WWF White Paper

Sustainable Finance – Now or Never!

Frontrunner in the past, today midfield, tomorrow lagging – Switzerland needs better framework conditions

G20 Leaders' Communique Hangzhou Summit, 5 September 2016
«We believe efforts could be made to provide clear strategic policy signals and frameworks, promote voluntary principles for green finance, expand learning networks for capacity building, support the development of local green bond markets, promote international collaboration to facilitate cross-border investment in green bonds, encourage and facilitate knowledge sharing on environmental and financial risks, and improve the measurement of green finance activities and their impacts»

Paris Climate Agreement, Article 2.1 c.
This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:
[...] Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

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Disclaimer
This report was drafted primarily using material from sources external to WWF.

WWF
WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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Foreword by:

A word to readers, by:

Foreword by WWF

The transition to a more sustainable economy is a done deal internationally—and it is gaining speed. The Sustainable Development Goals (SDGs) are in the process of being implemented by the signatory countries and the Paris climate agreement was ratified in record time (effective since November 2016).

The individuals who continue to ignore reality and defend the self-interests of the old, fossil world are still out there. But even Donald Trump's rejection of the Paris climate agreement only had a very limited impact. In fact, in some cases this had the opposite effect: Shortly after Trump's announcement, the Chinese government cancelled plans to build 103 coal-fired power plants and resolved to invest an additional USD 360 billion in renewable energies by 2020. At the same time, European leaders blocked the United States' request to renegotiate the Paris climate agreement and Emmanuel Macron is attempting to lure climate researchers who have fallen out of favor in the USA to France.

The shift to a more sustainable, post-fossil economy is unstoppable and is progressing much faster than many realize. Who would have predicted only a short time ago that in April 2017, Tesla would be more valuable than General Motors? And who would have thought in 2009 that prices for photovoltaic installations would fall by over 80% in the next seven years?

The choice is ours: Either we bury our heads in the sand and adamantly oppose each and every move toward sustainability—or we accept this and actively use it for the benefit of society and to strengthen national competitiveness over the long term. However, this inevitably requires a discussion at political level as well. The regulatory framework must be both contemporary and forward-looking in order to support the economy and society during this transition. Only a broad-based coalition—far from the antiquated left–right model—will achieve real change, as it happened during the Energiestrategie 2050.

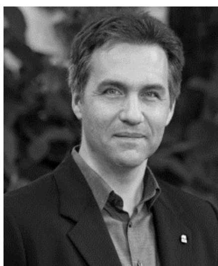
You might be asking what this has to do with the financial sector. But it is precisely this sector that will play a key role in the transition to a more sustainable economy. It is the bridge between investors and the real economy. In this way, financial service providers facilitate economic development and function as multipliers. They will make an important contribution to the transition—steering it either toward or away from a more sustainable economy.

Just as visionary Alfred Escher founded *Schweizerische Kreditanstalt* to finance the forward-looking Gotthard project and the construction of the railway—a cornerstone of Switzerland's economic success—today, too, we need long-term investment in the sustainable transition and the infrastructure required to achieve this. This investment volume cannot and should not be provided by the government alone. For banks, insurers, pension funds, asset managers and other financial market participants, and yes, even for the national bank, this opens up attractive investment opportunities. A financial system that promotes sustainable development (sustainable finance) offers enormous market potential for Switzerland as a financial center.

Unfortunately, sustainable finance is still relegated to a niche existence in Switzerland. That being said, better framework conditions could help this fast-growing sector to achieve a breakthrough, join the mainstream and offer the sluggish Swiss financial market a decisive competitive edge.

The financial sector and politics are now equally called upon to engage in dialog with each other, to dismantle barriers, as well as to define incentives and standards. The WWF would like to contribute and has developed seven specific policy recommendations that show where and how sustainable finance could be promoted in Switzerland.

For many years, Switzerland was famous for its innovative financial market players. We were proud to be pioneers. A culture of merely preserving structures and managing what is already there has since spread in many places. It is time to rediscover Alfred Escher's pioneering spirit—because money can shape the future!



Thomas Vellacott, CEO WWF Switzerland

Foreword by Forma Futura Invest AG

How do you want to be treated? What do you expect from other people? How do you treat others? You will know the answer by heart. The “Golden Rule” of practical ethics is simple and well-known: We should treat others as we would like others to treat ourselves.

If you apply this to your closer living environment (e.g. family, colleagues, neighbors) you would surely say that you strive to live in accordance to that rule – at least, as much as possible. Today it is not only our direct action but also our money’s impact that we are responsible for. What does that mean?

We live in a financial environment just as we live in a living environment – those two are interacting layers of our existence. Don’t we then also need clear rules describing our expectations in the financial environment, just as we do with our living environment? If you accept that your money is invested in a certain company, you accept and even support the company’s way of treating people, societies and the environment. But beware: the corporate reality can be quite the opposite of the Golden Rule. Child labour, modern slavery, overexploitation, climate change, fraud of societies by tax evasion – the list of misconducts is long. Although we do not want them to happen in our vicinity, they are virulent in our world day by day. However, it is often challenging to distinguish between right and wrong, between good and bad, between sustainable and not sustainable. Yet, just as in our living environment, if we strive to live by the Golden Rule we must endeavor, experience and improve our financial impact.

With our company’s 10-year history of profound experience in sustainable investing and together with other pioneers in this sector, we have consolidated knowledge at hand, showing that it is possible to transfer our everyday responsibility from our living environment to our money’s impact.

The WWF White Paper on Sustainable Finance aims to accelerate this process: to reflect and to discuss our expectations, our responsibility and our opportunities. As long as most investors do not naturally consider the full impact of their investments, especially in terms of sustainability, improved framework conditions are needed to stimulate and speed up the transition towards sustainable investing. This transition is absolutely essential, and the WWF paper provides important and concrete measures. No need to wait – let us proceed!

Dr. Elimar Frank,
Deputy Head Sustainability Research Forma Futura Invest AG

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A word to readers, by Conser Invest and Sustainable Finance Geneva (SFG)

Responsible investing is gaining exposure in Switzerland and volumes are on the rise. The general public and institutional investors are coming round to the idea, amid mounting pressure – from the media, policyholders and society at large – for environmentally sound, socially responsible and ethical financial decision-making.

Institutional investors, and pension funds and foundations in particular, face a tough task – how to secure average market returns while at the same time demonstrating a proper commitment to ethics and sustainability.

In their quest for financial returns, investors often have little option but to turn to passive investing – broad portfolios that offer no guarantees around sustainability or adherence to international conventions. The prominent position that fossil fuel companies hold in conventional indices is a case in point. Yet by opting for these portfolios, investors are exposed to firms whose values and principles sit uneasily with their own, with real risks to return on equity in the long run.

It would appear, however, that attitudes are shifting, as some heavyweight institutional investors adopt longer-term investment strategies and develop formal sustainability policies.

Swiss pension funds would be well-advised to take the initiative and put in place credible sustainability policies now, rather than waiting for federal or cantonal legislation, sanctioning their inaction – like the Minder Initiative on executive pay – to force them into action.

Angela de Wolff, Founding Partner Conser Invest and Co-Founder Sustainable Finance Geneva

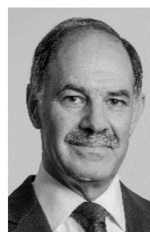
A word to readers, by Ethos

Investing in order to obtain not only a financial return, but to also realise an environmental and social performance becomes a requirement for more and more institutional investors. It is now recognized that investments can contribute to the respect of human rights and the preservation of the environment.

In view of its size, Switzerland's financial centre has the ability – and indeed a duty – to get financial market participants thinking about the environmental and social impact of their investments. Yet socially responsible investing remains on the fringes in Switzerland, despite various voluntary initiatives both here and abroad.

In this context, the WWF White Paper marks an important step forward in making a series of policy proposals to promote sustainable finance. There is an urgent need to act. Self-regulation cannot function unless a basic legal framework is in place. The Federal Council and Parliament must therefore take steps to encourage investors and firms to act in a responsible manner with regard to the environment and society.

It rests with our institutions to map out a strategic vision that looks far into the future and safe-guards the well-being of generations to come. The seven proposals in WWF's White Paper make us aware of our responsibilities. Each and every one of us – pension funds, insurance companies, investment funds, the Swiss National Bank and the Financial Market Supervisory Authority – has a part to play in shaping a financial centre that places responsibility and sustainability at the core. It is via our investments that we build tomorrow's world!



Dr. Dominique Biedermann, Chairman of the Board Ethos

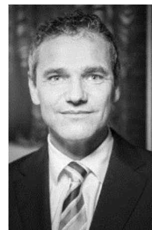
A word to readers, by RepRisk AG

In my role as CEO of RepRisk, I have witnessed the development of sustainable finance in Switzerland over the last years. In the 1990s, Swiss asset managers were pioneers launching the first eco- and socially responsible funds as well as the Dow Jones Sustainability Index (DJSI) series. Switzerland was again at the center of innovation at the beginning of the 2000s when microfinance funds took off. Both achievements reflected changing sentiment in society – and were due to efforts from the Swiss private sector with support from governmental and supranational bodies.

Yet, foreign competitors have caught up over the last ten years. One of the reasons for this might be that ESG regulation in other countries is more stringent. The “wait-and-see” strategy that Switzerland has successfully followed in many areas might put the finance industry at a disadvantage when it comes to sustainable finance, while Switzerland is one of the fastest adopters in other areas such as the banking regulation Basel III.

Lately, Swiss banks were under pressure regarding white money and controversial products. They were sometimes perceived as less trustworthy or even of questionable ethics. As a result, many of the important banking players did not feel comfortable positioning themselves prominently with respect to offering sustainable financial products.

However, recent high-level appointments make me feel optimistic that this is changing and that today, the financial industry feels the desire and need to engage ethically and benefit from increasing client demand in ESG integration and from the trend to responsible business conduct.



Dr. Philipp Aeby,
CEO RepRisk AG

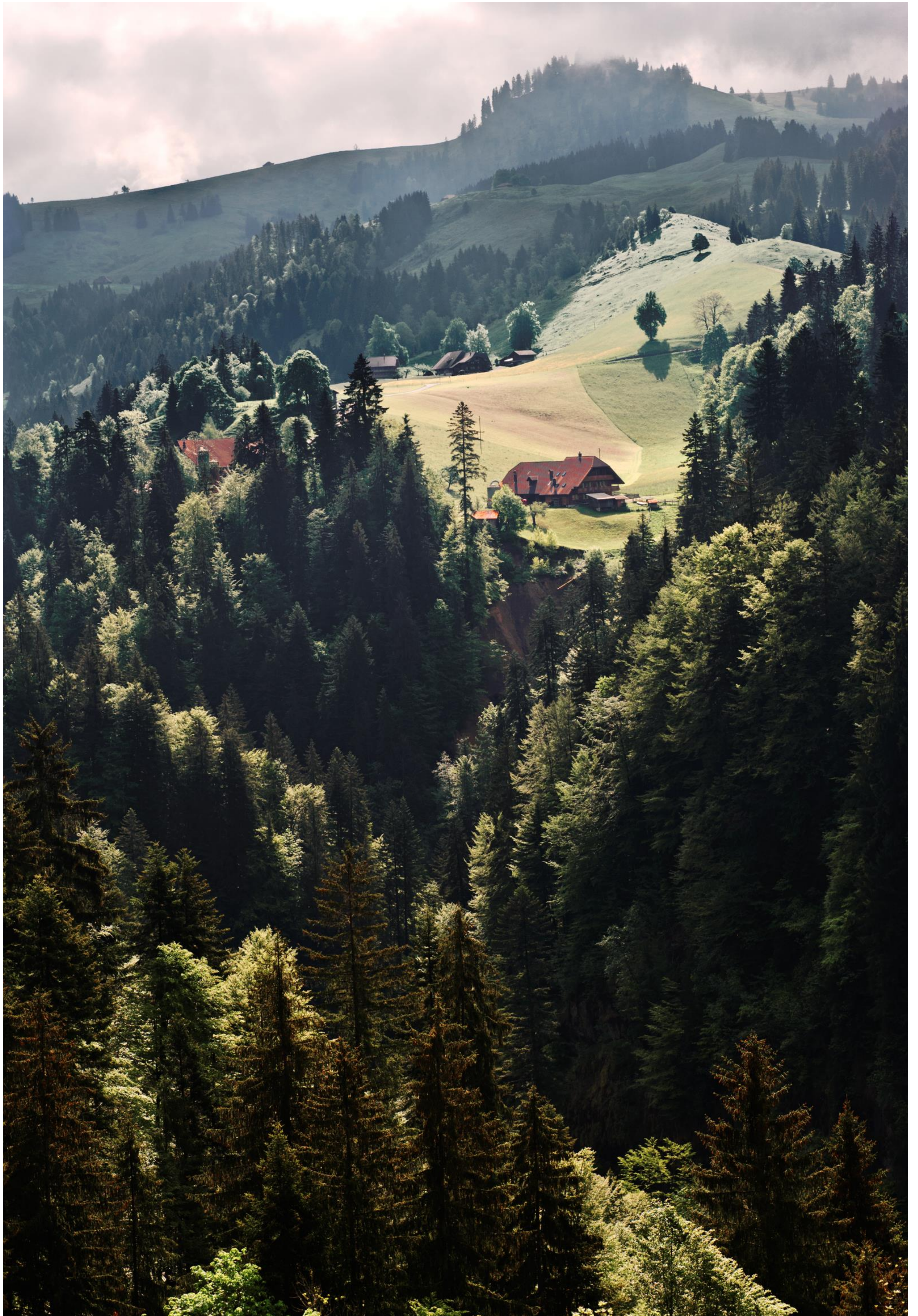
A word to readers, by Swiss Sustainable Finance

Everybody knows that money makes the world go round. That is why many actors understand that financial flows can also contribute to achieving the goals of sustainable development. The growing number of governments and organizations that establish standards, change framework conditions and create incentives for increased sustainability in the financial sector is impressive. The reports by the Task Force on Climate-Related Financial Disclosures (TCFD) and the European Commission’s High Level Expert Group on Sustainable Finance are just two current examples of the dynamic changes in this area. In addition, the large number of investor initiatives (i.e. those aiming to reduce climate change risks in investment portfolios) clearly illustrate that sustainability issues are now recognized as being relevant in the field of finance.

At the same time, the financial system is highly complex and measures that change financial flows must be well thought through, and their effects carefully analyzed. For this reason, broad discussions about the advantages and disadvantages must take place before adapting laws or regulations and amending taxes for certain activities.

Switzerland is historically seen as a pioneer in the field of sustainable investment. According to opinion leaders, recent developments signal that other financial centers are occupying the field and – thanks to targeted initiatives – are developing core competencies in sustainable finance. These claims cannot be ignored, even if, in many cases, concrete activities are yet to be seen. Here in Switzerland, policymakers will only be able to draw the right conclusions and make the right decisions if we also hold an active debate about the advantages and disadvantages of various measures to promote sustainable finance. This WWF White Paper provides a valuable basis for an informed discussion of the issue.

Sabine Döbeli,
CEO Swiss Sustainable Finance



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Executive Summary

Sustainable finance entered mainstream policy discussions and agendas in September 2016, when the G20 cited it in its official Communiqué as a relevant and important policy field. Sustainable finance is therefore set to become the “new normal.” According to recent publications by the Swiss Finance Institute (SFI)[1] and the Federal Office for the Environment (FOEN),[2] Switzerland’s financial sector is lagging behind its international peers when it comes to integrating sustainability considerations into financial practice.

Based on this background, this paper intends to compare the sustainable finance activities in Switzerland to the ones by its international peers. Therefore, the analysis juxtaposes the sustainable finance activities of governmental institutions, private sector initiatives, and civil society organizations. It finds that there is little difference between market actors and civil society organizations in how they approach sustainable finance in Switzerland and abroad. The major exception is that Switzerland lacks effective framework conditions that encourage sustainable finance. In particular, there is a lack of incentives and support provided to the Swiss National Bank, pension funds, insurers, and Switzerland’s financial market regulator for embedding sustainability thinking into their core business. Instead of fostering an enabling environment, Swiss governmental institutions, for example the financial supervisor or the Swiss Parliament, are following a “wait-and-see” strategy based on voluntary measures, expecting industry-led change.[3] A coherent sustainable finance policy, however, based on a more proactive Swiss governmental stance would deliver three benefits for Switzerland:

a) **Re-igniting growth in the Swiss financial sector.** Considering the increasing global demand for sustainable finance products and services, there is significant growth potential that the Swiss financial sector could tap into, but currently fails to do. Particularly promising are recent developments in green fintech.

b) **Strengthening the competitiveness of the Swiss financial sector.** With relatively few additional efforts, the Swiss financial sector could leverage its existing reputation as one of the world’s leading financial centres and its large talent pool for becoming a leader in sustainable finance. Considering the popularity of the topic among many investors, such a realignment could bolster Switzerland’s international reputation overall and hence further strengthen the competitiveness of the Swiss financial sector.

c) **Facilitate sustainable development.** Sustainable finance can reduce the negative environmental and social impacts of the financial and economic system and foster specific positive developments. Done in a strategic manner, this could allow Switzerland to effectively meet its international commitments such as those under the Sustainable Development Goals and the Paris Climate Agreement at a faster pace.

To encourage the governmental institutions to take advantage of these opportunities by creating effective framework conditions, politicians should actively discuss and potentially implement measures that give governmental institutions a mandate to proactively encourage sustainable finance. WWF Switzerland is convinced that the following policy recommendations could have the greatest potential to effect change.

1. The Federal Council establishes an Advisory Committee on Swiss Sustainable Finance Policy whose mission would be to comment on current challenges and trends and issue recommendations as appropriate.
2. The Federal Council and the Swiss Parliament set lean, smart minimum standards for medium- and large-sized companies on the compulsory disclosure of environmental, social, and governance (ESG) factors that could have a material impact on financial stability, and should ensure their implementation.
3. The Federal Council and the Swiss Parliament determine that the fiduciary duty of institutional investors to integrate ESG criteria into all their investment decisions is a legally binding obligation.

4. The Federal Council and the Swiss Parliament require the Swiss Financial Market Supervisory Authority (FINMA) to regularly measure and publish the impact of climate change risks on financial stability. FINMA decides on any measures needed to reduce climate change risks.
5. The Federal Council and the Swiss Parliament require the Swiss National Bank (SNB) to regularly evaluate, disclose, and – if appropriate – reduce the climate change impact of its investments, to comply with national and international goals.
6. The Federal Council and the Swiss Parliament require all Swiss institutional investors, such as pension funds and insurers, to regularly measure, disclose, and reduce climate change risks, and to perform due diligence in respect of ESG (environmental, social and governance) risk exposures in their investments.
7. The Federal Council and the Swiss Parliament adapt the framework conditions for financial intermediaries in order to channel financial flows into investment instruments and products offering environmental and/or social added value and make them financially more attractive.

These seven policy recommendations on better framework conditions for sustainable finance are designed to trigger a pragmatic, public debate. Thus, WWF Switzerland calls on the politicians to act and provide the mandate for better framework conditions requiring, encouraging and effectively implementing sustainable finance. Now is the right time to do this: with the complete revision of the CO_2 Act, the revision of the Code of Obligations, and the Pensions 2020 reform package, the national political agenda now offers several starting points for a more in-depth debate on sustainable finance. This would be an important first step towards a sustainable world – even if the road there is still a long one.

I. Introduction

Considering the importance of sustainable finance for sustainable development, its considerable business potential and comparing the position of Switzerland in this sector to its international peers, the following question arises: how could Switzerland catch up and (again) become a front-runner in sustainable finance? This paper aims to contribute to the ongoing debate on sustainable finance in Switzerland by suggesting an alternative narrative. Furthermore WWF proposes a set of practical recommendations to bridge the gap between Switzerland and international frontrunners, and encourages politicians and decision-makers to further develop these ideas and strive to implement them.

This paper is structured as follows: Section 2 highlights the policy relevance of sustainable finance; Section 3 outlines the sustainable finance activities of Swiss governmental institutions; Section 4 compares those activities with international ones and emphasises the differences; Section 5 outlines the reasons why effective framework conditions are necessary for sustainable finance and explores the specific benefits; and Section 6 outlines concrete policy recommendations and specific measures.

II. The International Policy Context: The Rising Importance of Sustainable Finance

Sustainable development is considered the most pressing challenge of the 21st century. And the associated issues – such as climate change, the migration crisis, human rights violations, and economic stagnation – are the biggest threats to humanity (World Economic Forum).[4] These problems, and the recognition of an urgency to act, have gained significant momentum in recent years.

Several studies have found concurring evidence that effectively implementing the Sustainable Development Goals (SDGs)[5] and the Paris Agreement on Climate Change would cost about USD 90 trillion over the next 15 years.[6] This exceeds the amount that governments globally can pay, especially considering the effects of economic stagnation and multiple financial, political, and economic crises over the last ten years as well as austerity policies and budget cuts. It is therefore no surprise that several intergovernmental conferences in 2015[7] stressed the need for the private sector to contribute to the funding of these goals.

In this context the financial sectors contribution to sustainable development is increasingly discussed.[8] The positive and negative social and environmental impacts of the financial sector's lending and investment decisions[9] became central to the global sustainable development agenda in 2015 and 2016. These come on top of the well-established effects of the financial sector's business decisions on economic growth and stagnation (see the Stiglitz report[10] on the 2007–2008 financial crisis).

A compelling example is the impact that Switzerland's financial industry has had on climate change. As of end-2013, the capital invested in the equity fund market in Switzerland financed 52.2 million tonnes of CO_2eq globally, which is equal to Switzerland's total domestic GHG emissions[11] in 2013.[12] Furthermore, the Swiss NGO Klima-Allianz estimates that the Swiss financial sector as a whole finances 1,100 million tonnes of CO_2eq (or 22 times the country's total domestic emissions). If the sector re-allocated its capital to more sustainable assets, it could be a driver of the transition to a low-carbon economy.[13] This is emphasized in Art. 2c[14] of the Paris Agreement, which states that financial flows need to be made "consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."

Even though it is not a new topic, sustainable finance (see Appendix 1) clearly attracted much more attention in 2016 in Switzerland than in previous years. Key organisations such as the Federal Office for the Environment (FOEN) and the Swiss Finance Institute (SFI)[15] have noted that Switzerland's sustainable finance practices currently lag behind international practice, even though Switzerland had been a frontrunner in the 1990s. The FOEN and SFI reports concluded that this gap needs to be filled by greater commitment on the part of private-sector players. However, the literature indicates that multi-governance approaches, going beyond the private sector, engaging also governmental institutions and civil society actors, are required to overcome complex problems such as creating and fostering a sustainable financial

sector.[16] So the sole commitment and action of market players is not enough. **A necessary precondition for the effective implementation of a sustainable financial sector is the interaction, collaboration, and cooperation of governmental institutions, private-sector entities, and civil-society institutions towards this goal.**

III. Sustainable Finance Policy in Switzerland

Switzerland was one of the frontrunners of sustainable finance in the 1990s.[17] Innovative Swiss firms such as Sustainable Asset Management (today RobecoSAM) or Forma Futura Invest AG were part of the first asset managers offering only sustainable investment products. UBS and Credit Suisse were among the first major commercial banks to include environmental risks in its credit risk assessments. responsAbility Investments AG, BlueOrchard, and Symbiotics SA were some of the building blocks of the microfinance industry worldwide, Ethos was established to encourage active ownership of asset owners, and Globalance was one of the first sustainable private banks globally. **Despite being a frontrunner in the past, recent research by SFI[18] and FOEN[19] found that Switzerland has lost its pioneering role to its international peers.**

Sustainable development figures very prominently in the Swiss Constitution (Articles 2 and 73).[20] However, governmental and political institutions have only recently begun to consider sustainable finance a relevant topic.

Within Switzerland's national legislation, there is currently no law that addresses the direct and indirect environmental impacts of the financial sector. However, in recent laws some social and governance impacts of financial sector actors were addressed. For example, the Minder initiative, approved by Swiss voters in 2013, extended shareholder rights and gave them decision-making power over executive pay.[21] Another example is the Federal Act on War Material, amended in 2013, which requires norm-based screening for certain types of weapons (e.g., cluster bombs) as a minimum standard for the direct and indirect financing of such weapons. After the financial crisis 2007/2008, laws that aimed at minimising the negative economic impacts of the financial system attracted the most attention, such as Basel III[22] and the recently passed FinfraG,[23] FIDLEG,[24] and FINIG.[25] Within these laws wider sustainability factors, particularly environmental impacts, are not considered, except for some governance issues.

The political commitment to sustainable finance, is limited to several parliamentary motions. Those filed by Susanne Leutenegger Oberholzer,[26] Adèle Thorens Goumaz,[27] and Luc Recordon[28] show that policymakers are taking an increasingly closer look at the financial sector's role in encouraging sustainable development. The specific issue of investments in fossil-fuel companies has been taken up by 20 parliamentary motions since March 2014.[29] A few popular initiatives in the country have focused on specific issues related to sustainable finance, such as an initiative aiming to ban speculation on food commodities,[30] or the *Vollgeldinitiative.*[31]

On 24 February 2016,[32] the Federal Council stated that sustainable finance is an important part of its long-term vision and set out principles for Switzerland's position. This position was further strengthened by the Federal Council's new financial market strategy (year 2016), which highlights sustainable finance as one of the main areas of innovation for the financial sector.[33] Finally, a press release issued by the Federal Council in March 2017 described the progress made on sustainable finance and emphasised the importance of the issue.

The most active organisation in shaping the debate on sustainable finance at the governmental level is the Federal Administration with its different Departments. The Federal Office for the Environment (FOEN), which sits within the Federal Department of the Environment, Transport, Energy, and Communications, has been quite active, looking mainly at the environmental impacts of the financial sector; it published a "Roadmap Towards a Sustainable Swiss Financial System"[34] in 2016. Initially, the FOEN participated in the UNEP Inquiry into the Design of a Sustainable Financial System and issued a report titled "Swiss Team Input into the UNEP Inquiry" in 2015.[35] In 2015, the FOEN analysed the climate risks and domestic GHG emissions arising from equity fund investments,[36] and in 2016 did research on the performance of low carbon funds versus their non-sustainable peers.[37] Most recently, the FOEN invited all pension funds and insurers to run the

2-Degree-Initiative analytical software on their portfolios. The purpose is to establish whether these portfolios are 2-degree compatible. The FOEN has also started incorporating sustainable finance considerations into its policies, such as a new action plan on the "green economy" (Measure 6c) in 2016[38] and a revision to the CO_2 law (Point 6.9).[39] The Federal Office for Spatial Development has not taken specific sustainable finance measures, but did list sustainable finance as one of the goals of the new "Swiss Sustainable Development Strategy" in effect since 2016.[40] The Federal Department of Finance, and more specifically the State Secretariat for International Financial Matters, participated in the G20's Green Finance Study Group in 2016, and held an event on environmental risks in the financial sector in May 2016. In October 2016, the Federal Department of Finance issued a new financial market strategy that spells out five levers of change – and sustainable finance is one of the core elements of the innovation lever. Sustainable finance is presented as an opportunity for the financial sector. The State Secretariat for Economic Affairs (SECO), within the Federal Department of Economic Affairs, Education, and Research, was recently involved in the launch of a new fund with Symbiotics and UBS. SECO took on the first-loss tranche of the fund, thereby aiming to de-risk the investment and leverage private-sector funds.[41] SECO was also one of the main investors in the Natural Capital Finance Alliance (formerly NCD), which aims to demonstrate the relevance of natural capital for financial intermediaries.[42] However, SECO's corporate social responsibility position paper[43] and action plan do not focus on sustainable finance. Lastly, the Swiss National Bank mentions in its investment rules that it abstains from investing in assets that have "very high negative environmental and human rights impacts."

In comparison with the Federal level, there are fewer initiatives at the cantonal and municipal level. However, three cantons – Fribourg, Geneva, and Vaud – have interesting laws requiring their cantonal pension funds to incorporate ESG issues into their investment policies.2016 saw a growing number of parliamentary motions and postulates at the cantonal and municipal level. For example, members of parliament in the cantons of Schaffhausen, Basel-Stadt, Zurich, and Fribourg requested the mandatory divestment of public-sector institutions from fossil-fuel companies.[44] The canton of Bern is considering launching a social impact bond.[45] Finally, several municipalities have been taking an active stance against the issue of investments in weapons manufacturers.[46]

In summary, Swiss governmental institutions are being driven by the advocacy measures of the FOEN and to a lesser extent the SIF, and the Federal Council. Political activities regarding sustainable finance remain at an exploratory level, trying to evaluate whether the financial sector has an impact on sustainability. **Thus Switzerland's governmental institutions have not yet received the far-reaching political mandate to request, encourage and effectively implement sustainable finance.**

IV. A Comparison Between Swiss and Other National Policy Initiatives on Sustainable Finance

A recent study by PRI (formerly the UN Principles for Responsible Investment) indicates that in the world's 50 largest economies, almost 300 policy instruments encourage investors to consider ESG factors.[47] Over half of these were introduced in the last three years. Comparing Swiss governmental actions to those of its international peers, WWF Switzerland found six main differences:

- **Switzerland lacks thought leaders advocating for sustainable finance.** High-profile individuals such as Mark Carney (Governor of the Bank of England),[48] Henry Paulson (former United States Secretary of the Treasury),[49] Michael Bloomberg (former Mayor of New York City and current CEO of Bloomberg L.P.), Peter Thomson (new President of the UN General Assembly), Jean-Claude Juncker (President of the European Commission), and Valdis Dombrovskis (European Commissioner for Financial Services) have all actively championed sustainable finance over the past few years. Switzerland lacks such thought leaders, of the mainstream financial sector, driving the debate around sustainable finance.

- **Swiss regulators do not require private-sector companies and investors to regularly disclosing their ESG impacts.** The EU Directive on Non-Financial Reporting (2014/95/EC)50 requires EU companies with more than 500 employees to report on social, environmental, and governance factors. This gives financial intermediaries the necessary sustainability information for their investment and lending decisions. The EU's capital market reform aims to develop guidelines for companies to report on ESG issues to investors. France requires all institutional investors to disclose the climate emissions of their investments. In contrast, Switzerland does not require an all-encompassing ESG reporting for companies in general or for investors in particular. The FOEN noted in a recent study that only 132 of Switzerland's 500 largest companies have a sustainability reporting scheme in place. This lack of information makes it difficult for investors to take well-informed, effective decisions on the sustainability of their investee companies.

- **International central banks take up sustainability issues – particularly focusing on climate change.** Central banks have different goals depending on their home country, either focusing on price stability and/or actively encouraging economic growth. There is an emerging consensus internationally that climate change could have major impacts on carbon-intensive assets and potentially reduce their value in the future – making them "stranded assets." Thus, some central banks of European Union member states (amongst others Sweden, German, England) are considering climate stress tests to determine to what extent a devaluation of carbon-intensive assets could lead to a financial crisis. Particular efforts have been undertaken by the Bank of England as well as the Dutch, Swedish, and German central banks. In the United Kingdom, the Bank of England's regulatory mandate was linked to climate change in 2012, and the Dutch central bank (DNB) examined the exposure of the country's financial sector to climate risks in 2014.51 Some central banks also focus on the opportunity side and aim to encourage sustainable investment. The EU's capital market reform forced the European Investment Bank to increase the availability of green funds by earmarking at least 20% of the EU's 2014–2020 climate action budget. In Switzerland, however, there is no law or incentive requiring the SNB to reduce climate risks or to encourage climate mitigation and/or adaptation measures. A recent study by Artisans de la Transition revealed the substantial investments that the SNB has in fossil fuel companies. The SNB's US equity investments, which account for 10% of its assets, are responsible for CO2 emissions of nearly the same amount as Switzerland's in 2013. The SNB has no policy on the management of climate risks and does not intend to run climate stress tests in the near future. With over CHF 600 billion in assets under management, the SNB has become one of the biggest investors in the world. Adjusting its own investment policies would therefore result in potentially significant positive environmental and social impacts. Furthermore, in leading by example, the SNB would likely prompt similar action by the financial sector and could thus be a great lever.

- **International governments require pension funds to include sustainability considerations in their investment processes – focusing in particular on climate risks.** Pension funds and insurers are the institutions that hold the largest share of assets within the financial system. Thus, shifting investments towards sustainable assets could have major leveraging effects on other industries. The EU's IORP II Directive requires all pension funds to incorporate environmental and social factors into their investment decisions (the Directive was issued in December 2016 and entered into force in January 2017). Similarly, the UK's Sustainable Investment Pension Disclosure Act and France's Fonds de Réserve pour les retraites encourage the disclosure and reporting of ESG issues by pension funds. In contrast, Switzerland's governmental institutions focus less on transparency and disclosure requirements for pension funds, but try to encourage the provision of tools and instruments to measure climate-risk exposure (such as those provided by the FOEN). A WWF study52 found that despite the increasing uptake of sustainability issues by pension funds, the level of implementation remains low.

- **International governments require insurers to include sustainability considerations in their investment processes – focusing in particular on climate risks.** Climate change that results in the warming of the planet by 2° Celsius or more could arguably lead to an "uninsurable" world with major impacts on their core business. Thus, insurers are at the forefront of advocating for keeping climate change

to a minimum. Insurers in the US and Europe have been urging governments to help them account for climate change in their business decisions. The US National Association of Insurance Commissioners (NAIC) has adopted the mandatory disclosure of financial risks linked to climate change.53 In early 2016, Dave Jones, the California Insurance Commissioner, introduced the Climate Risk Carbon Initiative that aims to evaluate the degree to which California's insurers might be impacted by climate change.54 The European Supervisory Authorities (ESA) aims to introduce a set of minimum environmental and social objectives for packaged retail investment and insurance products (EOS PRIIPs).55 In Switzerland, on the other hand, despite active advocacy by the Swiss Insurance Association, no similar initiative has been implemented.

- **The Swiss financial market regulator does not measure climate risks and their impacts on financial market stability, and does not run climate stress tests.** The Financial Stability Board (FSB) has been very active in making financial markets less vulnerable to the financial stability risks related to "too-big-to-fail." Recently, it has also started to focus on the links between environmental and financial risks and the associated potential disruption to financial market stability. Financial regulators are thereby essential in defining the concept of "risks." Sweden's Financial Supervisory Authority studied the link between climate change and financial stability in 2015, and in France, a new energy transition law requires regular climate stress tests of its financial sector.56 In Switzerland, the FOEN published a report on the carbon risks of the Swiss financial sector.57 Despite this awareness-raising, the Swiss Financial Market Supervisory Authority (FINMA) has so far not focused on the financial stability risks of climate change. In the new financial market policy, of the Federal Council, issued in the fall of 2016, climate change and sustainable finance are considered as "opportunities," while the "risk" aspect of sustainability issues is less prominently discussed.

In conclusion, there is little difference between Swiss and international market players as well as civil society actors in how they approach sustainable finance (see Appendix 2 and 3). **The major difference between Switzerland and its international peers: Switzerland lacks effective framework conditions that encourage a sustainability-oriented financial sector and ensure its effective implementation**. While the financial sectors of many countries outside Switzerland are taking a proactive role towards sustainable finance, the "Swiss way" can be characterized as passive and reactive. This was confirmed in a WWF study[58] on financial market regulations and in a Swiss Finance Institute analysis that gives an overview of Switzerland's sustainable finance market.[59] The lack of effective framework conditions driven by proactive governmental institutions could explain why the Swiss financial sector seems to be lagging behind its international peers. Furthermore, a recent study by Bank J. Safra Sarasin indicates that countries with strong regulatory requirements might also have larger shares of assets that are managed sustainably. **WWF Switzerland believes that the necessary framework conditions are currently missing, as the Swiss governmental institutions are not proactive enough about encouraging a sustainability-oriented financial sector, which is due to a lack of the necessary political mandate.** This is worrisome for Switzerland, since sustainable finance delivers an array of benefits for its the economic, social, and environmental development.

V. Creating Conducive Framework Conditions for Sustainable Finance in Switzerland: Rationale and Potential Benefits

Switzerland is generally regarded as a liberal country. There is widespread scepticism regarding state intervention. However, governmental institutions perform important functions in a liberal order, provided that they orient their actions to contribute to the following goals: enabling markets to function, creating stability, assuring the prosperity of current and future generations, setting expectations and incentives, and effectively implementing the goals and objectives the population sets for itself. Section 5.1 explains why Swiss governmental institutions need to act to encourage sustainable finance, and Section 5.2 provides an overview of the concrete benefits that sustainable finance can offer the Swiss financial marketplace.

V.A) Reasons for proactive government encouragement of conducive framework conditions

First, government action is necessary in case of market failures and the lack of a level playing field for all market players. For sustainable finance to become mainstream in Switzerland, the market requires common rules applicable to all as well as clear, coherent goals and objectives supported by clear incentive structures. This paper argues that in Switzerland, the current institutional framework favours financial actors that are not sustainability-oriented over those who are.

- Market failures. Financial markets rarely internalise the negative environmental and social impacts that result from certain financial decisions. This creates distortions in pricing and a lack of incentives to account for the social and environmental externalities of financial products and services. Furthermore, efficient markets are characterised by "full and complete information." Most financial products and services, however, do not transparently price their social and environmental costs and/or benefits to consumers. Consumers and financial sectors players can therefore rarely take fully informed decisions. This is due to the difficulty for actors of the financial sector obtain the necessary social and environmental data in a reliable, comparable, and standardised form. Those financial institutions that choose to account for environmental and social aspects do so at great cost and with low certainty on the quality of the corresponding data.
- One-sided framework conditions. This is particularly interesting for pension funds and insurers which are heavily regulated in Switzerland, given their responsibility for safeguarding the social security of future generations. As a result, their scope of action is more restricted than that of other financial actors. A recent WWF study on pension funds cites this strict regulation as one of the main barriers to the inclusion of sustainability factors into their investment processes. While the laws and incentive structures currently in place do not directly hinder the investment in sustainable finance products and services, they do not support or encourage investment into such products. Another barrier cited by the report is the limited definition of fiduciary duty given in the *Obligationenrecht.* This definition does not consider the reduction of environmental and social risks as an integral part of fiduciary duty, and neither do the Basel III and Solvency II frameworks.

Second, internationally, sustainable finance is becoming the "new normal" (see Appendix 3 and 4) and the corresponding standards are being increasingly transposed into national regulations. Thus, there is a growing pressure for Switzerland to adopt international standards and regulations. The EU Directive on Non-Financial Reporting, the French requirement for institutional investors to report their ESG impacts, and the new EU IORP II Directive requesting pension funds to report their ESG impacts are only a few examples showing that sustainability is no longer just a "nice-to-have" for companies but a mandatory requirement in many European countries. Despite the active involvement of Swiss market players in the development of the TCFD guidelines, Swiss governmental institutions are not encouraging its uptake and dissemination within Switzerland. If the TCFD guidelines become an international norm and are required by other countries, Swiss companies will most certainly have to follow them as well. As the Swiss government is currently not encouraging the uptake of the TCFD guidelines, companies could face significant costs to implement them to comply with international "soft" or "hard" laws. The same holds for the OECD Guidelines for Multinational Entreprises for asset owner.

The longer the Swiss government does not require the implementation of such minimum sustainable finance standards in line with international developments, the more pronounced the risk will be of falling behind. This could have the following consequences:

- Reputational risks for the Swiss financial sector. The Swiss government's reluctance to take a proactive stance and create conducive framework conditions has had significant negative impacts on its financial sector in the past (e.g., the automatic exchange of information). Switzerland's financial sector is one of the most important ones in the world. Thus it will always be an "easy campaign target" for civil society and countries with competing

financial centres. Switzerland stands to lose if it remains passive.

- Losing access to international markets and a "level playing field." The Swiss financial sector has been at the forefront of innovation in the past (see Appendix 2). However, due to a lack of conducive framework conditions, Switzerland risks losing this position – at least with respect to sustainable finance. Some countries integrated sustainability considerations into their regulatory and political framework conditions (as discussed in Section 4). This trend towards formalising such considerations in law and policies is likely to increase further in the coming years. Therefore, if Switzerland wants to create a level playing field for its market players, it needs to start including sustainable finance considerations in its policies and regulations.

Third, with the adoption of the Sustainable Development Goals, the global community aims to bring that the global economy in line with our planetary resources and services. Switzerland is asked to implement these goals. Its contribution to this effort hinges upon the contribution of its financial sector as one of the epicentres of our economy today. If the financial sector choses and is encouraged to support sustainable development in Switzerland and worldwide, the probability of achieving the SDGs or the objectives of the Paris Agreement will be significantly increased.

A country's governmental institutions define what is the "norm." **If governmental institutions take a proactive stance on sustainable finance and set clear standards through their policies and regulations, they can lead to a "race-to-the-top" to a fully sustainable financial centre offering several benefits.** Therefore, governmental institutions need a political mandate enabling them to take on this proactive role.

V.B) Benefits of a coherent sustainable finance policy driven by proactive Swiss governmental institutions setting effective framework conditions

A coherent sustainable finance policy linked to proactive governmental institutions is needed in Switzerland, as it would deliver triple benefits:

a) Re-igniting growth in the Swiss financial sector

Global demand for sustainable finance products and services has been growing steadily over recent years. Younger generations and women in particular are requesting those: In Switzerland, the share of sustainable investments has grown significantly and steadily over the last ten years. In 2016, about CHF 266 billion of assets could be considered sustainably invested – totalling about 7% of all assets under management in the Swiss fund market.[60] The growth potential is enormous, and it could be tapped into by the financial players already active in the field.

Several academic studies have shown that sustainable finance products and services often have better risk-return profiles[61] and could thereby contribute to much-needed new revenue sources that the Swiss financial sector has been trying to generate since the 2007–2008 financial crisis. As Mark Carney[62] and Lord Stern[63] have pointed out, transitioning to a truly sustainable economy offers significant growth opportunities. This is best reflected in the need for investment in sustainable infrastructure (e.g., housing and mobility) and renewable energy. Investments in these fields can have competitive return profiles comparable to traditionally planned infrastructure, so incentivising such investments can be economically attractive.

Furthermore, a more sustainability-oriented financial sector could reduce financial risks at both the macro-economic and company-specific levels, since it would avoid the potential risks posed by, for instance, climate change. For example, regulations combatting climate change (e.g. carbon pricing) could impact the business model and negatively affect the valuation of fossil fuel assets. This could potentially create so called "stranded assets"[64] The earlier the Swiss financial sector starts reducing its exposure to carbon risks, the lower the risk of financial instability resulting from climate change.

Innovative new business models can offer significant growth opportunities. Green Fintech is an example of how technology can drive the development of new products and services with a positive sustainability impact, and generate new revenue sources as well.

b) Strengthening the competitiveness of the Swiss financial sector

Switzerland is well placed for becoming for a leader in sustainable finance. The country's financial sector already has a well-established infrastructure and reputation, and it boasts a large talent pool. A conscious, strategic refocus could bolster Switzerland's international reputation overall and hence further strengthen Swiss competitiveness.

This is particularly important as evidence mounts that the Swiss financial sector needs to be revitalised after a decade of decreasing profits, the loss of Swiss banking secrecy, the persistent low-interest-rate environment, the ongoing legal disputes, and the high value of the Swiss franc. In the aftermath of the 2007/2008 financial crisis, Switzerland opted for a "clean money strategy" focusing on the liabilities side of the balance sheet and reducing the reputational risk linked to the owners of the assets. This reactive approach resulted in the automatic uptake of several international laws and standards – a painful experience. A "sustainable money strategy" should also take into account the assets side of the balance sheet (where money is invested and to whom it is lent). That would minimise reputational risk and generate new revenue sources – thereby creating a new competitive advantage. Switzerland could choose a positive approach to finance, stating that it only intends to finance projects and companies with proven environmental and/or social benefits. **Not encouraging sustainable finance would be a wasted opportunity to strengthen the competitiveness and reputation of the Swiss financial sector.**

c) Facilitating sustainable development

Sustainable finance can manage the negative environmental and social externalities of the financial and economic system, and encourage specific positive impacts. Done in a strategic manner, this could allow Switzerland to effectively meet its international commitments such as those under the Sustainable Development Goals and the Paris Climate Agreement at a faster pace. If Swiss financial actors are incentivised to invest their money in line with the 2-degree or 1.5-degree goals, most portfolios could reduce their carbon footprint by over 50% in just a few years, according to a FOEN study.[65]

VI. Coherent Swiss Approach to Sustainable Finance: Policy Recommendations and Action Plan

The comparison of Swiss and international government organisations (see Section 4) revealed that Swiss governmental institutions are generally less proactive when it comes to encouraging the financial sector to act sustainably. For example, they provide less implementation support to companies, the Swiss National Bank, pension funds, insurers, and the Swiss Financial Market Supervisory Authority for implementing sustainable finance solutions. **Swiss governmental institutions can assume a proactive role and define effective framework conditions only if policymakers issue the corresponding mandates and assignments. This is therefore an appeal to policymakers to launch a debate on promoting sustainable finance and to discuss concrete measures.**

The following action areas and corresponding approaches are based on five main players (companies, the Swiss National Bank, pension funds, insurers, and the Financial Market Supervisory Authority – see Section 4), and call for more proactive involvement by Swiss governmental institutions. This will enable Switzerland to leverage the three benefits of sustainable finance (see Section 5). This paper's policy recommendations focus on the environmental component of sustainability. They reinforce each other and are guided by the following principles:

- **Exploiting financial sector leverage**. The Swiss financial sector manages ten times the volume (> CHF 6,000 billion) of the entire Swiss GDP (CHF 650 billion), and its influence on the growth of the real economy is correspondingly large. Additionally, the policy recommendations are focused on the largest and most influential financial market players. They are well placed to put sustainable finance on the political agenda and their decisions can influence smaller financial institutions;
- **Reinforcing political coherence at national level**. Financial market policy must respect and effectively support international and national objectives (e.g., the Paris Climate Agreement);
- **Creating transparency about the sustainability impact of financial actors and their sustainability risks**. The sustainability impact of investment and lending decisions by financial sector actors must be disclosed, measured, and reduced;
- **Establishing clear expectations from Swiss financial actors**. There are no binding rules in Switzerland governing sustainability reporting, there is no clear definition of climate change risks for financial intermediaries, there are no clear climate change and human rights goals for financial intermediaries, and there are no clear paths to mitigating the negative impact for financial intermediaries. This increases the relative costs for any financial institution that decides to confront the issue of sustainability.

Action area 1 – The Federal Council establishes an Advisory Committee on Swiss Sustainable Finance Policy whose mission would be to comment on current challenges and trends and issue recommendations as appropriate.

Goal orientation: The Federal Department of Finance established an "Advisory Committee on the Future of Switzerland as a Financial Centre" in 2015 on behalf of the Federal Council. Researchers, federal representatives, and academics come together regularly to discuss fundamental challenges and future prospects affecting Switzerland as a financial centre. However, sustainability – in the sense of the contribution of the financial centre to a more ecological, fairer world – is addressed only marginally in the topics covered by the advisory committee. In 2016, China established its Green Finance Study Group and the European Commission set up a High-Level Expert Group on Sustainable Finance. Both of these initiatives are aimed at developing a clear, rigorous sustainable finance strategy. A coherent Swiss policy therefore needs a clear direction, which such an advisory committee could encourage.

Potential approach:

- The Federal Council establishes an Advisory Committee on Swiss Sustainable Finance Policy, composed of financial market representatives, academics, government, and nongovernmental organisations, whose mission would be to comment on current challenges and trends and issue recommendations as appropriate.

Action area 2 - The Federal Council and the Swiss Parliament set lean, smart minimum standards for medium- and large-sized companies on the compulsory dis-closure of environmental, social, and governance (ESG) factors that could have a material impact on financial stability, and should ensure their implementation.

Goal orientation: financial intermediaries need cost-effective, reliable, and comparable data about the environmental impact of companies (similar to Directive 2014/95/EU Non-Financial Reporting), so that they can integrate this data effectively into their investment and financing decisions.

Potential approaches:

- The Federal Council calls for the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD) to be implemented by all medium- and large-sized companies in Switzerland starting in 2020.
- The Swiss Parliament introduces an obligation for medium-sized and large companies to disclose information about their sustainability impact. This obligation could be generally anchored in Title 32 of the Code of Obligations (Commercial Accounting and Financial Reporting) or in the following articles of the Code of Obligations: 958 (Financial reporting/I. Aim and constituent elements), 958c (Financial reporting/ III. Recognized financial reporting principles), 958e (Publication and inspection), and/or 959c (Notes to the accounts).
- The Federal Council sets minimum requirements for the disclosure of social and environmental factors by medium- and large-sized companies.[66] It might be necessary to amend the Accounting Records Regulation accordingly.

Action area 3 – The Federal Council and the Swiss Parliament determine that the fiduciary duty of institutional investors to integrate ESG criteria into all their investment decisions is a legally binding obligation.

Goal orientation: The Freshfields Bruckhaus Deringer Report 2005 was the first report to set out that investors may integrate ESG criteria into their investment decisions, and that this is also legally required ("clearly permissible and is arguably required"[67]). In 2015, the UNEP Inquiry published its report "Fiduciary Duty in the 21st Century," which demonstrates that non-inclusion of ESG aspects is a breach of fiduciary duty.

Potential approaches:

- Based on the report "Fiduciary Duty for the 21st Century," the Federal Council and the Swiss Parliament set out the fiduciary duty of Swiss pension funds and insurers. The Federal Council and the Swiss Parliament issue a declaration that sustainability should be automatically incorporated into all investment decisions, based on the potential negative financial impacts.
    - For pension funds, this could be embedded into the following legislation: Article 51a (Duties of the supreme governing body of the pension plan) of the Federal Act on Occupational Old-Age, Survivors', and Disability Pensions (BVG), Article 51b (Integrity and loyalty of responsible persons) paragraph 2 BVG[68], and/or Article 65 (Principle).[69]
    - The following legislation could be adapted for insurers: Article 1 (Subject and purpose), Article 22 (Risk management) of the Insurance Oversight Act and/or Article 111 (Risks in the valuation of securities), Article 97 (Risk Management/Documentation), and Article 98 (Operational risk) of the Insurance Oversight Regulation (AVO).[70]
- The Swiss Parliament require the adaptation and explanation of fiduciary duty in the context of the parliamentary debates relating to the Pensions 2020 reform package.

Action area 4 – The Federal Council and the Swiss Parliament require the Swiss Financial Market Supervisory Authority (FINMA) to regularly measure and publish the impact of climate change risks on financial stability. FINMA decides on any measures needed to reduce climate change risks.

Goal orientation: Both the Financial Stability Board[71] and the Bank of England[72] have pointed out that climate change risks can negatively impact financial stability because stranded assets[73] can trigger a carbon bubble.[74] A sudden and very rapid transformation to a low-carbon economy therefore poses a risk to financial stability. In order to ensure an orderly transition away from a carbon-intensive economy, reducing significant carbon risks to Switzerland as a financial centre should therefore start as quickly as possible (see the study by the European Systemic Risk Board).[75] Various EU countries are conducting carbon stress tests in this context. These are designed to establish the impact of the devaluation of carbon-intensive financial securities on financial stability.

Potential approaches:

- The Federal Council and/or the Swiss Parliament instruct the FINMA to include climate change risks in its analyses of financial stability, to measure them, and to take appropriate countermeasures to support financial stability. This could be based on the following legislation: Article 5 and Article 24 paragraph 2 of the Federal Act on the Swiss Financial Market Supervisory Authority.
- The Federal Council require the FINMA to regularly review the negative impact of climate change risks on financial stability in accordance with Articles 2 and 3 of the Financial Market Review Regulation, with a specific focus on individual Swiss institutions.

Action area 5 – The Federal Council and the Swiss Parliament require the Swiss National Bank (SNB) to regularly evaluate, disclose, and – if appropriate – reduce the climate change impact of its investments, to comply with national and international goals.

Goal orientation: At the end of 2015, the SNB held total assets of CHF 640 billion – almost as much as Swiss GDP (which stood at CHF 645 billion at end-2015). A recent study[76] published by Artisans de la Transition reveals that the SNB's US equity investments alone (CHF 61 billion, or 9% of the SNB's total assets[77]) emit 46.5 billion tonnes of CO2eq. These investments almost double Switzerland's total annual CO2 emissions. The goal should be to align the investments with its own policies and with national and international rules (e.g., the Paris Climate Agreement).

Potential approaches:

- The Federal Council require the SNB to implement its own investment policy guidelines effectively. See Investment Policy Guidelines, point 3.2 (equities):[78] "The SNB also avoids shares in companies which produce internationally banned weapons, seriously violate fundamental human rights or systematically cause severe environmental damage."
- The Swiss Parliament debate a revision of the Federal Act on the Swiss National Bank to require the regular disclosure and measurement of the climate change impact of the SNB's investments. This measure could be anchored in the following articles of the Swiss National Bank Act: Article 7 (Accountability and information) and/or Article 42 (Tasks of the Bank Council).

Action area 6 - The Federal Council and the Swiss Parliament require all Swiss institutional investors, such as pension funds and insurers, to regularly measure, disclose, and reduce climate change risks, and to perform due diligence in respect of ESG (environmenttal, social and goverance) risk exposures in their investments.

Goal orientation: Various studies (including one by the Swiss Finance Institute in 2016[79]) have shown that, by international standards, Swiss investors, pension funds, and insurers rarely factor climate change risks into their investment decisions. Climate change risks entail material financial risks, and companies that do not reflect them sufficiently clearly are exposing themselves to considerable financial losses. Global warming of more than 2 degrees Celsius could lead to an "uninsurable world."[80] For this reason, the Swiss Insurance Association (SIA) is proposing a 50% reduction in CO_2 emissions by all its members by 2030 (compared with 1990) and a 85% reduction by 2050 (along the entire value chain – see the SIA position paper on climate and energy[81]). Swiss insurers have total assets of approximately CHF 654 billion and pension funds hold around CHF 767 billion (2015 in both cases, when Swiss GDP was approximately CHF 650 billion), giving them considerable influence on the global economy. The government should enable Swiss investors to factor climate change risks into their decisions at a low cost so that they can safeguard their investments and comply with international goals such as the Paris Climate Agreement.

Potential approaches:

- The Federal Council or the Swiss Parliament require the regular disclosure of climate change risk exposures in the investments of pension funds and insurers.
    - The disclosure requirement for pension funds could be anchored in Article 65a (Transparency) paragraphs 1 and 2 of the Federal Act on Occupational Old-Age, Survivors', and Disability Pensions (BVG), and in the Regulation on Occupational Old-Age, Survivors', and Disability Pensions (BVV2), Article 48b (Information to be provided by the pension plans).
    - The disclosure obligation for insurers could be anchored in Articles 26 and 29 of the Insurance Oversight Act and/or Article 60 of the Federal Act on Health Insurance (KVG), and/or Articles 86 to 88 of the Health Insurance Regulation.
- The Federal Council and/or the Swiss Parliament set minimum standards for disclosing the climate risk exposures in the investments of Swiss pension funds and insurers.
    - For pension funds, the minimum standards could be based on the following legislation: Article 65a paragraph 3 and Article 65b[82] of the Federal Act on Occupational Old-Age, Survivors', and Disability Pensions (BVG).[83]
    - For insurers, the minimum standards could be based on the following legislation: Article 22 paragraph 2 of the Insurance Oversight Act (VAG) and/or Articles 88 and 110 of the FINMA Insurance Oversight Regulation (AVO-FINMA).
- The Federal Council and the Swiss Parliament set the OECD Guidelines on *"Responsible business conduct for institutional investors"* as a minimum standard for the due diligence process to be applied to the assessment of ESG risk exposures in investments.

Action area 7 - The Federal Council and the Swiss Parliament adapt the framework conditions for financial intermediaries in order to channel financial flows into investment instruments and products offering environmental and/or social added value and make them financially more attractive.

Goal orientation: There are investments offering environmental and/or social added value both in Switzerland and abroad. The difficulty lies in making these investment products accessible to as many investors as possible and offering attractive risk-return profiles. Countries like Denmark and Germany show how these financial instruments can be supported by good framework conditions. For example, *KfW* in Germany

offers structured, fixed-rate investment products with a range of tranches. The tranches with the higher risk profiles are underwritten by public funds. As a result, the other tranches are attractive to institutional and private investors and leveraged by public funds. Denmark underwrites part of the risk of certain wind farm projects abroad. This makes foreign investments with environmental and/or social added value attractive to Danish exporters. This mechanism could also be used for investors.

Potential approaches:

- The Swiss Parliament ring-fences part of the annual national budget for reducing the risk of investments with environmental and/or social added value.
- The Federal Council requires the Swiss Parliament to examine the establishment of a Swiss national fund that reduces the risk of Swiss and foreign investments with environmental and/or social added value.
- The Federal Council requires the examination of a state funding mechanism (similar to export finance) that makes foreign investments with environmental and/or social added value more financially attractive as investments for all Swiss investors.

VII. Concluding remarks

Despite some progress, sustainable finance continues to be marginally important in Switzerland, and there is a risk that the country will fall behind internationally. In addition to a lack of will on the part of certain market players, the spread of sustainable finance is hampered above all at an institutional level. These recommendations are therefore aimed primarily at policy-makers, which can give political mandates to encourage more proactive governmental institutions. Comprehensive transparency requirements and targets for assessing ESG risks by the Swiss National Bank, companies and investors are the basis for aligning Switzerland with a sustainable growth path.

The policy recommendations are designed to trigger a public debate, which historically has only been conducted to a limited extent at the level of institutional policymakers in Switzerland. WWF Switzerland encourages policymakers and other decision-makers to adopt the proposed measures and to integrate them effectively into the framework conditions for financial actors. **Now is the right time to do this: with the complete revision of the CO_2 Act, the revision of the Code of Obligations and the Pensions 2020 reform package, the national political agenda offers several starting points for a more in-depth debate on sustainable finance. This would be an important first step towards a sustainable world – even if the road is still a long one.**

Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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Appendix 1: What is Sustainable Finance?

"Sustainable development" and "sustainability" have become buzzwords and are used so frequently that some people argue they have become devoid of meaning. About 200 different definitions of "sustainability" and "sustainable development" currently exist. The one provided by the United Nations' Brundtland Commission is arguably the most recognised: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Generally, "sustainable development" refers to the process, while "sustainability" to the end goal to which the process should lead.

Despite the lack of conceptual clarity, numerous national and international policies and regulations have taken up the idea of "sustainability" and "sustainable development." Contradicting the famous quote "the business of business is business" (shareholder-value maximization) ascribed to Milton Friedman, many private-sector market players are also considering sustainability issues and have made "sustainable development" an integral part of their business. Before the 1990s these activities were known as Corporate Social Responsibility (CSR) and included philanthropy, corporate donations, and other charitable activities such as corporate volunteering.[84] However, these processes and instruments were conceptualised as "add-ons" to their "normal business". But, "corporate sustainability" refers to the core activities of a business and looks at how companies can incorporate environmental, social, and governance (ESG) aspects into their day-to-day business decisions.[85]

Thus, the terms sustainable banking, sustainable insurance, sustainable asset management, etc. refer to the active inclusion of ESG indicators into business decisions of financial sector companies. Most of the literature on sustainable finance focuses on "why", "how," and "when" specific companies incorporate sustainability into their lending and investment decisions. There are several reasons why the financial sector chooses to include ESG factors in their business activities: to comply with international and national norms and standards (e.g., the fiduciary duty of asset managers and asset owners to incorporate ESG aspects into their investment and lending decisions); to improve the risk-return profile of investments and loans; to reduce reputational risks; to respond to growing customer demand; or with the aim of having a positive impact on society and nature. Nevertheless, many financial sector actors struggle to incorporate ESG factors into their investment and lending decisions. This is due to, among other things, the technical difficulty and complexity of internalising social and environmental externalities and the inherent short-termism in the financial sector that discourages longer-term investments.[86]

The literature concludes that compared to all other economic sectors, the financial sector has very little direct negative ESG impacts (e.g., energy consumption and waste); however, its indirect impacts (e.g., via clients or investees) are significant.[87] Nevertheless, research currently focuses less on the sustainability of the whole financial sector and struggles to agree on a common definition of a sustainable financial system.

At WWF, we believe that a sustainable financial system is one that accounts for its environmental, social, and economic impacts over the short, medium, and long term in all its investment and lending decisions, and encourages the positive social and environmental development of society.

Appendix 2: Examples of Sustainable Finance Initiatives in Switzerland by the Financial Sector and Civil Society

The Swiss Financial Sector and Sustainable Finance

After a few years of rather slow growth in the early 2000s, **the sustainable investment market has recently gained momentum and totalled over CHF 266 billion in 2016**.[88] A variety of reasons are driving the financial sector to increasingly focus on sustainable finance. At the same time, a growing number of local industry associations are supplementing their work.

Two main motivations are driving the financial sector in Switzerland. First is the desire to reduce the risks associated with some types of unsustainable investments. This is illustrated in the notable announcement by two large Swiss pension funds (Publica and BVK) that they are divesting from coal,[89] and in the move by UBS and Credit Suisse to jointly create the Thun Group,[90] which has developed common tools to effectively implement the UN Guiding Principles on Business and Human Rights for the Banking Sector. Within the insurance sector, Swiss Re is considered as a thought leader worldwide, particularly for its systematic environmental risk assessments. Second is the aim to create new investment and revenue opportunities. The opportunity side is best exemplified by Switzerland's market-leading position in "Investments for Development"[91] (including microfinance): Switzerland manages about a third of the world market (approx. USD 10 billion).[92] A further example is the recent success of Lombard Odier's new Climate Bond Index.

Actors of the financial sector have also created industry associations such as Swiss Sustainable Finance (SSF), an association of a broad range of players that was founded in 2014, and Sustainable Finance Geneva (SFG), an association of individuals that was founded in 2008. Next to these larger sector initiatives, specialised organisations have also been established, such as the Swiss Association for Responsible Investments (SVVK-ASIR), founded by seven pension funds at the end of 2015, and Ethos,[93] founded back in 1997. There are also "traditional" industry associations that focus some of their work on specific aspects of sustainable finance. For example, the trade association economiesuisse and the Swiss Stock Exchange have issued a Swiss Code of Best Practice for Corporate Governance.[94] SwissFoundations published another Swiss Code[95] that sets voluntary guidelines for foundations on how to invest "sustainably." Finally, the Swiss Insurance Association has issued a position paper on climate change and energy, providing guidance and a vision for its members.[96] It underlines the proactive stance that the Swiss insurance industry is willing to take on climate change and its risks.

Despite these developments and the increasing momentum behind sustainable finance, it remains a niche in Switzerland's finance industry with respect to both investing and financing. Sustainable investments as measured by assets under management make up only around 3% of the overall Swiss investment market.[97] The share of sustainable assets within the Swiss financing business (corporate and retail loans and mortgages) is not measured or reported.

Swiss Civil-Society Organisations and Sustainable Finance

Civil-society players in Switzerland generally focus on a particular issue within the spectrum of sustainable finance and use a variety of instruments to influence public perception, market players, and governmental action. These range from collaborative approaches with the private sector all the way to campaigning with "naming and shaming" strategies.

Over the past 20 years, NGOs such as Public Eye (formerly Berne Declaration), Alliance Sud, Greenpeace, and WWF Switzerland have engaged in the debate on sustainable finance. The number of NGOs active in sustainable finance issues has recently grown, with new organisations such as fossil-free.ch (also active internationally) and Klima-Allianz. Some of the more relevant publications include a benchmark analysis of how Swiss institutional investors incorporate sustainability,[98] an analysis of the financing structures of "dirty diesel,"[99] research on the link between financial speculation and food commodity prices,[100] the sizable CO_2 emissions of the Swiss National Bank's US equity holdings,[101] and a campaign to encourage pension funds to divest their fossil-fuel holdings.[102] Of particular interest is the recent work of Klima-Allianz which prompted 130 professors and experts to sign a public letter to the Swiss National Bank demanding that it aligns its assets with climate goals (April 2017).

Mainstream financial research institutes such as the Swiss Finance Institute have recently shown an interest in sustainable finance, which was the topic of its 2016 Annual General Meeting.[103] These efforts are being underscored by growing media attention in Switzerland. In 2016 several special issues on sustainable finance were issued by magazines and newspapers such as Le Temps,[104] Schweizer Monat,[105] and Schweizer Bank.[106] Furthermore, universities have opened an array of new research and educational institutes focusing on sustainable finance. University of Zurich (UZH) launched the Center for Financial Networks and Sustainability (FINEXUS) and the Center for Sustainable Finance and Private Wealth, and Institut für Finanzdienstleistungen Zug der Hochschule Luzern (IFZ) very recently introduced a Certificate of Advanced Studies on “Sustainable Investments.”

Appendix 3: Examples of International Sustainable Finance Activities

The following paragraphs give a selection of examples of how international market players, civil society, and governments have taken up sustainable finance on a global level. International organisations are discussed in Appendix 4.

Civil-Society Organisations globally and Sustainable Finance
Non-profit entities can be divided into two types. The first addresses sustainable finance as part of a larger portfolio of activities; these include WWF, Greenpeace, Friends of the Earth, SOMO, and the World Resource Institute. The second works solely on sustainable finance issues; examples here include BankTrack, which campaigns against "unsustainable" behaviour by banks, and the Transition Pathway Initiative, which encourages and supports the financial sector to align their portfolios with the 2° Celsius goal of the Paris Climate Agreement.

Several social movements have formed around specific sustainable development challenges in the financial sector. The most famous is the "divestment movement" that aims to motivate asset owners to divest from fossil-fuel companies. It is driven by individual activists (e.g., Bill McKibben), ethical investors (e.g., churches), newspapers (e.g., The Guardian) and groups such as fossil-free.org and 350.org. The New York Times recently reported (in an article written in December 2016) that the amount of divested capital had doubled over the previous 15 months. Currently 688 institutions and nearly 60,000 individuals in 76 countries are selling their shares in fossil fuel companies.

Market Players globally and Sustainable Finance
Internationally, there have been numerous private-sector initiatives on sustainable finance over the past few years, mainly originating from the investor or banking side.

With regards to investors, momentum built up considerably in 2016. For example, in August 2016, 130 investors (with USD 13 trillion in assets under management; the only Swiss signatory was Bank J. Safra Sarasin) asked the G20 countries to ratify the Paris Agreement. They stated that they need a clear policy and institutional structure regarding climate change, and further mentioned that a lack of governmental action would increase the risk of stranded assets. Similarly, the Institutional Investor Group on Climate Change (IIGCC) asked political leaders to improve the pricing of environmental risks and to align the EU's financial system to climate change risks. European pension funds such as Sweden's AP1, AP2, AP3, and AP4 and the Netherland's PGGM have pledged to use the SDGs as a framework on which they intend to base their investment decisions. The world's largest asset manager, BlackRock, called on all investors to "adapt their portfolios to combat climate change," and demonstrated that this would be in line with the goal of maximizing shareholder value. Insurers have also been advocating proactively for the effective inclusion of climate risks into business decisions, and pushed governments to be more active on this issue. This is exemplified by the creation of the "Sustainable Insurance Forum" in 2016 to promote cooperation among insurance supervisors on climate risks.

As in Switzerland, the banking side internationally has been less prominent than the investor side. Nevertheless, several organisations have recently been encouraging sustainable banking; these include the Global Impact Investing Network, the Global Alliance for Banking on Values, and Positive Impact Banks. These institutions all aim to reduce transaction costs between the different companies involved, but differ significantly in their perception of sustainability. Furthermore, several banks (such as Wells Fargo and Morgan Stanley) have divested from coal. Banks have generally been heavily criticised about the North Dakota Access Pipeline project. This prompted banks such as Norwegian bank DNB to sell their assets invested in this project.

International Governmental Institutions & the European Union and Sustainable Finance
This discussion highlights nations that are considered frontrunners on sustainable finance, as well as relevant competitors to the Swiss financial sector (according to the Swiss Finance Institute study). A WWF study on the BRICS countries (Brazil, Russia, India, China, and South Africa) looked at the sustainable finance initiatives, of which only the Chinese ones are discussed here, as the other countries are considered as being less direct competitors to the Swiss financial sector.

The UK has introduced several regulations that establish the mandatory disclosure of ESG information, encourage sustainable investments by exempting them from taxes, and request the incorporation of some ESG issues in investment decisions (e.g., the 1995 Sustainable Investment Pensions Disclosure, the 2003 Community Investment Tax Relief, and the 2010 UK Stewardship Code). In 2016, the UK decided to further strengthen its market-leading position in social impact bonds by increasing its governmental support to GBP 80 million of investments in the coming years. The Bank of England was one of the first central banks to focus on the relationship between climate change and financial stability. And the City of London launched the Green Finance Initiative London to promote London as the leading centre for green finance and especially green bonds.

Like the UK, France has adopted several laws requiring sustainable investment strategies and introducing the mandatory disclosure of ESG indicators in financial companies' annual reports (e.g., the 2005–2008 Fonds de Réserve pour les retraites, and the 2010–2012 Loi Grenelle II). Leveraging its leadership role in the Paris Climate Agreement, the French government used the resulting momentum to revise its law on the transition to a low-carbon economy. The revision led to an amendment to France's financial market law, which now requires all French institutional investors to report and monitor the GHG emissions of their investments as well as other ESG factors. The French government also introduced a certification system for designating sustainable finance instruments. In June 2016, Paris Europlace opened the Paris Green Financial Centre, an institution that brings together, develops, and promotes green initiatives for the entire French financial sector. Like London, Paris also wants to establish itself as a centre for green finance.

Other European nations, especially the Netherlands and Luxembourg, use interesting approaches. The Dutch central bank has proposed climate transparency rules for banks and insurers and is currently considering financial climate stress tests. In October 2016, the Dutch banking industry issued an agreement on international responsible business conduct with respect to human rights. Luxembourg is the EU country where the most sustainability-focused investment funds are domiciled. In 2016 it announced the launch of the first green securities exchange and a new Luxembourg Fund Labelling Agency to grant recognisable and credible certifications to sustainable investment funds.

In recent years, many of the EU's institutions have been advancing important projects on sustainable finance. The most recent is the Capital Union Market Reform adopted in September 2016, which is a European Commission plan to mobilise capital in Europe. It recognises the need to scale up green finance and highlights the necessity of creating an expert group to develop a European strategy for sustainable finance (which was established in December 2016). The Commission will also adopt non-binding guidelines on the methodology to be used by all companies to report on ESG issues to investors and consumers. Additionally, under the Capital Market Union Reform, the European Investment Bank must increase the availability of green funds through the European Fund for Strategic Investment by earmarking at least 20% of the EU's 2014–2020 climate action budget and setting up a platform for financing the circular economy. On the legislative side, the European Parliament, Council, and Commission agreed to revise the Occupational Retirement Provision (IORP II) Directive, which now contains provisions requiring EU pension funds to consider ESG issues in their investment decisions. The European Central Bank (ECB) and the European Bank for Reconstruction and Development (EBRD) have stressed the issue of climate risks for the financial sector. This is illustrated in an ECB report titled "Too late, too sudden" that advocates for a gradual transition to a low-carbon economy, starting immediately, to prevent the risk of a carbon bubble and financial instability. European financial-market players and central bankers also discussed carbon stress-testing at a meeting in April 2016.

In Asia, China is the most relevant country for this paper. **China has shown the most leadership over recent years and is implementing many new sustainable finance initiatives.** The Chinese government issued Green Credit Guidelines already in 2007 requiring banks to assess the environmental impacts of their borrowers in order to reduce lender liability and the negative environmental impacts of their lenders. In 2014, Ma Jung at the People's Bank of China established a task force on green finance. This in turn prompted China to put green finance on the agenda of the G20 meeting during its 2016 presidency by creating the Green Finance Study Group. This Group's mandate was to provide a summary report to the ministers of G20 countries at the General Meeting in September 2016 and give recommendations on how to best take up the issue of "green finance" in the G20's work. Furthermore, the Chinese govern-

ment included green finance as one of the strategic imperatives of China's 13th 5-Year Plan. China rolled out many new initiatives, policies and regulations in 2016. For example, it established the first rules on the issuance of green bonds, and the People's Bank of China and six other agencies jointly issued guidelines for establishing a green financial system in China, including the launch of a national-level green development fund, the unification of domestic green bond standards, and the mandatory disclosure of environmental information. The Industrial and Commercial Bank of China (ICBC) conducted the first lending analysis of climate risks by stress-testing its lending portfolio. China additionally plans to create a nationwide carbon market in 2017 (which would become the largest worldwide), based on pilot exchanges that exist for instance in Hong Kong. Finally, the Chinese central bank (the People's Bank of China) is considering providing low-cost loans to support green financing.

Singapore, a main competitor of Switzerland's financial centre, has been promoting sustainable finance over the past few years. The Association of Bankers in Singapore issued a set of guidelines aimed to encourage lenders to include ESG criteria in their risk assessment and lending processes. The Singapore Stock Exchange announced in July 2016 that it will introduce mandatory sustainability reporting starting in 2018.

Appendix 4: Examples of Multinational Initiatives on Sustainable Finance

This list of international organisations is limited to those that are central to the discourse on sustainable finance and that focus on a broad set of issues. Swiss players are active in all the institutions mentioned below.

United Nations – The United Nations Environment Programme–Finance Initiative (UNEP FI) is the oldest international organisation directly linked to sustainable finance. It was created by UNEP in 1992. UNEP FI has been very active in the field and has contributed to the launch of associated structures, such as the Principles of Responsible Investment (PRI), the Principles for Sustainable Insurance (PSI), the Sustainable Stock Exchange (SSE) initiative, the Montreal Carbon Pledge, and the related Portfolio Decarbonization Coalition. Each of them focuses on a specific issue (e.g., natural capital) or a group of players (e.g., insurance companies). These initiatives aim in particular to create standards, establish benchmarks, and clarify terminology.

UNEP Inquiry – The UNEP Inquiry process was launched in 2014. It published its first report in 2015 on the “Financial System We Need,” looking at the financial system and more specifically at how it should change to finance and encourage sustainable development. Since then the Inquiry has published many more reports on the state of the financial system in different countries, developed roadmaps, identified levers for change, and advocated globally for a faster and more general uptake of sustainable endeavours. 15 countries (including Switzerland) participated in the first report on the “Financial System We Need,” and they can be considered as the driving forces in the Inquiry.

G20 – In 2016, the year of China’s presidency, green finance was on the agenda of the 20 largest economies. The G20 Green Finance Study Group was created and it drafted a report on green finance. The final G20 Communiqué, endorsed by all G20 leaders in September 2016, included a section on green finance that noted the importance of scaling up efforts on sustainable finance and outlined specific action points (e.g., facilitating and encouraging green bonds). The Green Finance Study Group was continued under the German presidency that started on 1 December 2016, and will most certainly be continued again under the Argentinian presidency starting in December 2017.

Financial Stability Board (FSB) – **Under the leadership of Mark Carney (Bank of England), the FSB has started examining the link between climate change and financial market stability.** This based on the concepts of stranded assets and the carbon bubble. Among other initiatives, the FSB created the Task Force on Climate-related Financial Disclosures (TCFD), chaired by Mark Carney and Michael Bloomberg. In December 2016 it published voluntary disclosure standards on climate-related issues for financial intermediaries. These were submitted to public consultation in the early months of 2017, and the revised guidelines were published end of June 2017.

Organisation for Economic Co-operation and Development (OECD) – The OECD has focused its attention on developing financial sector guidance on responsible business conduct as part of the OECD Guidelines for Multinational Enterprises. It published the first set of guidelines for institutional investors in June 2016 and opened a Centre on Green Finance and Investment in October 2016. It aims to help catalyse and support the transition to a green, low-emission, and climate-resilient economy through the development of effective policies, institutions, and instruments for green finance and investment. Switzerland is part of the OECD.

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[4] See: http://www3.weforum.org/docs/Media/TheGlobalRisksReport2016.pdf
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[73] “Production facilities that can no longer operate because of regulatory intervention or the effects of climate change are termed ‘stranded assets’.”(BAFU, 2015: 65)

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[91] See: *http://www.sustainablefinance.ch/en/swiss-investments-for-development-2016-_content---1--3043.html*
[92] See: *http://www.sustainablefinance.ch/upload/cms/user/SSF_A4_Layout_RZ-1.pdf*
[93] Ethos is a Swiss foundation established by Swiss pension funds that aims to encourage sustainable investments. It especially focuses on active ownership, proxy voting, and engagement activities. See: *https://www.ethosfund.ch/de*
[94] See: *http://www.ecgi.org/codes/documents/swiss_code_26sep2014_en.pdf*
[95] See: *http://www.swissfoundations.ch/de/good-governance*
[96] See: *http://www.svv.ch/de/politik-und-recht/dossiers/klimawandel*
[97] See: *http://www.bafu.admin.ch/publikationen/publikation/01857/index.html?lang=en*
[98] See: *https://assets.wwf.ch/downloads/wwf_shareaction_german_report.pdf*
[99] See: *https://www.publiceye.ch/fileadmin/files/documents/Rohstoffe/DirtyDiesel/PublicEye2016_DirtyDiesel_A-Public-Eye-Investigation.pdf*
[100] See study by Markus Mugglin for Alliance Sud “Nahrungsmittelspekulation - (k)ein problem?”
[101] See: *http://www.artisansdelatransition.org/rapports/carbon-invest-schweizer-nationalbank.pdf*
[102] See: *http://renten-ohne-risiko.ch/*
[103] See: *http://sfi.ch/node/3003*
[104] See: *https://www.letemps.ch/2016/06/06/finance-durable-decolle-enfin*
[105]See: *https://www.schweizermonat.ch/aktuelle-ausgabe*
[106]See: *http://www.sustainablefinance.ch/upload/cms/user/201609_SchweizerBank_20160819_010.pdf*