

**Examining How Stakeholders Can Access A Sustainable, Climate Resilient Economy and Generation: An Update on Green and Climate Economy Finance Sources, Developments and Investment Trends Draft,**

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## **I: Introduction, Climate Change and Climate Finance Developments**

From sea level rise to biodiversity loss, species migration and extinction and a projected increase in the duration, frequency and intensity in climate related natural disasters; climate change increasingly presents the greatest uncertain future threat to oceans, interdependent supply chains, marine ecosystem resources and vulnerable communities across the South Pacific, Commonwealth and world. Among the foremost barriers preventing radical systematic transformation, there is the access to climate finance. Since the 2015 Paris Agreement on Climate Change, many nations and stakeholders including the Commonwealth via its Climate Finance Access Hub have pledged to mobilise resources including finance to assist in the transition towards a maximum of 2 degrees Celsius temperature increase and retain a climateproofed, “business as usual” future, based on Intergovernmental Panel Climate Change Projections.

However, countries most in need such as Small Island Developing States have experienced significant constraints in accessing resources; including the need for a climate funding implementation plan, funding proposal advice, adequate training and awareness that is sufficiently user-friendly and inclusive of stakeholder consultation and mindful of scarce time, labour, experience and other resource constraints including opportunity costs. Climate finance increased from \$342 billion in 2013 to \$624 billion in 2019 (44% public sources). However, the Asian Development Bank estimates climate related natural disasters cost

between \$250-\$300 billion per year at a minimum. Global climate finance needs have, been estimated at over \$4 trillion in 2018, yet the private sector only contributed \$579,000,000.

Global pledges towards climate change mitigation, adaptation and investment include funding aims of \$100 billion by 2020 but current projections are far closer to \$67 billion (versus 62 billion in 2014) and may be even more reduced due to the COVID19 epidemic. Yet Lord Professor Nicholas Stern in the Stern Review reported the need for at least \$90 trillion. Research by Dr Jack Dyer of Blue Economy Future suggested the Cook Islands alone would cost \$139 billion, if not climateproofed. Comparatively limited attention has been globally dedicated as to how to aid stakeholders to overcome many of the stringent eligibility criteria set by the Global Environmental Facility, Conservation Finance Alliance, Green Climate Fund, Special Climate Change Fund, Least Countries Development Fund, World Bank, individual governments and businesses. Many sources focus merely on the public sector, multilateral banks and organisations without considering the possibilities of private sector initiatives such as the Global Investor Group for Climate Change; venture capital, crowdsourcing and entrepreneurs such as the Global Climate Finance Lab initiative, nor how to access them. The Commonwealth Secretariat, its Climate Finance Access Hub, dedicated National Climate Finance Advisors and others are among a few stakeholders seeking to directly overcome this core impediment to a climateproofed and resilient future identified by the Commonwealth in 2013. It recognised challenges including highly complex processes, few resources and access guides, support for formal training was minimal, a lack of expertise, high transaction and preparation costs. For example, the Green Climate Fund is worth over \$10.3 billion but requires a lengthy 2-3-year accreditation process and channels funding only through these entities. In response the Commonwealth published a tender for consultants to create a Climate Finance Manual, especially focusing on member countries such as Fiji, the Solomon Islands and Vanuatu that could also be practically, subsequently disseminated as coursework materials.

In 2020 more institutions and nations globally are pledging billions towards climate finance from 5.8 billion pounds in the UK to 2.85 billion dollars in Canada and over 5 billion euros in France and 1.3 trillion Yen in Japan. Spain is targeting 900 million euros and the US over \$800,000,000. New Zealand pledge an increase from \$100,000,000 to over \$300,000,000 each year. Evidence has yet to emerge as to how this will be subsequently influenced by the COVID 19 pandemic. The African Development Bank aims to dedicate \$5 billion, Asian Development Bank \$6 billion, European Investment Bank \$20 billion, \$29 billion by the World Bank and \$1.01 billion for the Green Climate Fund. In the South Pacific, from 2010-2014 stakeholders

received pledged climate finance of \$748 million (Atteridge and Canales 2017), but existing research cited similar challenges of accessibility. 59% was committed for adaptation, 36% for mitigation and 5% for both. In 2013 the Pacific Islands Forum Secretariat conducted a Pacific Climate Change Financing Assessment Framework proposing the need to consider funding sources, resources, barriers, policies, plans, institutions, projects, criteria and effectiveness. Vanuatu received \$200 million and has its own Climate Finance Roadmap. The Solomon Islands in 2017 conducted its own internal Climate Change and Disaster Risk Finance Assessment. It also has a separate climate finance section under its Ministry of Finance. Annually a global overview of the public sector and multilateral organisation, Climate Finance Landscape is published by the HBS Foundation (Watson and Schalatek 2020). In Asia it exceeded US \$4.9 billion for 530 projects in 2019, dominated by India, China, Indonesia and Vietnam, with 62% by the Green Climate Fund. Others include the Clean Technology Fund, Pilot Programme for Climate Resilience, Least Development Countries Fund, Adaptation Fund, Forest Carbon Partnership Facility, the Global Energy Efficiency and Renewable Energy Fund, Global Climate Change Alliance, the Indonesia Climate Change Trust Fund and Bio Carbon Fund. Mitigation comprised 62% of finance related activities.

In Latin America 470 projects received over \$4 billion dominated by Brazil and Mexico, followed by Chile, Columbia along with Argentina and 81% financed by the Green Climate Fund. The area also has the Amazon Fund in addition to many of the ones above. It concentrates on forestry, biodiversity and energy efficiency. From 2010 to 2015 the Caribbean received \$1,477,000,000 in climate finance with 48% for mitigation and 32% for adaptation. The Middle East and North Africa climate finance reached over \$1.5 billion for 127 projects, with Egypt and Morocco attracting 47% of the total. Sub-Saharan Africa received \$1.2 billion for 74 readiness programmes and 36 other projects. 38 Small Island Developing States received \$1.772 billion from 2003-2019, \$642 million of this from the Green Climate Fund with 19 projects and 79 readiness programmes. This is dominated by the Solomon Islands, Samoa, Haiti and the Comoros. The entrepreneur Richard Branson has also favoured a Carbon War Room to convert Caribbean economies away from fossil fuels.

Existing climate finance sources may mention ecosystem conservation but this source considers it to not be completely effective without that investment interlinking to related climate risk projections, evaluating and minimizing projected disruption or impact costs and preserving the ecological/economic functions of ecosystem resources (Table 1.1). It needs to consider elements of risk, vulnerability and climate resilient livelihoods. Existing climate funding manuals and access training programmes remain few but have certain similar characteristics to consider. A 2016 Clima-South guide incorporated information on specific funds and

eligibility criteria requirements, funding proposal writing advice, concept notes and application process overviews with detailed performance and evaluation metrics. This is echoed by the International Federation of Red Cross and Red Crescent Societies in a 2013 guide and SPREP/PIFS in 2015. A training manual for accessing climate finance in India emphasized a modular training approach including overview of the climate finance landscape, policy framework, instruments and criteria. There is a need for practical case studies, examples of success, failure and to incorporate participatory experiences/interactive discussion. GIZ in their 2017 climate finance training notes the need for understanding climate change and climate finance, prior to the landscape, understanding of project requirements and proposal structuring along with presentation tips.

**Table 1.1: Ecological/Economic Functions of Climate Economies Needing Related Finance**

<b>Ecological</b>	<b>Economic</b>
Biomass/Biodiversity Life Formation and Habitat	Life, Food, Material
Conservation	Supply of Natural Resources, Reduced Imports
Biological/Physical/Chemical	Redundancy against Uncertainty
Growth, Reproduction,	Trade, Production, Consumption, Income/Profit
Respiration/Oxygen/Photosynthesis	Greenhouse gas mitigation funding/source sink
Water supply/purification. Food security/Nutrition	
Protection	Protection – Vulnerability and Resilience
Ocean Chemistry, currents, salinity	Risk Identification, Monitoring, Prioritisation, Adaptation
Coral atolls – geographical physical formation, continued growth and survival	Risk Enhancement if Ignored – Legal, Reputational, Insurance, Security, Operational, Impact Costs
Sand formation, nourishment and sediment	Opportunity
Evaporation, Condensation and Absorption	Insurance against Maladaptation,
Climate Regulation –calcification, stratification	Future Sustainability and Survival
Counter eutrophication	Knowledge – Existing and Potential/Spiritual
Detoxification	Stability/Security/ Increased Adaptive Capacity
Population equilibrium	Aesthetic/Cultural/Social
Tourism	

Although many emerging opportunities, risks and developments have manifested with the surge of interest in the climate and green economy including climate change mitigation, adaptation, innovation, energy efficiency and carbon offset credits from renewable energy to conservation to technology and others (Table 1.2); this has yet to be matched by a correlating increase in related finance especially from the private sector; despite myriad expressions of interest and pledges. As subsequent analysis will investigate; this research's conceptual contribution is to provide an independent and experienced professional blue/maritime and climate change economist's perspective on the extent to which climate economy finance is available to stakeholders dreaming of achieving this future. Although conscious of the fact that this trend has only surfaced in the past decade years or even more recent for both; it aims to map current progress towards sustainable climate finance globally for selective, more transparent investors present. It recognises the need to provide an update

on related climate finance developments, investors and finance trends/policy developments as of May 2020. This subsequently will aid stakeholders with scarce time, financial, information, attention, labour or other resources aiming to locate and prioritise a sustainable climate resilient economy including finance, whether as individuals or companies with an idea, project or product; governments, academics and other policy stakeholders seeking to advance the climate economy and myriad developments; NGO's seeking support or investors seeking a viable rate of return on investment and curious as to their possible competitors. Therefore, innovations and financial support mobilised for the climate economy can manage rapid human overpopulation; preserve biodiversity loss and species; enable greater safety, security and climateproofed supply chains against climate change. It can radically reduce poverty and support myriad community livelihoods, whilst still remaining viable and profitable from reconfigured education, economies, communities and environments. More green and blue carbon, ecological sanctuaries and other investments can prove to be profitable, sustainable financed and a pathway out of debt -such as in a debt for nature swap.

**Table 1.2 Broad Climate Finance Existing and Potential Area Activities**

Mitigation	Adaptation
Ecosystem conservation	Green/Blue Carbon bonds and pricing
Renewable energy	Energy conservation
Water conservation	Afforestation and landscapes
Early warning systems	Climate risk insurance -PCARFI, CCARFI,
Technology innovation and research	Climate resilient agriculture (fisheries equals blue economy)
Infrastructure and transport	Climate resilient industry
Waste reduction... circular economy	Resource efficiency
Economic diversification from a fossil fuel based economy	Entrepreneurship -i.e. Accelerator Lab/incubation

**II: Climate Economy Investor Sources, Finance Types and Principles**

Global climate finance does not yet have a globally consistent definition, yet this research considers it as following the UNFCCC working definition as *“finance that aims at reducing emissions, and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts,”* However it extends this to consider it as applicable not just to mitigation and adaptation but any subsequent activity related to climate and climate change, including reducing projected impact costs and diversifying/exploiting related emerging opportunities.

Article 9 of the Paris Agreement on Climate Change states: “*Developed Country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention*”.

However, very few specialised research sources have been publicly disseminated or privately financed to consider how much progress has been made in the various financing sources, criteria and contributions made by various stakeholders so far. Few have considered intensively what else remains necessary to capitalise further on the green and climate economy and the associated transition towards a circular economy with climate resilient livelihoods and economic diversification from more polluting and resource intensive, less sustainable enterprises. Climate finance needs to be radically mobilised but also be effectively targeted and prioritised into areas with maximum catalytic and scaled up impact potential. Improved awareness of the value to be obtained in prioritising blue and green natural capital, carbon, biomes and environments; can yield hope and inspiration to others to reciprocate in activating to conserve the land, aerial, coastal and ocean environment including our magnificent grandiloquent heritage; whether as activists; youth; funders; volunteers, those employed or otherwise motivated. As a blue, green and climate economy specialist, one focuses on not only overcoming existing barriers of information uncertainty, asymmetrical information; creating a network of stakeholders and deciphering the psychological reluctance of people to invest but focusing on overcoming the great gap between pledged or potential green or climate economy/sustainable finance versus the reality.

Global finance is traditionally structured towards tax revenues, government grants, infrastructure and other bonds, conventional insurers and commercial banks, loans, equity, debt, savings and others. This article proposes future research focus on new sustainable financing solutions to ensure successful climate and green economy projects from the above climate economy developments. Funding comes from a variety of sources including crowdfunding, blended financing, green/blue carbon bonds; conservation finance and donation by NGO’ supporters and philanthropists to individual entrepreneurs and technical start-ups or venture capital online platforms, equity funds and instruments opportunities exist to create new blue economy banks and risk management models incorporating climate change. They include specific stock exchanges with e carbon and ocean economy bonds, shares, venture capital and crowd sourcing. Existing insurance firms, sovereign wealth and pension funds plus individuals could invest further in ecological capital and other products/services specifically recognising and assimilating to climate mitigation/adaptation.

Since around 2013, alternative sources include crowdfunding (Von Ritter and Black-Layne 2013). This source is often underadvertised and lacks integration into formal organisations such as the Global Environmental Facility or climate specific indicators, proven and accessible impacts, methods and case studies. Investors face asymmetrical information and uncertainty over the creditworthiness of microfinanced loans and assets. Few direct specific green and climate economy schemes related to crowdfunding and microcredit have been initiated but more stakeholders are looking to adapt existing structures. It argues advantages for borrowers of greater speed, less bureaucracy and transaction costs with greater risk. One example is the Kiva platform with previous experience in raising a US\$ 49,525 loan for Tanzania solar lighting and another for energy efficient stoves.

*Although not specifically targeting the blue economy or oceans*, the European Union High Level Expert Group on Sustainable Finance focused on the need for increased awareness, incentives and guidelines to provide more certainty towards this nascent sector (EU High Level Expert Group on Sustainable Finance 2018). These would consider social, environmental and other responsibilities initially with green bonds, preserving natural capital, agriculture and ocean purposes as much as they were capable of. It extended towards a retail strategy and criteria to form sustainable finance, to incentivise others to purchase, invest and support this initiative. Table 2.1 identifies signatories of the Global Investor Statement on Climate Change as potential sources to consider when approaching for climate finance and the climate economy although an extensive analysis is beyond the resource constraints of this independent analysis and review.

**Table 2.1: Investor Sources Who Have Expressed Potential Interest In the Climate Economy**

ACA Investments	Domini Social Investments LLC	Mercy Health	Sisters of Charity of New York
Achmea	Dominican Sisters of Hope	Mercy Investment Services	Sisters of Charity of Saint Elizabeth
Acorus Capital	Dragon Capital Group	Mergence Investment Managers	Sisters of Instruction of the Child Jesus
ACTIAM	Earth Capital Partners	Merseyside Pension Fund	Sisters of Saint Joseph of Boston
Addenda Capital	Eco-Frontier Global Capital	Metcalf Foundation	Sisters of St. Ann
Aegon Asset Management	Eco-Alpha Asset Management, LLC	Miller/Howard Investments	Sisters of St. Dominic Blauvelt, New York
Allan Gray Australia Pty Ltd	Ecofi Investissements	Minot Capital	Sisters of St. Dominic of Caldwell, NJ
Alliance Trust PLC	Edinburgh Partners Limited	Mirova	Sisters of St. Francis of Philadelphia
Allianz Global Investors	EKO Asset Management Partners	Mirvac	Sisters of St Ursula
Allianz Group	Element Investment Managers	Mission Responsibility Through Investment, Presbyterian Church	Sisters of the Good Shepherd-Province of New York
Alpha Bank	Environmental Investment Services Asia Limited	Mission-Point Partners	Sisters of the Holy Family

Altrinsic Global Advisors	Environmental Technologies Fund	Mitsubishi Corp. – UBS Realty Inc.	Sisters, Servants of the Immaculate Heart of Mary – Leadership Council
Amherst College	Epworth Investment Management	MN	Sjätte AP-fonden, AP6
AMP Capital	Equilibrium Capital Group	Mondrian Investment Partners	Society of the Holy Child Jesus, American Province
Amundi Asset Management	ERAFP (French public service additional pension scheme)	Nanuk Asset Management	Socrates Fund Management Ltd.
Andra AP-fonden AP2	Essex Investment Management, LLC	Nathan Cummings Foundation	Solaris Investment Management
AP7	Ethos Foundation Switzerland	National Employment Savings Trust	Sompo Japan Nipponkoa Insurance Inc.
Aperio Group	Etica SGR S.p.A.	Natixis Asset Management	Sonen Capital
APG Asset Management	Eureka Funds Management Limited	Natural Investments	South Pole Carbon Asset Management Ltd
Apollo Investment Management Ltd	Evangelical Lutheran Foundation of Eastern Canada	Nedbank Limited	South Yorkshire Pensions Authority
Arcus Foundation	Everence and the Praxis Mutual Funds	NEI Investments	SSM US/Caribbean Province
Arjuna Capital	Första AP-fonden (AP1)	New England Province of the Society of Jesus	St. Joseph Health System
Armstrong Asset Management	FEDERAL FINANCE GESTION	New Forests	Stafford Capital Partners
As You Sow	FEDERIS GESTION D'ACTIFS	New Mexico State Treasurer's Office	Stafford Timberland
ASN Bank	Ferrostaal Capital GmbH	New York City Comptroller's Office	Standard Bank
Atkinson Charitable Foundation	Financière de l'Echiquier	New York Province of the Society of Jesus	Standard Life Investments
ATP Group	First Affirmative Financial Network	New York State Comptroller	Statewide Super
Australian Ethical Investment	FirstRand Ltd	NGS Super	Stephen Whipp Financial
Australian Super	Fjärde AP-fonden (Fourth Swedish National Pension Fund)	Nordea Asset Management	Stepstone Group LP
Avaron Asset Management	Folksam	Northern Ireland Local Government Officers' Superannuation Committee	Stichting Bedrijfstakpensioenfondsvoor de Bouwnijverheid (bpfBOUW)
Aviva Investors	FONDS DE RESERVE POUR LES RETRAITES (FRR)	Ocean Rock Investments Inc.	Stichting Pensioenfondsvoor de Woningcorporaties
AXA Group	Fortius Funds Management	Office of the Rhode Island General Treasurer	Stichting Personeels pensioenfondsvoor de Woningcorporaties
AXA Investment Managers	Franciscan Friars (OFM), St. John the Baptist Province, JPIC Office	OFI ASSET MANAGEMENT	Stichting Personeels pensioenfondsvoor de Woningcorporaties
Bank J Safra Sarasin	Franciscan Sisters of Perpetual Adoration, Inc.	OFI REIM	Storebrand ASA
Bank Vontobel	Friends Fiduciary Corporation	Öhman Fonder	Strathclyde Pension Fund
Batirente	FSM Development Bank	Oikocredit International	Sura PerÅ°
BBC Pension Trust	Generation Investment Management	Old Mutual	Swedbank Robur Fonder AB
BBVA	Glasswaters Foundation	OPSEU Pension Trust	Swiss Re
BC Government & Service	Goddard College	Oregon State Treasury	Syntrus Achmea

Employees' Union	Government Employees Pension Fund (GEPF) of South Africa	Ownership Capital	Tellus Mater Foundation
British Columbia Investment Management Corporation	GPT	Panahpur	Temporis Capital LLP
Bedfordshire Pension Fund	Great Lakes Advisors – Disciplined Equity Team	Parnassus Investments	Terra Firma Capital Partners
BlackRock	Greater Manchester Pension Fund	Pax World Management LLC	Terra-Verde Capital Management
Blumenthal Foundation	Green Century Capital Management	Pennsylvania State Treasurer	The Betsy and Jesse Fink Foundation
BMO Global Asset Management	Green Mountain College	Pensioenfonds Metal en Techniek (PMT)	The Catherine Donnelly Foundation
BMS World Mission	Grosvenor Fund Management	Pensioenfonds Vervoer	Central Finance Board of the EMEA
BNP Paribas Investment Partners	Groupama Asset Management	Pension Denmark	Methodist Church
Boardwalk Capital Management	Groupama Asset Management	Pension fund Metalektro	Church of Sweden
Bon Secours Health System, Inc.	Groupe Assurances du Crédit Mutuel	Pensions Caixa 30	The Congregation of the Sisters of Mercy of Newfoundland
Boston Common Asset Management	Hampshire College	Perpetual Investments	The Egyptian Exchange
Boston Provident Partners, LP	Henderson Global Investors	PGGM	Environment Agency Pension Fund
Bpifrance	Hermes Equity Ownership Services	Pictet Asset Management	J.W. McConnell Family Foundation
BRAINERD Foundation	Hermes Fund Managers	Pioneer Investments	The John Merck Fund
Breckinridge Capital Advisors	Hermes Real Estate Investment Management	PKA A/S	Joseph Rowntree Charitable Trust
Bristol Community College	HESTA	Plater Trust	The Link REIT
Brown University Socially Responsible Investment Fund	Hg Capital	Platina Partners	Lutheran Council of Great Britain
Brown University Socially Responsible Investment Fund	Humanis	Plato Investment Management Limited	The McKnight Foundation
BT Financial Group	IFM Investors	Polar Capital	The Pensions Trust
BT Pension Scheme	IL&FS INVESTMENT MANAGERS LIMITED	Polden-Puckham Charitable Foundation	The Skoll Foundation
Bullitt Foundation	Illinois State Board of Investment	Portfolio Advisory Board Adrian Dominican Sisters	The Sustainability Group of Loring
CA Catholic Congregations for Responsible Investing	Impax Asset Management	Portfolio 21	Wolcott & Coolidge
Caisse des Dépôts	Inflection Point Capital Management	Préfon, Caisse Nationale de Prévoyance de la Fonction Publique	The Townsend Group
California State Controller	ING Investment Management International	Prentice Foundation	University of California
California State University	Insight Investment	Presbyterian Church in Canada	TIAA Henderson Real Estate
California State University, Northridge	Institute of the Blessed Virgin (Loretto Sisters)	Presbyterian Church in Canada	Tiemann Investment Advisors, LLC
CalPERS	Interamerican Hellenic Insurance Group	Pension Plan	Toronto Atmospheric Fund
	Investa Commercial Property Fund	Prescott College	Tredje AP-fonden

CalSTRS	Investa Property Group	Progressive Asset Management, Inc.	Trillium Asset Management, LLC
Calvert Investments	IRCANTEC	Province of St. Joseph of the Capuchin Order	Triodos Investment Management
Canadian Labour Congress (CLC)	Ivey Foundation	Prudential Portfolio Managers South Africa	Union Investment Asset Management Holding
Staff Pension Plan	Jesuits in Britain	Quakers in Britain	Unipension Fondsmæglersekskab A/S
Candriam Investors Group	Jonathan Rose	Quoniam Asset Management	UniSuper
Capricorn Investment Group, LLC	Julie Ann Wrigley Foundation	Rathbone Investment Management	Unitarian Universalist Association
Care Super	Jupiter Asset Management	REI Super	United Church Funds
Cathay Financial Holdings	Juristernes og Økonomernes Pensionskasse	Respons-Ability Investments AG	United Church of Canada
Catholic Health Initiatives	Justice Team of the Congregation of St. Joseph	Robeco	United Nations Foundation
Catholic Superannuation Fund	Kempen Capital Management	Rockefeller Asset Management	United Nations Joint Staff Pension Fund
CBRE Global Investors	Kent County Council Superannuation Fund	Rockefeller Brothers Fund	Unity College
Cbus Superannuation Fund	Kleinwort Benson Investors	Rothschild & Cie Gestion Group	Universities Superannuation Scheme – USS
CCLA Investment Management	Klima INVEST Green Concepts GmbH	Royal London Asset Management	University of Dayton
CEI	KLP	RPMI Railpen	Ursuline Sisters of Tildonk, U.S. Province
Celadon Capital	Krull & Company	Russell Investments	V. Kann Rasmussen Foundation
CHE Trinity	La Banque Postale	SAIL Capital Partners LLC	Vancity Investment Management
Christian Brothers Investment Services, Inc.	Laird Norton Family Foundation	San Francisco Employees' Retirement System	Veris Wealth Partners
Christian Super	Land Bank of the Philippines	Sanlam Investment Management	Vic Super Pty Ltd
Christopher Reynolds Foundation	Legal & General Investment Management	Sanlam Life Insurance Limited	Victorian Funds Management Corporation
Church Commissioners for England	Local Government Super	SANTAM Ltd.	Village Power Finance
Church of England Pensions Board	Local Tapiola Asset Management Ltd	Sarasin & Partners	Vision Super Pty Ltd
Clean Yield Asset Management	Lombard Odier	Schroders	Walden Asset Management
Clear-Bridge Investments	London Borough of Southwark Pension Fund	Seattle City Employees' Retirement System	Wallace Genetic Foundation
Climate Change Capital	Low Carbon	SEB Investment Management	Washington State Treasurer
Colonial First State Global Asset Management	Loyalis Verzekeringen	Secom corporate pension fund	Water Asset Management
COMGEST	LUCRF Super	Sentinel Sustainable Funds	Wespath Investment Management
Commonwealth Financial Group	Macroclimate LLC	Servite Friars – The Province of the Isles	West Midlands Pension Fund

Compensation Employees' Union	Maine Public Employees Retirement System	Shea Family Office	WHEB
Compton Foundation	MARGUERITE ADVISER	Shinhan Bank	Wilbanks Partners LLC
Congregation of the Passion	Marshall Street Management	Sindicatum Sustainable Resources Group	Wrigley Investments
Connecticut Retirement Plans & Trust Funds	Martin Currie Investment Management	Sinsinawa Dominican Shareholder Committee	Youville Provident Fund
Conser Invest	Maryknoll Fathers and Brothers	Sisters of Charity – Halifax	Zevin Asset Management, LLC
Custodian and Allied Plc	Maryknoll Sisters	AIGCC	CERES
Danske Capital	Maryland Treasurer's Office	IGCC	Climate Action 100+
Danske Civil- og Akademiingeniørers Pensionskasse	Massachusetts State Treasurer	Investor Network on Climate Risk	DNB
Daughters of Charity, St Louise	Matrix Asset Management Inc.	2 Degrees Investing	Institutional Investors Group on Climate Change IIGC
DBL Investors	Mayfair Capital Investment Management	UNEPFI	Dignity Health
de Pury Pictet Turrettini & Cie S.A.	Meeschaert Asset Management	World Bank	Merck Family Fund
Delta Lloyd Asset Management	Mennonite Education Agency	African Development Bank	Asia Development Bank
Deutsche Asset & Wealth Management	Mercer	Caribbean Development Bank	

Source: Climate Action 100+; CERES, International Investor Group on Climate Change

However, this research, found insufficient information or credible evidence exists for the majority of these companies, whilst other sources of equity could be more verified. Very few have specific investment trends as yet. The source remains Euro-centric and US centric rather than focusing on global needs and prospects across various green/climate economy activities and ecosystems including blue/green carbon and protected areas or natural capital. It therefore aims to conduct a detailed green and climate economy investment trend identification and analysis in Section III, where in information is possible for those summarised. Virtually no sources are proposing recommendations or guidelines as to how green or climate economy finance should be structured internationally, complicating the need for consistent international approaches and guidance for investors.

Existing sources on sustainable green or climate economy finance also allude to natural capital, carbon or an ecosystem based approach that incorporates traditional investment but also new social, environmental and climate change/climate based criteria in determining a rate of return, dividend or profit and risk. Global climate finance includes funds by donors devoted to conservation finance, climate change, conservation, and other aid, grants or finance that can be devoted towards environment and climate based risks, problems,

innovations, technology, entrepreneurship, education, awareness, support, sustainable resource extraction, utilisation or processing; protection, conservation and restoration. Whilst funding and finance have rapidly increase, existing sources still reflect a mere fraction of what is increasingly necessary to really commit to the climate or green economy. Many of these investments can be far more profitable for savers and investors when compared to increasingly lower global trends globally from 5.25% average interest rate in banks in South Africa to 2.95% in Fiji, the Cook Islands and the South Pacific to 0.25 in Australia to 0.1% in the United Kingdom, to 0.25% the Federal Reserve Bank in the USA and 0 across the European Union, -0.75 in Switzerland, -0.1 Japan and 4.5% in China as of 17<sup>th</sup> April 2020. The COVID 19 epidemic has created historically low rates of return.

It therefore becomes increasingly critical to reorientate and motivate finance away from hazards created. However, to progress forward, stakeholders will need to overcome not just a scarcity of financial sources and risk-averse behaviour but asymmetrical information over the fluctuating conditions of resources; accurate economic, social and ecological valuations of natural resources and which projects to prioritise. It also means overcoming the uncertainty as to how regulators will act or persuading the public to treasure their oceans as assets, avoiding moral hazard, poor resource governance and the tragedy of the commons. Above all it remains imperative to remain the ultimate objective remains ensuring long term prosperity and sustainability for ecosystems, stakeholders, economies, heritage, communities and livelihoods; avoiding worsening the problems of marine, coastal, aerial and terrestrial ecosystems.

Whilst the World Ocean Council represents the emerging interest and transition towards sustainable ocean finance and the blue economy, several organisations including Climate Action 100+, the Institutional Investors Group on Climate Change, Investor Group on Climate Change, the Asia Investor Group on Climate Change, CERES and the Principles of Responsible Investment are all prioritising climate finance to mobilise the private sector. For example, Climate Action 100+ aims to recruit and identify 161+ of the top global polluters, and investment sources simultaneously to catalyse capital. CERES in the USA similarly established a committed climate finance, investor and related stakeholder network aiming for greater sustainability. In October 2019 it created the CERES Accelerator for Sustainable Capital Markets to provide information, lobby and facilitate capital flows towards low carbon technologies and innovation. Australia's Investor Group on Climate Change is also committed in theory with \$1 trillion in current assets and 52 members including New Zealand. The Institutional Investor's Group on Climate Change has similarly connected 90+ members with over 7.5 trillion

euro searching for viable opportunities. The USA centred Investor Network on Climate Risk exceeds 100 members with \$13 trillion of assets. There is also the Asian Group of Investors on Climate Change.

The Global Investor Statement on Climate Change and the subsequent global commitments following the 2015 Paris Climate Change Agreement have pledged over 450 investors worth over \$US 40 trillion to utilize more of their finance, sustainably and with long term planetary implications. The Investor Agenda similarly echoes this with orienteering resources to investment, corporate engagement, disclosure and policy advocacy as does Business for Social Responsibility and Principles for Responsible Investment to focus beyond the economic dimensions to the socio-environmental and governance aspects. The Investor Statement lead for private sector calls for a global binding convention equivalent to the later, subsequent Paris Agreement on Climate Change. It argued for *“appropriate incentives to invest, be of adequate duration to improve certainty to investors in long-term infrastructure investments and avoid retroactive impact on existing investments,”* Governments were asked to commit to the following

- *Provide stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge.*
- *Strengthen regulatory support for energy efficiency and renewable energy, where this is needed to facilitate deployment.*
- *Support innovation in and deployment of low carbon technologies, including financing clean energy research and development.*
- *Develop plans to phase out subsidies for fossil fuels.*
- *Ensure that national adaptation strategies are structured to deliver investment.*
- *Consider the effect of unintended constraints from financial regulations on investments in low carbon technologies and in climate resilience.*

Many companies and investors may in principle have committed to notions of corporate social responsibility, responsible investment and action on climate change including emissions offset and finance but it often equates to “corporate greenwashing.” Subsequent detailed analysis often fails to provide quantifiable impacts or evidence of any actual substantial commitments to these actions beyond appointing PR campaigns, a few token gestures, lobbyists and often ill informed, underprepared or resourced/ committed officials. Technology and services such as Carob Tracker have however, made it simpler to measure carbon emissions footprints, achieve scalable commercial renewable energy, water conservation and circular economy waste minimization or natural capital valuation.

### III: How to Access Funding and Initiate Radical Innovation. Detailed Climate Finance Institutions, Investment Trends and Analysis.

This section focuses on providing a brief overview of some of the more transparent and common sources of climate finance along with a section on various proposal application tips to assist stakeholders. These institutions and sources are summarised in Table 3.1.

**Table 3.1: Selected Climate Finance Sources for Analysis**

CREWS	Capacity Building Initiative for Transparency
Evolutions Fund	Clean Technology Fund
International Climate Finance Accelerator	Green Climate Fund
Antigua and Barbuda Climate Change Trust Fund	Global Energy Efficiency and Renewable Energy Fund (GEEREF)
African Enterprise Challenge Fund	Berkeley Energy
Commonwealth Climate Finance Access Hub/UNDP	SEED Practitioner Labs for Climate Finance
Climate Finance Labs	Youth Climate Lab
Climate Investment Funds	Asian Development Bank Climate Change Fund
Scaling Up Renewable Energy in Low Income Countries Programme	Asia Pacific Carbon Fund
International Investor Group on Climate Change	Canadian Climate Fund for the Private Sector in Asia
Global Environment Facility Trust Fund	Canadian Cooperation Fund on Climate Change
Special Climate Change Fund	Climate Finance Options
Strategic Climate Fund	Terra Viva Grants
Least Countries Development Fund	

Source: This Study.

#### CREWS

CREWS or the Climate Risk Early Warning Systems Project founded in 2015, focuses purely on establishing related initiatives in developing countries to assist in predicting climate related risk events including natural disasters and more conventional weather (CREWS 2020). It is a partnership between the UNDRR, the World Meteorological Organisation and the World Bank GFDRR. Evidence indicates projects in 8 nations/areas across the Middle East (Afghanistan), Africa (the Democratic Republic of Congo, Chad, Togo, Mali and Niger), the Caribbean (1 regional) and Pacific (1 regional and Papua New Guinea). It had funding worth \$40.92 million as of May 2020. It provides impacts of training and workshops, research, policies, response plans and systems such as a flood risk model for the Congo and plans for Tuvalu and Fiji climate services. Although lacking transparency in the application process, it offers potential until the end of 2021 for stakeholders to consider approaching.

## **Evolutions Fund**

The Evolutions Fund focuses specifically on a range of climate finance related investments as a venture capital, private equity fund centred in South Africa, Mauritius and other parts of Africa (Evolutions Fund 2020). It is more translucent than many funds in publishing an Impact Report annually. It targets areas such as renewable energy, technology, aquaculture, waste management, the circular economy and infrastructure. From an initial \$50 million in 2008 it includes \$310,000,000 of equity with 11 nations and 17 investments across 2 funds. Its net output extends to 1.1 GW of renewable energy. Project examples include solar PV facilities in Kogi Nigeria, Eldoret Kenya and Mariental Namibia. It extends to wind farm and aquaculture in South Africa. Its business even publishes the carbon footprint and the impact of its investments in saving over 58,300,000 tonnes of CO<sub>2</sub> aside from the social, governance, environmental and economic impact. Cited examples of Africa's Evolution Fund include Abagold, Commercial Energy SA, AFPOC, D Light Design Limited and Altern RE Developments Africa.

## **International Climate Finance Accelerator**

The International Climate Finance Accelerator based in Luxembourg, appears misnamed in primarily targeting existing investment related stakeholders including individuals and financial institutions. It provides mentorship, training, legal and tax advice, business plans, access to funding and networking along with additional support, risk management, monitoring, evaluation and impact assessment. Its cited selection criteria consider whether it represents a sound investment project or is commercially viable, scalable, replicable, innovative and with a great social/environmental impact.

## **Antigua and Barbuda Climate Change Trust Fund**

The Antigua and Barbuda Climate Change Trust Fund since 2014 under the Global Environmental Facility represents a minor funding source to climate related projects such as renewable energy, technology, conservation and biodiversity.

## **African Enterprise Challenge Fund**

The African Enterprise Challenge Fund focuses on entrepreneurs in the green or climate economy within its geographical region (AECF 2019). It concentrates on agriculture, renewable energy, rural finance and development, clean-tech and gender related investments with 153 businesses directly and \$7,900,000 in

2018. Its impact extends to \$78,100,000 in renewable energy for 78 projects, from a total of \$356,000,000 in equity and 268 enterprises. It claims at least 12,000 direct jobs created. It cited a profit of \$70,000,000 from 2017 to 2018. Examples include over 8 MW in Tanzania and Kenya. The Fund committed \$6,700,000 to more fuel-efficient means of cooking and related ingenuity such as Rwandan stoves. It has also created Connect 1.0 to assist as a pioneering related incubator hub for entrepreneurs aiming to assist Small and Medium Enterprises (SME's) facing barriers to finance. Although no active competitions were present as of early May 2020, it typically funds between \$100,000 to \$1,500,000 per proposal pitch. Previous events focused on the South Sudan, Tanzania, Zimbabwe and agribusiness specifically.

### **Commonwealth Climate Finance Access Hub/UNDP**

Established since 2015, the Climate Finance Access Hub based in Mauritius, is seeking to simplify the process for its members with an advisory network, technical support, research and assistance with readiness preparation to large funds such as the Green Climate Fund, rather than a direct funding source. Examples include Zambia, Belize and Tonga. Tonga received \$1,600,000+ for climate adaptation planning. It mentions success of over \$30,000,000. Others include a Pacific Climate Resilience, Capacity Building Project, NDC Implementation Roadmaps, and Green Entrepreneurship Guides for Fiji, Kiribati and Vanuatu, the Tonga Joint National Action Plan 2 On Climate Change and Disaster Risk Management 2018-2028 along with the Nauru Energy Road Map 2018 to 2020. UNDP has over \$600,000,000 of capital focusing on sustainable development of 19 projects it also focuses on ecosystem and sustainable livelihood adaptation.

*. While both reports include some information on the quality of public climate finance provided, such as how much of it is delivered in grants versus loans, they are largely silent on a whole set of qualitative and normative questions and issues that should provide the framework for how public climate finance is mobilized, governed and disbursed. These include questions such as the additionality or predictability of climate finance. Or issues of adequacy of climate finance provision: Should adaptation finance be delivered to some of the poorest developing countries or Small Island Developing States in the form of loans? Or is it legitimate to include flows from export credit agencies (where the purpose is clearly to generate income in the developed countries providing the finance) as public climate finance delivered, as the OECD report does? And how to account for and report on the gender-responsiveness of climate finance and ensure that public climate finance flows deliver equitable benefits to both men and women in a way that contributes to more gender equality?*

## **Climate Finance Labs**

Global Innovative Lab for Climate Finance focuses on an accelerator start-up hub open to a variety of stakeholders at the early pre-pilot or pilot initial stages of project development. To apply, proposals need to confirm to certain eligibility criteria including it must be “*Innovative, Actionable, Catalytic Potential and prove Financial Sustainability*’. It needs to consider the timeframe and objectives, business plan and extent to which the implementation plan is successful. More successful projects consider the function of the product, how is it unique and how does it overcome an existing climate change or finance related issue. It specifically targets not only technology and other forms of innovation but extends this to creating various financial products such as funds, bonds, structured equity, insurance guarantees, lending platforms, pay per service models, securitization and other instruments. Stages include the proposal preparation and submission stage, selection screening, development, endorsement and implementation. Successful applicants get access to funding, 25 days average of intense mentoring, devoted staff support, outreach, marketing and networking/training. It has supported 41 projects so far and over \$2.07 billion from 2014 to 2018. These include 19 in renewable energy, 18 in sustainable cities, 12 in climate risk, 10 in conservation, agriculture and forestries, 7 in energy access and 8 in energy efficiency. Examples include the West African Initiative for Climate Smart Agriculture, Blockchain Climate Risk Crop Insurance and a mangrove conservation linked Restoration Insurance Service Company. The Climate Finance Lab aims to achieve \$2.5 billion and 4,800 GWh and 1,800,000 per hour. Other Sub Labs exist for India and Brazil, focusing especially on avoiding Amazon deforestation and 45% renewable energy in Brazil.

## **Climate Investment Funds**

Climate Investment Funds have a variety of financed activities and sources, as a venture equity firm (Climate Investment Funds 2017) via grants, loans and blended funding. Under the Forestry Investment Programme this includes \$723,000,000 of estimated investments aiming for up to 28 million hectares of forests across Ghana, Brazil, Lao and Mexico for 39 projects. It aims to offset 11.17 million tonnes of CO<sub>2</sub>. The FIP supports initiatives related to sustainable forestry since 2009 on assessment criteria including climate change mitigation potential; demonstration potential at scale; cost-effectiveness; implementation potential; integrating sustainable development (co-benefits); and the risk management or safeguards considered. The Pilot Programme on Climate Resilience was started in 2008 and targets adaptation, coastal zone management, climate resilient infrastructure, early warning and climate services along with sustainable

livelihoods and technologies. In 2017 it reached 28 nations, 66 projects and 1,029 million of funding. It projected 529 knowledge products and 426 policies/strategic plans. However, it has experienced fiscal constraints and experienced project uncertainty as in Yemen. Nations spend 1-2 years for project proposal and evaluation and 3-7 years for implementation and evaluation on average. Project examples include Uganda's Strategic Programme for Climate Resilience, including agriculture and climate service, a Flood Risk Information System in Jamaica and urban resilience to climate change in Haiti. It offers up to \$1,500,000 for single country pilot projects. It echoes other funding in being more transparent over successes and publicized impacts rather than failures and the long-term sustainability of finance. Clear evidence exists in the number of people affected; research output generated (286 rather than the targeted 572), training and capacity building along with number of weather/climate stations, agriculture hectares improved and coastal areas protected. Others move onto resilient infrastructure, businesses and individuals reached and supported. It failed to elaborate as to why many impressive targets were failed to achieve.

Climate Investment Funds in general has committed to over \$8 billion, 70 developing nations and 300 invested projects (Climate Investment Funds 2020). It claims over 30 million hectares of forests and 25.3 GW of renewable energy. Examples include the circular economy in Turkey, climate change adaptation in Jamaica, the green economy in Kazakhstan with 1 GW+, 100,000 coastal hectares in Bangladesh and more eco-friendly Brazilian agriculture. Another example is the Clean Technology Fund with at least 24 nations focusing on energy efficiency, renewable energy and climate technology.

### **Scaling Up Renewable Energy in Low Income Countries Programme**

Scaling Up Renewable Energy in Low Income Countries is under the Strategic Climate Fund. As a programme it focuses on 45 projects related specifically to renewable energy and emissions reduction, although 24 of the projects remained concepts. Total recorded output includes saving up to 2,508,323 tons of CO<sub>2</sub> each year, generating 3,365,872 MWh per year and aiding 142,782 businesses. An example includes a 0.9 MW solar power system for Honduras in 2015, solar in Ethiopia/Mali and geothermal in Kenya. Its proclaimed impact included 2,500 jobs and 427 GWh annually. In 2020 the existing fund balance was recorded as US \$ 2,765,600,000,000.

### **International Investor Group on Climate Change**

The International Investors Group on Climate Change focuses more as a coordinating, information, networking and lobbying association for green and climate economy related investors with over 30 trillion euros of existing equity from 230+ members. For example, Denmark’s pension funds wish to invest over \$50 billion from 2020-2030. IIGCC members are summarised in Table 3.2.

**Table 3.2: Members of International Investors Group on Climate Change**

A. S. R. Asset Management	Church of England Pensions Board	LGPS Central	Robeco
Aberdeen Standard Investments	Church of Sweden	LGT Capital Partners	Royal London Asset Management
ACTIAM NV	CPEG (Caisse de Prévoyance de l'Etat de Genève)	Lime Rock New Energy	RPMI Railpen
Aegon NL	Danske Bank	Lloyds Banking Group Pensions Trustee Limited	Ruffer LLP
Aeon Investments Limited	Devon County Council	Lombard Odier (Bank Lombard Odier & Co. Ltd)	Russell Investments
AEW	Dragon Capital Group Ltd.	London Borough of Islington Pension Fund	Sampension
Allianz Global Investors	DWS	London Borough of Newham Pension Fund	Sarasin & Partners LLP
Allianz Investment Management	Earth Capital Partners	London Pensions Fund Authority	Scottish Widows, part of Lloyds Banking Group
Amundi Asset Management	Eden Tree Investment Management Ltd.	M&G Investments	SEB Investment Management AB
AP Moller Capital, AP Pension	Elo Mutual Pension Insurance Company	Maj Invest Equity	South Yorkshire Pensions Authority
AP1 (First Swedish National Pension Fund)	Environment Agency Pension Fund	Mayfair Capital Investment Management	Stafford Sustainable Capital
AP2 (Second Swedish National Pension Fund)	ERAFF; Falkirk Council Pension Fund	Mercer Global Investments Europe	Storebrand Asset Management
AP3 (Third Swedish National Pension Fund)	Fonds de Réserve pour les Retraites (FRR)	Merian Global Investors UK Ltd	Strathclyde Pension Fund
AP4 (Fourth Swedish National Pension Fund)	Fonditel Pensiones EGFP	Merseyside Pension Fund	Swedbank Robur Fonder AB
AP7 (Seventh Swedish National Pension Fund)	Franklin Resources	Mistra	Swiss Life Asset Managers
APG Asset Management	Generation Investment Management LLP	MN	Sycomore Asset Management
Asper Investment Management Ltd	Glenmont Partners	MP Investment Management	Tellus Mater Foundation
Atlas Infrastructure	Greater Manchester Pension Fund	MPC Renewable Energies GmbH	TPT Retirement Solutions
ATP	Guardian Media Group PLC	National Grid UK Pension Scheme	UBS Asset Management
Australian Super	Handelsbanken AB Pub	NEST	Universities Superannuation Scheme
Aviva Investors	Hartree Partners	NN Group	Univest Company BV

AXA Investment Managers	Hermes Investment Management	Nordea Investment Funds	Velliv, Pension & Livsforsikring A/S
Baillie Gifford & Co	HSBC Bank Pension Trust (UK) Ltd.	Northern Ireland Local Government Officers' Superannuation Committee	Wermuth Asset Management
BBC Pension Trust, Impax Asset Management	HSBC Global Asset Management	Northern Trust Asset Management,	OFI Asset Management, West Midlands Pension Fund
Bedfordshire Pension Fund	Industriens Pension	Ohman	West Yorkshire Pension Fund
BlackRock	Insight Investment	Ostrum Asset Management	WHEB Group
BMO Global Asset Management (EMEA)	Investec Asset Management	OU Endowment Management	Witan Investment Trust PLC Associate Members
BNP Paribas Asset Management	Janus Henderson Investors	P+(DIP/JOEP)	European Bank for Reconstruction and Development
Border to Coast Pension Partnership	Joseph Rowntree Charitable Trust	Pædagogernes Pension (PBU)	FTSE Russell
Brunel Pension Partnership	JP Morgan Asset Management	Palatine Private Equity Pen Sam	Linklaters LLP
BT Pension Scheme	Jupiter Asset Management	Pension Protection Fund	Moody's Investor Service
C/O Arisaig Partners Research Services (UK) Ltd	KBI Global Investors	Pension Denmark	Ortec Finance Supporting Partners
Caisse des Dépôts	Kempen Capital Management	PFA Pension	Canada Pension Plan Investment Board
CalPERS	Kent County Council Pension Fund	PGGM	Norges Bank Investment Management
CBRE Investors	Keva	Phoenix Group	Church Investors Group joint members Archbishops' Council
CCLA Investment Management	La Banque Postale	Pictet Asset Management	Baptist Union of Great Britain
Central Finance Board of the Methodist Church	Lægernes Pension	PIMCO LLC	Barrow Cadbury Trust
Church Commissioners for England	Lazard Asset Management	PKA	BMS World Mission
Church Investors Group	Legal & General Investment Management	Quaero Capital	Charles Plater Trust

Source: Institutional Investors Group on Climate Change.

### Global Environment Facility Trust Fund

Aside from various other funds such as the Green Climate Fund, the Least Developed Countries Fund, the Capacity Building Initiative and the Adaptation Fund, the Global Environment Facility incorporates a generalized Trust Fund for various environmental related challenges including climate change since its inception in 1992. Countries need to commit to the various GEF objectives to be eligible and approach any of the 18 implementing partner agencies and their local focal points or apply for formal accreditation. It supported 940 projects over 25 years aiming to offset 8.4 billion tonnes of carbon emissions. From 2018 to 2022 it has received promises of \$4.1 billion of funding. In 2020 it received US\$ 514,240 million. It also includes the Special Climate Change Fund related to all land economy-based areas and activities including

forestry, agriculture, industry, water reduction, cleantech, energy efficiency, infrastructure, policies and renewable energy. The Adaptation Fund originally received funding not just from donors but carbon offset market credits on a voluntary initiative but this proved to be less effective, receiving minimal support. Project examples include preparing compliance reports with UNFCC.

### **Special Climate Change Fund**

The Special Climate Change Fund was formed in 2001. In 2018 it reached a portfolio balance of 79 nations, 77 projects and market capitalisation support of \$350 million. It focuses on targeting climate change impacts via technology transfer, climate change mitigation and adaptation across various economic sectors including the circular economy, agriculture, forestries, industry, transport, energy, water and others. It also aims for economic diversification from fossil fuel based economies. Its accessibility is available to many developing countries, unlike other funds which are more limited. Evidence affirms it focuses on the formation of National Action Plans and related measures including infrastructure.

### **Strategic Climate Fund**

The Strategic Climate Fund has a balance of \$1,380,640,000 with major catalytic projects and scaling up. The Forest Investment Programme, Pilot Programme for Climate Resilience and Programme for Scaling up Energy in Low Income Countries falls under it.

### **Least Countries Development Fund**

The Least Countries Development Fund under the Global Environmental Facility was promulgated in 2001 by 194 nations with \$1.3 billion in funds by 2019. The remaining fund balance as of May 2020, reached \$45,940,000. It focuses on establishing National Adaptation Plans of Action in 51 nations among other projects such as ecosystems, disaster risk event responses and resource security. Examples include Samoa and Sao Tome with Principe early climate warning systems, Niger drought resilient crops along with 280+ other projects. The Least Countries Development Fund extends to 51 nations under the Project Identification Fund. (GEF 2011). It focuses on medium scale projects related to climate change mitigation and adaptation benefits up to \$2,000,000. Applicants need to complete a Project Identification Form and Proposal but via the support of an accredited Global Environmental Facility, Operational Focal Point and one of 10 agencies. This contrasts with projects greater than \$2,000,000 which also need a CEO endorsement form and a far

more laborious application process. The process is meant to take up to 4 weeks but can be longer based on the technicalities involved. Proposals and projects are meant to be implemented over 12-18 months.

### **Capacity Building Initiative for Transparency**

The Capacity Building Initiative in Transparency aims to finance monitoring, recording and evaluation systems to consider how sincere stakeholders subsequently are in achieving the Paris Agreement on Climate Change and Nationally Determined Contributions. It focuses on establishing and improving institutional capacity including training. By early 2020 it reached \$63,000,000 in funding and 58 committed or envisioned projects along with a Global Coordination Platform.

### **Clean Technology Fund**

Clean Technology Fund focuses primarily on mitigation of greenhouse emissions and the transition towards low carbon substitutes. It retained a balance of \$ 2,605,790,000 by May 2020 from a past investment received of \$5.4 billion and offers 87 present projects in 19 countries. Published outcomes include saving 4,583 GWh per year, achieving 5,596 MW of renewable energy (41% solar and 30% wind) from 28 projects and 16.6 Mt of CO<sub>2</sub>. It includes the creation of 13,348 jobs and \$284 million in reduced air pollution. Project examples include geothermal energy in Turkey.

### **Green Climate Fund**

Since 2015 the Green Climate Fund in South Korea has committed to 129 projects, 95 accredited implementing agencies and \$5,660,900,000 in funded investments by early 2020. Stakeholders have pledged at least \$9.08 billion. Its eight target areas include energy generation and access; forests and land use; buildings, cities, industries and appliances; transport, ecosystems and ecosystem services; infrastructure and built environment; livelihood of people and communities along with health, water and food security. It aims to reduce 1,600,000,000 tonnes of CO<sub>2</sub> emissions. It claims to have simplified climate finance to more direct routes, than the GEF formal accreditation process but still requires accreditation entities to be involved at least in partnership. Climate finance services extend to equity, debt, blended and concessional finance, loans and grants. Applicants need to submit basic concept notes prior to proposals to investigate if it is worth progressing to the next stages of preparing and assessing a full funding proposal and implementation. It

specifies the need for a detailed budget and resources plan, implementation timetable, procurement and Environmental and Social Safeguards disclosure.

It offers a more “Simplified Approval Process” for projects less than \$10,000,000 and related to climate change. Proposals are limited to 20 pages with preparation guidelines. Without citing the criteria which made them successful, it provides case studies that were approved. Examples include solar microgrids in Haiti, climate resilient water supply solutions in Bahrain and an Energy Efficient Consumption loan scheme. For projects to succeed it cites the need for them to contribute meaningfully to climate change reduction and sustainable development, be innovative enough to change behaviour and paradigms, be ecologically and financially viable, address recipient needs adequately, develop country autonomy and efficiency. Stronger proposals aim to motivate using reference to GCF goals and policy objectives along with country and regional action plans to achieving climate change and nationally determined contribution targets. Aside from the Green Climate Fund Proposal Toolkit (Green Climate Fund 2020), the Swiss Agency for Development and Cooperation have published a guide on accessing the Green Fund separately (Swiss Agency for Development and Cooperation 2018). Proposals need to consider gender and are recommended to investigate examples of best practice where possible. Its proposal project guidelines require clarity on a project’s scope, method, risks and mitigation measures linked to specific GCF investment criteria and motivation over other funds. It includes attention to budgets, tasks, monitoring and evaluation based on set criteria (Acclimatise and CDKN, 2017). Its Readiness Programme offers up to \$1000,000 for institutional capacity building per nation per proposal per year and \$300,000 towards a national focal point. However, this research cites the example of South Africa’s SANBI which for 2-3 years refused to accept any proposal and was narrow focused on biodiversity only.

### **Global Energy Efficiency and Renewable Energy Fund (GEEREF)**

The Global Energy Efficiency and Renewable Energy Fund focuses on its named categories but remains limited to existing investments rather than funding new chances. It has supported others such as the Africa Renewable Energy Fund under Berkeley Energy and the Arch Africa Power Fund (\$19,600,000 each). Others include 10,000,000 euros to the Armstrong Southeast Asia Clean Energy Fund. Catalyst MENA Clean Energy Fund concentrates on solar energy and water conservation across the Middle East and North Africa for \$16,600,000 out of available capital of \$57,000,000. It offers access to small and medium enterprises. The Caucasus Clean Energy Fund specifically focuses on \$13,600,000 to 10-20 MW for Georgia hydropower

projects. DI Frontier Market and Energy Fund received 10,000,000 euros out of a total 60,000,000 capitalisation with emphasis on East and Southern Africa with 45 projects and over 750 MW of production. An alternative region-specific funding source is the Emerging Energy Latin America Fund II (12,500,000 euros) and the African based Evolution Fund (\$21,000,000). The Fund's accessibility criteria consider the need for proven concepts -financially, ecologically, technically and market related, potential for replicability, scalability and competitiveness. It includes cost effectiveness, a sound business and risk management strategy and endgame or ultimate objective. Frontier 2 similarly focuses on Sub-Saharan Africa (East Africa) with a minimum of € 10.0 million. MGM Sustainable Energy Fund targets Central America and the Caribbean with energy efficiency and renewable energy, (\$16,900,000 minimum capital available) with a prefeasibility analysis of investment prior to actual evaluation and implementation. The 12,500,000 euro Renewable Energy Asia Fund and \$15,900,000 Fund II echo similar requirements as does the 25 GW of solar PV capacity for SOLARISE in India. It claims to have provided power for 276,974 people and saved a minimum of 99,133 tonnes of CO<sub>2</sub> emissions each year.

### **Berkeley Energy**

Launched in 2007 it focuses on renewable energy and an investment and equity firm with a cap around \$100 million. Its three funds include the Renewable Energy Asia Funds I and II along with the African Renewable Energy Fund focusing on the development stage. It achieved over 30 projects across 9 nations. Examples include wind, hydropower and landfill bioenergy the Philippines and Wind in India, solar power (Azimuth) in Ghana and biomass (APSD) along with 4 hydro projects in Uganda and geothermal for Ethiopia.

### **SEED Practitioner Labs for Climate Finance**

To facilitate access to climate and green economy finance, Seed Practitioner Labs for Climate Finance works on facilitating financial grants and products, training people, marketing, networking and aiding in implementation or capacity building since 2002. It cites involving over 200 people, 100 organisations and products. The process involves a networking and finance/concept development then working towards its enactment in a collaborative rather than individual approach, presenting it and modifying in response to received feedback where appropriate. It then aims towards finalisation. It is open to investors, individuals, NGO's, the finance sector, government and entrepreneurs. In 2018 it took place in Thailand, India and Uganda. It offers hubs in Thailand and South Africa. It has published a SEED Starter Toolkit with 19 tools. It claims to have trained 321 SEED teams and 471 youth. The SEE Starter claims to consist of Discover,

Design, Test, Refinement of Concept and Demonstrate stages. Those who complete the training can subsequently apply for an initial 1000 euros towards their idea as a grant. It also offers a SEED Replicator service to learn from and connect to similar minded people and enterprises. This has apparently benefitted the training of 1400 entrepreneurs via 54 workshops and 62 partnerships. It also offers case studies via 15 Replicator Workbooks to consider. Examples include ADAPT+ Clean Energy Kampala, AET Africa, Bio-Afriq Energy Limited, Biopane Energy Company, Congretype, ENRAPOWER, Envirocook, Green Impact Technologies, Hydra Power, Iscom Tradelink Enterprises, Komodo Water and Kukula Solar. Others extend to MEGA (Mulanje Electricity Generation Agency), N.A. Energy Solutions Limited (NASL), Nat-fort Energy, Rokim Group, Rural Environmental Sustainability Initiative – RESI, Sun-Sawang Company Limited, Khainza Energy, Brent Technologies, Cooperative Sahel Vert, Ekasi Energy and Magiro Hydro Electric Limited. SEED claims having aided award winners to eliminate over 3,276,000 metric tonnes of CO<sub>2</sub> emissions. It hosts Climate Finance and Policy Prototyping Labs.

South Africa has the SA Green Fund under the Department of Environmental Affairs, concerned with small and medium enterprises related broadly to the green economy. Other sources to access climate finance include Energy Impact Partners with \$531,000,000 in existing investments, Prime Impact Fund, Breakthrough Energy Coalition, Tribeca Early Stage Partners, Greentown Labs (enterprise start-ups) and the Wells Fargo Innovation Incubator. Additional USA centred opportunities which focus more on general and green economy related ideas, innovation and technology rather than climate specific products; extend to Y Combinator (up to \$150,000 per investment per year with 2 application rounds annually and networking), Elemental Exceleator and Powerhouse. Y Combinator boasts of over 2000 start ups worth over \$100 billion.

### **Youth Climate Lab**

Youth Climate Lab represents another entrepreneurship accelerator initiative related to climate change, finance and the green economy with a more global focus, started in 2017. It defines you as those aged under 30. It hosts events such as Greenpreneurs and a Future-X-Change programme in Canada. Initiatives include forestry, agriculture, energy, cities, water and sanitation or general climate change. It offers thee typical networking, mentorship, training, business plan preparation and funding support. It reached 10 youth teams in 2018 and 15 in 2019. Examples include sustainable fisheries in the Philippines (Isdabest), plastic waste recycling and conversion into textiles in Uganda (Kimuli Fashion) and India's Rento-Rewa (recycled wastewater).

### **Asian Development Bank Climate Change Fund**

From 2008, the Asian Development Bank Climate Change Fund targeted climate finance readiness, mitigation via afforestation, clean/ renewable energy, sustainable transport, energy efficiency and adaptation. It evidently concentrates on individual and regional specific Asian nation projects via 6 application rounds each year (1 per 2 months). However, by 2020 \$71,400,000 from a total capital of \$74,000,000 was committed to 118 proposals with no indication of subsequent more sustainable actual funding for new projects. Project examples include the Greater Mekong Subregion Climate Change and Environmental Sustainability and Sustainable Agriculture/Food Security Programmes, an Uzbekistan Sustainable Hydropower Project and Vietnamese Water Efficiency in drought afflicted regions. Others involved China renewable energy and transport air pollution and Myanmar climate resilient agriculture

### **Asia Pacific Carbon Fund**

The Asian Development Bank has also hosted and supported the Asia Pacific Carbon Fund since 2007. It is similarly interested in clean technology, energy efficiency and renewable energy.

### **Asia-Pacific Climate Finance Fund**

Launched in 2017, the Asia-Pacific Climate Fund similarly focuses on climate finance and investments including those related to climate-sensitive areas, adopting climate technologies, addressing climate events and potential consequences. Examples include ecological protection in China's rivers, Bangladesh coastal climate resilient infrastructure and India clean energy.

### **Canadian Climate Fund for the Private Sector in Asia/Canadian Cooperation Fund on Climate Change**

This region specific fund formed in March 2013 focuses on mitigation and adaptation and other green economy areas via loans, grants, debt co-financing and concessional finance under the Asian Development Bank. It is limited to certain South Pacific and Asian countries. Examples include solar power in Samoa, Afghanistan, Mongolia and Cambodia, hydropower in Georgia plus Nepal and geothermal in Indonesia. It includes capital of over \$200,000,000. From 2001 the Canadian Cooperation Fund on Climate Change aims to assist China, India, Indonesia and the South Pacific with related mitigation and adaptation activities. It extends to offering technical training and support

## **Climate Finance Options**

The UN indicated several initiatives such as a Climate Finance Options database since 2010 as being meant to be the universal based solution to uncertainty over accessing climate finance but subsequent independent analysis proved technical glitches and a nonexistent domain registration error. It initially included over 60 funding sources and 100 publications. Others lacking transparency and user friendliness include Impact Assets 50, the Adaptation Funding Interface, Eco Machines Incubator and Private Sector Initiative.

Miscellaneous environment, clean energy and climate finance solutions range beyond those above to the Dutch Fund for Climate and Development, the Enel Foundation Open Africa Challenge, the Africa Opportunity Platform and UN Women “Capacity Development in Climate Change Programme. Perhaps the most immediately useful and varied source of climate change related funding, competitions, scholarships and other opportunities is the Terra Viva Grants Directory, with an immediate link on this author’s [www.blueeconomyfuture.org.za](http://www.blueeconomyfuture.org.za) website.

## **Terra Viva Grants**

The recent Terra Viva Grants Directory include various financial sources such as the Caribbean Catastrophe Risk Insurance Facility, Small Grants Program, Inno-Energy, Climate Technology Initiative, the International Climate Initiative Medium Grants of the German Government and the UN Capital Development Fund. Others include the British Embassy in Moldova’s Climate Change Solutions, the Co-Creation Hub, Cities’ Alliance Small Grants for Climate Adaptation and the Caribbean Biodiversity Fund, ecosystem based adaptation. There is also the Green Business Idea or Climate Launch Pad Competition (EIT Climate-KIC), Electric Pressure Cooker Competition (Global Leap Awards), Dutch Postcode Lottery, Green Challenge 2020 and renewable energy under the International Fund for Agricultural Development and BRILHO.

## **Application/ Proposal General Guidelines to Access Climate/Green, Blue Economy and Other Finance**

Comparatively few guides exist to climate finance and other applications and how to assist stakeholders to succeed. This research cites application tips of being as concise and focused or relevant as possible given a limited attention span and myriad received applications. Outline the objective first. Consider the means of implementation, existing resources and people involved and what is necessary. It asks for 1-2 examples of

other accomplishments. Those pitching ideas are also more likely to succeed if they consider competitors as well and the particular contributions or projected impact of your concept, project or potential intervention. Proposals are more likely to succeed if they can consider common objections in advance and how to avoid or overcome these. Applications stand out further if delivered in an innovative manner, include social media or website links or exist in a video or other innovative format. Those sieving through proposals aim for audacious, intriguing concepts which demand attention over others as much as possible.

When creating a proposal, those preparing are advised to consider a projected risk analysis for commonly predicted risks and the resources necessary to achieve desired outcomes (Clima South 2016). Finally, monitoring and evaluation stages will require assessing results against projected impact and performance criteria. Clima South distinguish between the expectations and requirements involved in accessing climate finance that may differ between accessing it from governments, the private sector, NGO's, crowdfunding, multilateral organisations, the finance and insurance sector and other investors/fund supporters. It advises that an effective guide needs to comprehensively incorporate funding types, size, sectors, accessibility criteria, guidelines and application processes. One guide to accessing climate finance in India (Vashisht and Pathak 2016) similarly focuses on identifying financial sources and initiatives, prior to recommending a training skills course although lacking pragmatic insights and experience. The International Federation of Red Cross and Crescent Societies has also published a guide including drafting proposals (International Federation of Red Cross and Red Crescent Societies 2013). In a 2011 UNDP guide to climate finance it advised not only identifying sources and policies but additional evaluation criteria (UNDP 2011). Examples include feed in tariffs for wind power, efficient biomass stoves, energy efficient buildings and low emission vehicles. It identified the need to overcome existing behavioural, institutional, regulatory, financial and technical barriers after determining priority technology areas to invest in and mechanism of finance.

Adaptation projects need to motivate the project in alignment to core objectives such as specifically reducing disruption or projected impact costs, reducing vulnerability or enhancing resilience. It also needs to link to national, regional and global climate change policies, emphasising why it should be prioritised over others, given concerns of scarce finite resources including a limited attention span. More donors, communities and policy makers are looking for a continuous impact that remains beyond a project's directly supported and financed lifespan. The process is advised to be both efficient and cost-effective. They wish a clear output to reassure them psychologically that they are making a meaningfully and dramatic enough difference from the

projected approach and method over substitutes. A few sources have moved beyond accessing finance towards training and preparing others. GIZ include training tips such as social ice breakers, action orientated learning, graphic visualisation and receiving feedback via stakeholder consultation and assessing their particular desire or motivations to absorb core material rapidly within a narrow time horizon (GIZ 2017). It advises managing expectations and sharing insights into the process. Contextualising is essential to the local climate change, funding options, projects, nation, stakeholders and environment. It offers its own training course example.

#### **IV: Conclusions, Recommendations; Limitations; Climate Finance Stakeholders and Potential Prospects or Opportunities**

In conclusion, this source's conceptual contribution was to provide an update and progress towards sustainable green and climate economy finance and to strive towards uncertainty for those wishing to overcome one of the greatest barriers to solving the global challenges facing action on climate change, its risks and impacts - -access to finance. If human beings wish to become a part of the climate resilient and circular economy future, we need to be able to utilise investments proactively to fuel innovation, ecosystem protection, enterprises and other solutions. Equally, investors are becoming more and more committed, seeing guidance. In response this source provided a partial identification, summary and analysis of climate finance and green economy developments, risks and challenges that provide a basis upon which funding and other forms of support can be channelled before. It also provides a brief update on identifying certain investors, their approaches and analysing trends to identify existing gaps, guidelines and inspirations including their competitors to ascertain the sincerity of existing efforts.

Of the 25 sources investigated, 1 was Caribbean focused, 2 Africa linked, 3 in Asia, 1 for those of the Commonwealth, 6 targeting Less Developed Countries including emerging economies and Small Island Developing States and 17 with a more truly global focus. 4 targeted entrepreneurs, 4 the private sector, 1 was miscellaneous and 16 across multiple areas. Whilst 1 focused exclusively on technology, 3 on renewable energy and 1 on transparency and capacity building, 19 were mixed in myriad areas. However, this research recognises the superficiality of analysis but recognises many firms have only started recently to become more transparent since 2017/2018 to prioritise this area, hence only a limited sample was provided as a core research limitation and constraint. Yet Terra Viva Grants and Climate Finance Options seek to provide a more detailed source of prospective opportunities. They thus often provide minimal information as to how

successful their investments have been, thus undermining several of the concepts of the Principles of Responsible Investment and their sincerity towards the Global Investor Statement on Climate Change/implementation of the UNFCCC and 2015 Paris Agreement. A significant lack of transparency exists.

When scaling up funds such as Althelia/Mirova become more committed. Many are committed to solutions to core problems and risks and prepared to partner with others. including data sharing such as the Blue Prosperity Coalition.

Therefore, to finance a future green and climate economy vision and climate change age increasing attention needs to be devoted into converting stakeholder pledges and myriad other developments into tangible commitments of progress. Ultimately all ecosystems need preserving and extending, all species saving from the threats of climate change and extinction and every worthy innovation that can aid this transition needs to be financed, whilst other more destructive activities need to be halted and no longer subsidised or promoted by global finance. The circular economy also needs to prevail.

It extends to having local entrenched local climate resilient, green and blue economy and finance stock exchanges, globally competitive corporations, ownership of patents, publications and continuance of genetic resources, the overcoming of finite scarce resources, threats of biodiversity loss and extinction via reserves, gene and biobanks, futureproofing against digital and climate change disruption. This research represents but a prototype in harnessing the latent potential of investing in the blue economy to our future. With it, we could create sustainable settlements, aerial, underwater and floating habitats, research centres and tourism facilities. We could extend our existences, cure many afflictions, ensure complete, productive food security for over 7 billion people; without impinging upon the waste of agriculture and industry... We would dress in more durable, element proof garments and utilise paper; our complexions would become more beautiful, enable more wondrous culture, art, materials and the survival of a great many species. We could preserve our cultural heritage, reverse engineer coral bleaching, purge ocean acidification and cleanse the oceans and lagoons of marine plastic and other waste. We could transport via hovercraft, skimmers and submersibles and power via biorefineries and offshore and onshore renewable energy. With more effective means of resolving issues, we would not face waste greater than 130 million tonnes of by-products and catch each day worth over \$50 billion. Species could avoid biodiversity loss, collapsing ecosystems and ultimate extinction.

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