Location: Niger

Ticket size: \$ 20.9 M in grants from the GAFSP

In 2011 the government of the Republic of Niger received \$ 33 M in support to develop a Water Mobilisation Project to Enhance Food in Maradi, Tahoua and Zinder Regions (PMERSA-MTZ). The project notably benefited from a \$ 20.9 M grant from the GAFSP, an \$ 8.2 M loan from AfDB African Development Fund and a \$ 3.9 M from the Spanish Agency for International Development Cooperation (AECID). The project was implemented by the General Directorate of Rural Engineering of the Ministry of Agriculture. It was officially closed in 2019.

The project aimed to mobilise surface water to develop and strengthen agriculture yields in the Maradi, Tahoua and Zinder regions. The project benefited from its alignment with Niger's different strategies for poverty reduction, food security and rural development. Furthermore, it also aligned

with the country's irrigation plan aiming at improving surface water collection, expanding irrigation and increasing irrigation outputs. The specific action of the project included the development of 47 weirs and 11 mini-dams strengthening for farming. The project also supported local communities by developing water and soil conservation techniques directly supporting food security. The training also extended to the operation and maintenance of infrastructures by local communities to guarantee the long-term success of the infrastructure.

PMERSA-MTZ has surpassed its objective by supporting 218,000 people with the construction of dams, shallow wells for agriculture and the delivery of 6,000 water pumps. It also resulted in better agricultural practices for water and soil conservation on 3,700 hectares of land.

4.1.6 Green Climate Fund

- | Founded in 2010, active since 2015
- | Targets public and private actors
- | *Implements the projects through a National Designated Authority*
- | Provides grants, loans, equity, working capital and guarantees
- | Ticket size \$ 100 k - \$ 250 M
- | Total fund committed: \$ 10.8 B
- | Active in 154 countries including NB and MENA
- | Climate adaptation and mitigation

Creation and rationale of the fund

The Green Climate Fund (GCF) was established in 2010 at COP16 in Cancun to become the United Nations Framework Convention on Climate Change (UNFCCC) executive financing instrument to support developing countries in achieving their climate change mitigation and adaptation targets. Since 2015 and its first investments, the fund also serves as the Paris Agreement Financing Mechanism. It is the biggest climate fund with a total of \$10.8 B committed funding across 200 projects in 154 countries.

Aware of the importance of investment decisions in fighting climate change, the GCF was launched to catalyse finance to achieve the goal of maintaining global warming below 1.5°C. The fund focuses its investment in four areas of transition, energy and industry; built environment; human security, livelihoods

and wellbeing; and land-use, forest and ecosystems. Moreover, GCF actions aim at promoting integrated approaches in project development and policy making; investing in and mainstreaming climate innovations; de-risking investment in low-emission technologies in LDCs and SDCs; and popularising climate investment opportunities.

The GCF is a country-driven initiative, collaborating with beneficiary states via National Designated Authorities (NDA) or Focal Points. Furthermore, GCF investment aims at transforming countries' National Determined Contributions (NDC) into action. GCF-financed projects are implemented by a network of 200 Accredited Entities such as national or international banks, multilateral funds, financial institutions or UN agencies.

Activity Breakdown

The Green Climate Fund offers a vast variety of support ranging from local small-scale projects to hundred-millions-large national or international programmes. Most of the GCF's support takes the form of grants and loans - 42% of the total funding each - followed by equity - 9% - and results-based payments and guarantees - 5% and 2%, respectively. The

funds provided by the GCF aim to be equally distributed between two themes, climate change mitigation and adaptation.

The climate mitigation activities of the Green Climate Funds regroup Building cities, industries and appliances - \$ 1.5 B funding in 33 projects- Forest and Land use, - \$ 1.5 B funding in 57 projects- Transport - \$ 840 M in 11

projects - and Energy Generation and Access - \$ 2.8 B in 57 projects. GCF's climate adaptation pillar also has four sub-sectors of activities, ecosystems and ecosystems services which represents \$ 796 M in funding split between 68 projects, health, food and water security - \$ 1 B in 90 projects - infrastructure and the built environment - \$ 805 M in 53 projects - and livelihoods and communities - \$ 1.5 B in 128 projects.

Most of the 200 projects supported by the Green Climate Fund have a multi-sectoral approach and impact multiple funds' result areas. Additionally, several of the GCF's result areas have the potential to finance Water, Energy and Food projects. The health,

water and food security result area are one of the most notable domains of activity for WEF Nexus projects. Indeed, its objectives include developing climate innovation to shift towards resilient, water-efficient, low-emission agricultural systems. Other significant results areas include livelihood and communities, which typically covers community-scale WEF project to increase the community's resilience, energy generation and access which can support WEF PUE technologies or ecosystems and ecosystem services activities. Finally, the GCF promotes integrated cross-cutting approaches when developing infrastructures and built environments in the health, water, energy or agriculture sectors.

Project Focus: FP167 - Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger

The FP167 is a cross-cutting project positively affecting climate change adaptation and mitigation in Niger. Out of the \$ 44.3 M cost of the project, the Green Climate Fund provided a \$ 23.6 M grant and a \$ 5.7 M loan. The accredited entity managing the project in the field is the West African Development Bank (BOAD). The project supporting hydro-agricultural development with smart agriculture practices will have an impact on the "energy generation and access", "health, food and water security" and "livelihoods of people and communities" result areas. It was approved in 2021 and is considered a medium size project by GCF's standards.

The project aims at supporting the development of agricultural activities in Niger, which are the main source of income for 87% of the population. Additionally, the food security of Niger is already threatened and is particularly vulnerable to climate change

due to fluctuating precipitations. Nigerien agriculture relies on Irrigated Agricultural Development¹ (AHA). However, those irrigation infrastructures suffer from climate change and extreme flooding events. Therefore, the project's objectives are to design and build climate-resilient, solar-powered Irrigated Agriculture Development to support the efficient operation of AHAs and to attract and promote private investment in Niger's agriculture.

The project will implement technology and practice changes on all three dimensions of the Water, Energy and Food nexus. The classically fuel-powered pumps will be replaced by solar-powered models, while water-efficient irrigation technologies such as drip irrigation will be implemented in the new AHAs. Cooperatives and organised mutual production groups will be in charge of operating the newly built AHAs.

¹ Also called "Aménagement Hydro-Agricoles" in French

4.1.7 Powering Renewable Energy Opportunities



Targets private actors and grassroots organisations

Notably works with start-ups and local stakeholders developing energy for productive use products

Provides grants and TA

Ticket size < \$ 300 k

Active in Niger Basin and other Sub-saharan countries

Energy for productive use

Creation and rationale of the fund

The Programme has been built on the premise that “energy supply alone is not enough to transform economies” and therefore it is fundamental to include socio-economic aspects in the design of rural energy development programmes.

This is the general concept that led IKEA Foundation and the UK Aid to fund the PREO programme: in particular, the UK government contribution comes from the UK Foreign, Commonwealth & Development Office Transforming Energy Access (TEA) Programme, whose aim is to stimulate access to clean and affordable energy to both industries and

communities in developing countries. To achieve this, the TEA is endowed with \$ 130 M until 2024. part of which flows into the PREO programme.

The implementing partners identified are the Carbon Trust, for what concerns the financial aspects, and Energy 4 Impact programme (an initiative powered by Mercy Corps) for the technical part.

The ultimate goal of PREO is to stimulate energy demand in rural Africa to reduce poverty through the creation of sustainable jobs and women’s inclusion for local communities, with energy as the catalyst to unlock productive activities.

Activity Breakdown

The programme aims to create 3.500 jobs, empowering 1.000 women and generating impact on more than 11.000 rural households. To achieve its mission, the programme operates on three main streams:

- Action learning projects: grants up to EUR 300k for innovative business models and solutions able to attract investments and with the potential of development at scale. The PREO has not foreseen any application

window during 2021 and 2022, but aims at a new funding cycle in the future.

- Partnership services: enabling the exchange among partners, PUE projects developers and potential investors acting as a sort of “incubator”.

- Technical assistance: it is offered in the form of knowledge transfer or technical support drawing from the pool of experts of the UK TEA programme; each TA service provided is designed on the needs of the promoter of

any initiative related to the productive use of energy (PUE).

Together with the services provided, the programme also acts as a knowledge hub, as

a platform to put in contact relevant actors and stakeholders of the PUE value chain and exchange information and resources developed during projects implementation and previous experiences.

Project Focus: Good Nature Agro (GNA)

Location: Zambia

Ticket Size: N/A

The country is endowed with millions of hectares of arable lands, constituting a strong asset for local agricultural enterprises: in the recent decades the expansion of agricultural activities has come at the expense of forests areas, cleared to give space to productive activities. Furthermore, the country stays generally dry from mid-May to mid-October.

The main scope of the project is to make agricultural activities more efficient, working on existing lands and introducing "sustainable intensification" through the use of solar-powered irrigation systems and boreholes. This would allow the farmers to reduce their

reliance on rainwater, have more control on water usage thus moving from one farming season to two (and in some cases three) farming seasons.

The main promoter of the project is GNA, a for profit company engaging with more than 26.000 farmers, that mainly produce maize on a subsistence basis. With the support of the PREO Programme, GNA aims at not only supporting the farmers in intensifying their production, but also to diversify their production with more high-value horticultural products (such as onions).

4.1.8 The GEF Small Grant Programme

Active since 1992

Targets grassroots organisations

Specialises in community-led projects to preserve and restore the environment

Provides grants

Ticket size up to \$ 50 k

Facility size: \$ 724.9 M since 1992

\$ 76 M between July 2020- June 2021

128 active countries including NB and MENA

Climate change adaptation and mitigation, community-led environment protection

Creation and rationale of the fund

The Small Grant Programme is implemented by UNDP and belongs to the Global Environment Facility (GEF). It was established in 1992 as a consequence of the global commitment towards sustainability that was inspired by the Rio Earth Summit that took place in the same year. One of the most important features of the Fund is that it serves as a financial mechanism for the implementation of Multilateral Environmental Agreements (MEAs).

The fund was created with the intention to overcome life-threatening challenges that put the planet in danger, such as pollution of waters, land degradation, greenhouse emissions in the atmosphere etc., through the support of community-led initiatives and empowerment

of civil society actors through the adoption of a bottom-up approach, in the spirit of “think globally, act locally”. The sectors covered by the fund range from biodiversity and climate change mitigation and adaptation initiatives to land degradation, sustainable forest management and international waters and chemicals. Although not explicitly mentioned in the areas of work, renewable energy’s role in the Fund is relevant. Indeed 46% (+26% for energy efficiency) of the funds dedicated to climate change measures are linked to renewable energies, for an approximate number of more than 150 projects in one year. Similarly, land degradation and resource management projects address agriculture and water management practices.

Activity Breakdown

The Small Grant Programme operates exclusively through the direct disbursement of grants to civil society actors: the grants’ maximum value is \$ 50 k and the average value of grants distributed in the last decades is around \$ 25 k; however the SGP can also support strategic projects for a maximum of \$ 150 k. These “bigger” projects are normally located in highly vulnerable locations where successful solutions

have proven to be very effective and could be scaled up to broaden the overall impact across communities in the area.

Since its inception, the facility has supported 136 countries with a total of 26.429 projects financed with more than \$ 720 M plus a mobilisation of an extra \$ 870 M in co-finance. The SSGP has widely proven that civil society’s actions are able to generate positive outcomes

and impacts for the environment and its protection. The fund becomes particularly relevant in light of the fact that its priorities for the near future foresee the adoption of an integrated approach among vulnerable

landscapes and seascapes, putting at the core of their funding topics such as sustainable agriculture and fisheries, low-carbon energy access benefits, land and water conservation etc.

Focus project: *Pilot project for water pumping wind-solar hybrid system*

Location: Mali

Ticket size: N/A

The project “Pilot project for water pumping wind-solar hybrid system” is implemented by the NGO Mali-Folkcenter, whose aim is the promotion of renewable energy solutions and energy efficiency together with natural resource management to foster economic growth of rural communities. This has been the first project realised in Mali to improve water pumping systems to ameliorate rural populations’ welfare through enhanced productive use of renewable energies.

The project has different objectives: i) the reduction of 4 tons of CO2 by substituting diesel motors for water pumping with hybrid wind-solar systems, ii) building local expertise to operate the systems, iii) creating income generating activities, iv) promotion of the concept of “Rural Service Centre”. Finally, the project also aims to set up a centre that can provide services to the local population through renewable energy.

4.1.9 Water and Energy for Food

Active since 2019

Targets private sectors and grassroots organisations (with for-profit BM)

Notably works with innovators, entrepreneurs and locally implemented start-ups

Provides grants and TA

Ticket size: \$ 25 k - \$ 200 k

\$ 6,7 M Mobilised until 2021

Active in MENA and Africa, including NB

Food with a lower burden on Energy and Water consumption

Creation and rationale of the fund

The Water and Energy for Food (WE4F) programme was designed to help meet the condition to achieve SDG2, recognising that Climate Change increases the burden on the use of resources and worsens the situation of food security. Indeed, agriculture is the biggest consumer of freshwater and an important consumer of energy and is thus particularly vulnerable to climate change. The initiative aims to promote the WEF Nexus approach as a resilient solution to food scarcity challenges. The Water and Energy for Food fund aims to develop projects using the holistic WEF nexus approach to achieve the project with the best possible impact. Namely, the project works on increasing food security with a better, more efficient use of energy and water resources along the food value chain and increasing revenue for the poorest in urban and rural areas. Therefore, the fund aims to scale the operation of selected innovators developing sustainable solutions, promoting climate change resilient solutions and technologies respectful of the environment and biodiversity. Within the Water, Energy and Food Nexus, the programme focuses on

supporting technologies impacting the food component of the nexus. Thus, it helps develop Energy and Food, Water and Food and Water, Energy and Food projects.

The initiative was launched in 2019 as a joint initiative between the German Federal Ministry of Economic Cooperation and Development (BMZ), the European Union (EU), the Ministry of Foreign Affairs of the government of the Netherlands, the Swedish International Development Cooperation Agency (Sida) and the U.S. Agency for International Development (USAID). The initiative follows and succeeds two previous programmes already incorporating Water, Energy and Food Nexus elements, the Powering Agriculture: An Energy Grand Challenge for Development programme and the Securing Water for Food Grand Challenge. The programme is implemented through its five Regional Innovation Hubs (RIH) covering East Africa, West Africa, Southern and Central Africa, Middle East and North Africa, as well as South and Southeast Asia and has implemented projects in 38 countries to this date.

Activity Breakdown,

Successful applicants of the WE4F programme are primarily supported by integrating a network of companies, mentors, partners and potential

investors. The selected innovators also receive technical assistance to expand their businesses to new products, geographies and services.

WE4F network also supports its members in mobilising new investments. Finally, selected applicants can qualify for grants ranging from \$ 25,000 to \$ 200,000.

As previously mentioned, the primary focus of the Water and Energy for Food programme is to promote water and energy technologies to have an impact on food production and security. Therefore, all WE4F-supported innovators developed projects with a food-related component.

In 2021, 30.5% of all supported innovators developed energy and food solutions, 22% water and food technologies and 44% fully integrated water, energy and food projects¹. The Southern and Central Africa hub is launching its first call of proposals in 2022. MENA seems to have a strong potential for WEF nexus projects,

as 74% of the 23 innovations supported in the region integrated the three dimensions of the nexus. In contrast, West Africa had a higher share of Energy and Food or Water and Food projects, with only 10% of the 20 innovators developing full WEF projects.

The Nexus projects supported by WE4F take various forms but always include food-related components. WE4F, for example, backs classic solar-powered WEF projects such as solar irrigation projects or solar refrigeration, other renewable solutions such as the transformation of biomass with biodigesters, but also low-tech efficient solutions for water sanitation and agriculture such as the use of filtered wastewater for irrigation or the recycling of agri-waste into fertiliser.

Project Focus: Green Watech

Location: Morocco

Ticket size: Technical assistance; Financial support to be determined

GREEN WATECH joined the Water and Energy for Food network after the second MENA call for Innovations in 2022. It is a Moroccan company specialised in water treatment in rural and peri-urban areas. It has developed and commercialised low-cost and

energy-efficient water sanitation solutions for irrigation. Its products rely on gravity-powered soil-based filters. Compared to conventional filter solutions, the product saves energy and reduces drinking water use in irrigation.

Project Focus: Green Agro Valley

Location: Ivory Coast

Ticket size: Technical assistance; Financial support to be determined

Green Agro Valley joined WE4F's network in February 2022 after the West Africa RIH's Ivory Coast Call for Innovations. The company develops laser spray irrigation systems for smallholder farmers in Ivory Coast. The use of precision irrigation allows important water savings and increases agricultural productivity

and yields. Furthermore, the design developed by Green Agro Valley requires low maintenance. It presents characteristics corresponding to the local context of the Ivory Coast, making the system easily accepted by smallholder farmers.

¹ The 3.5% remaining went to digital solutions.

4.2 Selected financing mechanisms summary

The cross-comparison of financing mechanisms declaring interest in the three dimensions of the Nexus and sector-specific funds resulted in a shortlist of financing mechanisms with a strong potential in supporting Water, Energy and Food Nexus projects in the Niger Basin and the MENA regions. Those financing mechanisms were selected based on the type of funding they offered, the ticket size they awarded and the

region in which they were active. However, the most important criterion was their propensity to support Nexus projects. These dispositions were first assessed through the declared interest of the financing mechanisms in financing the different dimensions of the Nexus and then through a thorough analysis of their project portfolio. The funds were then classified by region of activities, stage of projects supported and eligible entities.

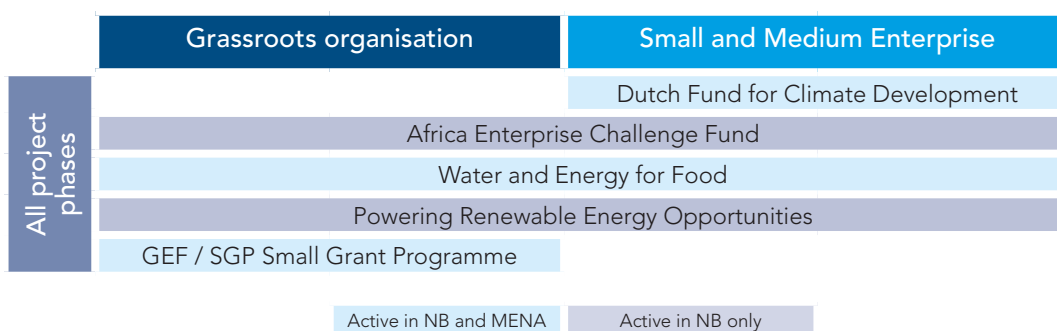


Table 8: Shortlisted funds supporting grassroots organisation and SME

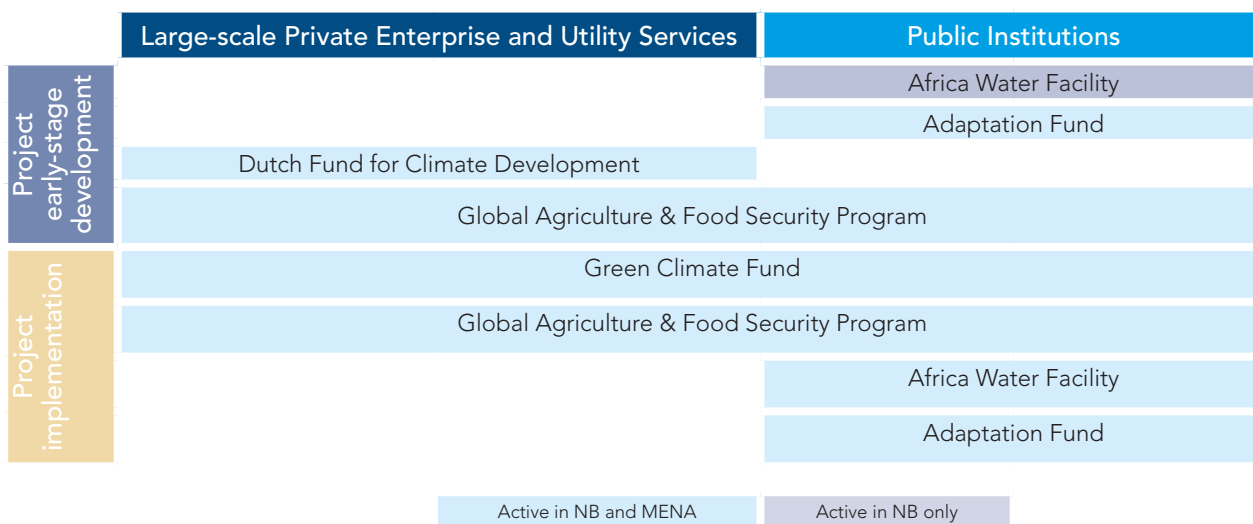


Table 9: Shortlisted funds supporting grassroots organisation and SME

Among the selected funds, three did not explicitly finance all the dimensions of the Water, Energy and Food Nexus: Powering Renewable Energy Opportunities (PREO) supporting Productive use of Energy, The Global Agriculture & Food Security Program active in developing the food value chain and the Dutch Fund for Climate Development,

a climate-oriented institution having facilities for agriculture and water projects. However, the analysis of the projects they supported demonstrated their experience in financing the Nexus. The review of those funds, as well as other PUE, agribusiness and water financing mechanisms, highlighted two areas for further

research in the financing of the Nexus. The first area of research is the evolution of productive use-of-energy funds and their role in the Water, Energy and Food Nexus development. This point was highlighted during the interviews with stakeholders. This first remark led to the second area for further research, which is the relationship of water- and agriculture-oriented funds with the Nexus compared to energy for

impact. Indeed, water and food funds tend to have an implicit interest in energy as an enabler for the development of their activities. Energy for impact funds on the other hand, often express an explicit interest in supporting projects with positive impacts on water and food resources. Those two approaches could be an opportunity for collaboration between different actors to finance multisectoral projects.

4.3 Application process

Identifying funds matching the needs of an applicant is only a first step towards getting funded. Indeed, application processes can be long and can require important resources to reach completion. Some procedures could require having specific partners to be eligible, while others will ask for a minimum amount of

the applicant’s own capital in the project. Those requirements can also include documents, specific timelines for the application or periods where applications are opened. While each fund has different application processes, Figure 6 summarises some of the most common requirements by the shortlisted funds.

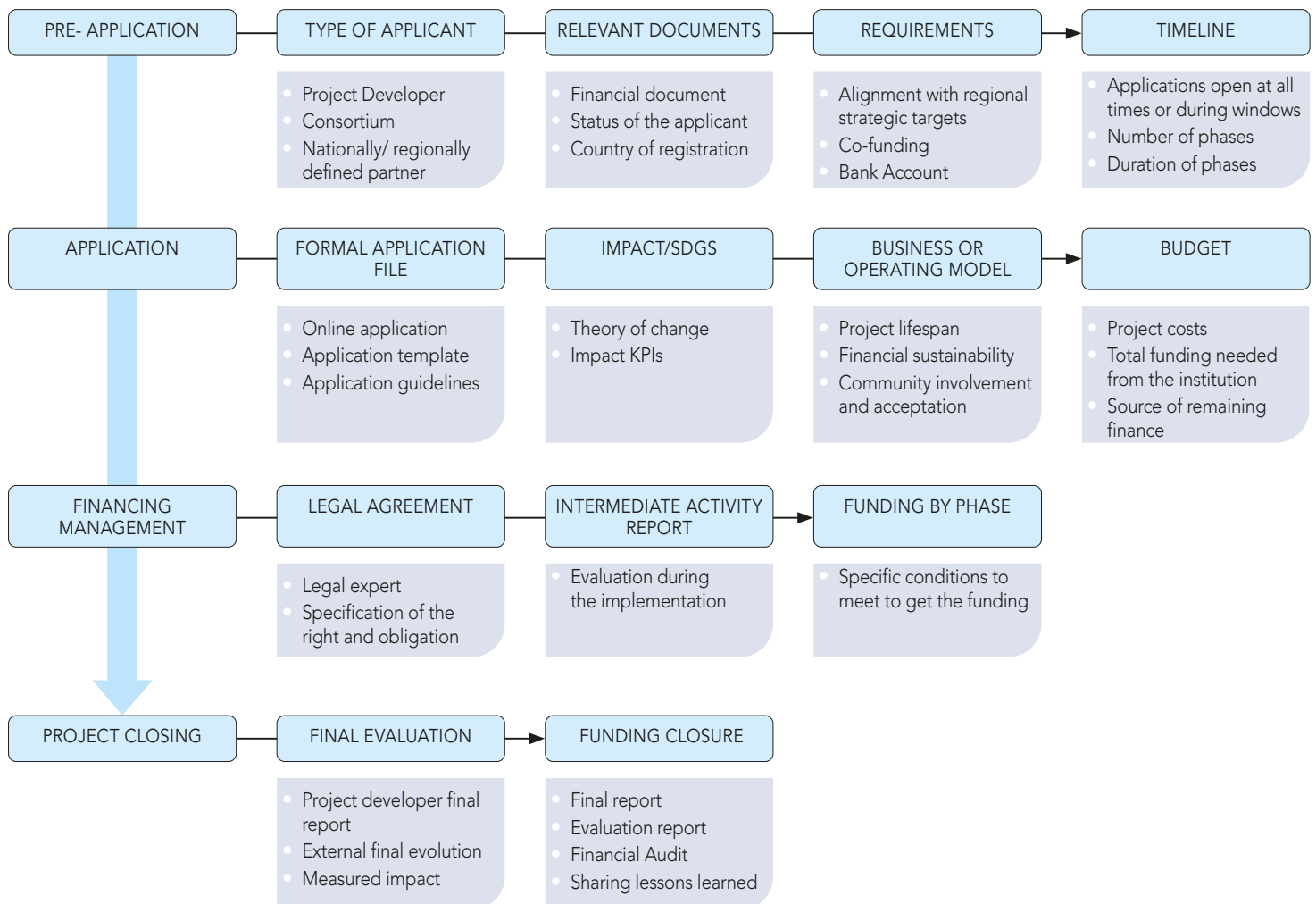


Figure 7: Common application requirements

In addition to the general requirements, the following section presents a brief overview of the requirements for three of the selected financing mechanisms.

The Green Climate Fund

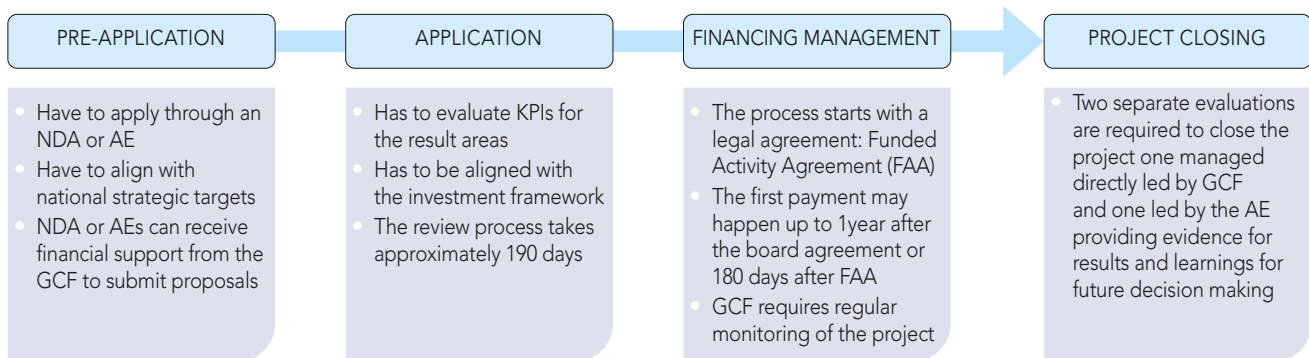


Figure 8: Summary of the Green Climate Fund application requirements¹

The Adaptation Fund

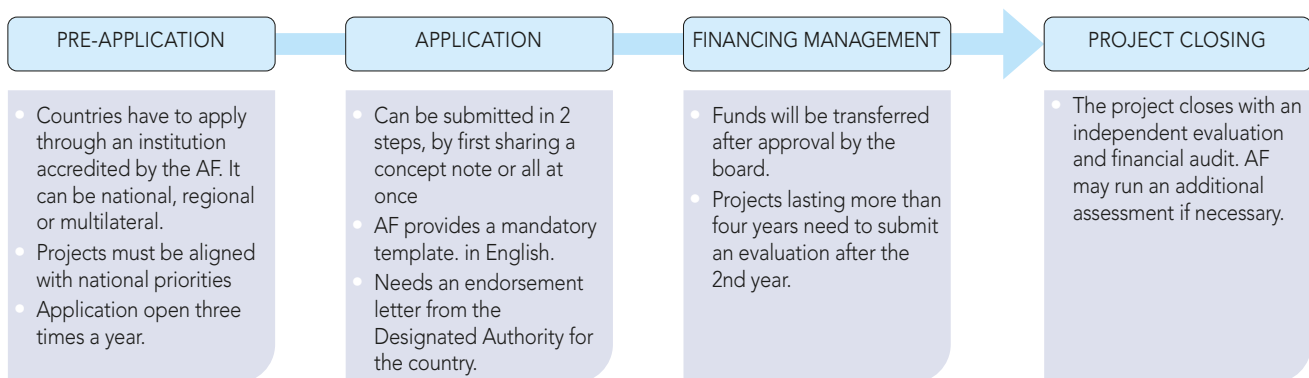


Figure 9: Summary of the Adaptation Fund application requirements²

Water and Energy for Food

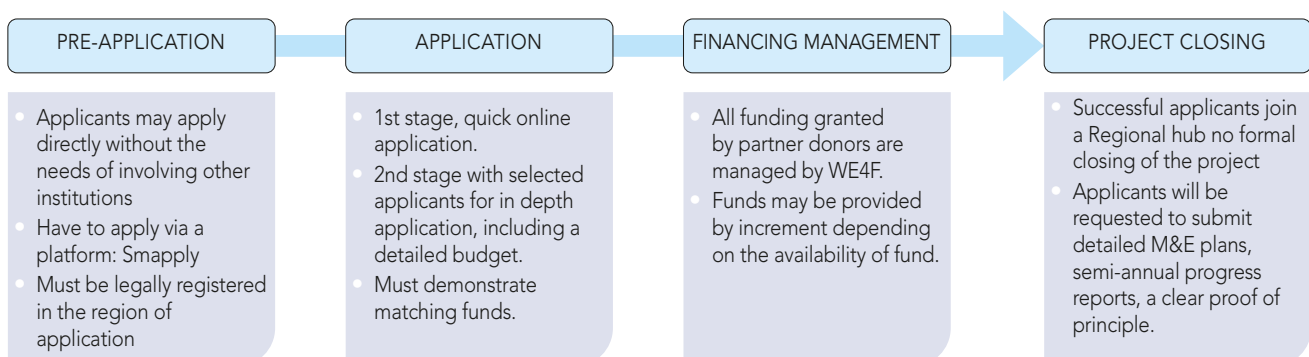


Figure 10: Summary of the Water and Energy for Food application requirements³

¹ Detailed information on the GCF process: www.greenclimate.fund

² Detailed information on the AF process: www.adaptation-fund.org

³ Detailed information on the WE4F process: we4f.org

05 / **Conclusions and Recommendations**



This report presents the context of financing instruments susceptible to support Water, Energy, and Food oriented projects in the Niger Basin and the MENA region. The review aims to help identify opportunities in financing WEF Nexus projects and support the mobilisation of funding for high-impact integrated activities. More specifically, the research:

- Maps existing financing institutions according to their core characteristics, leading to the creation of a **database of 71 financing instruments** active in the domain of renewables and energy access, water and sanitation or agribusiness and food security, but also

A path forward

Analysing the data provided by the 71 reviewed funds, the projects those funds have supported and comparing those pieces of evidence with the best practices of the shortlisted funds combined with a series of interviews have highlighted several points of interest for the financing and development of the WEF Nexus:

- **The perceived size of WEF projects:** Water Energy and Food Nexus projects tend to be perceived as small-scale projects, whereas larger-scale projects can also fall in the Nexus definition. This impression of the Nexus could have negative implications on finance mobilisation.
- **Need for multi-sectorial expert teams:** WEF project development requires integrated competencies at all stages of implementation both for project developers and funders. This point suffers from negative repercussions from the perceived size of WEF projects. Indeed, one might not allocate large and complex teams to projects perceived as small-scale.
- **Lack of WEF Nexus-specific funds:** While the analysis has revealed several financing mechanisms able to support WEF Nexus projects, the majority of those funds had no specific Nexus targets.
- **Data on supported WEF Nexus projects:** Due to the lack of WEF targets, data on the

infrastructures, climate change adaptation and mitigation, and ecosystems preservation;

- Presents a short list of funds susceptible to finance WEF projects by cross-comparing financing mechanisms according to **seven characteristics**.

The analysis of the funds' data delivered a snapshot of the Water Energy and Food Nexus financing landscape in the Middle East, North Africa and Niger Basin regions. It notably highlighted that **financing mechanisms active in the three dimensions of the Nexus in the database tended to have lower ticket sizes than sector-specific funds on average**.

support of financing institutions on the Nexus are sparse.

- **Urgency:** The challenges posed by the vulnerabilities of African countries to climate change and the demand's growth call for action. Developing integrated approaches such as the Water Energy and Food Nexus offers reliable solutions affecting both climate mitigation and adaptation.

Given the potential of the Water Energy and Food Nexus in tackling multiple challenges posed by climate change, those limitations call for a path of improvement in the WEF Nexus approach implementation through a series of actions:

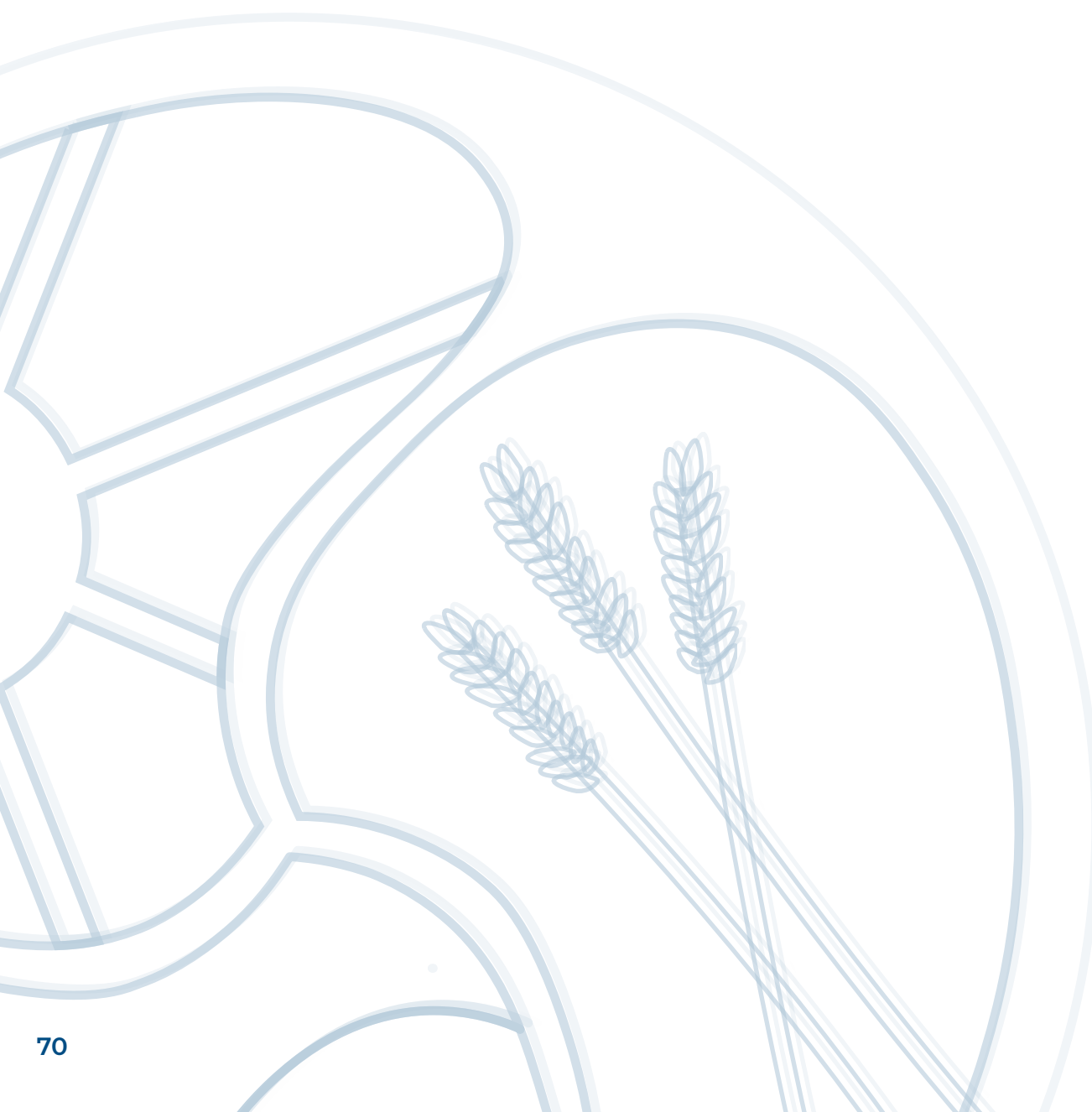
- **Favour coordination** between all players of the WEF Nexus. Coordination should be promoted **between local institutions creating a favourable environment and financing mechanisms to support investment and deployment of WEF Nexus solutions** and projects. Funding institutions could also further collaborate to share their expertise. The **DREAM initiative in Ethiopia**[12] is a successful example of multi-stakeholder collaboration.
- **Promote WEF-specific funding pillars/windows** within existing financing mechanisms or **one-stop-shop mechanisms to reduce fragmentation of funding** while facilitating

channel financing from different sectors to integrated and high-impactful projects.

- **Support sectorial financing mechanisms** that are active in at least one of the three sectors **to adopt WEF nexus approaches, strategies, targets, KPIs and create multi-sectoral expert teams** to evaluate and oversee integrated projects effectively.
- **Raise awareness of the potential of the Nexus and promote adoption of high-impact**

or larger-scale Nexus projects, either by scaling up small-medium scale activities or by working with public institutions and utility-scale companies to develop infrastructure plans integrating Nexus approaches.

Advocating for the high-impact potential of Nexus projects and their replicability could facilitate the implication of multiple actors, thus favouring the sharing of expertise between sectors.



Bibliography

- J. Schmidt and N. Matthews, 'From state to system: Financialization and the water-energy-food-climate nexus', 2018
- Benson, David, Gain, Animesh, and Rouillard, Josselin, 'Water Governance in a Comparative Perspective: From IWRM to a "Nexus" Approach?', 2015.
- M. Falkenmark and J. Lundqvist, 'Towards water security: political determination and human adaptation crucial', 1998
- F. Dodds and J. Bartram, Eds., *The Water, Food, Energy and Climate Nexus*, 0 ed. Routledge, 2016.
- J. Briscoe, 'The Changing Face of Water Infrastructure Financing in Developing Countries', 1999
- Ardic, Oya Pinar, Chen, Gregory, and Latortue, Alexia, 'Financial Access 2011 An Overview of the Supply-Side Data Landscape'. International Finance Corporation, 2012
- 'Nonbanking financial institution', The World Bank, 2023
- 'Joint Research Centre, Energy Service Companies (ESCOs)', Joint Research Centre, European Energy Efficiency Platform (E3P). accessed Feb. 17, 2023
- 'Green Climate Fund Project Activity Cycle', Green Climate Fund, accessed Feb. 17, 2023
- 'Adaptation Fund, Apply For Funding', Adaptation Fund, accessed Feb. 17, 2023
- 'Water and Energy for Food', Water and Energy for Food, accessed Feb. 17, 2023
- 'Distributed Renewable Energy-Agriculture Modalities (DREAM)', SNV, accessed Feb. 17, 2023

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