

For Professional Investors only. Not for Retail distribution.

Biodiversity: Mind the impact! AXA IM in collaboration with VBDO

Definition:

Biodiversity is the variability of all living organisms from all sources, spanning all ecosystems across land and sea. It encompasses the characteristics of living systems and includes everything from the diversity within a species to the diversity between species, and of the ecosystems in which they live.



The Amazon 40,000 different plant species









The Amazon 1,300 birds





The Amazon

Over 800 amphibians and reptiles





The Amazon 378 mammals





The Amazon More than 100,000 invertebrate





Biodiversity – Why is it at risk, and why should we care?

At risk due to human activity:

- Land and sea use change
- Direct exploitation
- Climate change
- Pollution
- Invasive alien species

Why care: Human life depends on it

- Food and water supply
- Erosion
- Flood control
- Carbon storage





Biodiversity – Why is it important for asset owners and asset managers

RISK

 Sectors that are most impacted: agriculture, forestry and fishing, mining, and manufacturing sector

OPPORTUNITY

Investing in solutions to biodiversity loss, through alternative products, services and technologies that better preserve and support ecosystems

- precision or regenerative agriculture
- plant-based foods
- sustainable packaging
- water treatment





A final message...

We all have a part to play

Solutions exist and innovation continues

Start now, don't wait

Investors & biodiversity



VBDO 🔘

Jacqueline Duiker

Vereniging van Beleggers voor Duurzame Ontwikkeling

Welcome

- Introduction
- Biodiversity
- Investor practice
- Finding answers together





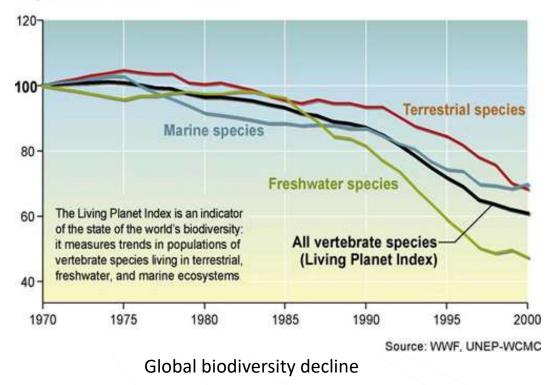
species

The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes variation in genetic, phenotypic, phylogenetic, and functional attributes, as well as changes in abundance and distribution over time and space within and among species, biological communities and ecosystems.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

Why are we discussing biodiversity?

Population Index = 100 in 1970

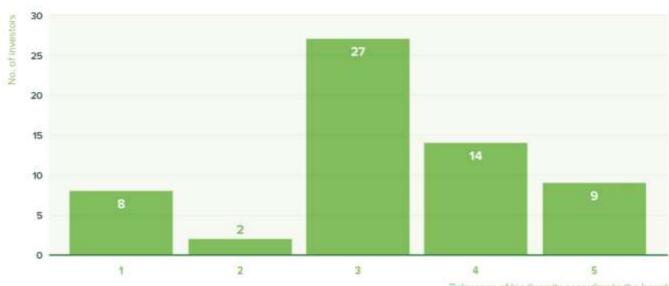




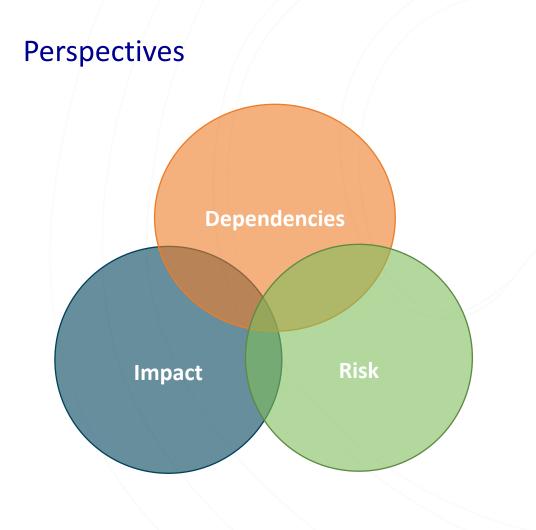
Biodiversity & Finance

Biodiversity is not that relevant to the board



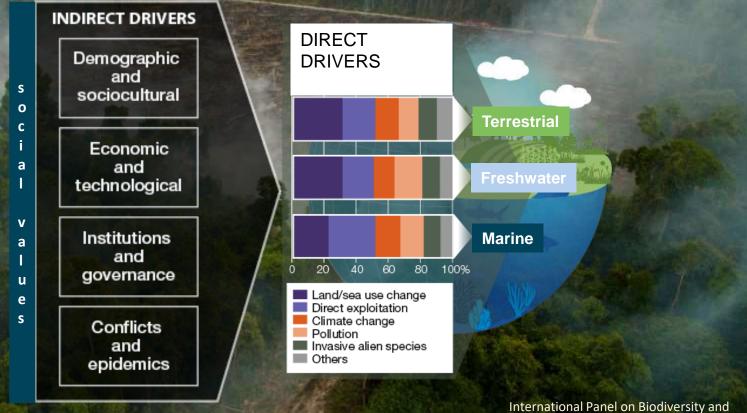


Relevance of biodiversity according to the board





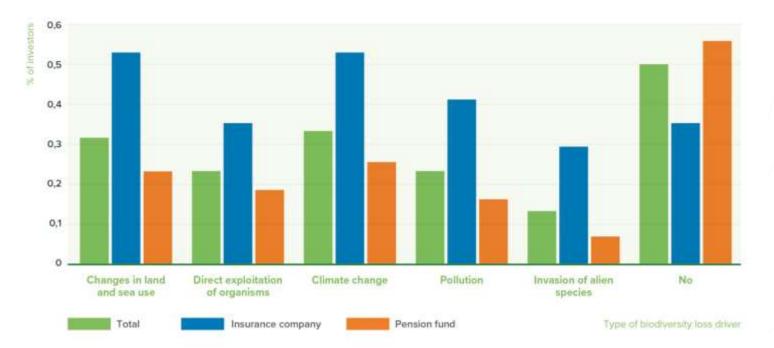
Impact drivers



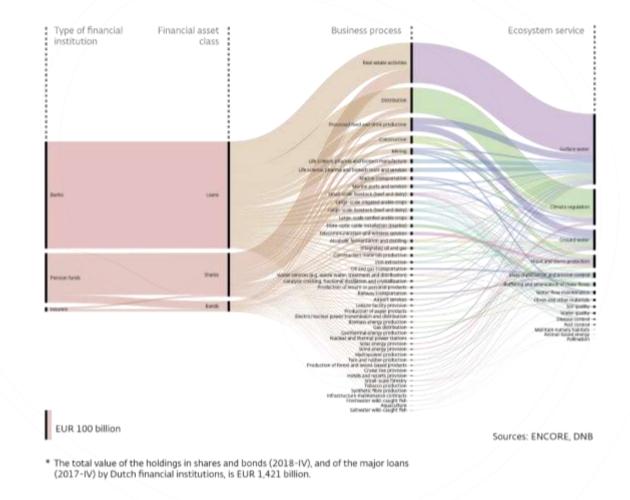
Ecosystem Services (IPBES) - May 2019

Focus on climate impact

Graph 3.4 | Focus on climate change for impact mapping



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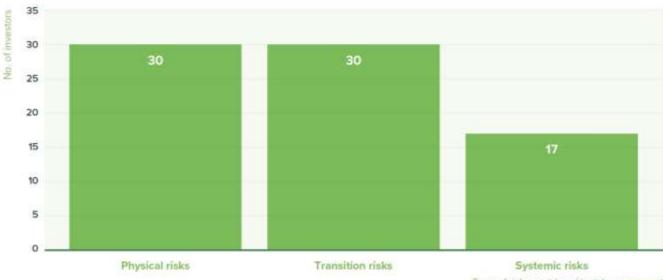
Dependencies

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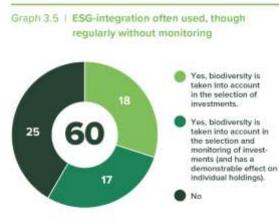
Systemic risk less often considered

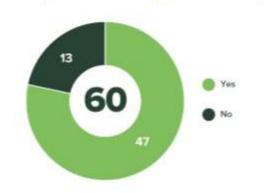
Graph 3.2 | Physical and transition risks are equally considered



Type of risk considered in risk-assessment

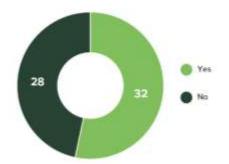
Responsible investment instruments





Graph 3.6 | Most Fis engage on biodiversity

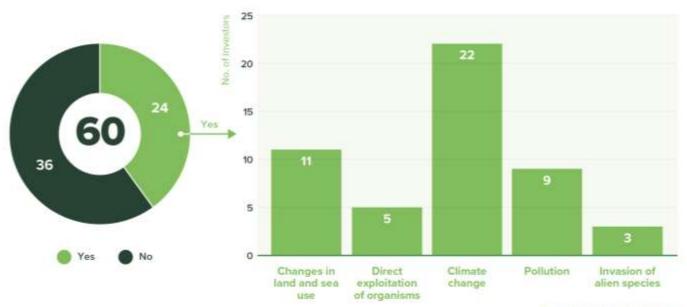
Graph 3.7 | Slightly over half of Fis include biodiversity in voting



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Impact investing

Graph 3.8 | Focus on climate change for impact investing



Type of biodiversity loss driver

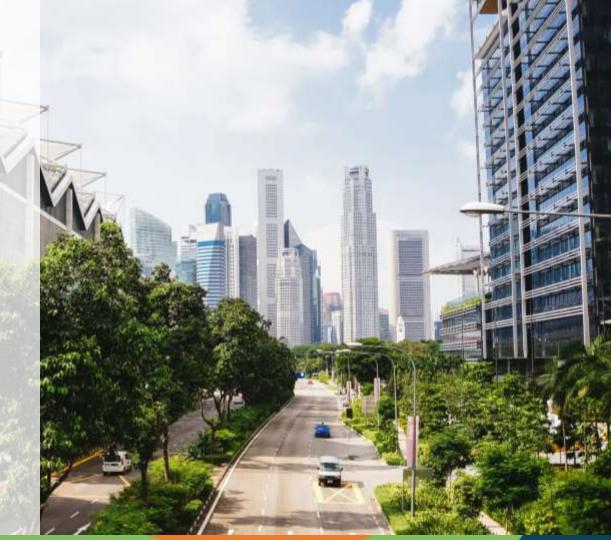
Concluding

- Investors make a careful start to look into biodiversity
- Linking it to ESG or climate change
- Confused on what biodiversity entails
- Varying degrees of commitment
- Data is everywhere



The way ahead

- Active board commitment and knowledge of biodiversity
- Be clear on what you focus on and what you need to know
- Consider the full spectrum of biodiversity



How do we meet the challenges outlined by VBDO's biodiversity research? Panel discussion





Jacqueline Duiker Senior Manager VBDO and Founder of Future Value Matters Coenraad Krijger Director IUCN **Eloisa Menguzzo** Responsible Investment Analyst PGGM

Daan DeZwart Investment Strategist Pensioenfonds Rail en Openbaar Vervoer



Hanna Spanier ESG Adviser Blue Sky Group





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How to have a significant and rapid impact on biodiversity

Stephane Lago, Listed Equity Impact Director

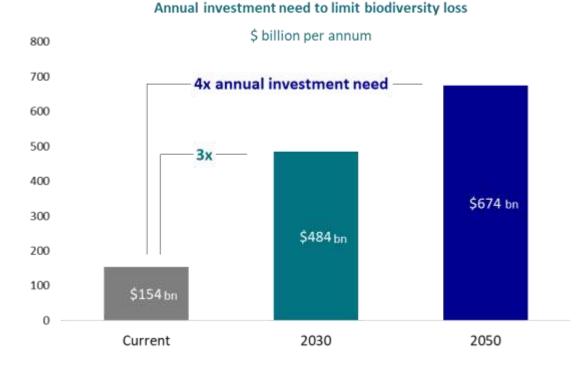
September 2023

Capital at risk. The value of investments may fall as well as rise and investors may not get back the full amount invested.

2Ds

Density + Diversity

Huge investment required to address Biodiversity loss



29 Source: State of Finance for Nature 2022 | UNEP - UN Environment Programme; Natural Climate Solutions Alliance, Natural Climate Solutions for Corporates, July 2021.



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2022 Montreal COP 15 outcome

Protect

Protect at least 30% of

land and water ecosystems

Restore

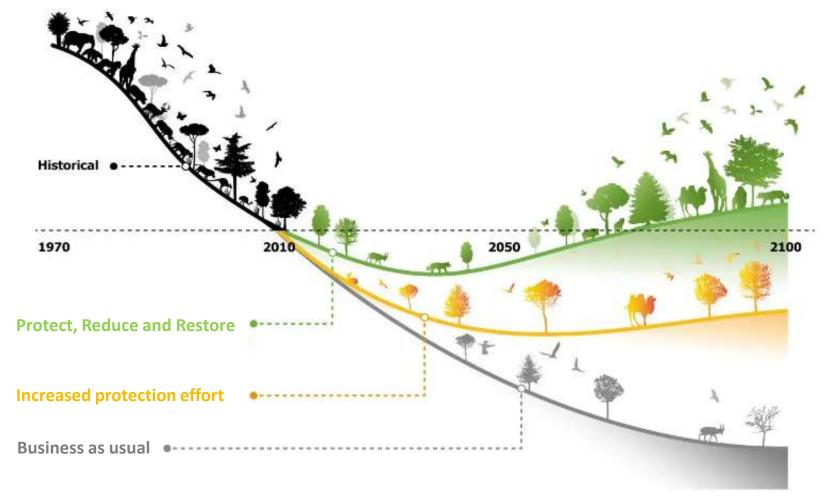
Restore at least 30% of degraded in land and water ecosystems

Reduce

Reduce 50% in pesticide use and food waste

Private Equity Listed Equity and Fixed Income







Biodiversity loss can be addressed via Products & Services and Operations companies

VS

Products & Services companies

generate positive outcomes through the provision of their innovative products and services



generate positive change through their corporate practices, behaviour and operations

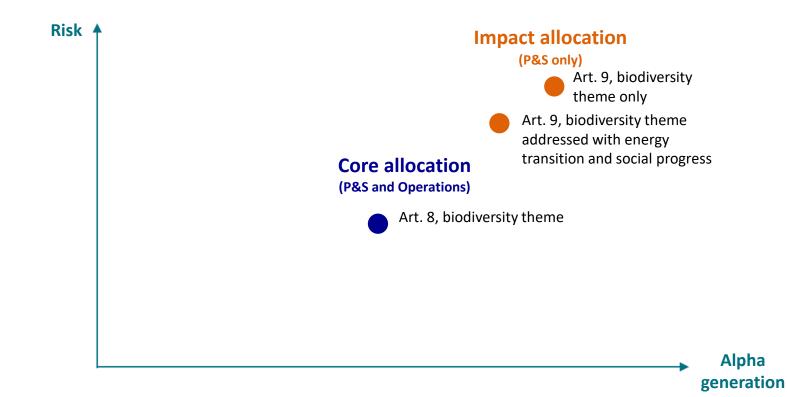




Source: AXA IM, BofAM, FAO report "Distribution of global Greenhouse", 2018. For illustrative purposes only. Images: Company websites. Company examples are for illustrative purposes only. This does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and 32 should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalised recommendation to buy or sell securities.



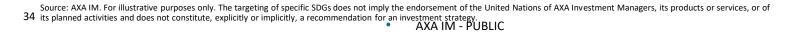
Different ways to allocate your investments to limit biodiversity loss



Biodiversity drivers

4 key investment areas across the long-term biodiversity opportunity









Xylem US water technology company addressing different stages of the water cycle





Intentionality Improve ageing

infrastructure to reduce water leakages

Negative Externalities

Few negative

externalities being

well addressed



Materiality Provides innovative

solutions for a resilient water infrastructure



Measurability

Company has set sustainability targets for 2025, aligned with UN SDGs



Additionality

Focus on **automation**, **data management** and **decision technologies**



KPIs monitored	2021	2022
Non-revenue water reduced ¹ (bn m ³)	0.44	0.47
Water treated for reuse with Xylem's solutions (cumulated° (bn m ³)	7.2	10.3

Source: AXA IM, Xylem sustainability report 2023. 1: Non-revenue water is the quantity of water that has been produced and is lost before it reaches the customers. KPIs for illustrative purposes only.



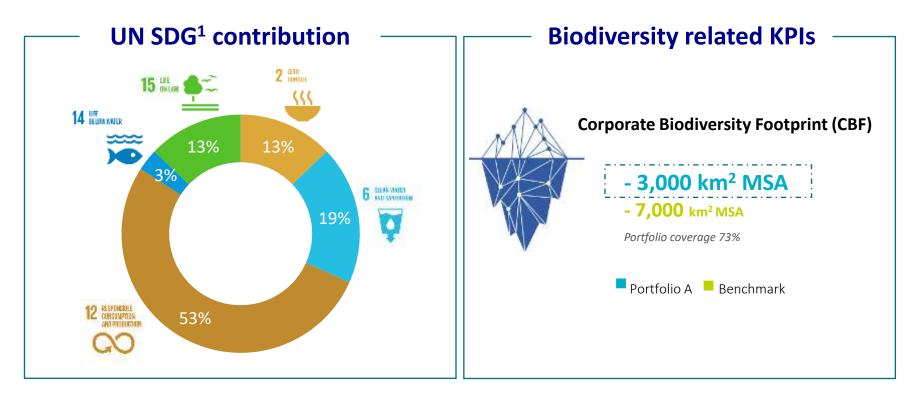
Main M&As in the biodiversity area in 2022-2023



Source: AXA IM, as at 31/08/2023. For illustrative only.



Measuring how investments impact biodiversity



Source: AXA IM and Iceberg Data Lab. 1: UN SDG: United Nations Sustainable Development Goals. For illustrative purposes only. The targeting of specific SDGs does not imply the endorsement of the United Nations of AXA Investment Managers, its products or services, or of its planned activities and does not constitute, explicitly or implicitly, a recommendation for an investment strategy. KPIs are not indicative of future results. Reporting in development and subject to change. *MSA calculated via science-based models, which have methodological limited processing and enterprise and enterprise processing and enterprise processing and enterprise processing of the limited processing and enterprise processing of the limited processing of the l



38 limits: invasive species, oceans and natural resources overconsumption – these aspects of biodiversity loss are not covered.

Innovative biodiversity-related solution helping some climate change challenges







Land use is the main driver of biodiversity loss



Source: BofAM, IEA, Growth of selected minerals in 2040 vs 2020 in « Sustainable Development Scenario ». Logos from company websites. For illustrative purposes only. This does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalised recommendation to buy or sell securities.





Implementing biodiversity strategies in the construction sector

HANNAKO BAKKER



Content

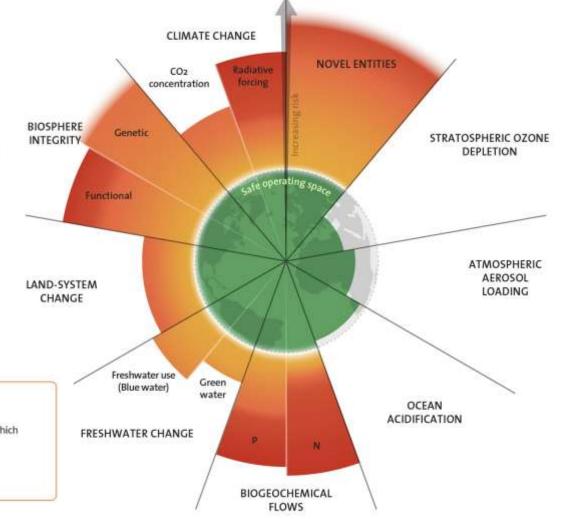
- What is happening right now?
- Introduction
- Case: Maanwijk Leusden
- Regulation as opportunities
- Conditions for implementing biodiversity

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42 Published 13-09-2023

We don't know how long we can keep transgressing these key boundaries before combined pressures lead to irreversible change and harm.

Johan Rockström, co-author and Centre researcher



Story highlights

- Human activity affects the Earth's climate and ecosystems more than ever which
 risks the stability of the entire planet
- · For the first time ever all nine planetary boundaries have been assessed
- Six of the boundaries are now transgressed



Heijmans profile

- Listed company based in the Netherlands
- Founded in 1923 (so a 100 yrs this year!)
- Approximately 4.500 employees
- Active across different sectors:
 - Property development
 - Construction
 - Technical services
 - Infrastructure



Who am I?

Hannako Bakker:

- 33 years old
- Sr. Advisor Biodiversity & Climate Resilience at Heijmans
- Passionate about:
 - Nature (obviously)
 - Acroyoga

What do we value*?



Building land:

€ 88.900 per ha



Agricultural land:

€ 70.000 per ha



€ 9.000 – € 35.000 per ha

*Source: Kwartaalbericht agrarische grondmarkt 2022-4 - Kadaster.nl zakelijk

What would the planetary costs be of each of these land uses?



Building land:

€ 88.900 per ha



Agricultural land:

€ 70.000 per ha



€ 9.000 – € 35.000 per ha

*Source: Kwartaalbericht agrarische grondmarkt 2022-4 - Kadaster.nl zakelijk





Real estate development "Maanwijk – Leusden"

OR HOW TO VALUE ECOSYSTEM SERVICES



Key figures

Project start: 2020 Contract value: 120 properties:

40 million

84 private ownership

36 social rental properties

Location: Leusden, Utrecht





Key succes factors for "Maanwijk"

- Find partners that benefit from the investments you make
 - Cooperating with the "Longfonds" a foundation focused on lung diseases and clean air.

Data- en Kennishub Gezond Stedelijk Leven

Key succes factors for "Maanwijk"

- Let yourself be monitored and checked by external stakeholders

- University of Utrecht and datapartner to monitor the effects of green interventions on air quality and other environmental aspects.
- NLGreenlabel to certify our development as "sustainable"

 \rightarrow This makes positive outcomes reliable and transparent. And it forces you to prioritise.

Greenlabel



Governmental regulations as opportunities

ACCELERATE SUSTAINABILITY EFFORTS BY CHANGING PERSPECTIVE ON POLICY

Three important opportunities for change!



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Science for Environment Policy

FUTURE BRIEF: No net land take by 2050?



Conditions for implementing biodiversity

Key conditions

Be aware of the complete system

Think longterm





Key conditions

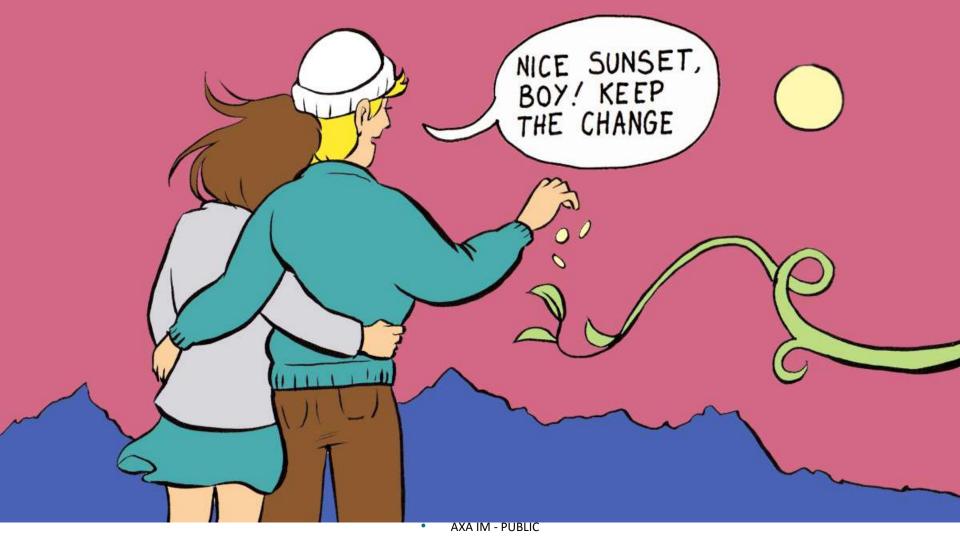
Be aware of the complete system



Strive for excellence



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Can't see the wood from the trees? Biodiversity metrics and TNFD reporting Panel discussion



Liudmila Strakodonskaya ESG Analyst AXA IM **Roel Nozeman** Head of Biodiversity ASN Bank **Delphine Bartre** Head of Research Iceberg Datalab Arthur van Mansvelt Senior Engagement Specialist Achmea Investment Management



Thank you for joining us

Please scan the QR code to view our biodiversity microsite, where you will find more information on biodiversity at AXA IM, todays presentation and our commitment to donate to our chosen local charity Stichting Mano.







Additional risks

Equity Risk: the value of shares in which a Fund invests fluctuate pursuant to market expectations. The value of such shares will go up and down and equity markets have historically been more volatile than fixed interest markets. Should the price of shares in which the Fund has invested fall, the Net Asset Value of the Fund will also fall. Funds investing in shares are generally more volatile than funds investing in bonds or a combination of shares and bonds, but may also achieve greater returns.

Interest Rate Risk: interest rate risk is the risk that the market value of bonds held by the Fund could fall as a result of higher market rates (yields). Yields can change as a result of, among other things, the economic and inflation outlook which also affects supply and demand as well as future interest rate expectations, without necessarily a change in official central bank short term interest rates. Higher yields result in a decline in the value of bonds. Conversely, lower yields tend to increase the value of bonds. Duration (a measure based on the coupon and maturity payments schedule of a bond) is an important concept in understanding how the price of that bond might change for a 1% move in its redemption yield. A bond with a longer duration is more sensitive to a change in yields and, generally speaking, will experience more volatility in its market value than bonds with shorter durations.

Emerging Markets Risk: If Investment in emerging markets (countries that are transitioning towards more advanced financial and economic structures) may involve a higher risk than those inherent in established markets. Emerging markets and their currencies may experience unpredictable and dramatic fluctuations from time to time. Investors should consider whether or not investment in such Funds is either suitable for or should constitute a substantial part of an investor's portfolio.

Companies in emerging markets may not be subject to:

- a) accounting, auditing and financial reporting standards, practices and disclosure requirements comparable to those applicable to companies in developed markets;
- b) the same level of government supervision and regulation of stock exchanges as countries with more advanced securities markets.
- Accordingly, certain emerging markets may not afford the same level of investor protection as would apply in more developed jurisdictions.
- Prospectus for the AXA Distribution Investment ICVC, valid as at 17 December 2021 15

Restrictions on foreign investment in emerging markets may preclude investment in certain securities by the Funds referred to above and, as a result, limit investment opportunities for those Funds. Substantial government involvement in, and influence on, the economy, as well as a lack of political or social stability, may affect the value of securities in certain emerging markets. The reliability of trading and settlement systems in some emerging markets may not be equal to that available in more developed markets, which may result in delays in realising investments. Lack of liquidity and efficiency in certain of the stock markets or foreign exchange markets in certain emerging markets may mean that from time to time the ACD may experience more difficulty in purchasing or selling holdings of securities than it would in a more developed market.

Investment in China A Shares via the Stock Connect Programme Risk: some Funds may invest in China A shares (shares issued by domestic markets in mainland China in Chinese renminbi) through the Stock Connect program. China A shares are generally only available for investment by residents of mainland China or by foreign investors through tightly regulated structures. The Stock Connect program is one structure through which foreign investors can invest in China A shares by providing mutual market access via the Hong Kong Stock Exchange, Shanghai Stock Exchange and Shenzhen Stock Exchange. In addition to the risks disclosed under Emerging Markets Risk and Political, Economic, Convertibility and Regulatory Risk, investment by the Funds via the Stock Connect program also involves the following risks. Investment limitations The Stock Connect program is subject to quota limitations applying across all participants and utilised on a first-come-first-served basis. Once the quota is exceeded, buy orders will be rejected although sell orders would not be impacted. Such quota limitations may restrict a Fund's Prospectus for the AXA Distribution Investment ICVC, valid as at 17 December 2021 18 ability to invest in China A shares through the Stock Connect program on a timely basis, and the Fund may not be able to effectively pursue its investment strategy. In addition a particular stock may be recalled from the scope of eligible stocks for trading via the Stock Connect program and in such a case a Fund would not be able to buy that stock (although it could sell it). This may affect the ability of the Fund to implement its investment strategy. Each of the stock exchanges participating in the Stock Connect program reserves the right to suspend trading if necessary for ensuring an orderly and fair market and that risks are managed prudently. Consent from the relevant regulator would be sought before a suspension is triggered. A suspension could adversely affect a Fund's ability to access the mainland China stock markets. The S



Additional risks

Currency Risk: assets of a Fund (including cash), and any income paid on those assets, may be denominated in a currency other than the base currency of the Fund. Changes in the exchange rate between the base currency and the currency of an asset may cause the value of the asset/income (expressed in the base currency) to fall as well as rise even if there is no change of the value of such assets in its local currency. This may also cause additional volatility in the Fund's Price. It may not be possible or practicable to hedge against such exchange rate risk. For certain Funds (as indicated in the relevant Fund Profile), the ACD aims to reduce the risk of movements in exchange rates on the value of all or part of the assets of a Fund through the use of currency exchange transactions. A Fund may enter into currency exchange transactions either on a spot basis (i.e., exchanging at the current price) or through forward currency transactions (i.e., agreeing to purchase the currency at an agreed price at a future date). Neither spot transactions nor forward currency transactions will completely eliminate fluctuations in the prices of a Fund's securities or in foreign exchange rates, or prevent loss if the prices of these securities should decline. The performance of a Fund may be strongly influenced by movements in foreign exchange rates because currency positions held by a Fund may not correspond with the securities positions held. Although these transactions are intended to minimise the risk of loss due to a decline in the value of the hedged currency, they also limit any potential gain that might be realised should the value of the hedged currency increase. Forward currency transactions may also have the effect of reducing or enhancing a Fund's performance due to the difference between the exchange rate available on such transactions compared to the current (spot) exchange rate. Under normal market conditions this difference in exchange rates is mainly caused by the different short term interest rates applicable to the currency of the assets and the base currency of the Fund. Where the interest rate applying to the foreign currency is higher than that of the Fund's base currency, this can reduce the Fund's performance and vice-versa. This impact on performance is usually far less pronounced than the effect of fluctuations of exchange rates that the use of such transactions is intended to reduce, but the impact can be significant over time, particularly where there is a wide gap between the interest rates applicable to the two currencies. The precise matching of the relevant contract amounts and the value of the securities involved will not generally be possible because the future value of such securities will change as a consequence of market movements in the value of such securities between the date when the relevant contract is entered into and the date when it matures. Therefore, the successful execution of a hedging strategy which matches exactly the Prospectus for the AXA Distribution Investment ICVC, valid as at 17 December 2021 16 profile of the investments of any Fund cannot be assured. Furthermore, it may not be possible to hedge against generally anticipated exchange or interest rate fluctuations at a price sufficient to protect the Fund from the anticipated decline in value of its assets as a result of such fluctuations.

Liquidity Risk: under certain market conditions, it may be difficult to buy or sell investments for the Fund. For example, smaller company shares may trade infrequently and in small volumes and corporate and emerging market bonds may be affected by the demand in the market for such bonds carrying credit risk, particularly in times of significant market stress. As a result, it may not be possible to buy or sell such investments at a preferred time, close to the last market price quoted or in the volume desired. The ACD may be forced to buy or sell such investments as a consequence of Shareholders buying or selling Shares in the Fund. Depending on market conditions at the time, this could lead to a significant drop in the Fund's value.

Counterparty Risk: at any one time, a Fund may be exposed to the creditworthiness and stability of the counterparties to transactions entered into by the Fund (including derivative and stock lending and repo/reverse repo transactions). The Fund will be subject to the risk of the inability of its counterparties to perform its obligations under such transactions (default), whether due to insolvency, bankruptcy or other causes. In the event of the insolvency of a counterparty, the Fund might not be able to recover cash or assets of equivalent value, to that invested, in full. The Fund may receive assets or cash from the counterparty (collateral) to protect against any such adverse effect. Where relevant, a counterparty will forfeit its collateral if it defaults on the transaction with the Fund. However, if the collateral is in the form of securities, there is a risk that when it is sold, it will realise insufficient cash to settle the counterparty's debt to the cunterparty under a stock lending arrangement. In relation to stock lending arrangements, there is also the risk that while cash is recovered in the event of a default, the actual stock cannot be repurchased. Furthermore, to the extent that collateral is not present to cover part or all of the debt, a counterparty default may result in losses for the affected Fund. To assist in managing these types of risks, the ACD sets criteria around the types of eligible collateral a Fund may accept. Please see the paragraph entitled "Treatment of Collateral" in the "Investment and borrowing powers applicable to the Funds" section in Appendix II of this Prospectus for more information.



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AXA WF ACT Biodiversity Fund is a sub-fund of AXA World Funds. AXA WORLD FUNDS' registered office is 49, avenue J.F Kennedy L-1885 Luxembourg. The Company is registered under the number B. 63.116 at the "Registre de Commerce et des Sociétés" The Company is a Luxembourg SICAV UCITS IV approved by the CSSF and managed by AXA Funds Management, a société anonyme organized under the laws of Luxembourg with the Luxembourg Register Number B 32 223RC, and whose registered office is located at 49, Avenue J.F. Kennedy L-1885 Luxembourg.

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The product categorisation is provided based on the basis of the European Directive (EU) 2019/2088 on sustainability-related disclosures in the financial services sector ("SFDR Regulation"). The attention of each recipient is drawn to the fact that, as of today the SFDR related regulatory technical standards ("RTS") have not been finalized and remain subject to the approval and formal adoption by the European Commission and the European Parliament and Council. Furthermore there may be further guidance in relation to the interpretation of the SFDR Regulation. We are monitoring regulatory developments closely, and the product categorization shall be re-assessed and may evolve when the RTS and/or further guidance is published.



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