BlueOrchard
Academy

Sustainable Infrastructure in Emerging Markets

Engine of Growth and Prosperity

September 2020

About BlueOrchard Finance Ltd

BlueOrchard is a leading global impact investment manager. The firm is dedicated to fostering inclusive and climate-smart growth, while providing attractive returns for investors. BlueOrchard was founded in 2001, by initiative of the UN, as the world's first commercial manager of microfinance debt investments. Today, BlueOrchard provides investors around the world with premium investment solutions, including credit, private equity, and sustainable infrastructure. Being an expert in innovative blended finance mandates, the firm is a trusted partner of leading global development finance institutions. With a major global presence and offices on four continents, BlueOrchard has invested to date more than USD 7bn across 80 emerging and frontier markets, enabling tangible social and environmental impact. BlueOrchard is a licensed Swiss asset manager of collective investment schemes authorized by FINMA. Its Luxembourg entity, BlueOrchard Asset Management S.A., is a licensed UCITS management company as well as a licensed alternative investment fund manager (AIFM) authorized by CSSF. For additional information, please visit: www.blueorchard.com.

EXECUTIVE SUMMARY

Emerging markets have a pronounced and wide-ranging need for infrastructure development. According to the UN, there exists currently an annual investment gap of approximately USD 2.5 trillion in developing countries, which must be bridged to reach the Sustainable Development Goals (SDGs) by 2030. Around 75% of that gap is made up of necessary infrastructure investments in the developing world. The sheer size of this investment gap poses a significant challenge to the efforts to overcome poverty and inequality. However, in that challenge also lies opportunity. Public and private investors have a chance to leverage increasing global awareness of sustainable infrastructure to create new and lasting partnerships that deploy capital for that purpose.

Sustainable infrastructure assets have the potential to provide significant benefits to investors, including resilience to economic downturns and low correlation with other asset classes, predictability of cash flows, and high positive impact on the quality of life and economic development of local communities and countries. However, there is a common misconception that investments in emerging markets, and particularly those in infrastructure assets, show higher default and loss rates.

And, while emerging and frontier markets present unique and considerable risk factors and barriers to entry, the risk-return profile of sustainable infrastructure investments in the developing world is far more aligned with the developed world than people tend to think. As with any investment however, risks are present and must be evaluated and thoroughly reviewed in the context of each investment proposal.

With twenty years' experience in emerging and frontier markets, BlueOrchard is one of the leading impact investors globally. A long-time lender in emerging markets, our teams have built an extensive network of project developers, sponsors, development finance institutions, commercial banks and advisors, allowing us to identify and invest in attractive deals across the sustainable infrastructure space. Our infrastructure finance investment strategy focuses on debt investments in emerging and frontier markets with strong contribution towards the SDGs. We target vital segments of sustainable infrastructure, including renewable energy, energy infrastructure and energy efficiency, sustainable transportation as well as data infrastructure, where there is a strong demand for development in frontier and emerging markets globally.

WHAT IS SUSTAINABLE INFRASTRUCTURE?

Infrastructure refers to the basic systems and essential services that a country or community needs in order to function properly. This includes roads, tunnels, and ports, but also renewable energy, energy infrastructure, energy efficiency, sustainable transport, and data infrastructure.

“Sustainable infrastructure” refers to assets planned, designed, constructed, operated, and decommissioned in a manner that aims to ensure economic, financial, social, environmental, and institutional sustainability over the entire life cycle of the asset. Sustainable infrastructure forms the basis for long-term economic growth and improved living conditions, and moreover it can contribute positively to climate change adaptation and mitigation efforts. The determination of sustainability is typically made and monitored through ESG assessment, environmental and social impact assessment, compliance with relevant industry standards, and exclusion of unsustainable sectors and practices.

More advanced approaches to sustainable infrastructure go beyond minimizing negative effects and aim for positive social and environmental impact. Depending on the sector, this impact is typically centred on providing essential services and making them both accessible and affordable in a manner that contributes to economic development goals, climate change mitigation, or combinations thereof. Pursuing this impact typically entails a detailed assessment of who will benefit from the investment, as well as how and to what extent they will benefit. It also involves setting targets for the intended impact and then measuring the outcome.

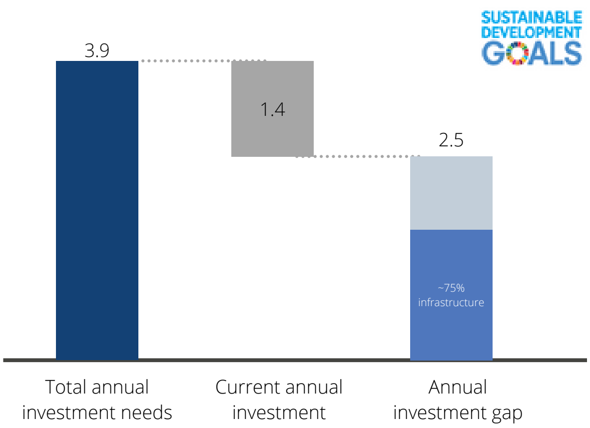
WHY EMERGING MARKETS?

Emerging markets have a pronounced and wide-ranging need for infrastructure development and present many interesting opportunities to support projects in a conscientious and sustainable way.

Around the developing world, one billion people (mostly in least developed countries) still lack access to electricity[1] and 39% lack access to a third generation broadband network during a time when the developed world has already moved into the fifth generation of network infrastructure.[2] In addition, emerging markets suffer eight times more from the effects of climate change than developed markets.[3] There are more than five billion people living in developing countries,[4] with population growth continuing at a fast pace.[5] Emerging markets will grow more than 10% between 2020 and 2030: notably Sub-Saharan Africa's population is projected to double by 2050.[6] Furthermore, emerging markets support world GDP growth at constant level of 3.6% and are forecasted to account for 63% of world GDP in 2023.[7]

This creates considerable demand for the development of infrastructure in an environment where local governments and other funding sources are far from meeting the growing demand. It is therefore not surprising that the UN is highlighting the need for significant investment in infrastructure in the developing world in order to achieve the ambitious Sustainable Development Goals (SDGs). There exists currently an annual investment gap of approximately USD 2.5 trillion in developing countries,[8] which needs to be bridged to reach these goals by the target date of 2030. Around 75% of that gap is made up of critical infrastructure projects in the developing world.[9]

Annual investment needs in developing countries
In USD trillion, annual average, estimates, 2015-2030



SOURCE: UNCTAD WORLD INVESTMENT REPORT 2014. SWISSRE SIGMA 2020

The consequences of the Covid-19 pandemic on developing countries' economies and societies are not even included in these figures and will require substantial additional investments in areas such as health and data infrastructure.

The sheer size of this investment gap poses a significant challenge to the efforts to overcome poverty and inequality. However, in that challenge also lies opportunity. Public and private investors have a chance to leverage increasing global awareness of sustainable infrastructure to create new and lasting partnerships that deploy capital for that purpose. In addition, due to the long-term nature of infrastructure assets, addressing the challenge also offers a generational opportunity to create sustainable infrastructure with a lasting contribution to climate mitigation and adaptation.

This is particularly pertinent as individuals in emerging markets are disproportionately impacted by the negative effects of climate change, especially when considering their limited contribution to greenhouse gas emissions compared to their developed market counterparts.

Because of their geographic location, the dominance of the agricultural sector in many countries and a lack of access to savings, insurance and other financial products, emerging and frontier countries are often less resilient and more exposed to extreme weather events that are linked to climate change.

The prospect of addressing not just the growing infrastructure needs of emerging and frontier markets but to do so in a more sustainable way is therefore particularly attractive to investors. Among the most appealing features of investing in sustainable infrastructure are contributing to a low-carbon and climate-resilient future, economic growth, and job creation.

BENEFITS OF SUSTAINABLE INFRASTRUCTURE INVESTING IN EMERGING MARKETS

Sustainable infrastructure assets have the potential to provide significant benefits to investors, including economic resilience and low correlation with other asset classes, predictability of cash flows, and high positive impact on the quality of life and economic development of local communities and countries.

Resilience to economic cycles and low correlation with other asset classes

Sustainable infrastructure investments are backed by long-term, durable assets, which tend to be highly resilient to economic or market volatility, bringing diversification benefits that are attractive to investors with a long-term investment horizon.[10]

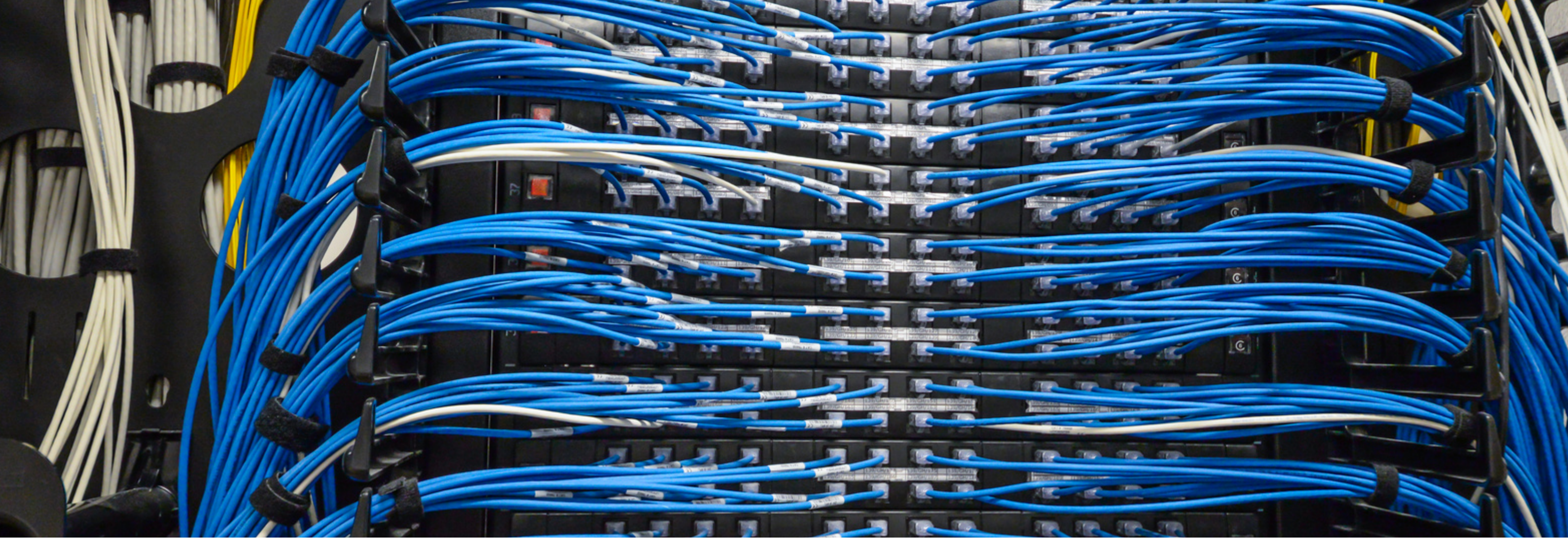
Given the essential nature of the services provided by infrastructure assets, the level of demand is inelastic and does not tend to ebb and flow with market fluctuations.[11] As real assets, they are inherently uncorrelated with other asset classes and with other assets within the infrastructure sector.[12]

Predictable cash flows

Sustainable infrastructure assets benefit from regulated or contracted revenues, resulting in high cash flow visibility and stability throughout the life cycle of the investments.[13]

Stable, risk-adjusted returns

Emerging market private infrastructure offers attractive risk premia over developed markets private infrastructure.[14] Investments typically offer a return premium over comparable developed market assets[15] without necessarily being exposed to higher default rates.



Positive impact on quality of life and economic development

By investing in the development of sustainable infrastructure in emerging and frontier markets, investors can make a meaningful contribution to the social, economic and environmental development of these countries.

Depending on the sector and intent of an investment, it is possible to target environmental, social, and economic development and resilience. Given the long life of infrastructure, the sustainability of assets and practices will provide these benefits for many years to come. As a result, the possibility for direct positive impact on the quality of life and economic development for the communities affected by the projects is particularly high.[16]

Opportunity to support the transition to a low carbon economy

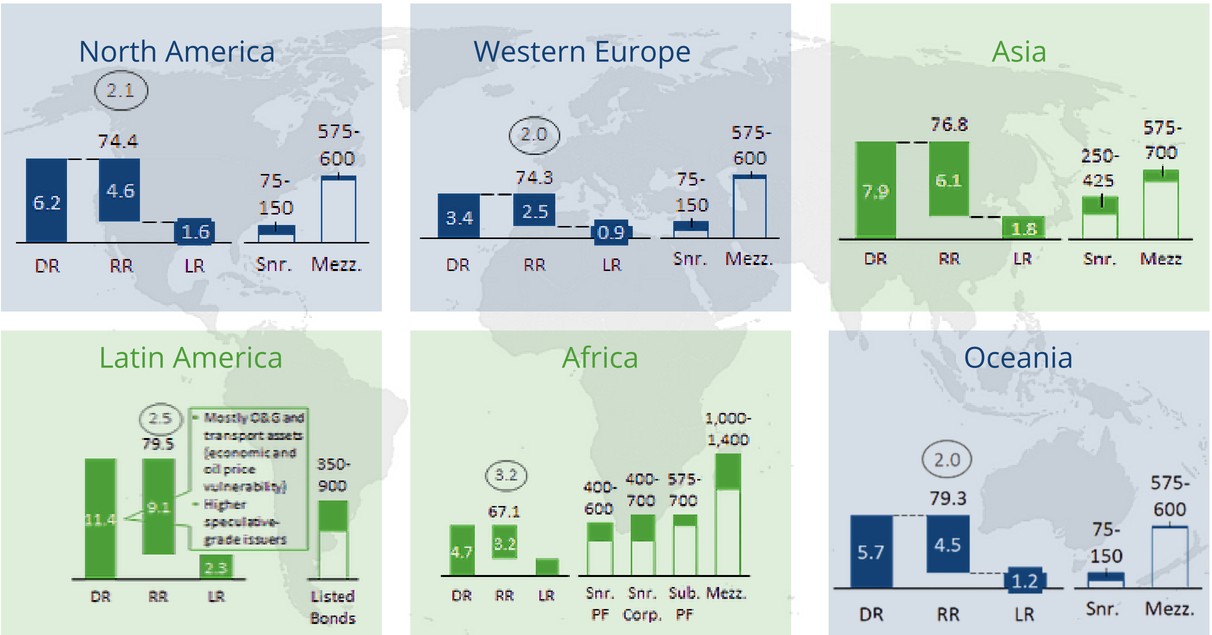
There is a significant opportunity within emerging and frontier markets to influence, through investments, the sustainable development of a range of infrastructure projects and services, which will have a meaningful impact today and for the future.

In many cases, these projects represent an opportunity to support the transition to a low carbon economy and can help to make strides towards achieving the UN SDGs. In doing so, whether through the development of renewable power initiatives, or improvement transportation options, sustainable infrastructure investments can make a meaningful contribution to the betterment of lives in the world's most vulnerable places.

RISKS ASSOCIATED WITH SUSTAINABLE INFRASTRUCTURE INVESTING IN EMERGING MARKETS

There is a common misconception that investments in emerging markets, and particularly those in infrastructure assets, fail more often than comparable investments in developed markets. And while emerging and frontier markets present unique and considerable risk factors and barriers to entry, the outcomes of sustainable infrastructure investments in the developing world are far more aligned with the developed world than people tend to think. As with any investment however, risks are present and need to be evaluated and thoroughly reviewed in the context of each investment proposal.

Project finance default rates and time to emergence, select infrastructure debt spreads
10 year cumulative default rates (DR), recovery rates (RR), loss rates (LR) in percent, time to emergence in years, spreads in bps



SOURCE: PROJECT FINANCE DEFAULT AND RECOVERY RATES MONDY'S 2018; INFRASTRUCTURE DEBT SPREADS (EXCEPT LATAM: MERCER 2018; LISTED BONDS; CA-SECURITIES.

Beyond the asset specific risks (or business risks) implied in infrastructure assets, there are three additional main risk components adding to the default risk of emerging markets infrastructure assets compared to the developed world: regulatory, political and currency risk.

Business risks

Business risks involve risks linked to the construction and operation of infrastructure assets, market risks implied in the price and volume of the services rendered, and risks of counterparty/off-takers defaults or non-payment.

Default risk

The stability of the regulatory system, or the lack thereof in many markets, is an important risk within the infrastructure investing space. The economic situation within a country can heighten the risk of regulatory change, particularly where this has a knock-on effect for the country's finances.[17] However, this is not to say that emerging or frontier markets are necessarily more heavily impacted by this possibility than other countries, particularly those with a solid economic environment that are relatively stable in nature.[18] Meanwhile, competition in the market is rising and competitive tender schemes are driving down system costs.[19] This further reduces the risk of adverse regulatory changes in the future.

Political risk

Political risk is that of material political change which has an effect on an investor's activities within the market. A potential concern at either a whole country or more targeted local level - for example changes to government processes - can highlight the issues with political risk from an investment perspective.[20] Political risk is often assessed based on a country's track record of similar adverse changes, so a robust risk assessment process should identify the level of political risk for a specific country.[21]

Currency risk

A mismatch between a company's cash flow currency and that of its liabilities represents the main driver of currency risk at an asset level. From a fund perspective, potential currency risks could arise if the investment currency differs from the fund's base currency.[22] In addition, currency risks can be mitigated through entering FX hedging contracts.

OPPORTUNITY CASE STUDY

Renewable energy investment in India

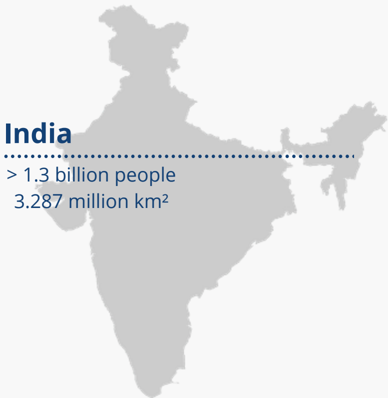
With a population of more than 1.3 billion[23] and ambitious government targets to increase capacity by more than 23GW per year, the Indian renewable energy market is one of the most attractive in the world. Installed renewable power generation capacity has increased at a fast pace over recent years and India has excellent natural solar and wind resources. The Indian government is committed to contributing to global climate change initiatives and has ratified the Paris Agreement on Climate Change, providing a constructive environment for investment into this area.

Commercial & industrial off-grid

An opportunity to enter the Indian renewable energy market would be by investing in a platform that focuses on off-grid commercial and industrial solar installations. The opportunity would offer strong positive environmental and economic impact along with best practice ESG standards and contribute directly to a number of the UN SDGs, including Climate Action, Affordable and Clean Energy, and Decent Work and Economic Growth.

Growing to 1GW by 2022

The company in question for such an opportunity is amongst the fastest growing renewable energy developers in India with 450MW of operating solar assets in India and a plan to grow to 1GW of capacity by 2022. It benefits from the experience of a world class team with proven track record in developing, financing, building, and operating renewable energy projects. Credit counterparty risk is well diversified, with power purchase agreements being entered into with a broad range of investment grade off-takers across several industries.



ABOUT BLUEORCHARD'S SUSTAINABLE INFRASTRUCTURE PRACTICE

BlueOrchard is a leading global impact investment manager. As a pioneer in the impact investing space, we are dedicated to generating lasting positive impact for communities and the environment, while providing attractive financial returns to investors. It is our aim to make impact investment solutions accessible to all and to advance the conscious use of capital which benefits society and the environment.

Our infrastructure finance investment strategy focuses on debt investments in emerging and frontier markets with strong contribution towards the UN SDGs. We target vital segments of sustainable infrastructure, including renewable energy, energy infrastructure and energy efficiency, sustainable transportation as well as data infrastructure, where there is a strong demand for development in frontier and emerging markets globally.

Our experience

With twenty years' experience in emerging and frontier markets, BlueOrchard is one of the leading impact investors globally. Our offices are spread around the world, in the regions where we invest, and are staffed with people whose personal and professional experiences grant them unique insight into the markets and products we develop for investors. A long-time lender in emerging markets, our teams have built an extensive network of project developers, sponsors, development finance institutions, commercial banks and advisors, which allows us to identify and invest in attractive deals across the sustainable infrastructure space.

Our team

The sustainable infrastructure team consists of experienced experts dedicated to infrastructure investing, leveraging BlueOrchard's existing Emerging Markets investment platform. The team focuses on sectors which are conducive to achieving our social and financial performance objectives, and are essential to the functioning of society and a modern economy.

Our impact management framework

From an impact perspective, each potential investment is analysed via BlueOrchard's proprietary impact management framework, B.Impact, which takes a three-step approach to assessing the asset's ESG characteristics, potential for delivering impact, and alignment with the UN SDGs. Our impact management framework is aligned with industry standards set by the PRI, IFC, Impact Management Project and SASB.* Within the sustainable infrastructure space, this framework is applied at an individual transaction as well as wider fund level and supported by BlueOrchard's independent impact management team with more than 50 years of collective experience. BlueOrchard regularly reports on the impact achieved through the investments made.

Our investment and risk process

BlueOrchard's sustainable infrastructure team originates investments via a variety of sources, including leveraging the team's and BlueOrchard's existing network with industry players, clients, providers, regulators, associations, and advisors and evaluates the financial, social, and environmental potential, portfolio fit, exit avenues and key risks of the investment. Investments are underwritten and evaluated in the prism of the infrastructure team's unique experience as well as the twenty year track record of emerging market debt BlueOrchard brings to the table. Risk awareness and mitigation strategies are woven into all phases of the investment process, from identification, to underwriting and approval, to post-disbursement performance monitoring with a focus on economic and impact assessment. Following the investment, BlueOrchard monitors financial performance, adherence to the terms of the loan agreement, and social/environmental performance of the project companies.

*Principles for Responsible Investment, The International Finance Corporation, Impact Management Project and Sustainability Accounting Standards Board

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About the authors

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Felix is Head of Private Equity & Sustainable Assets and Member of the Executive Management of BlueOrchard. Prior to joining BlueOrchard, Felix was Executive Director for Corporate Business Development at Bank Vontobel and served in senior positions at a leading global strategy consulting firm focused on financial services.

Gianfranco Saladino
Gianfranco leads BlueOrchard's Sustainable Assets investment activities across debt and equity. Before joining BlueOrchard, Gianfranco was an investment manager at Partners Group Infrastructure department focused on origination, structuring and implementation of a number of transactions in the infrastructure and green energy space.

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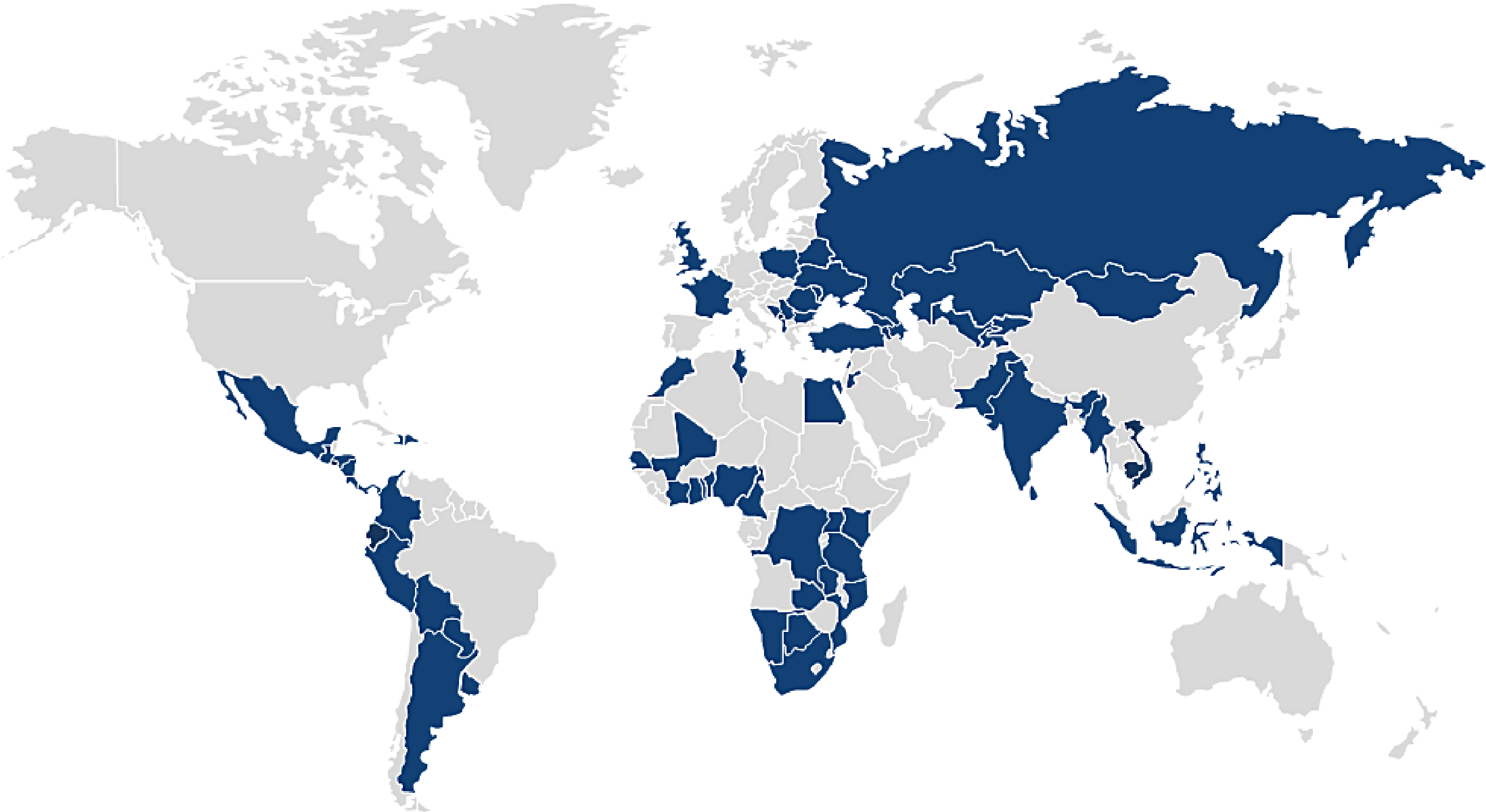

BlueOrchard investments by country, as of 30 June 2020

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